MUD

Rig: Hunt #2

Schlumberger

Company: **Lakes Oil N.L.**

Well: **Trifon 2**
Field: **Wildcat**
Rig: **Hunt #2** Country: **Australia**

MCFL−HRLA−GF
2500.2 − 1260 m
1:200 Scale

Company: Lakes Oil N.L.
Well: Trifon 2
Location: PEP 157
Field: Wildcat

LOCATION

PEP 157
516803 E
5760387 N

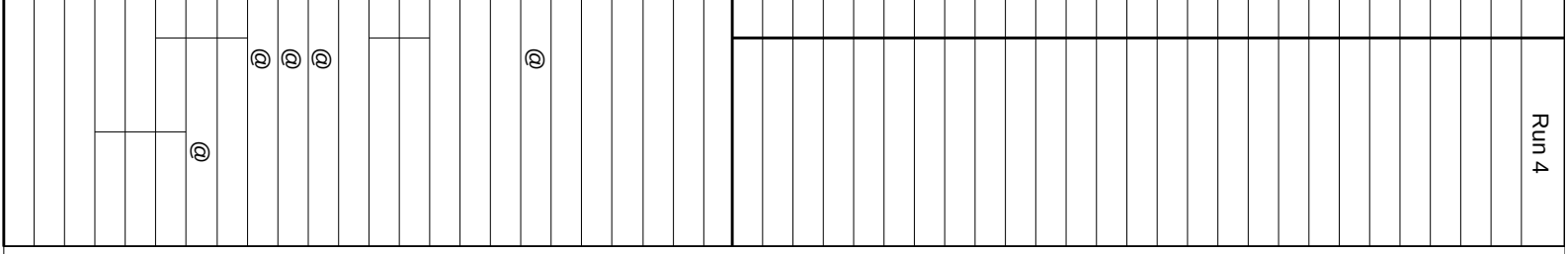
Elev.: K.B. 28.4 m
G.L. 25 m
D.F. 28.4 m

Permanent Datum: MEAN SEA LEVEL Elev.: 0 m
Log Measured From: Kelly Bushing 28.4 m above Perm. Datum
Drilling Measured From: Kelly Bushing

State:	Max. Well Deviation	Longitude	Latitude
Victoria	5 deg	147* 11' 30" E	38* 18' 15.5" S

Logging Date		4−Aug−2004				Logging Date			
Run Number		2				Run Number			
Depth Driller		2500 m				Depth Driller			
Schlumberger Depth		2501.2 m				Schlumberger Depth			
Bottom Log Interval		2500.2 m				Bottom Log Interval			
Top Log Interval		1260 m				Top Log Interval			
Casing Driller Size @ Depth		7.000 in @ 1265 m		@		Casing Driller Size @ Depth		@	
Casing Schlumberger		1260 m				Casing Schlumberger			
Bit Size		6.125 in				Bit Size			
Type Fluid In Hole		KCL PHPA				Type Fluid In Hole			
Density	Viscosity	1.1 g/cm3	37 s			MUD Density	Viscosity		
Fluid Loss	PH		8.7			MUD Fluid Loss	PH		
Source Of Sample		Pit				MUD Source Of Sample			
RM @ Measured Temperature		0.290 ohm.m @ 14 degC		@		RM @ Measured Temperature		@	
RMF @ Measured Temperature		0.218 ohm.m @ 14 degC		@		RMF @ Measured Temperature		@	
RMC @ Measured Temperature		0.435 ohm.m @ 14 degC		@		RMC @ Measured Temperature		@	
Source RMF	RMC	Calculated	Calculated			Source RMF	RMC		
RM @ MRT	RMF @ MRT	0.095 @ 88	0.071 @ 88	@	@	RM @ MRT	RMF @ MRT	@	@ @
Maximum Recorded Temperatures		88 degC	88			Maximum Recorded Temperatures			
Circulation Stopped	Time	3−Aug−2004	14:30			Circulation Stopped	Time		
Logger On Bottom	Time	4−Aug−2004	7:30			Logger On Bottom	Time		
Unit Number	Location	3170	QEA			Unit Number	Location		
Recorded By		Ian Thomas				Recorded By			
Witnessed By		Mr Tim O'Bien				Witnessed By			

	Run 1	Run 2	Run 3



DEPTH SUMMARY LISTING

Date Created: 4−AUG−2004 8:22:27

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−B	Type:	CMTD−B/A	Type:	7−42V−XS
Serial Number:	1933	Serial Number:	2268	Serial Number:	73069
Calibration Date:	dd−mmm−yyyy	Calibration Date:	16−Jul−04	Length:	4500.07 M
Calibrator Serial Number:	−50000	Calibrator Serial Number:	1050	Conveyance Method:	Wireline
Calibration Cable Type:	7−42V−XS	Calibration Gain:	0.87	Rig Type:	LAND
Wheel Correction 1:	−2	Calibration Offset:	326.00		
Wheel Correction 2:	−2				

Depth Control Parameters

Log Sequence:	Subsequent Trip To the Well
Reference Log Name:	HALS (/HRLA) − BHC − PEX
Reference Log Run Number:	1
Reference Log Date:	3−Aug−2004
Subsequent Trip Down Log Correction:	0.10 M

Depth Control Remarks

1.
2. All Schlumberger depth control procedures followed
3. Log depth matched to first run in hole HALS (/HRLA) − BHC − PEX dated 3−Aug 2004
4.
5.
6.

DISCLAIMER

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OTHER SERVICES1
OS1:
OS2:
OS3:
OS4:
OS5:

REMARKS: RUN NUMBER 1

REMARKS: RUN NUMBER 2

This is the second Run in hole, log depth matched to first run in hole HALS(/HRLA)−BHC−PEX dated 3−Aug−2004

Tool run with 0.5 in standoffs as per tool sketch

This run was performed to obtain Resistivity data as the deep sensor on the HALS in the first run failed

Log recorded in Hi−resolution from TD to Casing Shoe.

Maximum temperature recorded from thermometers in LEH−QT

Mud resistivity found from mud sample

Mud filtrate and mudcake resistivities calculated using Schlumberger chart Gen 7

No barite was used in the mud

Caliper Check in Casing reads 6.28" (Nominal 6.276")

RUN 1			RUN 2		
SERVICE ORDER #:			SERVICE ORDER #:		
PROGRAM VERSION:		12C0−301	PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

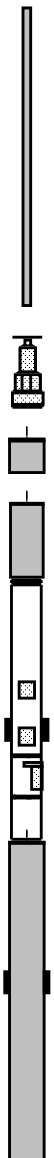
EQUIPMENT DESCRIPTION

RUN 1 RUN 2

SURFACE EQUIPMENT

GSR−U/Y
NCT−B
CNB−AB
NCS−VB
WITM (DTS)−A

DOWNHOLE EQUIPMENT



BSP
BRT−S 22 — 40.71

SP SPARC — 23.12

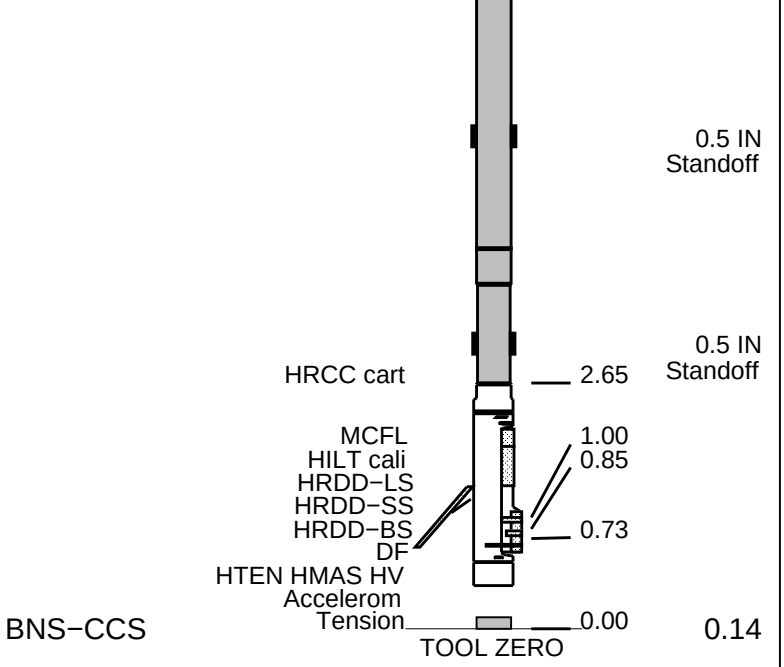
LEH−QT
LEH−QT — 16.32

AH−169 — 15.44

CTEM — 14.75
TelStatus
DTC−H — ToolStatu — 14.11 — 15.03
ECH−KC — HGNS HTEM
DTCH0−A 9034 — HMCA — 14.11

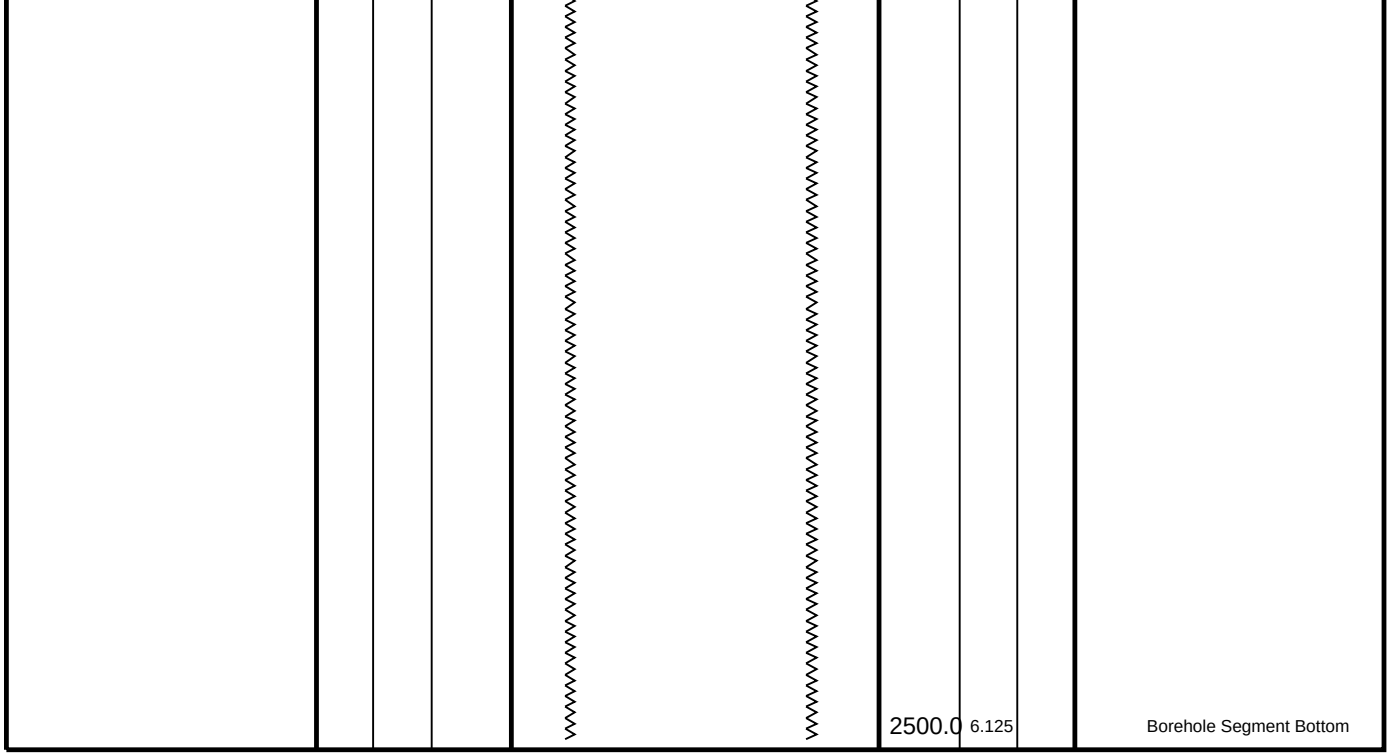
HILTB−FTB — Gamma−Ray — 13.89 — 14.11
HGNSD−B 890
HMCA
HGNH 890
NLS−KL
NSR−F 5051 — Neutron F — 12.11 — 0.5 IN Standoff
HACCZ — Neutron N — 11.96
HCNT
HGR
HRLT−B — HGNS sens — 11.25
DUMMY−A
AH−270
HRCC−B 756
HRMS−B 1730
HRGD−B 755
GLS−VJ 1893
MCFL Device
HILT Nucl. LS
HILT Nucl. SS
HILT Nucl. BS
NPV−N — 0.5 IN Standoff

High Res. — 7.66



MAXIMUM STRING DIAMETER 4.63 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

Production String	(in) OD	(in) ID	(m) MD	Well Schematic	(m) MD	(in) OD	(in) ID	Casing String
					0.0	7.000		Casing String
					1265.0	7.000		Casing Shoe
					1265.0	6.125		Borehole Segment



Schlumberger

HRLA Print
1:200 Scale

MAXIS Field Log

Company: Lakes Oil N.L. **Well: Trifon 2**

Input DLIS Files

DEFAULT	MERGE_HALS_SONIC_035	FN:1	PRODUCER	04−Aug−2004 11:55	2505.9 M	1213.0 M

Output DLIS Files

DEFAULT	HALS_SONIC_TLD_MCFL_037PUP	FN:51	PRODUCER	04−Aug−2004 12:09	2505.9 M	1250.4 M

OP System Version: 12C0−301

MCM

HALS−B	12C0−301	DSLT−H	12C0−301
HILTB−FTB	12C0−301	DTC−H	12C0−301
BSP	12C0−301		

PIP SUMMARY

Time Mark Every 60 S

HILT Caliper (HCAL)		HRLT Resistivity 5 (RLA5)	

HILT Caliper (HCAL)
4 (IN) 14

Gamma Ray (GR)
0 (GAPI) 200

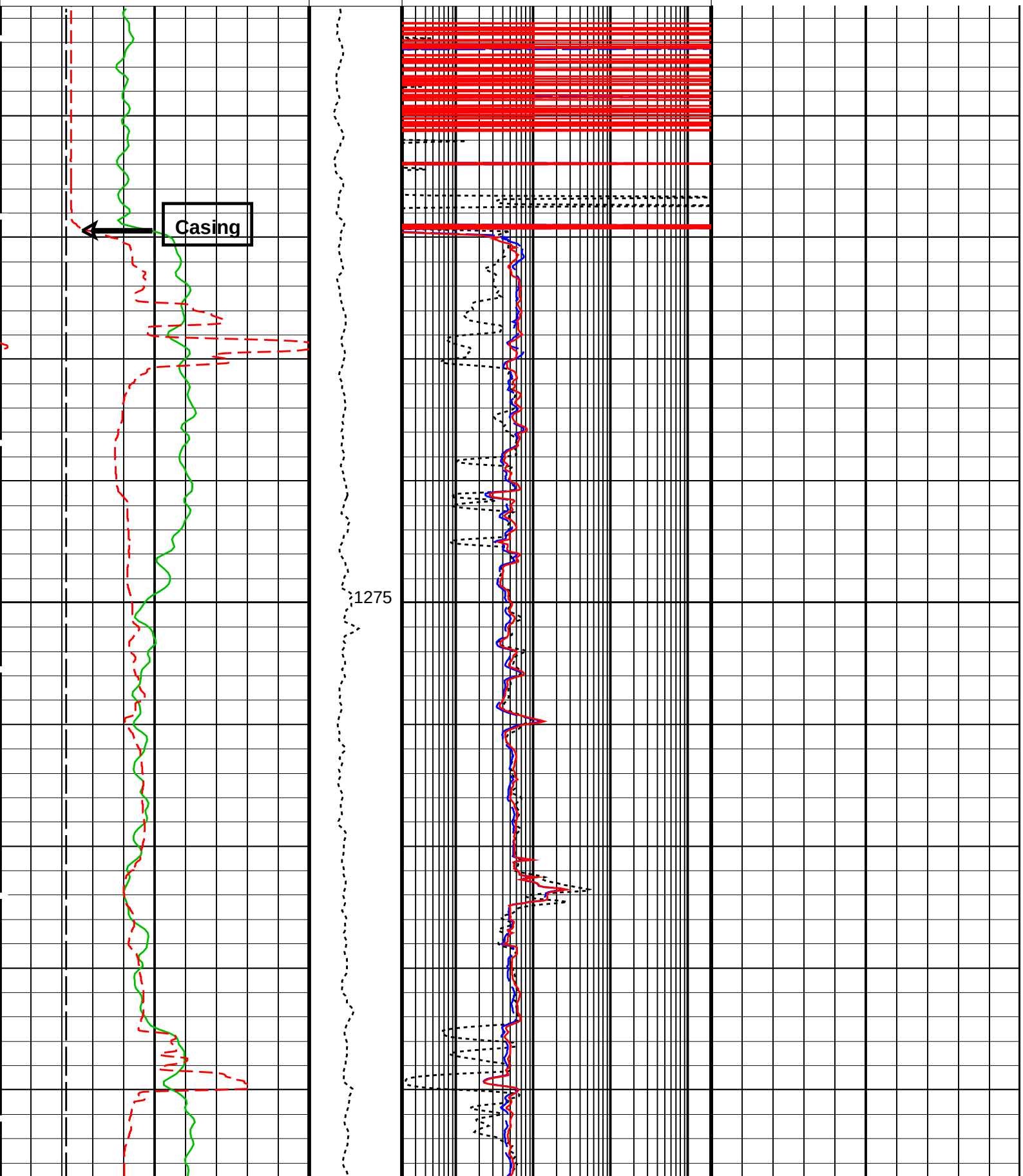
Bit Size (BS)
4 (IN) 14

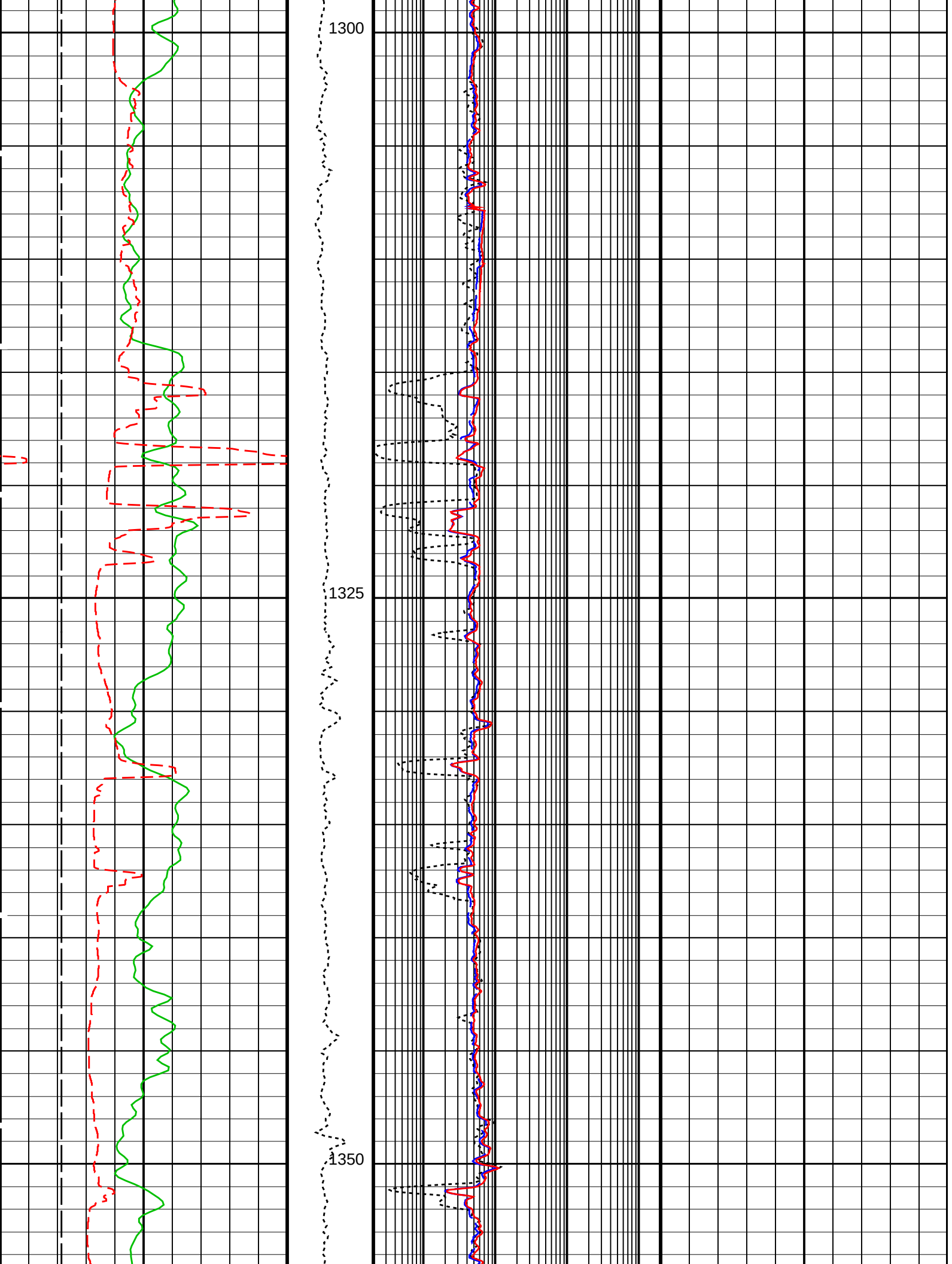
HRLT Resistivity 5 (RLA5)
0.2 (OHMM) 2000

