

Rig: Black Gold Drilling, Rig 69	
Crew: Tim Ludgate & Dave Marquez	

RUN 1			RUN 2		
SERVICE ORDER #:		B8GW-00028	SERVICE ORDER #:		
PROGRAM VERSION:		17C0-154	PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION					
RUN 1			RUN 2		

SURFACE EQUIPMENT

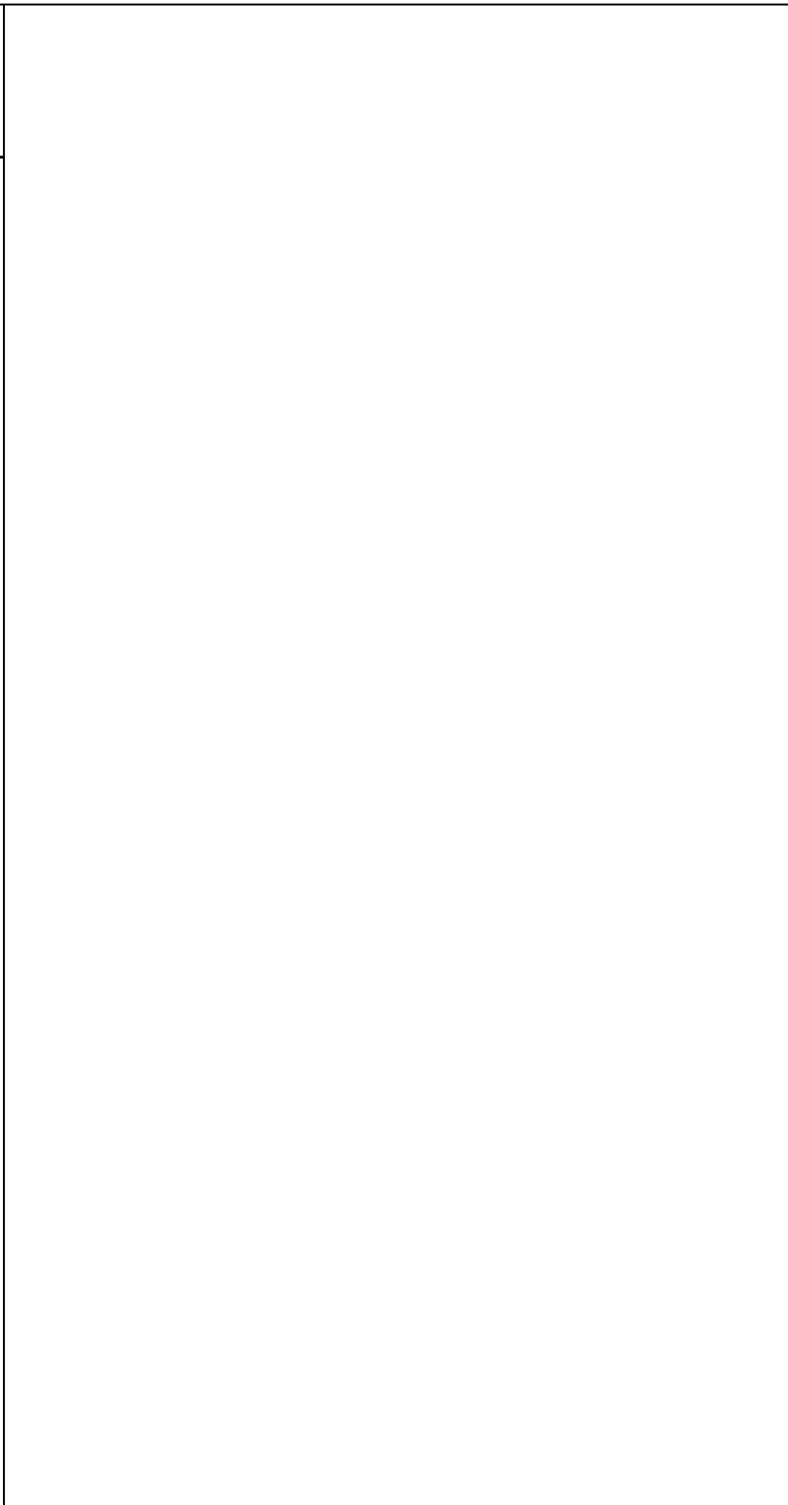
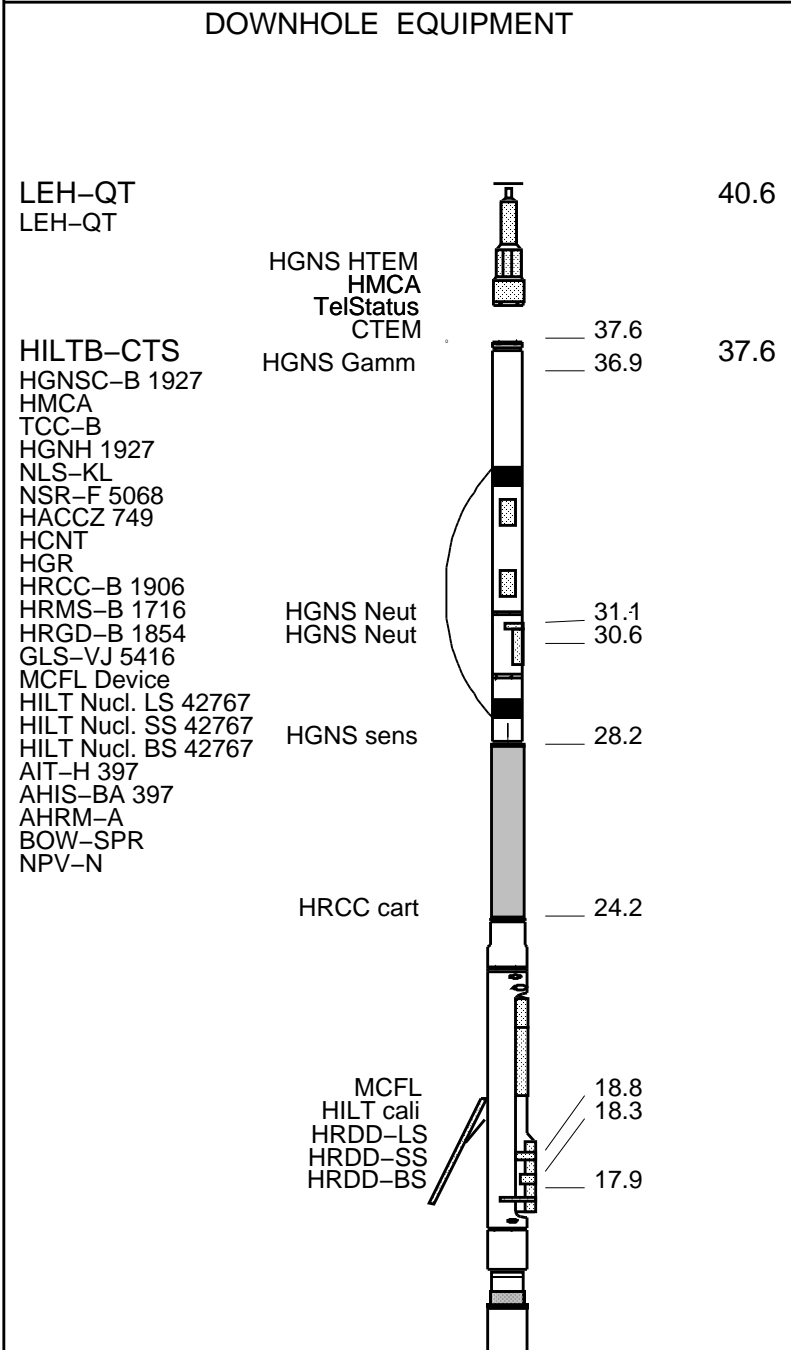
WITM (CTS)-A