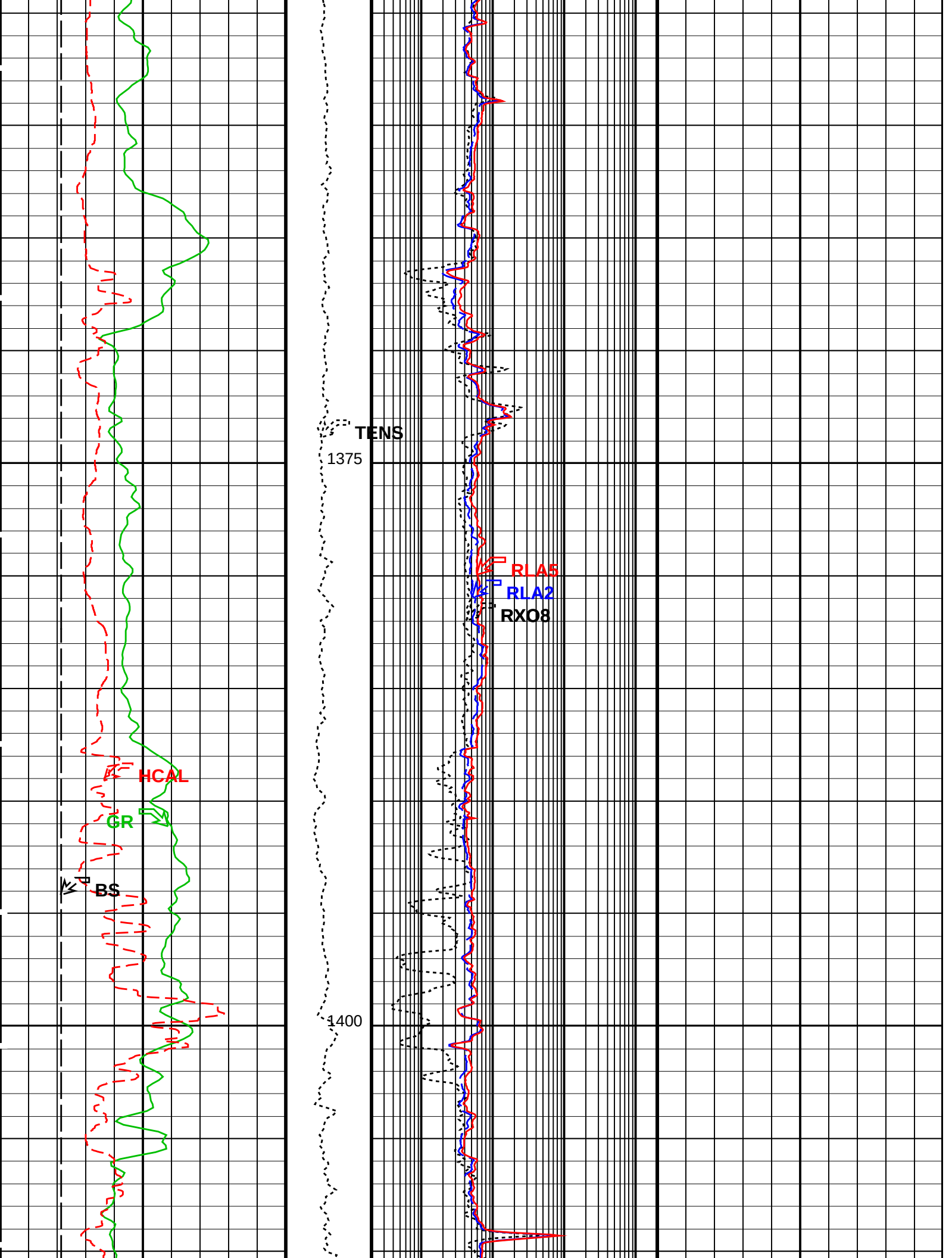
HRLT Resistivity 2 (RLA2)
0.2 (OHMM) 2000

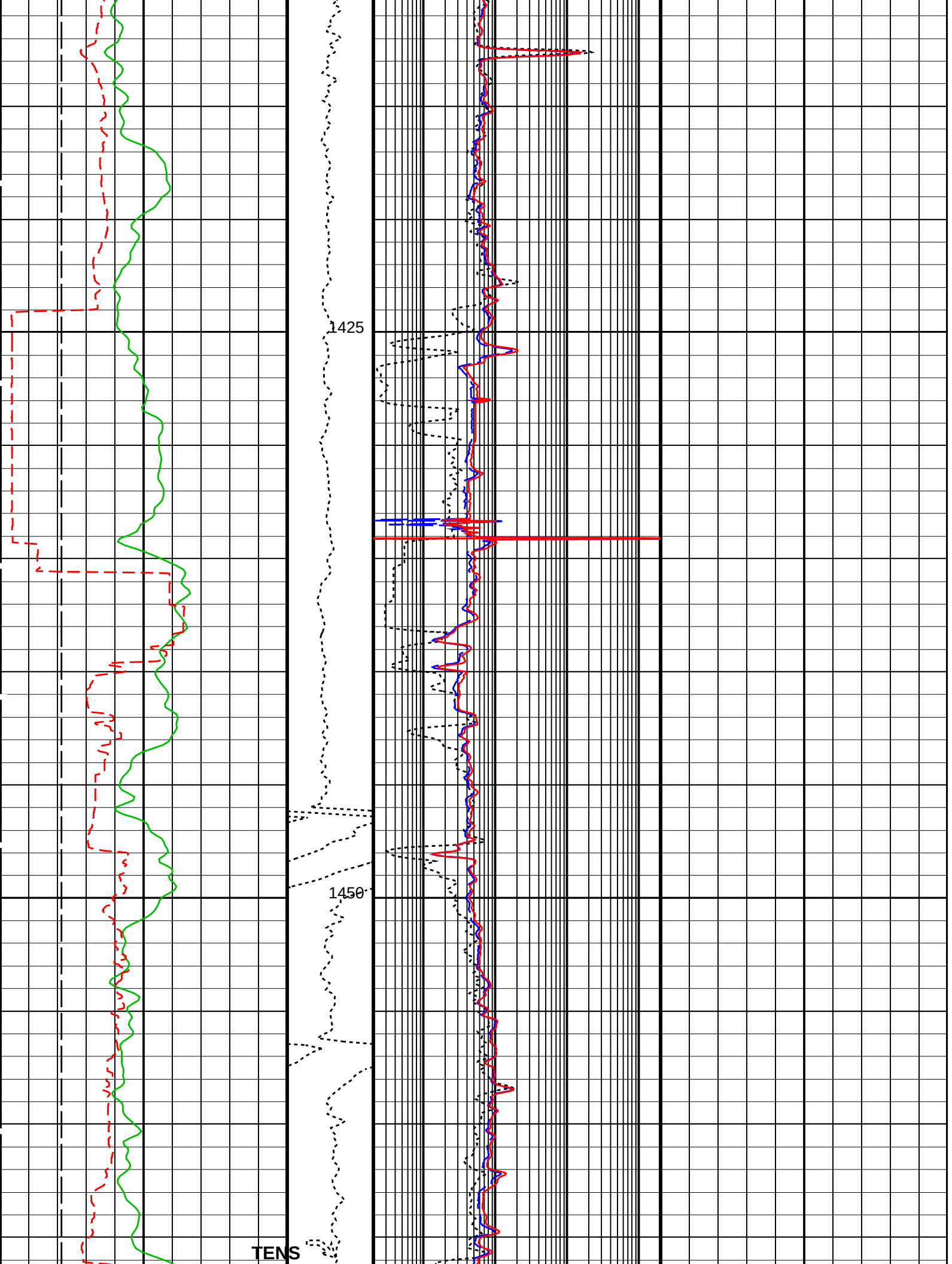
H. Res. Invaded Zone Resistivity (RXO8)
0.2 (OHMM) 2000