GSR-U/Y

NCT-B

CNB-AB

NCS-VB



Induction
Temperatu
Power Sup

7.9

SP SENSOR
HTEN HMAS
Accelerom HV
Mud Resis
Tension

0.1

0.0

TOOL ZERO

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

Production String

(in)

(ft)

OD

ID

MD

Well Schematic

(ft)

(in)

MD

OD

ID

Casing String

Casing String

Casing Shoe
Borehole Segment

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All depths are driller's depths



MAIN MICROLOG 5" = 100'

MAXIS Field Log

Output DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_007LUP FN:6 PRODUCER 08-Feb-2010 05:59 5520.0 FT 262.0 FT

Integrated Hole/Cement Volume Summary

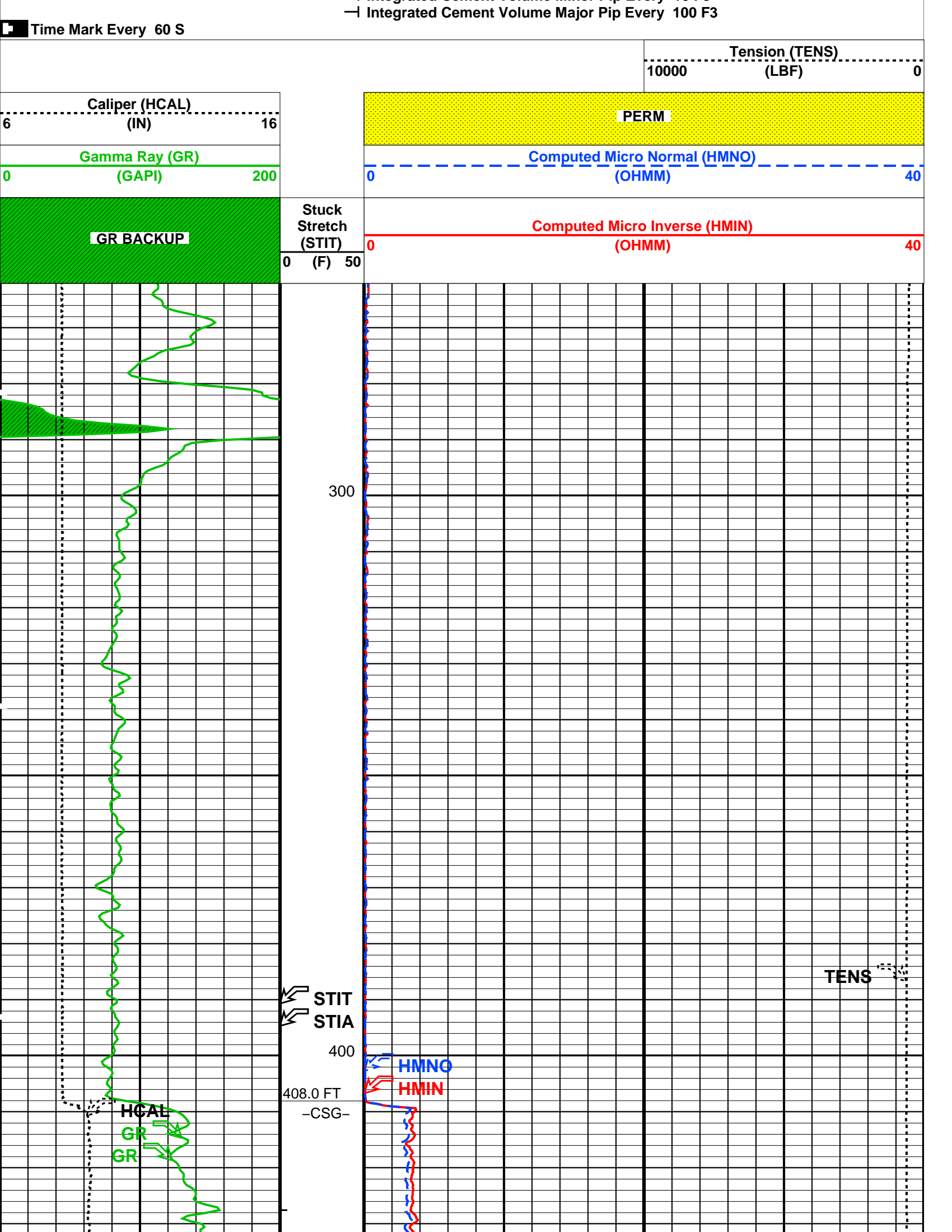
Hole Volume = 2159.01 F3
Cement Volume = 1318.16 F3 (assuming 5.50 IN casing O.D.)
Computed from 5504.0 FT to 408.0 FT using data channel(s) HCAL

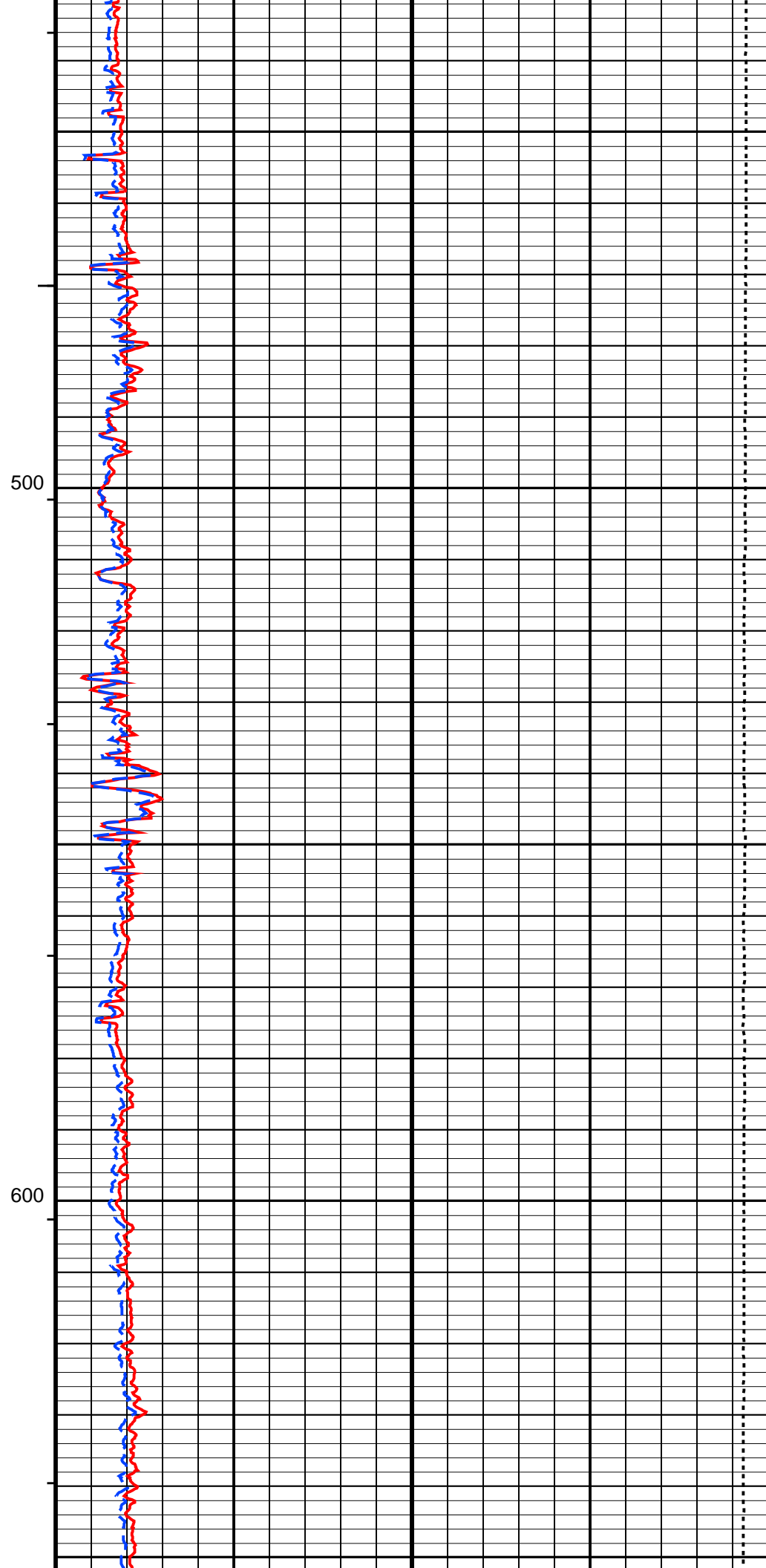
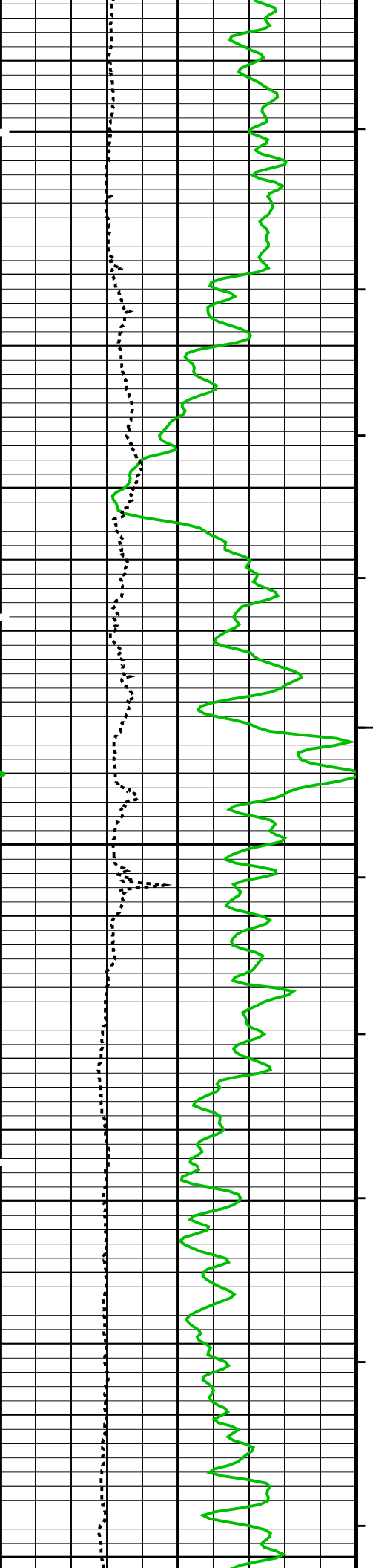
OP System Version: 17C0-154