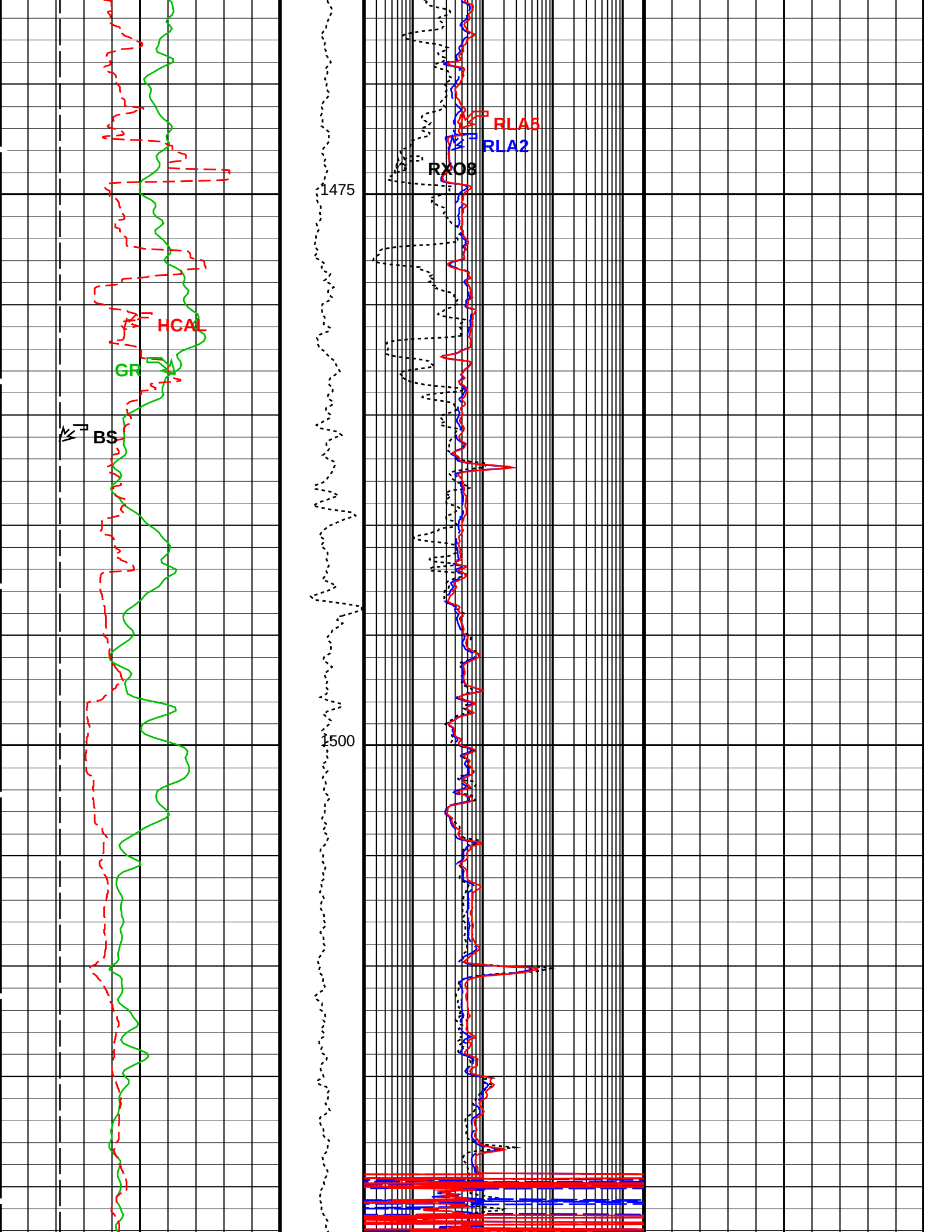
Tension (TENS) (LBF)
0 1000

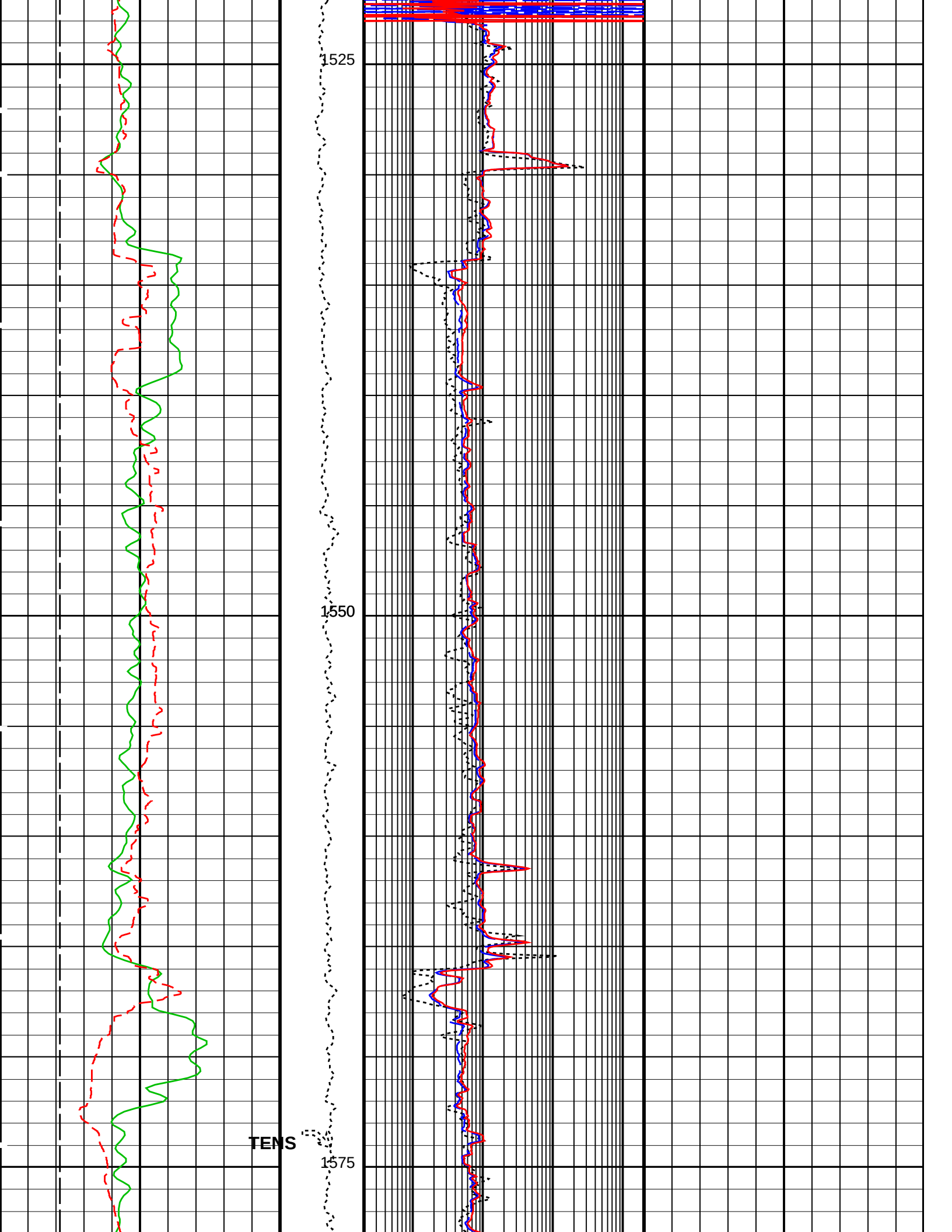


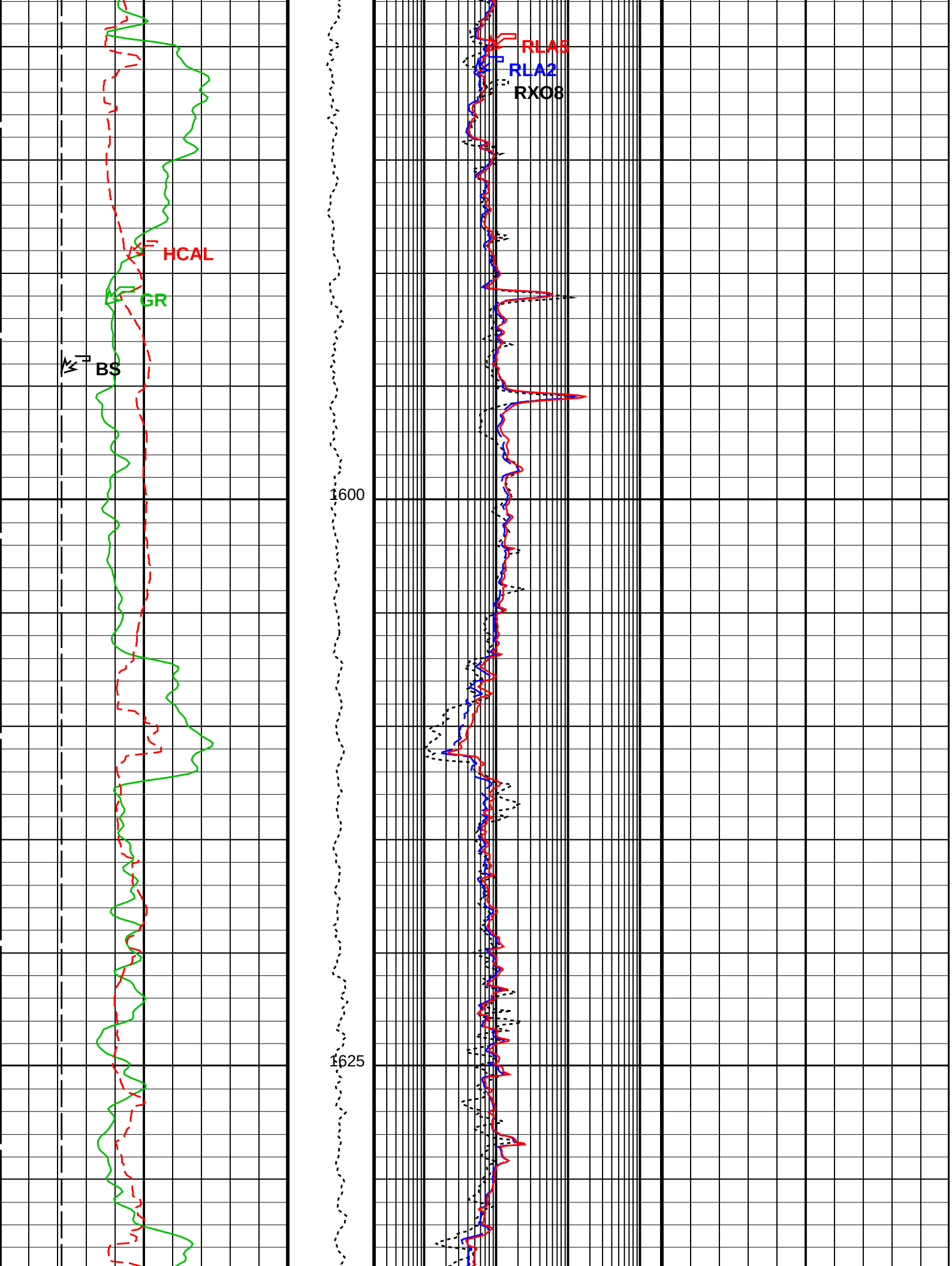

1300
1325
1350


TENS
1375
RLA5
RLA2
RXO8
HCAL
GR
BS
1400


1425
1450
TENS


RLA5
RLA2
RXO8
1475
HCAL
GR
BS
1500


1525
1550
TENS
1575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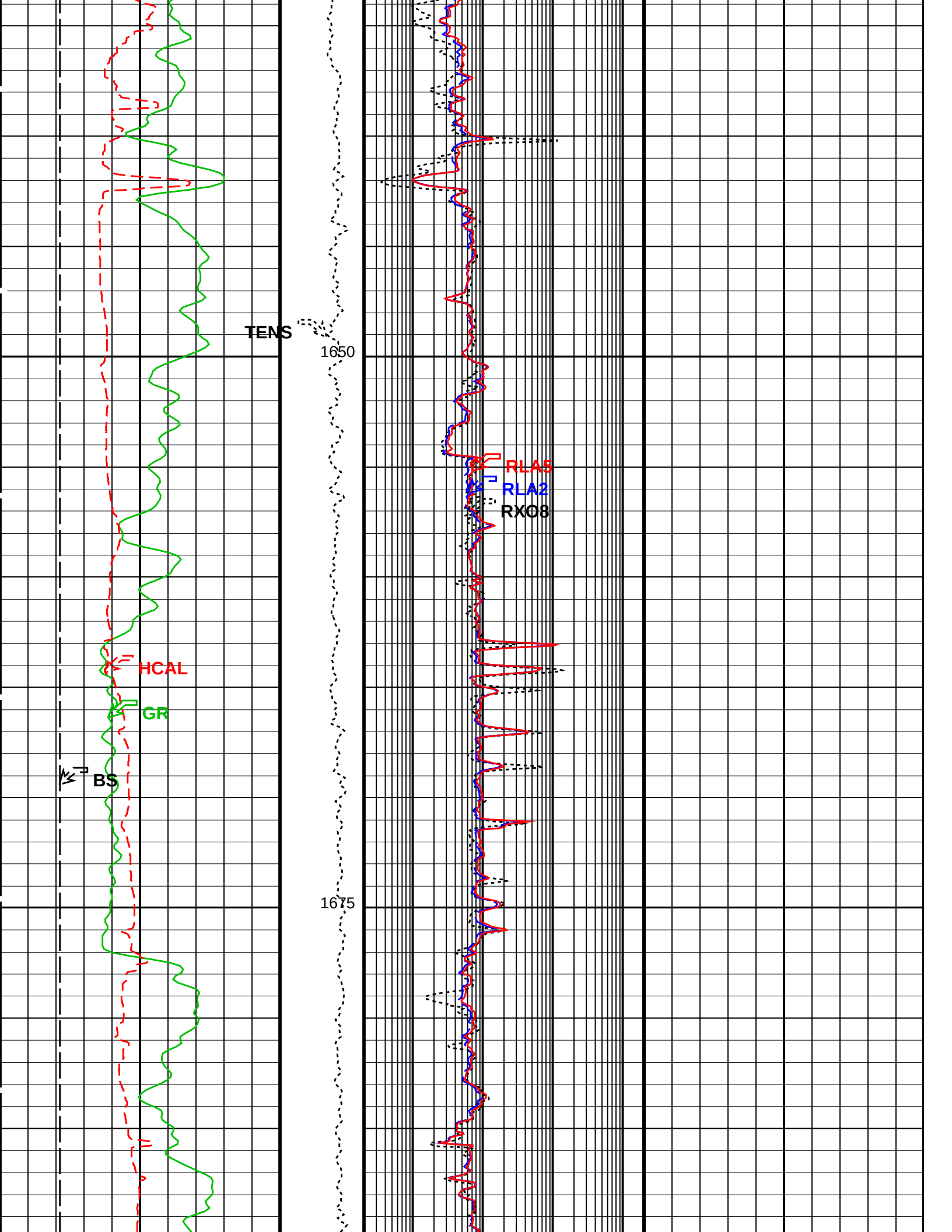
RLA2
RXO8
HCAL
GR
BS
1600
1625


TENS
1650
RLA5
RLA2
RXO8
HCAL
GR
BS
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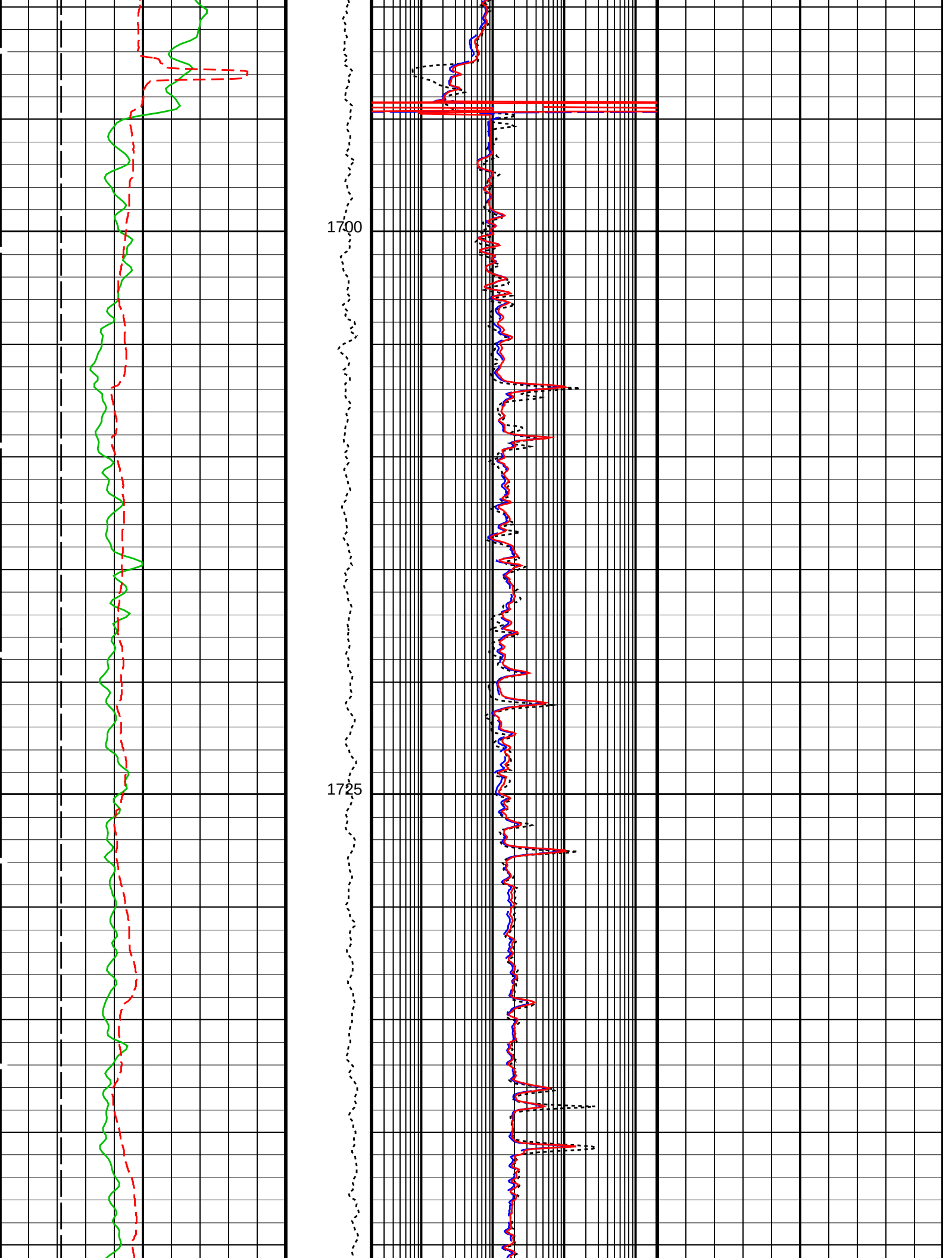
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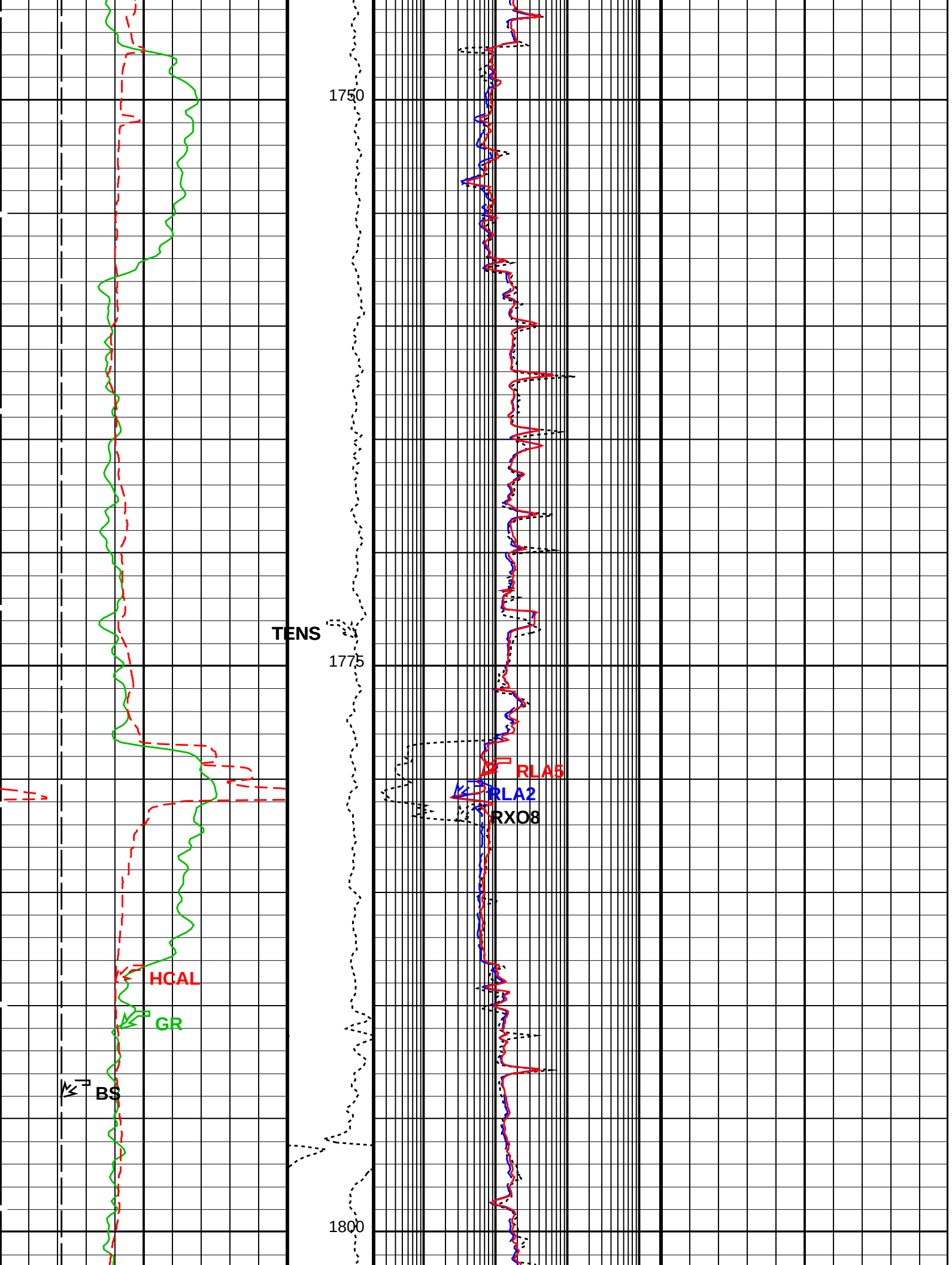
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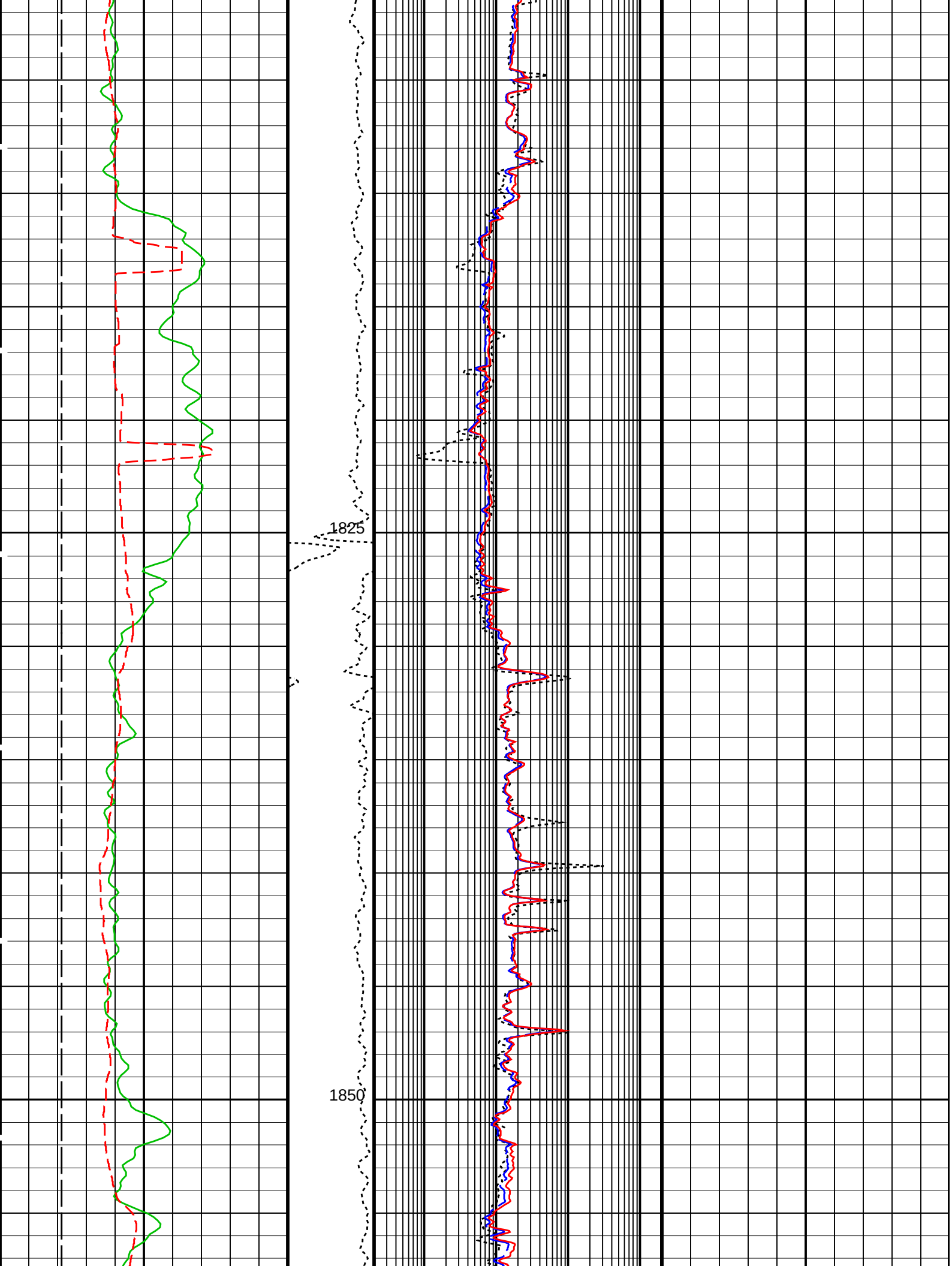
TENS
1775
RLA5
RLA2
RXO8
HCAL
GR
BS
1800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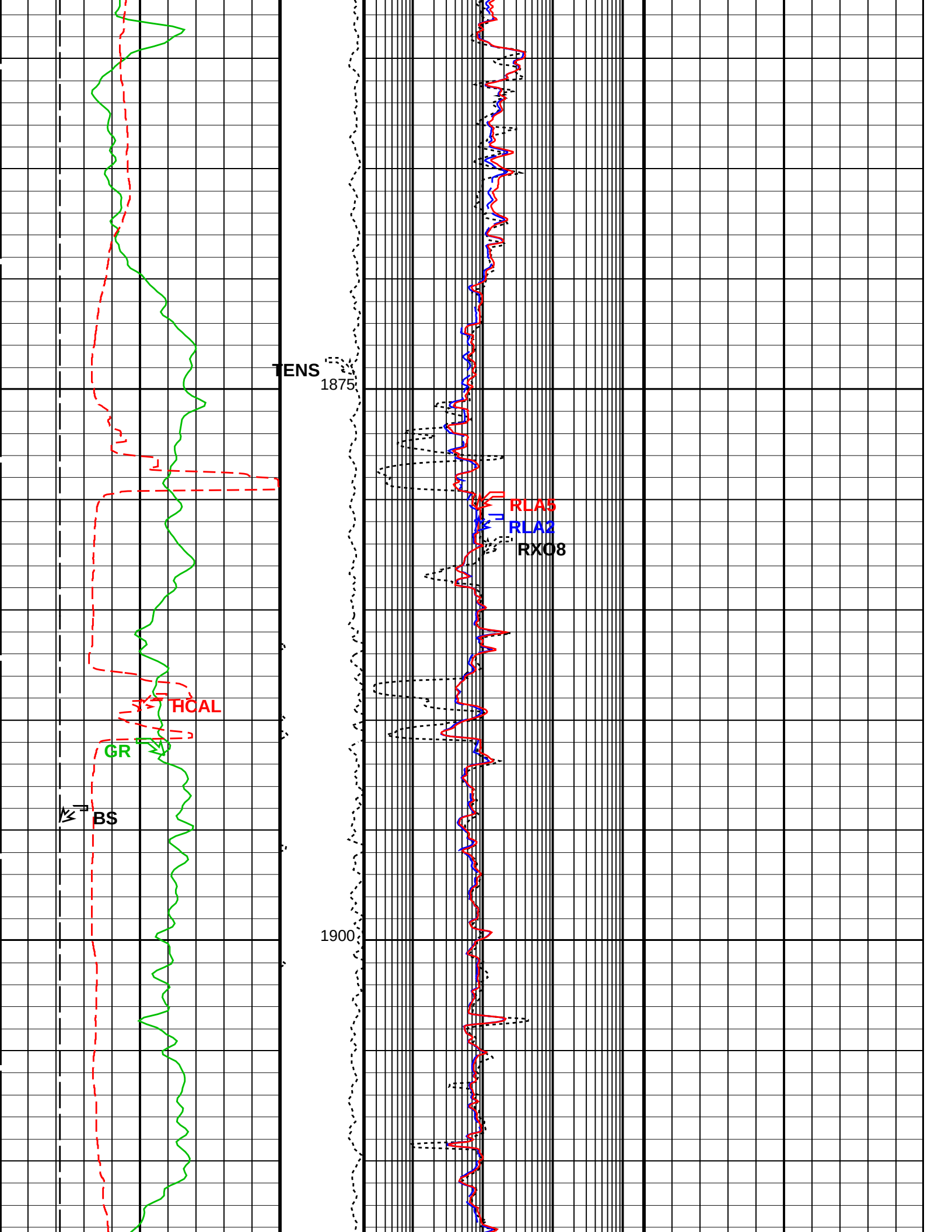
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RLA5
RLA2
RXO8
HCAL
GR
BS
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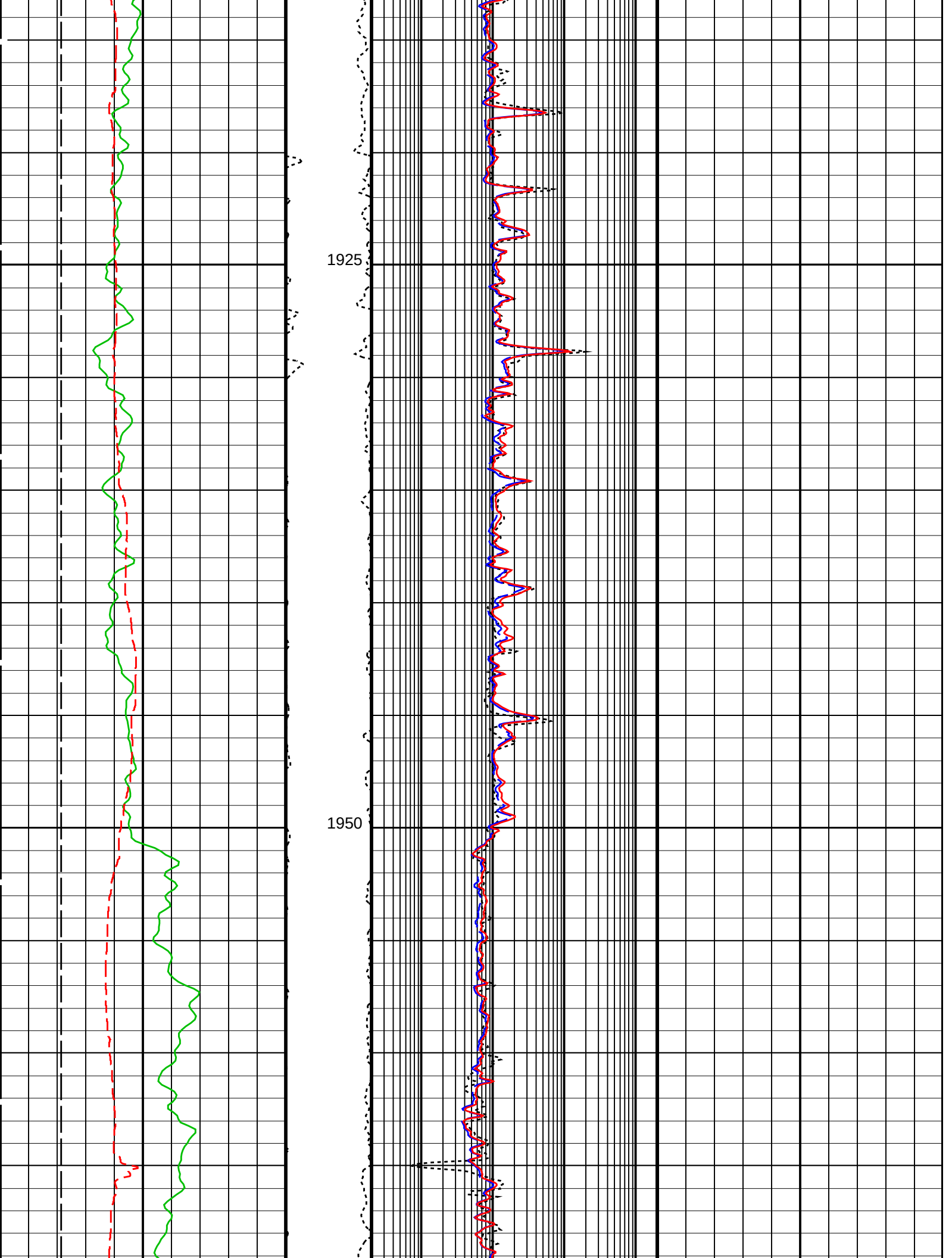
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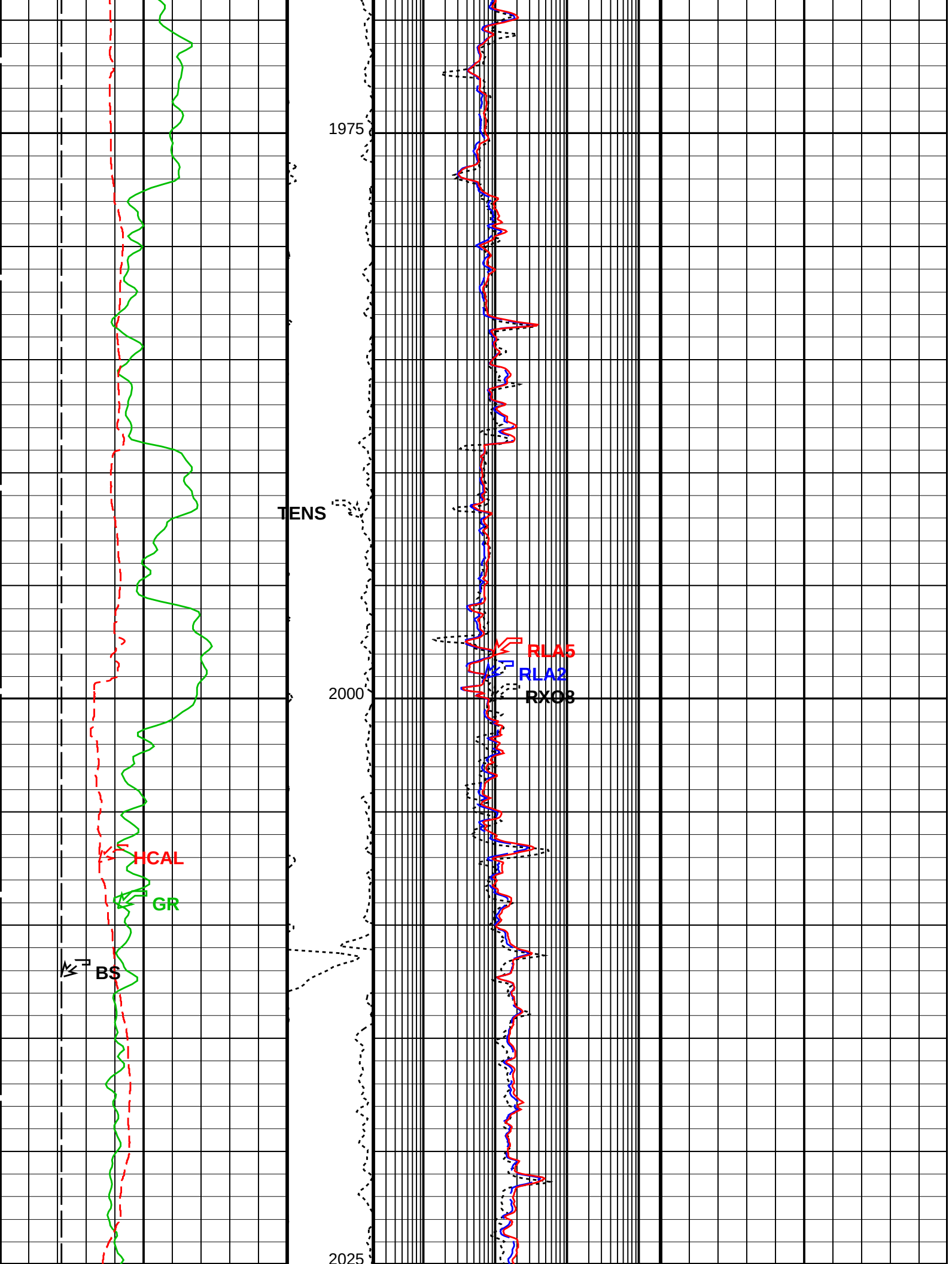
1950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BS
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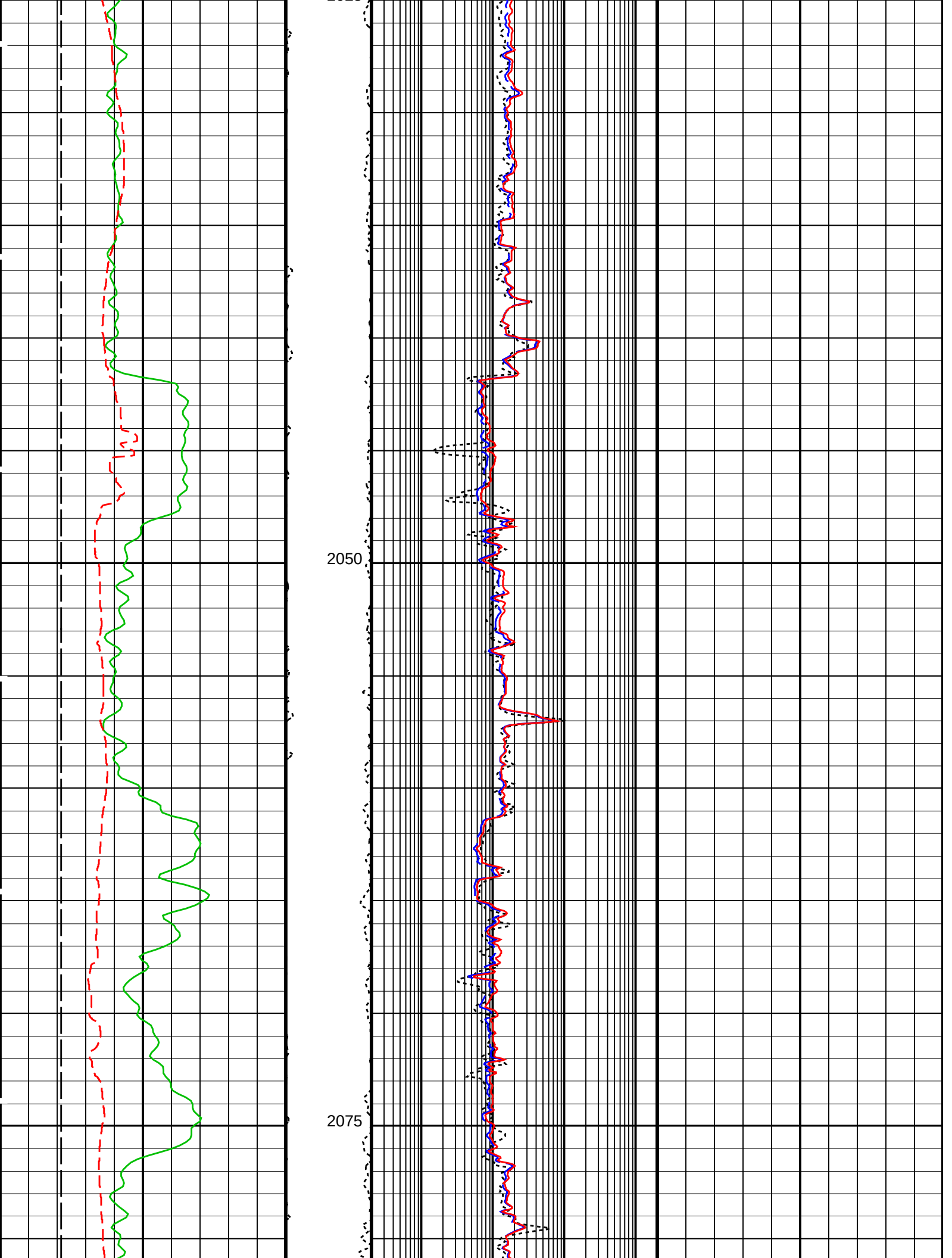