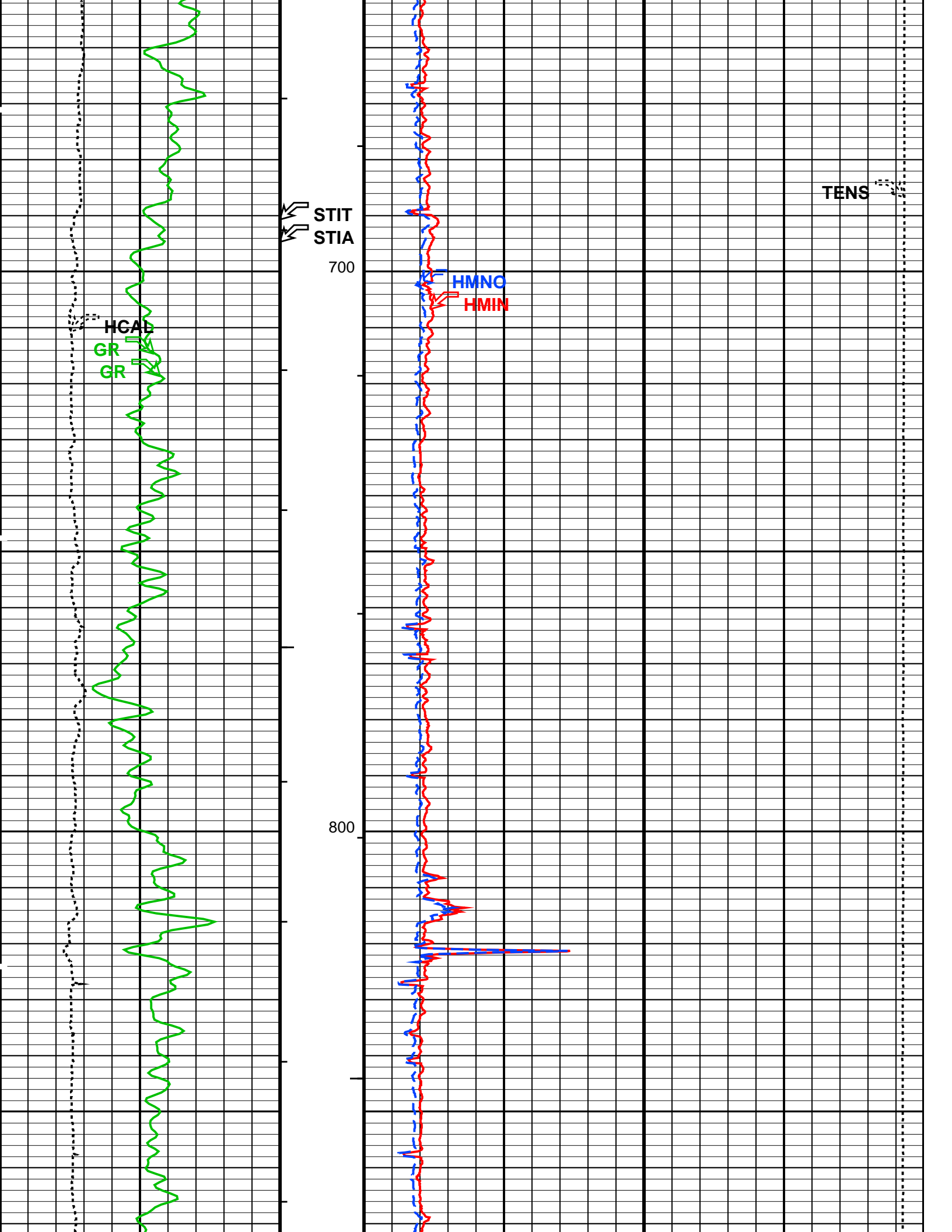
HILTB-CTS 17C0-154

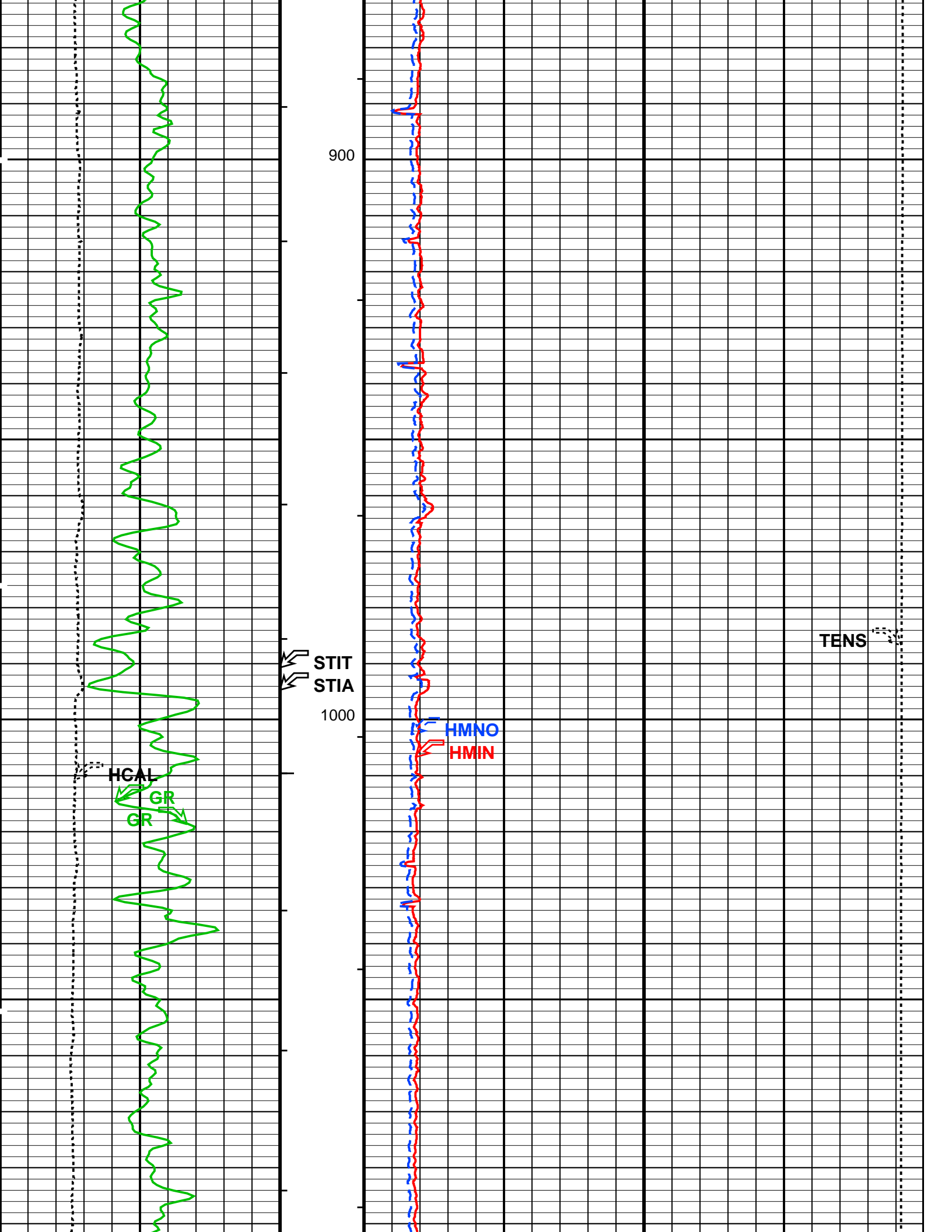