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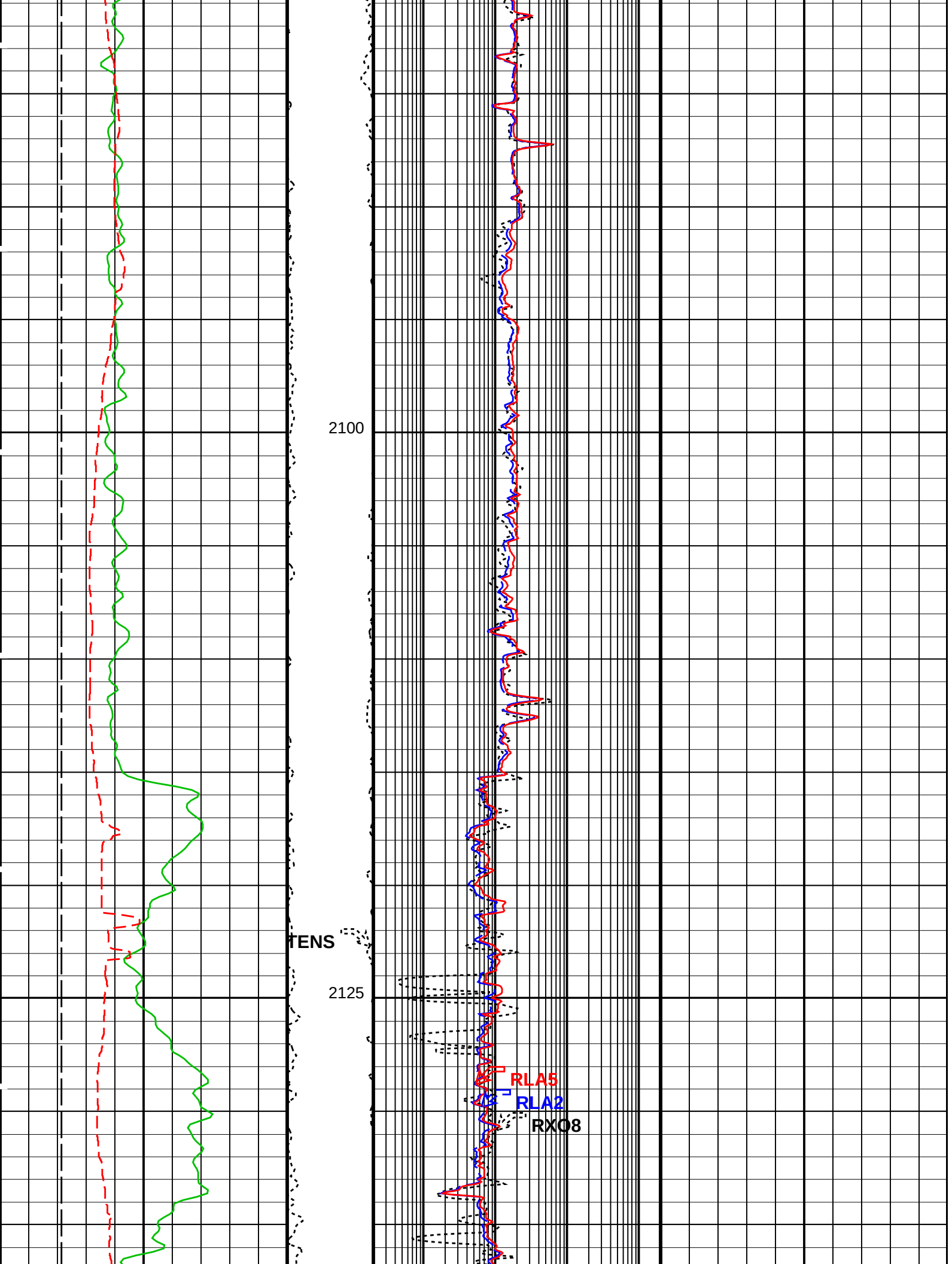
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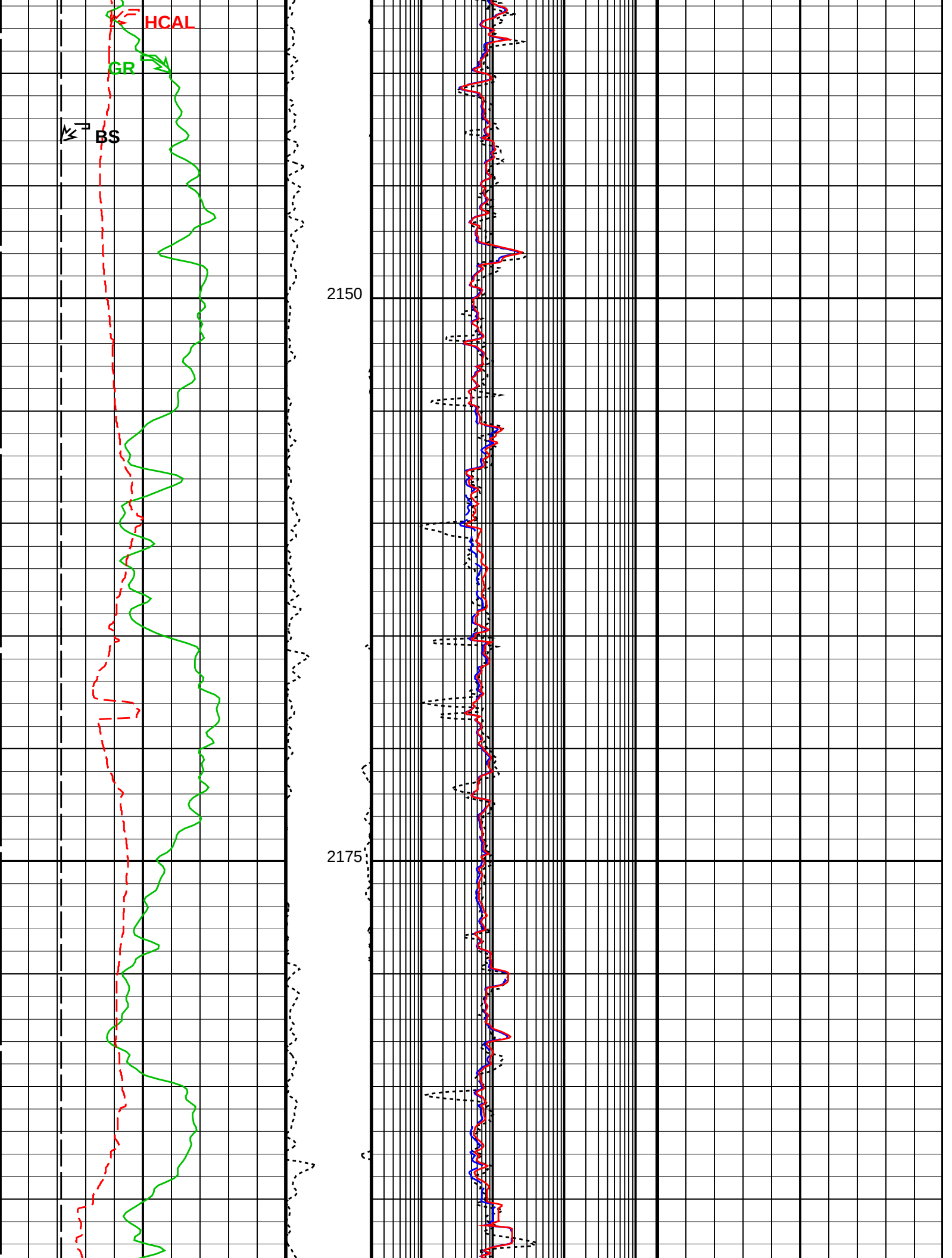
RXO8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BS
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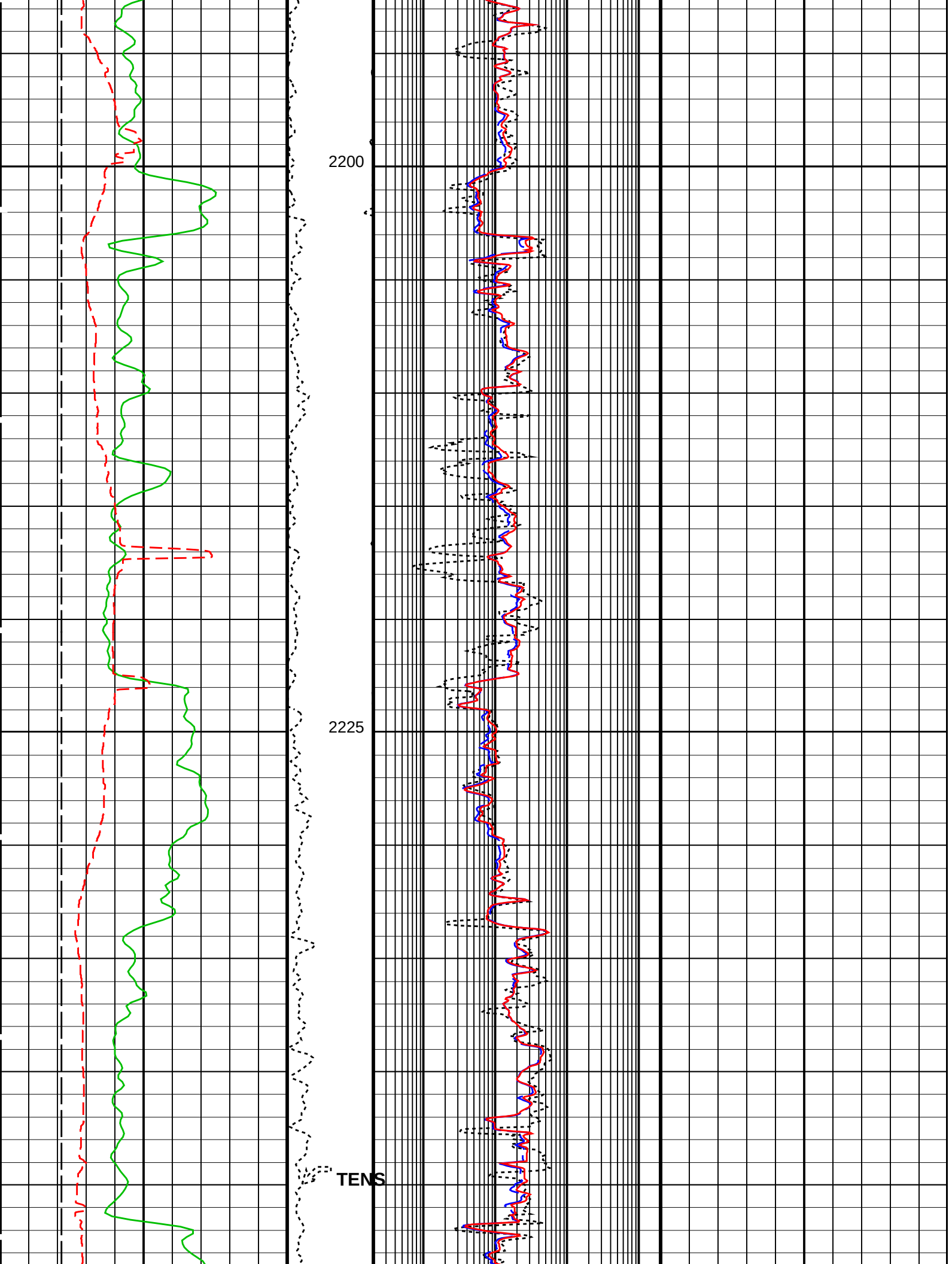
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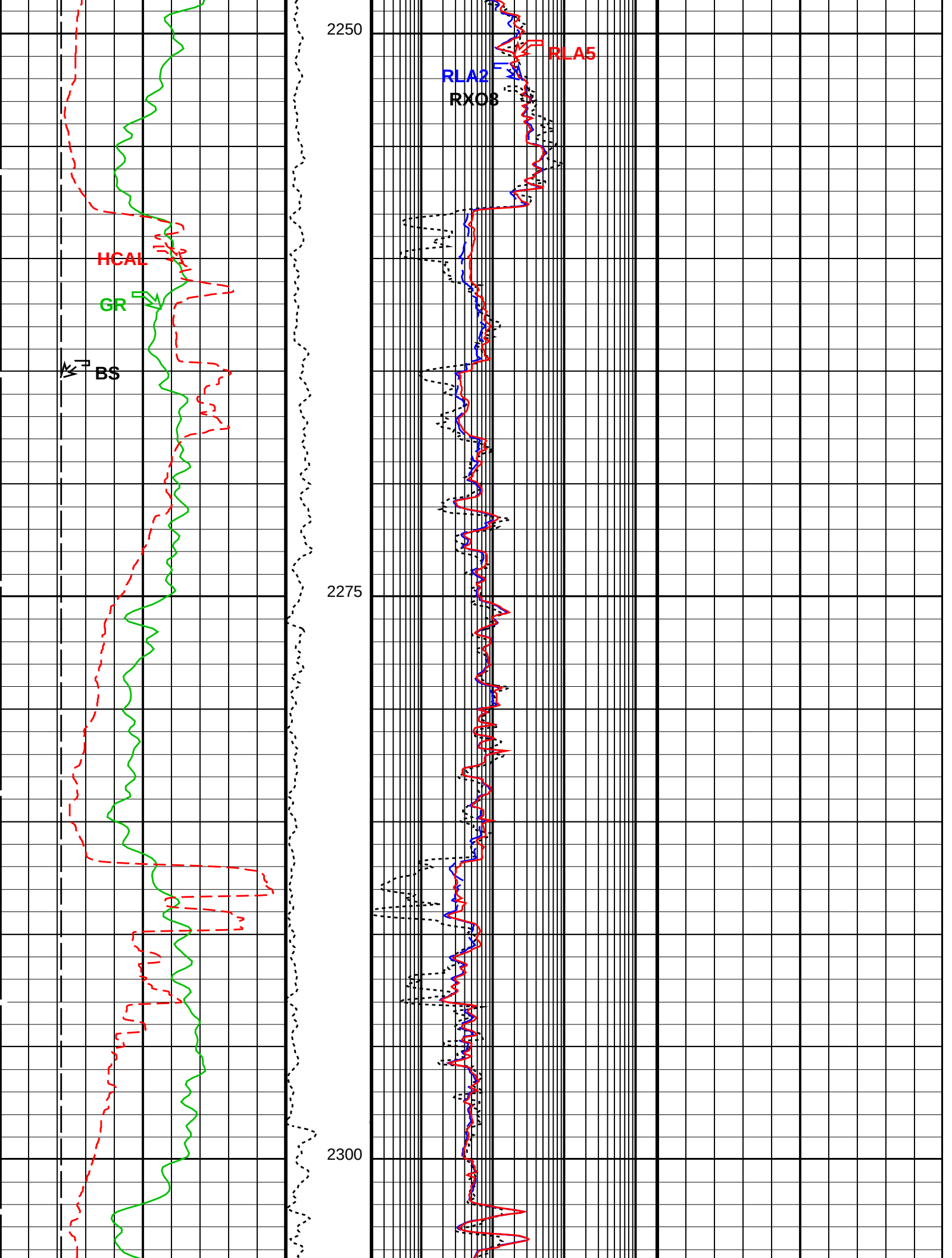
TENS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RXO8
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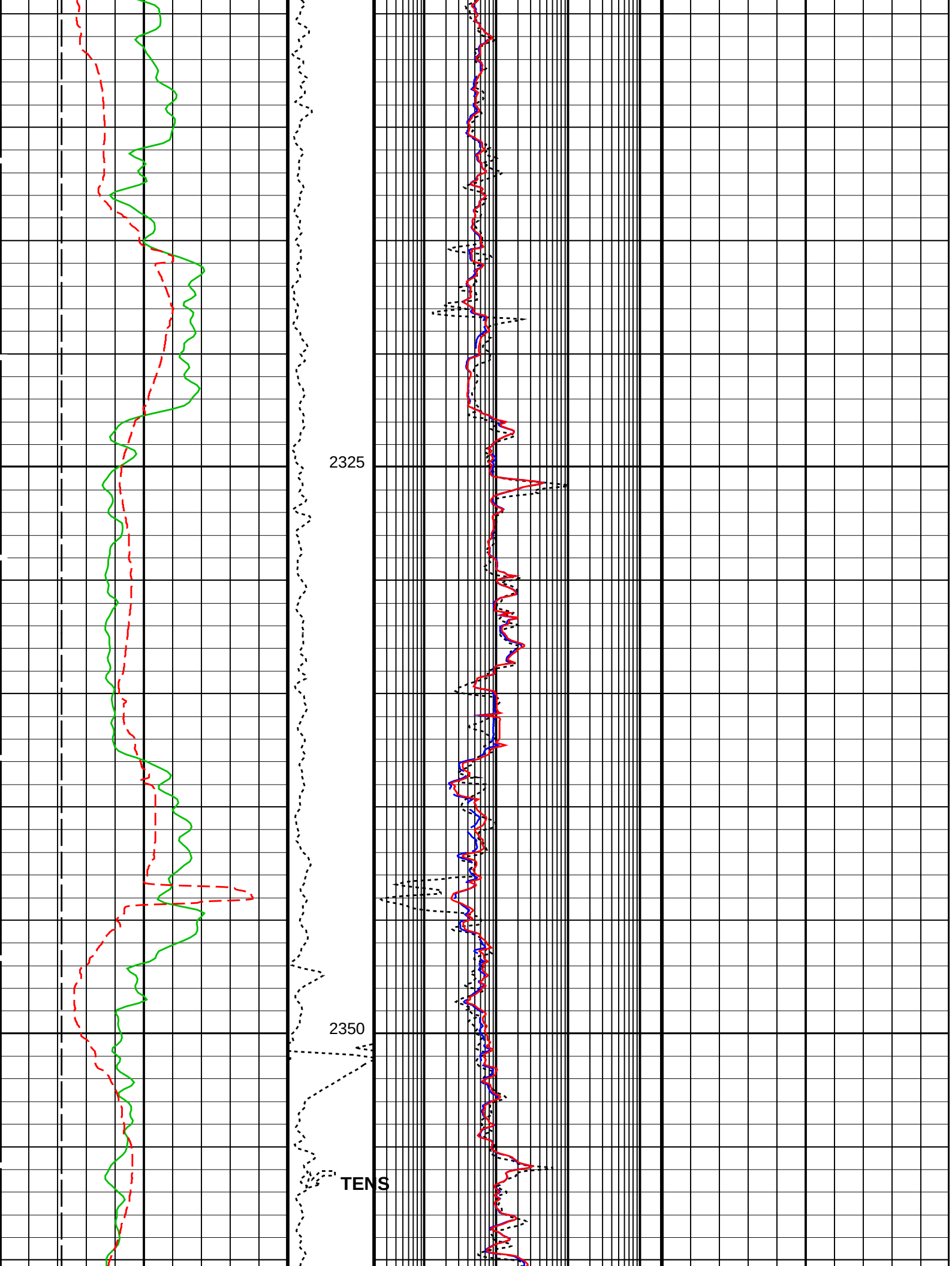
GR
BS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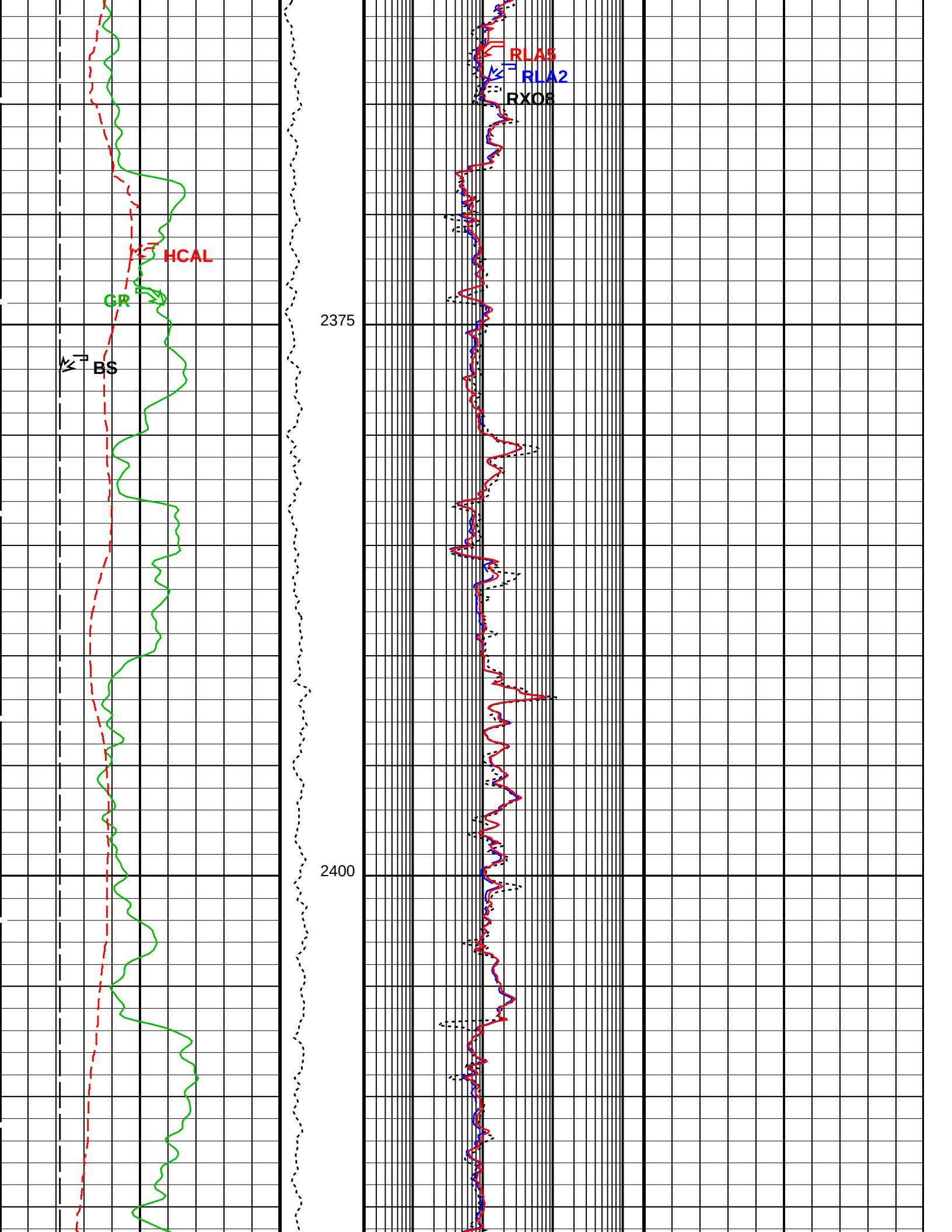
2350
TENS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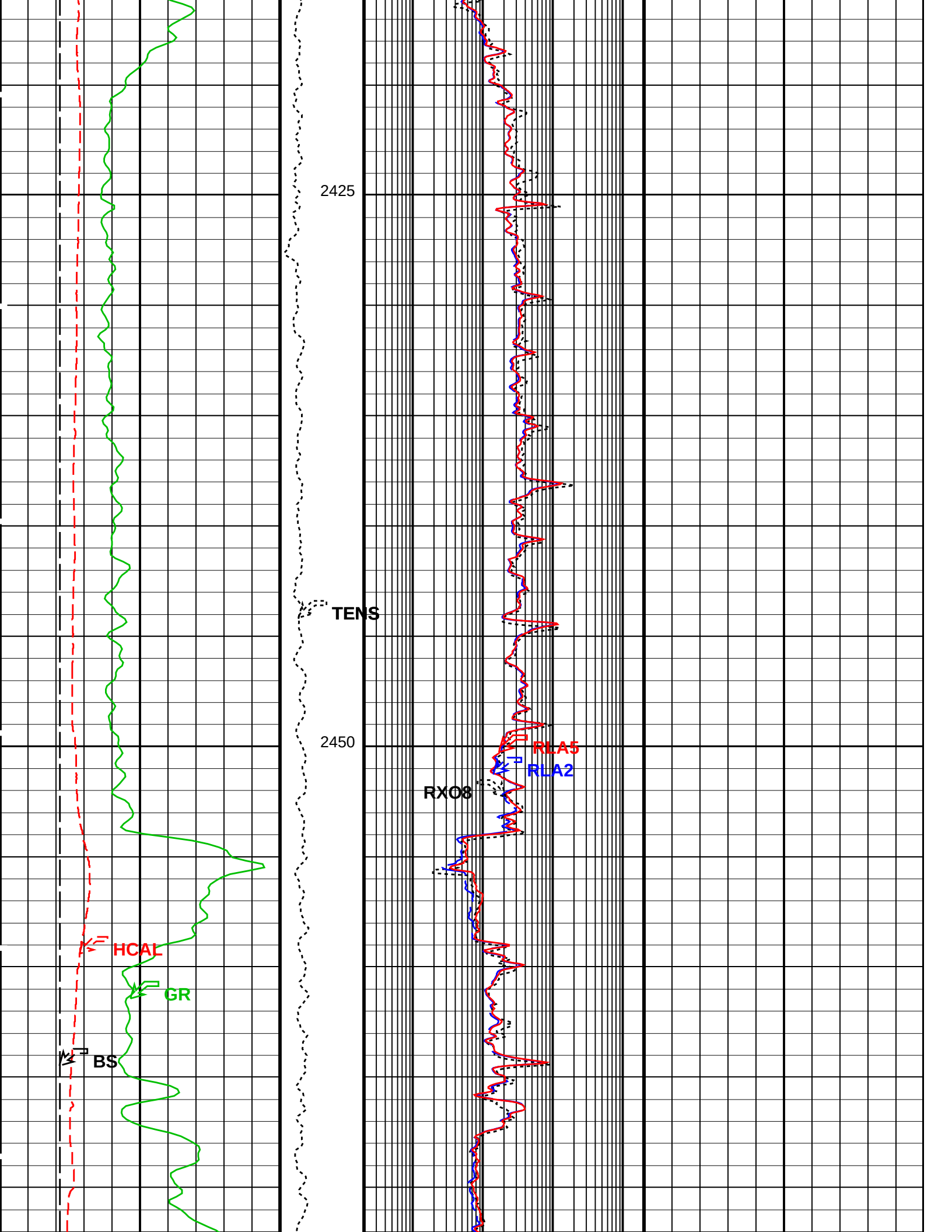
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GR
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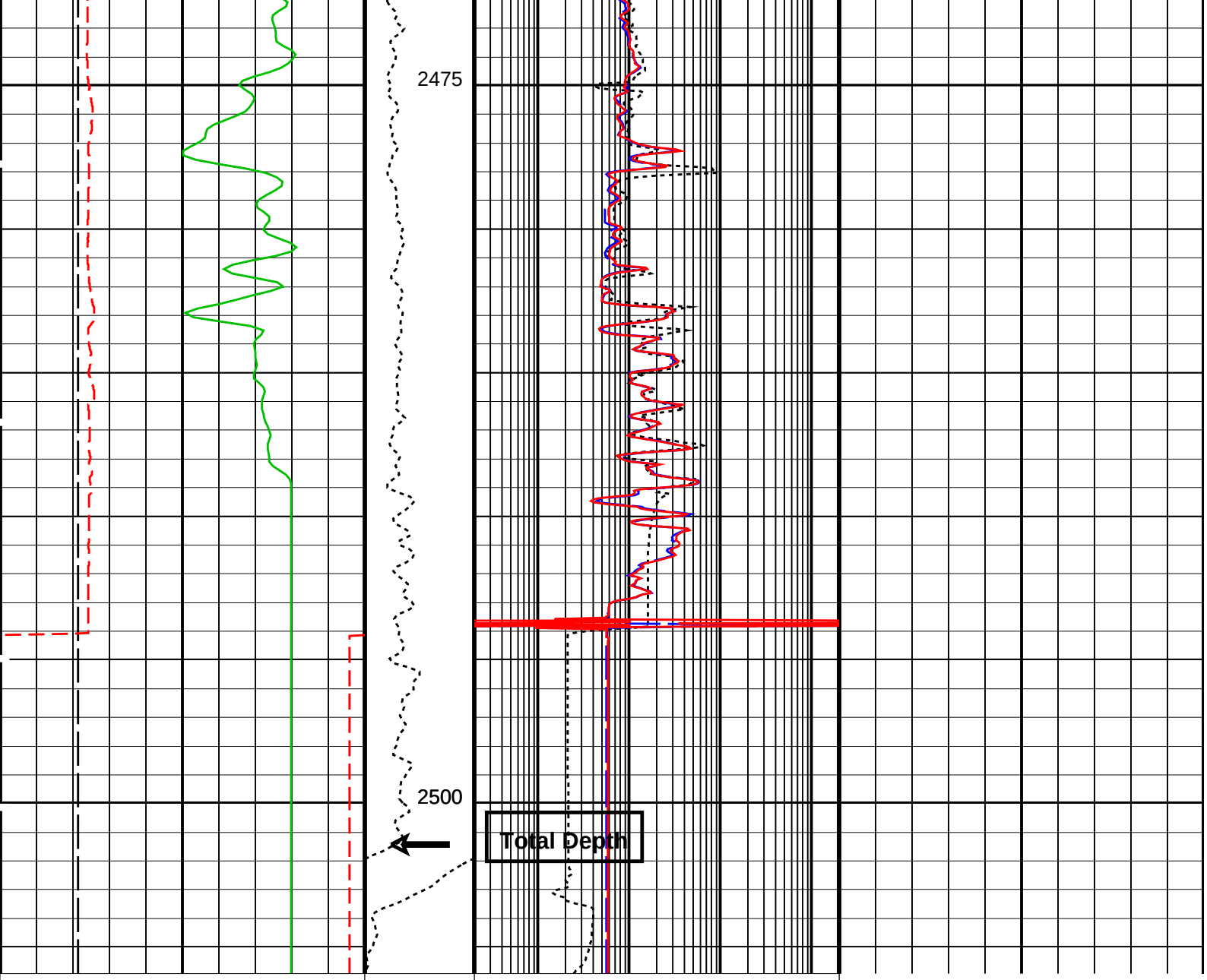

Bit Size (BS)	Tension (TENS)	H. Res. Invaded Zone Resistivity (RXO8)
4 (IN) 14	0 (LBF) 1000	0.2 (OHMM) 2000
Gamma Ray (GR)		**HRLT Resistivity 2 (RLA2)**
0 (GAPI) 200		0.2 (OHMM) 2000
HILT Caliper (HCAL)		**HRLT Resistivity 5 (RLA5)**
4 (IN) 14		0.2 (OHMM) 2000

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HALS−B: HILT Azimuthal Laterolog Sonde B		
	HALS Type of Image	Conductivities	
A2EX	HALS−B A2 Extended (Groningen effect)	OFF	
AGOS	HALS−GPIT OFFSET	−90	IN
ARIP_LTS	HALS Long Tool String Correction	OFF	
ARIP_SHOULDER	HALS Shoulder Correction	OFF	
BHCC	HALS Borehole Correction	ON	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	85	DEGC
DHOP	Diameter & Eccentering used in HALS Borehole Corrections	Caliper_Eccentered	
GCSE	Generalized Caliper Selection	HCAL	

GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRCC	HALS Groningen Correction	OFF	
GRSE	Generalized Mud Resistivity Selection	HALS_RESIST	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HLAC	HALS−B Loop A Coefficient	LOW	
HLMO	HALS Logging Mode	HIRES	
HMSO	HALS Mechanical Standoff	0.5	IN
HRUN	HALS−B Record Uncalibrated Channels	NO	
IMOS	HALS Image Orientation	OFF	
LIMP	HALS Left Image Processing	DeepRaw	
LOP1	HALS−B Mode 1 Loop Mode	OFF	
LOP2	HALS−B Mode 2 Loop Mode	OFF	
LOP3	HALS−B Mode 3 Loop Mode	OFF	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
RIMP	HALS Right Image Processing	ShallowRaw	
RTCOMP	HALS Rt Computation	Hals_Highres	
RTRE	HALS Resistivity Threshold	100000	OHMM
SHT	Surface Hole Temperature	20	DEGC
SPCO	HALS−B Special Power Connection	OFF	
TCOR	HALS TLC Correction	OFF	
UNSPK	HALS Despiking Filter Option	OFF	
UNSPK_THOLD	HALS Despiking Filter Threshold (in %)	20	%
UNSPK_WINDOW	HALS Despiking Filter Window (inches)	6	IN
DSLT−H: Digitizing Sonic Logging Tool			
	Telemetry Mode	DSLC_FTB	
	DSLT Firing Mode	BHC	
AGC	Automatic Gain Control Status	ON	
AMSG	Auxiliary Minimum Sliding Gate	140	US
BILI	Bond Index Level for Zone Isolation	0.8	
CBAF	CBL Adjustment Factor	1	
CBCF	CBL Correction Factor	4	
CBLG	CBL Gate Width	45	US
CDTS	C−Delta−T Shale	100	US/F
CSTR	Compressive Strength of Cement	0	KPAA
DDEL	Digitizing Delay	0	US
DETE	Delta−T Detection	E2	
DFAD	Digital First Arrival Detection Switch	HOST	
DIVL	DSLT Depth Sampling Interval	20	
DRCS	DSLT DLIS Recording Size	140	
DSIN	Digitizing Sample Interval	10	
DTCM	Delta−T Computation Mode	FULL	
DTF	Delta−T Fluid	189	US/F
DTFS	DSLC Telemetry Frame Size	316	
DTM	Delta−T Matrix	56	US/F
DWCO	Digitizing Word Count	140	
FCF	CBL Fluid Compensation Factor	1	
GAI	Manual Gain	40	
GOBO	Good Bond	2	MV
HRSP	High Resolution Spacing	5.118	IN
ITTS	Integrated Transit Time Source	DT	
LTUT	Lower to Upper Transmitter Spacing Ratio	1	
MAHTR	Manual High Threshold Reference	120	
MCI	Minimum Cemented Interval for Isolation	3.048	M
MGAI	Maximum Gain	60	
MIGA	Minimum Gain	1	
MNHTR	Minimum High Threshold Reference	100	
MODE	Sonic Firing Mode	BHC	
MSA	Minimum Sonic Amplitude	18.4103	MV
NMSG	Near Minimum Sliding Gate	140	US
NMXG	Near Maximum Sliding Gate	910	US
NUMP	Number of Detection Passes	2	
RATE	Firing Rate	R15	
RDFA	Reset DFAD	OFF	
SDTH	Switch Down Threshold	20000	
SFAF	Sonic Formation Attenuation Factor	10	DB/M
SGAD	Sliding Gate Status	ON	
SGAI	Selectable Acquisition Gain	AUTO	
SGCL	Sliding Gate Closing Delta−T	140	US/F
SGCW	Sliding Gate Closing Width	25	US
SGDT	Sliding Gate Delta−T	40	US/F
SGW	Sliding Gate Width	110	US
SLEV	Signal Level for AGC	5000	
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPSO	Sonic Porosity Source	DT	
SUTH	Switch Up Threshold	1000	
VDLG	VDL Manual Gain	40	
WAGC	Waveform AGC Allow/Disallow	OFF	
WGAI	Waveform Manual Gain	20	
WGDT	Waveform Gain Delta−T	240	US/F
WGIN	Waveform Gain Interval	2540	US
WMOD	Waveform Firing Mode	FULL	
HILTB−FTB: High resolution Integrated Logging Tool−DTS			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	

BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	85	DEGC
BSCO	Borehole Salinity Correction Option	YES	
CALSTAT	HRLTB Calibration Status	NOT_DONE	
CALTEMP	HRLTB Calibration Temperature	0	DEGC
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
EXSICL	External Shale Indicator Clean Value	20	
EXSISH	External Shale Indicator Shale Value	150	
FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FPHI	Form Factor Porosity Source	DPHZ	
FREQ0	HRLT Frequency Index for Mode 0	32	
FREQ1	HRLT Frequency Index for Mode 1	128	
FREQ2	HRLT Frequency Index for Mode 2	104	
FREQ3	HRLT Frequency Index for Mode 3	86	
FREQ4	HRLT Frequency Index for Mode 4	56	
FREQ5	HRLT Frequency Index for Mode 5	44	
FREQ6	HRLT Frequency Index for Mode 6	116	
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	HALS_RESIST	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HACPP	Accelerometer PROM Presence	PRESENT_FILE	
HART	Accelerometer Reference Temperature	20	DEGC
HDCOD	HILT Density Coal detection	2	G/C3
HDSAD	HILT Density Salt detection	2.1	G/C3
HILT_GAS_DENSITY	HILT Gas Downhole Density	0	G/C3
HILT_GAS_OPTION	HILT Gas Computation Option	OFF	
HNCOD	HILT Neutron Coal detection	45	PU
HNSAD	HILT Neutron Salt detection	5	PU
HPHIECUT	HILT effective Porosity Cutoff	5	PU
HSCO	Hole Size Correction Option	YES	
HSIS	HILT Shale Indicator Selection	GR	
HSWCUT	HILT Water Saturation from AITH cutoff	50	%
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	OFF	
LOOPMOD1	HRLT Mode 1 Loop Mode	OFF	
LOOPMOD2	HRLT Mode 2 Loop Mode	OFF	
LOOPMOD3	HRLT Mode 3 Loop Mode	OFF	
LOOPMOD4	HRLT Mode 4 Loop Mode	OFF	
LOOPMOD5	HRLT Mode 5 Loop Mode	OFF	
LOOPMOD6	HRLT Mode 6 Loop Mode	OFF	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.65	G/C3
MHC0	MCFL B0 Contrast Correction Coefficient	2.2e−005	OHMS
MHC1	MCFL B1 Contrast Correction Coefficient	3.2e−005	OHMS
MHCC	MCFL High Contrast Correction Switch	NO	
MPOF	MCFL Processing Operation Mode	ON	
MWCO	Mud Weight Correction Option	YES	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	HiRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PHIMAX	HILT max porosity	35	PU
PROCINV	Inversion Selection	ON	
PROCMFL	Inversion Micro−Resistivity Selection	RXO8	
PROCMSO	Mechanical Standoff Fin Size	0.5	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Eccentered	
PTCO	Pressure/Temperature Correction Option	YES	
SDAT	Standoff Data Source	SOCN	
SEXP_HILT	HILT Saturation Exponent	2	
SHT	Surface Hole Temperature	20	DEGC
SOCN	Standoff Distance	0	IN
SOCO	Standoff Correction Option	NO	
BSP: Bridle SP			
SPNV	SP Next Value	0	MV
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	85	DEGC
FCD	Future Casing (Outer) Diameter	4.5	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	HALS_RESIST	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	

HVCS	Integrated Hole Volume Caliper Selection	HCAL	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	20	DEGC
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	0.762	M
TDD	Total Depth − Driller	2500.00	M
TDL	Total Depth − Logger	2501.20	M
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	6.125	IN
BSAL	Borehole Salinity	28000.00	PPM
CSIZ	Current Casing Size	7.000	IN
CWEI	Casing Weight	26.00	LB/F
DFD	Drilling Fluid Density	1.10	G/C3
DO	Depth Offset for Playback	0.0	M
MST	Mud Sample Temperature	14.30	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	0.2180	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	2500	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: HRLA **Vertical Scale: 1:200** **Graphics File Created: 04−Aug−2004 12:09**

OP System Version: 12C0−301

MCM

HALS−B	12C0−301	DSLT−H	12C0−301
HILTB−FTB	12C0−301	DTC−H	12C0−301
BSP	12C0−301		

Input DLIS Files

DEFAULT	MERGE_HALS_SONIC_035	FN:1	PRODUCER	04−Aug−2004 11:55	2505.9 M	1213.0 M

Output DLIS Files

DEFAULT	HALS_SONIC_TLD_MCFL_037PUP	FN:51	PRODUCER	04−Aug−2004 12:09

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Repeat Analysis
1:200 Scale

MAXIS Field Log

Company: Lakes Oil N.L. **Well: Trifon 2**

Input DLIS Files

DEFAULT	TLD_MCFL_CNL_025LUP	FN:40	PRODUCER	04−Aug−2004 07:26	2504.5 M	1248.0 M
DEFAULT	TLD_MCFL_CNL_024LUP	FN:38	PRODUCER	04−Aug−2004 07:06	2504.8 M	2412.8 M

Output DLIS Files

DEFAULT	HALS_SONIC_TLD_MCFL_040PUP	FN:54	PRODUCER	04−Aug−2004 12:41

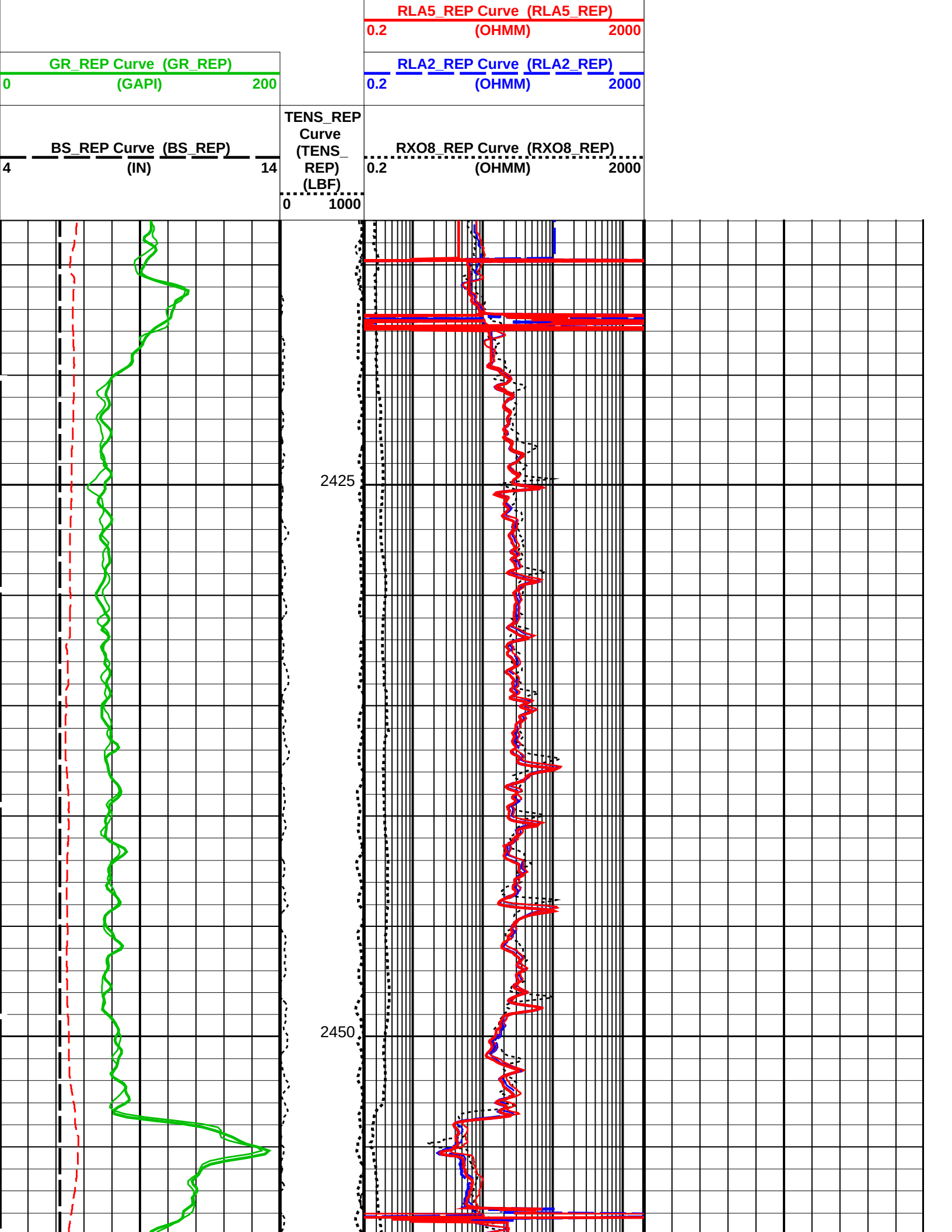
OP System Version: 12C0−301

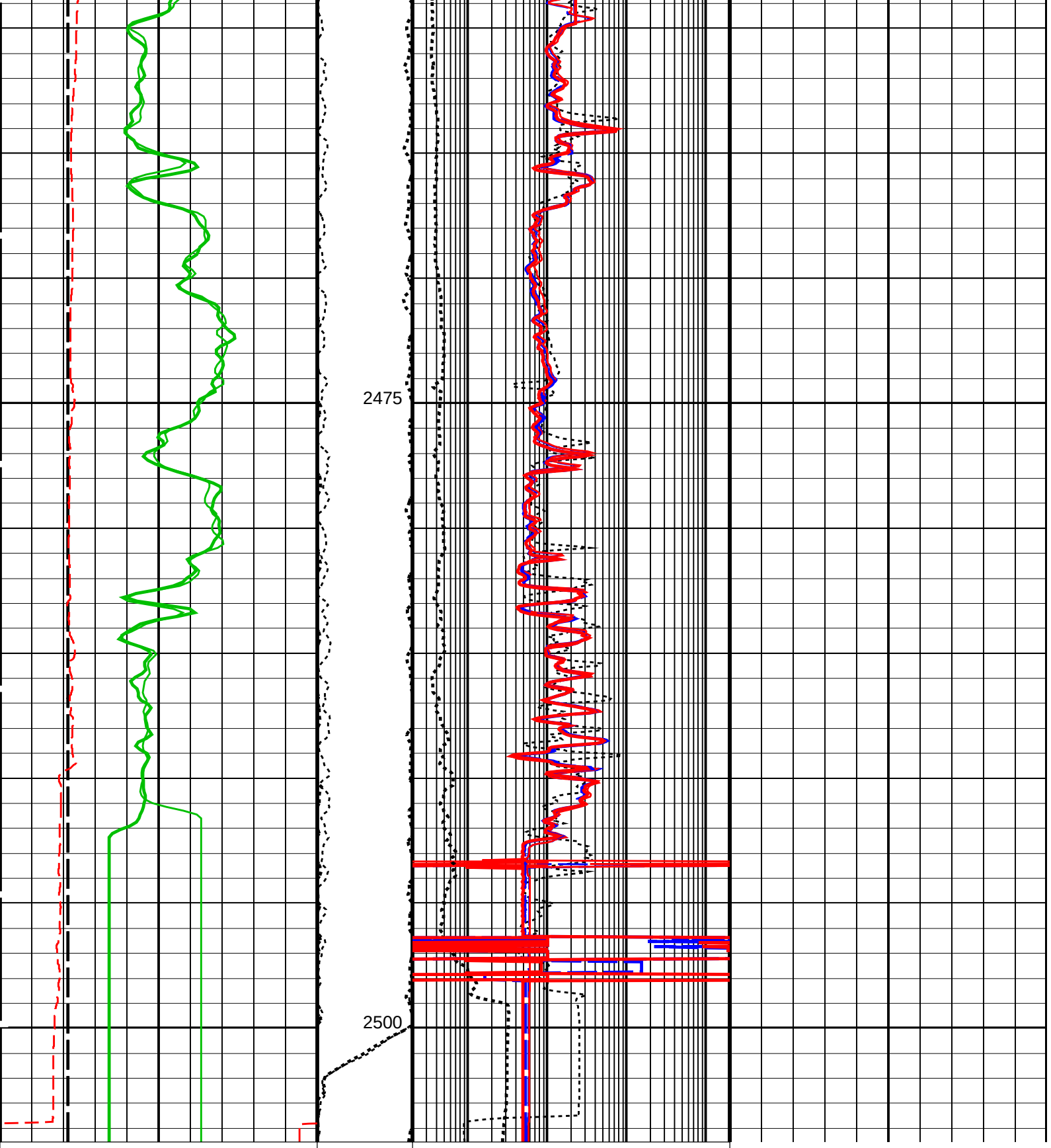
MCM

HALS−B	12C0−301	DSLT−H	12C0−301
HILTB−FTB	12C0−301	DTC−H	12C0−301
BSP	12C0−301		

PIP SUMMARY

Time Mark Every 60 S


RLA5_REP Curve (RLA5_REP)
0.2
(OHMM)
2000
GR_REP Curve (GR_REP)
0
(GAPI)
200
RLA2_REP Curve (RLA2_REP)
0.2
(OHMM)
2000
BS_REP Curve (BS_REP)
4
(IN)
14
TENS_REP Curve (TENS_REP) (LBF)
0
1000
RXO8_REP Curve (RXO8_REP)
0.2
(OHMM)
2000
2425
2450