PIP SUMMARY

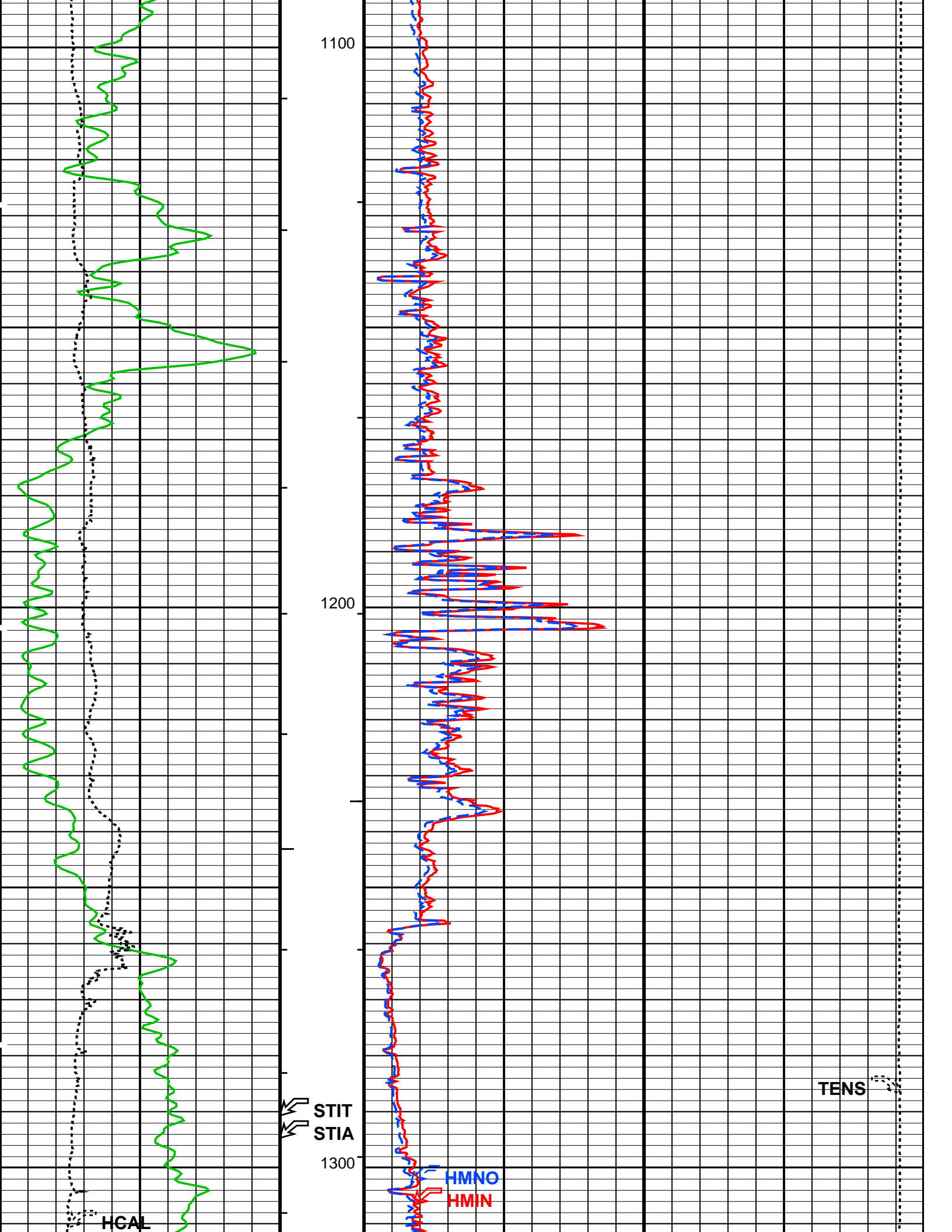
- └ Integrated Hole Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
- └ Integrated Cement Volume Minor Pip Every 10 F3