BS_REP Curve (BS_REP)
4 (IN) 14

TENS_REP Curve (TENS_REP) (LBF)
0 1000

RXO8_REP Curve (RXO8_REP)
0.2 (OHMM) 2000

GR_REP Curve (GR_REP)
0 (GAPI) 200

RLA2_REP Curve (RLA2_REP)
0.2 (OHMM) 2000

RLA5_REP Curve (RLA5_REP)
0.2 (OHMM) 2000

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HALS−B: HILT Azimuthal Laterolog Sonde B		
	HALS Type of Image	Conductivities	
A2EX	HALS−B A2 Extended (Groningen effect)	OFF	
AGOS	HALS−GPIT OFFSET	−90	IN
ARIP_LTS	HALS Long Tool String Correction	OFF	
ARIP_SHOULDER	HALS Shoulder Correction	OFF	
BHCC	HALS Borehole Correction	ON	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	85	DEGC
DHOP	Diameter & Eccentering used in HALS Borehole Corrections	Caliper_Eccentered	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRCC	HALS Groningen Correction	OFF	
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HLAC	HALS−B Loop A Coefficient	LOW	
HLMO	HALS Logging Mode	HIRES	
HMSO	HALS Mechanical Standoff	0.5	IN
HRUN	HALS−B Record Uncalibrated Channels	NO	
IMOS	HALS Image Orientation	OFF	
LIMP	HALS Left Image Processing	DeepRaw	
LOP1	HALS−B Mode 1 Loop Mode	OFF	
LOP2	HALS−B Mode 2 Loop Mode	OFF	
LOP3	HALS−B Mode 3 Loop Mode	OFF	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
RIMP	HALS Right Image Processing	ShallowRaw	
RTCOMP	HALS Rt Computation	Hals_Highres	
RTRE	HALS Resistivity Threshold	100000	OHMM
SHT	Surface Hole Temperature	20	DEGC
SPCO	HALS−B Special Power Connection	OFF	
TCOR	HALS TLC Correction	OFF	
UNSPK	HALS Despiking Filter Option	OFF	
UNSPK_THOLD	HALS Despiking Filter Threshold (in %)	20	%
UNSPK_WINDOW	HALS Despiking Filter Window (inches)	6	IN
	DSLT−H: Digitizing Sonic Logging Tool		
	DSLT Firing Mode	BHC	
	Telemetry Mode	DSLC_FTB	
AGC	Automatic Gain Control Status	ON	
AMSG	Auxiliary Minimum Sliding Gate	140	US
BILI	Bond Index Level for Zone Isolation	0.8	
CBAF	CBL Adjustment Factor	1	
CBCF	CBL Correction Factor	4	
CBLG	CBL Gate Width	45	US
CDTS	C−Delta−T Shale	100	US/F
CSTR	Compressive Strength of Cement	0	KPAA
DDEL	Digitizing Delay	0	US
DETE	Delta−T Detection	E2	
DFAD	Digital First Arrival Detection Switch	HOST	
DIVL	DSLT Depth Sampling Interval	20	
DRCS	DSLT DLIS Recording Size	140	
DSIN	Digitizing Sample Interval	10	
DTCM	Delta−T Computation Mode	FULL	
DTF	Delta−T Fluid	189	US/F
DTFS	DSLC Telemetry Frame Size	316	
DTM	Delta−T Matrix	56	US/F
DWCO	Digitizing Word Count	140	
FCF	CBL Fluid Compensation Factor	1	
GAI	Manual Gain	40	
GOBO	Good Bond	2	MV
HRSP	High Resolution Spacing	5.118	IN
ITTS	Integrated Transit Time Source	DT	
LTUT	Lower to Upper Transmitter Spacing Ratio	1	
MAHTR	Manual High Threshold Reference	120	
MCI	Minimum Cemented Interval for Isolation	3.048	M
MGAI	Maximum Gain	60	
MIGA	Minimum Gain	1	
MNHTR	Minimum High Threshold Reference	100	
MODE	Sonic Firing Mode	BHC	
MSA	Minimum Sonic Amplitude	18.4103	MV
NMSG	Near Minimum Sliding Gate	140	US
NMXG	Near Maximum Sliding Gate	910	US
NUMP	Number of Detection Passes	2	
RATE	Firing Rate	R15	
RDFA	Reset DFAD	OFF	

SDTH	Switch Down Threshold	20000	
SFAF	Sonic Formation Attenuation Factor	10	DB/M
SGAD	Sliding Gate Status	ON	
SGAI	Selectable Acquisition Gain	AUTO	
SGCL	Sliding Gate Closing Delta−T	140	US/F
SGCW	Sliding Gate Closing Width	25	US
SGDT	Sliding Gate Delta−T	40	US/F
SGW	Sliding Gate Width	110	US
SLEV	Signal Level for AGC	5000	
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPSO	Sonic Porosity Source	DT	
SUTH	Switch Up Threshold	1000	
VDLG	VDL Manual Gain	40	
WAGC	Waveform AGC Allow/Disallow	OFF	
WGAI	Waveform Manual Gain	20	
WGDT	Waveform Gain Delta−T	240	US/F
WGIN	Waveform Gain Interval	2540	US
WMOD	Waveform Firing Mode	FULL	
HILTB−FTB: High resolution Integrated Logging Tool−DTS			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	85	DEGC
BSCO	Borehole Salinity Correction Option	YES	
CALSTAT	HRLTB Calibration Status	NOT_DONE	
CALTEMP	HRLTB Calibration Temperature	0	DEGC
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
EXSICL	External Shale Indicator Clean Value	20	
EXSISH	External Shale Indicator Shale Value	150	
FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FPHI	Form Factor Porosity Source	DPHZ	
FREQ0	HRLT Frequency Index for Mode 0	32	
FREQ1	HRLT Frequency Index for Mode 1	128	
FREQ2	HRLT Frequency Index for Mode 2	104	
FREQ3	HRLT Frequency Index for Mode 3	86	
FREQ4	HRLT Frequency Index for Mode 4	56	
FREQ5	HRLT Frequency Index for Mode 5	44	
FREQ6	HRLT Frequency Index for Mode 6	116	
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HACPP	Accelerometer PROM Presence	PRESENT_FILE	
HART	Accelerometer Reference Temperature	20	DEGC
HDCOD	HILT Density Coal detection	2	G/C3
HDSAD	HILT Density Salt detection	2.1	G/C3
HILT_GAS_DENSITY	HILT Gas Downhole Density	0	G/C3
HILT_GAS_OPTION	HILT Gas Computation Option	OFF	
HNCOD	HILT Neutron Coal detection	45	PU
HNSAD	HILT Neutron Salt detection	5	PU
HPHIECUT	HILT effective Porosity Cutoff	5	PU
HSCO	Hole Size Correction Option	YES	
HSIS	HILT Shale Indicator Selection	GR	
HSWCUT	HILT Water Saturation from AITH cutoff	50	%
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	OFF	
LOOPMOD1	HRLT Mode 1 Loop Mode	OFF	
LOOPMOD2	HRLT Mode 2 Loop Mode	OFF	
LOOPMOD3	HRLT Mode 3 Loop Mode	OFF	
LOOPMOD4	HRLT Mode 4 Loop Mode	OFF	
LOOPMOD5	HRLT Mode 5 Loop Mode	OFF	
LOOPMOD6	HRLT Mode 6 Loop Mode	OFF	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.65	G/C3
MHC0	MCFL B0 Contrast Correction Coefficient	2.2e−005	OHMS
MHC1	MCFL B1 Contrast Correction Coefficient	3.2e−005	OHMS
MHCC	MCFL High Contrast Correction Switch	NO	
MPOF	MCFL Processing Operation Mode	ON	
MWCO	Mud Weight Correction Option	YES	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	HiRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PHIMAX	HILT max porosity	35	PU
PROCINV	Inversion Selection	ON	
PROCMFI	Inversion Micro−Resistivity Selection	RXO8	

PROCMSO	Mechanical Standoff Fin Size	0.5	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Eccentered	
PTCO	Pressure/Temperature Correction Option	YES	
SDAT	Standoff Data Source	SOCN	
SEXP_HILT	HILT Saturation Exponent	2	
SHT	Surface Hole Temperature	20	DEGC
SOCN	Standoff Distance	0	IN
SOCO	Standoff Correction Option	NO	
BSP: Bridle SP			
SPNV	SP Next Value	0	MV
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	85	DEGC
FCD	Future Casing (Outer) Diameter	4.5	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HVCS	Integrated Hole Volume Caliper Selection	HCAL	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	20	DEGC
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	0.762	M
TDD	Total Depth − Driller	2500.00	M
TDL	Total Depth − Logger	2501.20	M
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	6.125	IN
BSAL	Borehole Salinity	28000.00	PPM
CSIZ	Current Casing Size	7.000	IN
CWEI	Casing Weight	26.00	LB/F
DFD	Drilling Fluid Density	1.10	G/C3
DO	Depth Offset for Playback	0.0	M
DORL	Depth Offset for Repeat Analysis	0.3	M
MST	Mud Sample Temperature	14.30	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	0.2180	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	2500	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: HRLA_REP Vertical Scale: 1:200 Graphics File Created: 04−Aug−2004 12:41

OP System Version: 12C0−301

MCM

HALS−B	12C0−301	DSLT−H	12C0−301
HILTB−FTB	12C0−301	DTC−H	12C0−301
BSP	12C0−301		

Input DLIS Files

DEFAULT	TLD_MCFL_CNL_025LUP	FN:40	PRODUCER	04−Aug−2004 07:26	2504.5 M	1248.0 M
DEFAULT	TLD_MCFL_CNL_024LUP	FN:38	PRODUCER	04−Aug−2004 07:06	2504.8 M	2412.8 M

Output DLIS Files

DEFAULT	HALS_SONIC_TLD_MCFL_040PUP	FN:54	PRODUCER	04−Aug−2004 12:41

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Calibrations

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
High resolution Integrated Logging Tool−DTS Wellsite Calibration − Stab Measurement Summary							
Before: 2−Aug−2004 13:53							
BS Window Ratio	0.7730	N/A	0.7734	N/A	N/A	N/A	
BS Window Sum	11810	N/A	11790	N/A	N/A	N/A	CPS
SS Window Ratio	0.4826	N/A	0.4845	N/A	N/A	N/A	
SS Window Sum	9867	N/A	9836	N/A	N/A	N/A	CPS
LS Window Ratio	0.2946	N/A	0.2975	N/A	N/A	N/A	
LS Window Sum	1302	N/A	1295	N/A	N/A	N/A	CPS
High resolution Integrated Logging Tool−DTS Wellsite Calibration − Photo−multiplier High Voltages Calibrations							
Before: 2−Aug−2004 13:53							
BS PM High Voltage (Command)	1560	N/A	1566	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1646	N/A	1655	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1809	N/A	1807	N/A	N/A	N/A	V
High resolution Integrated Logging Tool−DTS Wellsite Calibration − Crystal Quality Resolutions Calibration							
Before: 2−Aug−2004 13:53							
BS Crystal Resolution	10.37	N/A	10.35	N/A	N/A	N/A	%
SS Crystal Resolution	9.902	N/A	9.889	N/A	N/A	N/A	%
LS Crystal Resolution	9.679	N/A	9.490	N/A	N/A	N/A	%
High resolution Integrated Logging Tool−DTS Wellsite Calibration − MCFL Calibration							
Before: 2−Aug−2004 13:42							
Raw B0 Resistivity	3875	N/A	3873	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3842	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3836	N/A	N/A	N/A	OHMM
High resolution Integrated Logging Tool−DTS Wellsite Calibration − HILT Caliper Calibration							
Before: 2−Aug−2004 13:45							
HILT Caliper Zero Measurement	8.000	N/A	8.208	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	12.25	N/A	N/A	N/A	IN
High resolution Integrated Logging Tool−DTS Wellsite Calibration − HRLT M01							
Before: 4−Aug−2004 5:28							
HRLT M0−M1 Voltage Plus − 0	0	N/A	−314.4	N/A	N/A	9.681	UV
HRLT M0−M1 Voltage Plus − 1	0	N/A	−296.2	N/A	N/A	9.681	UV
HRLT M0−M1 Voltage Plus − 2	0	N/A	−309.5	N/A	N/A	9.681	UV
HRLT M0−M1 Voltage Plus − 3	0	N/A	−306.1	N/A	N/A	9.681	UV
HRLT M0−M1 Voltage Plus − 4	0	N/A	−304.8	N/A	N/A	9.681	UV
HRLT M0−M1 Voltage Plus − 5	0	N/A	−317.3	N/A	N/A	9.681	UV
HRLT M0−M1 Voltage Plus − 6	0	N/A	298.7	N/A	N/A	9.681	UV
HRLT M0−M1 Voltage Plus − 7	0	N/A	−322.7	N/A	N/A	9.681	UV
High resolution Integrated Logging Tool−DTS Wellsite Calibration − HRLT M12							
Before: 4−Aug−2004 5:28							
HRLT M1−M2 Voltage Plus − 0	0	N/A	1718	N/A	N/A	53.42	UV
HRLT M1−M2 Voltage Plus − 1	0	N/A	1619	N/A	N/A	53.42	UV
HRLT M1−M2 Voltage Plus − 2	0	N/A	1687	N/A	N/A	53.42	UV
HRLT M1−M2 Voltage Plus − 3	0	N/A	1669	N/A	N/A	53.42	UV
HRLT M1−M2 Voltage Plus − 4	0	N/A	1663	N/A	N/A	53.42	UV
HRLT M1−M2 Voltage Plus − 5	0	N/A	1733	N/A	N/A	53.42	UV
HRLT M1−M2 Voltage Plus − 6	0	N/A	−1640	N/A	N/A	53.42	UV
HRLT M1−M2 Voltage Plus − 7	0	N/A	1781	N/A	N/A	53.42	UV
High resolution Integrated Logging Tool−DTS Wellsite Calibration − HRLT M23							
Before: 4−Aug−2004 5:28							
HRLT M2−M3 Voltage Plus − 0	0	N/A	1708	N/A	N/A	53.42	UV
HRLT M2−M3 Voltage Plus − 1	0	N/A	1620	N/A	N/A	53.42	UV
HRLT M2−M3 Voltage Plus − 2	0	N/A	1690	N/A	N/A	53.42	UV
HRLT M2−M3 Voltage Plus − 3	0	N/A	1675	N/A	N/A	53.42	UV
HRLT M2−M3 Voltage Plus − 4	0	N/A	1664	N/A	N/A	53.42	UV
HRLT M2−M3 Voltage Plus − 5	0	N/A	1734	N/A	N/A	53.42	UV
HRLT M2−M3 Voltage Plus − 6	0	N/A	−1630	N/A	N/A	53.42	UV
HRLT M2−M3 Voltage Plus − 7	0	N/A	1781	N/A	N/A	53.42	UV
High resolution Integrated Logging Tool−DTS Wellsite Calibration − HRLT V34							
Before: 4−Aug−2004 5:28							
HRLT A3−A4 Voltage Plus − 0	0	N/A	67790	N/A	N/A	2100	UV
HRLT A3−A4 Voltage Plus − 1	0	N/A	64240	N/A	N/A	2100	UV
HRLT A3−A4 Voltage Plus − 2	0	N/A	67290	N/A	N/A	2100	UV
HRLT A3−A4 Voltage Plus − 3	0	N/A	66870	N/A	N/A	2100	UV
HRLT A3−A4 Voltage Plus − 4	0	N/A	66340	N/A	N/A	2100	UV
HRLT A3−A4 Voltage Plus − 5	0	N/A	69160	N/A	N/A	2100	UV
HRLT A3−A4 Voltage Plus − 6	0	N/A	−63660	N/A	N/A	2100	UV
HRLT A3−A4 Voltage Plus − 7	0	N/A	70000	N/A	N/A	2100	UV

High resolution Integrated Logging Tool−DTS Wellsite Calibration − HRLT V45
Before: 4−Aug−2004 5:28

HRLT A4−A5 Voltage Plus − 0	0	N/A	67780	N/A	N/A	2100	UV
HRLT A4−A5 Voltage Plus − 1	0	N/A	64430	N/A	N/A	2100	UV
HRLT A4−A5 Voltage Plus − 2	0	N/A	67420	N/A	N/A	2100	UV
HRLT A4−A5 Voltage Plus − 3	0	N/A	66950	N/A	N/A	2100	UV
HRLT A4−A5 Voltage Plus − 4	0	N/A	66340	N/A	N/A	2100	UV
HRLT A4−A5 Voltage Plus − 5	0	N/A	69120	N/A	N/A	2100	UV
HRLT A4−A5 Voltage Plus − 6	0	N/A	−63860	N/A	N/A	2100	UV
HRLT A4−A5 Voltage Plus − 7	0	N/A	70000	N/A	N/A	2100	UV

High resolution Integrated Logging Tool−DTS Wellsite Calibration − HRLT V56
Before: 4−Aug−2004 5:28

HRLT A5−A6 Voltage Plus − 0	0	N/A	67820	N/A	N/A	2100	UV
HRLT A5−A6 Voltage Plus − 1	0	N/A	64380	N/A	N/A	2100	UV
HRLT A5−A6 Voltage Plus − 2	0	N/A	67410	N/A	N/A	2100	UV
HRLT A5−A6 Voltage Plus − 3	0	N/A	66950	N/A	N/A	2100	UV
HRLT A5−A6 Voltage Plus − 4	0	N/A	66380	N/A	N/A	2100	UV
HRLT A5−A6 Voltage Plus − 5	0	N/A	69170	N/A	N/A	2100	UV
HRLT A5−A6 Voltage Plus − 6	0	N/A	−63800	N/A	N/A	2100	UV
HRLT A5−A6 Voltage Plus − 7	0	N/A	70000	N/A	N/A	2100	UV

High resolution Integrated Logging Tool−DTS Wellsite Calibration − HRLT VTP
Before: 4−Aug−2004 5:28

HRLT Torpedo−M0 Voltage − 0	0	N/A	−67280	N/A	N/A	2100	UV
HRLT Torpedo−M0 Voltage − 1	0	N/A	−64240	N/A	N/A	2100	UV
HRLT Torpedo−M0 Voltage − 2	0	N/A	−67240	N/A	N/A	2100	UV
HRLT Torpedo−M0 Voltage − 3	0	N/A	−66810	N/A	N/A	2100	UV
HRLT Torpedo−M0 Voltage − 4	0	N/A	−66260	N/A	N/A	2100	UV
HRLT Torpedo−M0 Voltage − 5	0	N/A	−69050	N/A	N/A	2100	UV
HRLT Torpedo−M0 Voltage − 6	0	N/A	63640	N/A	N/A	2100	UV
HRLT Torpedo−M0 Voltage − 7	0	N/A	−70000	N/A	N/A	2100	UV

High resolution Integrated Logging Tool−DTS Wellsite Calibration − HRLT VBD
Before: 4−Aug−2004 5:28

HRLT Bridle#9−M0 Voltage − 0	0	N/A	−67300	N/A	N/A	2100	UV
HRLT Bridle#9−M0 Voltage − 1	0	N/A	−64280	N/A	N/A	2100	UV
HRLT Bridle#9−M0 Voltage − 2	0	N/A	−67280	N/A	N/A	2100	UV
HRLT Bridle#9−M0 Voltage − 3	0	N/A	−66850	N/A	N/A	2100	UV
HRLT Bridle#9−M0 Voltage − 4	0	N/A	−66300	N/A	N/A	2100	UV
HRLT Bridle#9−M0 Voltage − 5	0	N/A	−69080	N/A	N/A	2100	UV
HRLT Bridle#9−M0 Voltage − 6	0	N/A	63700	N/A	N/A	2100	UV
HRLT Bridle#9−M0 Voltage − 7	0	N/A	−70000	N/A	N/A	2100	UV

High resolution Integrated Logging Tool−DTS Wellsite Calibration − HRLT ISO
Before: 4−Aug−2004 5:28

HRLT Source Current Plus − 0	0	N/A	280.6	N/A	N/A	8.520	UA
HRLT Source Current Plus − 1	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus − 2	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus − 3	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus − 4	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus − 5	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus − 6	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus − 7	0	N/A	281.1	N/A	N/A	8.520	UA

High resolution Integrated Logging Tool−DTS Wellsite Calibration − HRLT MV
Before: 4−Aug−2004 5:28

HRLT Vertical Voltage Pl − 0	0	N/A	−314.9	N/A	N/A	9.681	UV
HRLT Vertical Voltage Pl − 1	0	N/A	−291.1	N/A	N/A	9.681	UV
HRLT Vertical Voltage Pl − 2	0	N/A	−302.5	N/A	N/A	9.681	UV
HRLT Vertical Voltage Pl − 3	0	N/A	−297.6	N/A	N/A	9.681	UV
HRLT Vertical Voltage Pl − 4	0	N/A	−293.4	N/A	N/A	9.681	UV
HRLT Vertical Voltage Pl − 5	0	N/A	−319.9	N/A	N/A	9.681	UV
HRLT Vertical Voltage Pl − 6	0	N/A	306.4	N/A	N/A	9.681	UV
HRLT Vertical Voltage Pl − 7	0	N/A	−322.7	N/A	N/A	9.681	UV

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Detector Calibration
Before: 2−Aug−2004 13:41

Gamma Ray Background	30.00	N/A	45.40	N/A	N/A	N/A	GAPI
Gamma Ray (Jig − Bkg)	168.3	N/A	168.3	N/A	N/A	15.30	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Zero Measurement
Master: 2−Jun−2004 11:58 Before: 2−Aug−2004 13:43

CNTC Background	29.20	29.20	29.19	N/A	N/A	4.380	CPS
CFTC Background	26.52	26.52	30.42	N/A	N/A	3.978	CPS

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Accelerometer Calibration
Before: 3−Aug−2004 20:01

Z−Axis Acceleration	9.810	N/A	9.785	N/A	N/A	N/A	M/S2

High resolution Integrated Logging Tool−DTS Master Calibration − Inversion results
Master: 8−Jul−2004 13:28

Rho Aluminum	2.596	2.595	−−	−−	−−	−−	G/C3
Rho Magnesium	1.686	1.692	−−	−−	−−	−−	G/C3
Pe Aluminum	2.570	2.559	−−	−−	−−	−−	
Pe Magnesium	2.650	2.607	−−	−−	−−	−−	

High resolution Integrated Logging Tool−DTS Master Calibration − Deviation Summary
Master: 8−Jul−2004 13:28

BS Average Deviation	0	0.4492	−−	−−	−−	−−	%
BS Max Deviation	0	1.001	−−	−−	−−	−−	%
SS Average Deviation	0	0.7701	−−	−−	−−	−−	%
SS Max Deviation	0	1.846	−−	−−	−−	−−	%
LS Average Deviation	0	0.6198	−−	−−	−−	−−	%
LS Max Deviation	0	1.862	−−	−−	−−	−−	%

High resolution Integrated Logging Tool−DTS Master Calibration − Tank Measurement
Master: 2−Jun−2004 11:58

Thermal Near Corr. (Tank)	6031	5441	−−	−−	−−	−−	CPS
Thermal Far Corr. (Tank)	2793	2260	−−	−−	−−	−−	CPS
CNTC/CFTC (Tank)	2.159	2.408	−−	−−	−−	−−	

High resolution Integrated Logging Tool−DTS Master Calibration − Tank Measurement
Master: 2−Jun−2004 11:58

Thermal Near Corr. (Tank)	6031	5441	−−	−−	−−	−−	CPS
Thermal Far Corr. (Tank)	2793	2260	−−	−−	−−	−−	CPS
CNTC/CFTC (Tank)	2.159	2.408	−−	−−	−−	−−	

The GLS−VJ source activity is acceptable.

The HGNS Neutron Master Calibration was done with the following parameters :

NCT−B Water Temperature 20.2 DEGC.
Thermal Housing Size 3.385 IN.

High resolution Integrated Logging Tool−DTS / Equipment Identification

Primary Equipment:

HILT high−Resolution Mechanical Sonde	HRMS − B	1730
HILT Rxo Gamma−ray Device	HRGD − B	755
HILT Nuclear Back−Scatter Detector	HILT −	
HILT Nuclear Short−Spacing Detector	HILT −	
HILT Nuclear Long−Spacing Detector	HILT −	
Micro Cylindrically Focused Log Device	MCFL −	
GR Logging Source	GLS − VJ	1893
HILT High Res. Control Cartridge	HRCC − B	756

Auxiliary Equipment:

High resolution Integrated Logging Tool−DTS Wellsite Calibration
Stab Measurement Summary

Phase	BS Window Ratio	Value	Phase	SS Window Ratio	Value	Phase	LS Window Ratio	Value
Before		0.7734	Before		0.4845	Before		0.2975
0.7344 (Minimum)	0.7730 (Nominal)	0.8117 (Maximum)	0.4585 (Minimum)	0.4826 (Nominal)	0.5067 (Maximum)	0.2798 (Minimum)	0.2946 (Nominal)	0.3093 (Maximum)
Phase	BS Window Sum CPS	Value	Phase	SS Window Sum CPS	Value	Phase	LS Window Sum CPS	Value
Before		11790	Before		9836	Before		1295
11220 (Minimum)	11810 (Nominal)	12400 (Maximum)	9373 (Minimum)	9867 (Nominal)	10360 (Maximum)	1237 (Minimum)	1302 (Nominal)	1367 (Maximum)

Before: 2−Aug−2004 13:53

High resolution Integrated Logging Tool−DTS Wellsite Calibration
Photo−multiplier High Voltages Calibrations

Phase	BS PM High Voltage (Command) V	Value	Phase	SS PM High Voltage (Command) V	Value	Phase	LS PM High Voltage (Command) V	Value
Before		1566	Before		1655	Before		1807
1460 (Minimum)	1560 (Nominal)	1660 (Maximum)	1546 (Minimum)	1646 (Nominal)	1746 (Maximum)	1709 (Minimum)	1809 (Nominal)	1909 (Maximum)

Before: 2−Aug−2004 13:53

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Crystal Quality Resolutions Calibration

Phase	BS Crystal Resolution %	Value	Phase	SS Crystal Resolution %	Value	Phase	LS Crystal Resolution %	Value
Before		10.35	Before		9.889	Before		9.490
9.369 (Minimum)	10.37 (Nominal)	11.37 (Maximum)	8.902 (Minimum)	9.902 (Nominal)	10.90 (Maximum)	8.679 (Minimum)	9.679 (Nominal)	10.68 (Maximum)

Before: 2−Aug−2004 13:53

High resolution Integrated Logging Tool−DTS Wellsite Calibration

MCFL Calibration

Phase	Raw B0 Resistivity OHMM	Value	Phase	Raw B1 Resistivity OHMM	Value	Phase	Raw B2 Resistivity OHMM	Value
Before		3873	Before		3842	Before		3836
3565 (Minimum)	3875 (Nominal)	4185 (Maximum)	3524 (Minimum)	3830 (Nominal)	4136 (Maximum)	3524 (Minimum)	3830 (Nominal)	4136 (Maximum)

Before: 2−Aug−2004 13:42

High resolution Integrated Logging Tool−DTS Wellsite Calibration

HILT Caliper Calibration

Phase	HILT Caliper Zero Measurement IN	Value	Phase	HILT Caliper Plus Measurement IN	Value
Before		8.208	Before		12.25
6.000 (Minimum)	8.000 (Nominal)	10.00 (Maximum)	9.000 (Minimum)	12.00 (Nominal)	15.00 (Maximum)

Before: 2−Aug−2004 13:45

High resolution Integrated Logging Tool−DTS Wellsite Calibration

HRLT M01

Idx	Phase	HRLT M0−M1 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−314.4	−322.7	−274.3	−371.1
1	Before		−296.2	−322.7	−274.3	−371.1
2	Before		−309.5	−322.7	−274.3	−371.1
3	Before		−306.1	−322.7	−274.3	−371.1
4	Before		−304.8	−322.7	−274.3	−371.1
5	Before		−317.3	−322.7	−274.3	−371.1
6	Before		298.7	322.7	371.1	274.3
7	Before		−322.7	−322.7	−274.3	−371.1
		(Minimum) (Nominal) (Maximum)				

Before: 4−Aug−2004 5:28

High resolution Integrated Logging Tool−DTS Wellsite Calibration

HRLT M12

Idx	Phase	HRLT M1−M2 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1718	1781	2048	1514
1	Before		1619	1781	2048	1514
2	Before		1687	1781	2048	1514
3	Before		1669	1781	2048	1514
4	Before		1663	1781	2048	1514
5	Before		1733	1781	2048	1514
6	Before		−1640	−1781	−1514	−2048
7	Before		1781	1781	2048	1514
		(Minimum) (Nominal) (Maximum)				

Before: 4−Aug−2004 5:28

High resolution Integrated Logging Tool−DTS Wellsite Calibration

HRLT M23

Idx	Phase	HRLT M2−M3 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1708	1781	2048	1514

1	Before	1620	1781	2048	1514
2	Before	1690	1781	2048	1514
3	Before	1675	1781	2048	1514
4	Before	1664	1781	2048	1514
5	Before	1734	1781	2048	1514
6	Before	−1630	−1781	−1514	−2048
7	Before	1781	1781	2048	1514
		(Minimum)	(Nominal)	(Maximum)		

Before: 4−Aug−2004 5:28

High resolution Integrated Logging Tool−DTS Wellsite Calibration

HRLT V34

Idx	Phase	HRLT A3−A4 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before	67790	70000	80500	59500
1	Before	64240	70000	80500	59500
2	Before	67290	70000	80500	59500
3	Before	66870	70000	80500	59500
4	Before	66340	70000	80500	59500
5	Before	69160	70000	80500	59500
6	Before	−63660	−70000	−59500	−80500
7	Before	70000	70000	80500	59500
		(Minimum)	(Nominal)	(Maximum)		

Before: 4−Aug−2004 5:28

High resolution Integrated Logging Tool−DTS Wellsite Calibration

HRLT V45

Idx	Phase	HRLT A4−A5 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before	67780	70000	80500	59500
1	Before	64430	70000	80500	59500
2	Before	67420	70000	80500	59500
3	Before	66950	70000	80500	59500
4	Before	66340	70000	80500	59500
5	Before	69120	70000	80500	59500
6	Before	−63860	−70000	−59500	−80500
7	Before	70000	70000	80500	59500
		(Minimum)	(Nominal)	(Maximum)		

Before: 4−Aug−2004 5:28

High resolution Integrated Logging Tool−DTS Wellsite Calibration

HRLT V56

Idx	Phase	HRLT A5−A6 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before	67820	70000	80500	59500
1	Before	64380	70000	80500	59500
2	Before	67410	70000	80500	59500
3	Before	66950	70000	80500	59500
4	Before	66380	70000	80500	59500
5	Before	69170	70000	80500	59500
6	Before	−63800	−70000	−59500	−80500
7	Before	70000	70000	80500	59500

(Minimum) (Nominal) (Maximum)

Before: 4−Aug−2004 5:28

High resolution Integrated Logging Tool−DTS Wellsite Calibration

HRLT VTP

Idx	Phase	HRLT Torpedo−M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−67280	−70000	−59500	−80500
1	Before		−64240	−70000	−59500	−80500
2	Before		−67240	−70000	−59500	−80500
3	Before		−66810	−70000	−59500	−80500
4	Before		−66260	−70000	−59500	−80500
5	Before		−69050	−70000	−59500	−80500
6	Before		63640	70000	80500	59500
7	Before		−70000	−70000	−59500	−80500

(Minimum) (Nominal) (Maximum)

Before: 4−Aug−2004 5:28

High resolution Integrated Logging Tool−DTS Wellsite Calibration

HRLT VBD

Idx	Phase	HRLT Bridle#9−M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−67300	−70000	−59500	−80500
1	Before		−64280	−70000	−59500	−80500
2	Before		−67280	−70000	−59500	−80500
3	Before		−66850	−70000	−59500	−80500
4	Before		−66300	−70000	−59500	−80500
5	Before		−69080	−70000	−59500	−80500
6	Before		63700	70000	80500	59500
7	Before		−70000	−70000	−59500	−80500

(Minimum) (Nominal) (Maximum)

Before: 4−Aug−2004 5:28

High resolution Integrated Logging Tool−DTS Wellsite Calibration

HRLT ISO

Idx	Phase	HRLT Source Current Plus UA	Value	Nominal	Maximum	Minimum
0	Before		280.6	284.0	326.6	241.4
1	Before		281.1	281.1	323.3	238.9
2	Before		281.1	281.1	323.3	238.9
3	Before		281.1	281.1	323.3	238.9
4	Before		281.1	281.1	323.3	238.9
5	Before		281.1	281.1	323.3	238.9
6	Before		281.1	281.1	323.3	238.9
7	Before		281.1	281.1	323.3	238.9

(Minimum) (Nominal) (Maximum)

Before: 4−Aug−2004 5:28

High resolution Integrated Logging Tool−DTS Wellsite Calibration

HRLT MV

Idx	Phase	HRLT Vertical Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−314.9	−322.7	−274.3	−371.1
1	Before		−291.1	−322.7	−274.3	−371.1

2	Before	−302.5	−322.7	−274.3	−371.1
3	Before	−297.6	−322.7	−274.3	−371.1
4	Before	−293.4	−322.7	−274.3	−371.1
5	Before	−319.9	−322.7	−274.3	−371.1
6	Before	306.4	322.7	371.1	274.3
7	Before	−322.7	−322.7	−274.3	−371.1
	(Minimum) (Nominal) (Maximum)				

Before: 4−Aug−2004 5:28

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Jig − Bkg) GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Before		45.40	Before		168.3	Before		165.0
	0 (Minimum) 30.00 (Nominal) 120.0 (Maximum)			153.0 (Minimum) 168.3 (Nominal) 183.6 (Maximum)			150.0 (Minimum) 165.0 (Nominal) 180.0 (Maximum)	

Before: 2−Aug−2004 13:41

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Zero Measurement

Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		29.20	Master		26.52
Before		29.19	Before		30.42
	5.000 (Minimum) 29.20 (Nominal) 40.00 (Maximum)			5.000 (Minimum) 26.52 (Nominal) 40.00 (Maximum)	

Master: 2−Jun−2004 11:58 Before: 2−Aug−2004 13:43

High resolution Integrated Logging Tool−DTS

Wellsite Calibration

Accelerometer Calibration

Phase	Z−Axis Acceleration M/S2	Value
Before		9.785
	9.610 (Minimum) 9.810 (Nominal) 10.01 (Maximum)	

Before: 3−Aug−2004 20:01

High resolution Integrated Logging Tool−DTS Master Calibration

Inversion results

Phase	Rho Aluminum G/C3	Value	Phase	Rho Magnesium G/C3	Value
Master		2.595	Master		1.692
	2.586 (Minimum) 2.596 (Nominal) 2.606 (Maximum)			1.676 (Minimum) 1.686 (Nominal) 1.696 (Maximum)	
Phase	Pe Aluminum	Value	Phase	Pe Magnesium	Value
Master		2.559	Master		2.607
	2.470 (Minimum) 2.570 (Nominal) 2.670 (Maximum)			2.550 (Minimum) 2.650 (Nominal) 2.750 (Maximum)	

Master: 8−Jul−2004 13:28

High resolution Integrated Logging Tool−DTS Master Calibration

Deviation Summary

Phase	BS Average Deviation %	Value	Phase	SS Average Deviation %	Value	Phase	LS Average Deviation %	Value
Master		0.4492	Master		0.7701	Master		0.6198
	−0.6000 (Minimum) 0 (Nominal) 0.6000 (Maximum)			−1.000 (Minimum) 0 (Nominal) 1.000 (Maximum)			−1.500 (Minimum) 0 (Nominal) 1.500 (Maximum)	
Phase	BS Max Deviation %	Value	Phase	SS Max Deviation %	Value	Phase	LS Max Deviation %	Value
Master		1.001	Master		1.846	Master		1.862
	−1.600 (Minimum) 0 (Nominal) 1.600 (Maximum)			−2.500 (Minimum) 0 (Nominal) 2.500 (Maximum)			−3.500 (Minimum) 0 (Nominal) 3.500 (Maximum)	

Master: 8−Jul−2004 13:28

High resolution Integrated Logging Tool−DTS Master Calibration

Tank Measurement

Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/CFTC (Tank)	Value

Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/CFTC (Tank)	Value
Master		5441	Master		2260	Master		2.408
	5000 (Minimum) 6031 (Nominal) 7200 (Maximum)			2075 (Minimum) 2793 (Nominal) 3125 (Maximum)			2.120 (Minimum) 2.159 (Nominal) 2.540 (Maximum)	

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High resolution Integrated Logging Tool−DTS Master Calibration

Tank Measurement

Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/CFTC (Tank)	Value
Master		5441	Master		2260	Master		2.408
	5000 (Minimum) 6031 (Nominal) 7200 (Maximum)			2075 (Minimum) 2793 (Nominal) 3125 (Maximum)			2.120 (Minimum) 2.159 (Nominal) 2.540 (Maximum)	

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Company: **Lakes Oil N.L.**

Schlumberger

Well: **Trifon 2**
Field: **Wildcat**
Rig: **Hunt #2**
Country: **Australia**

MCFL−HRLA−GF
2500.2 − 1260 m
1:200 Scale