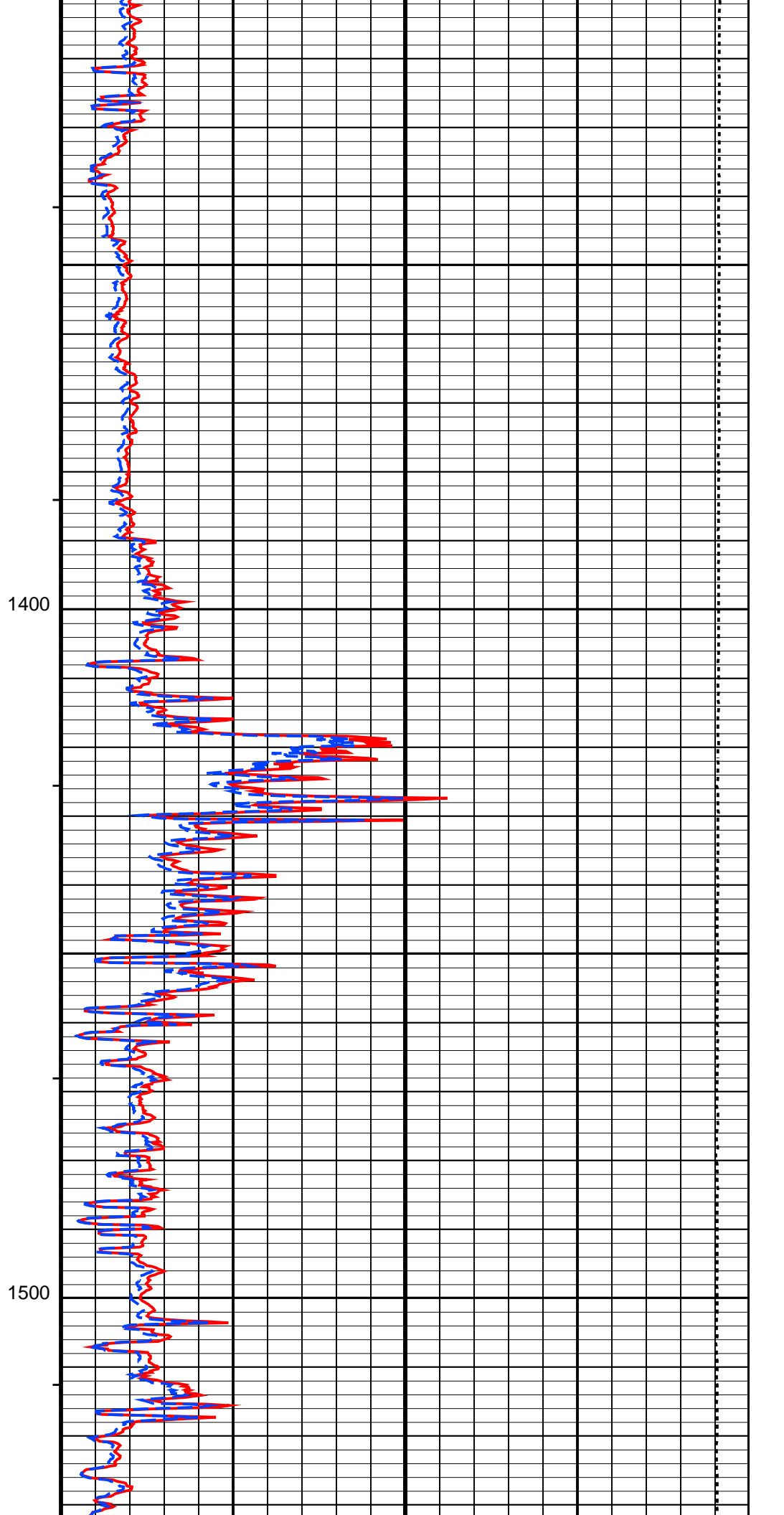
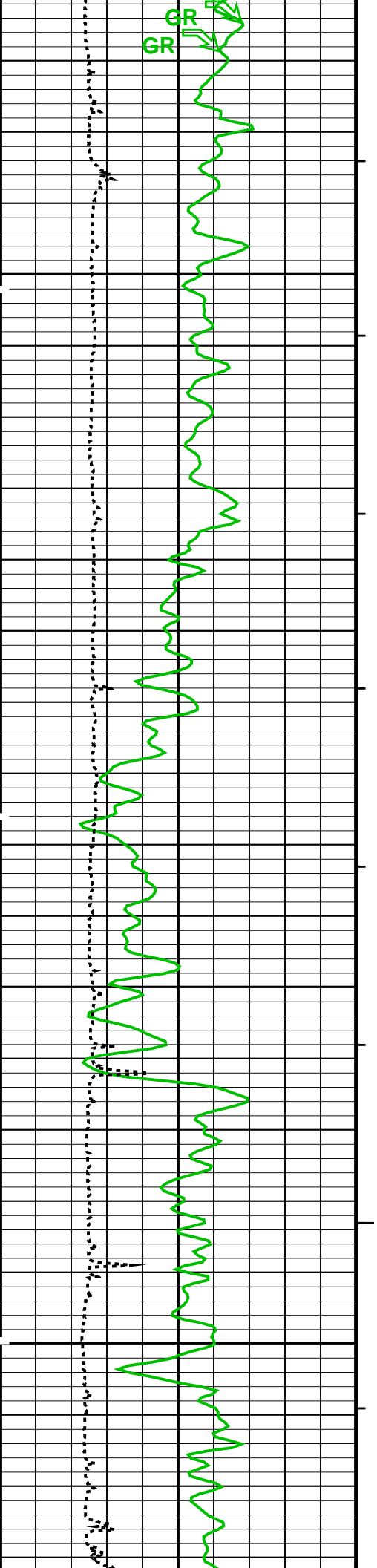


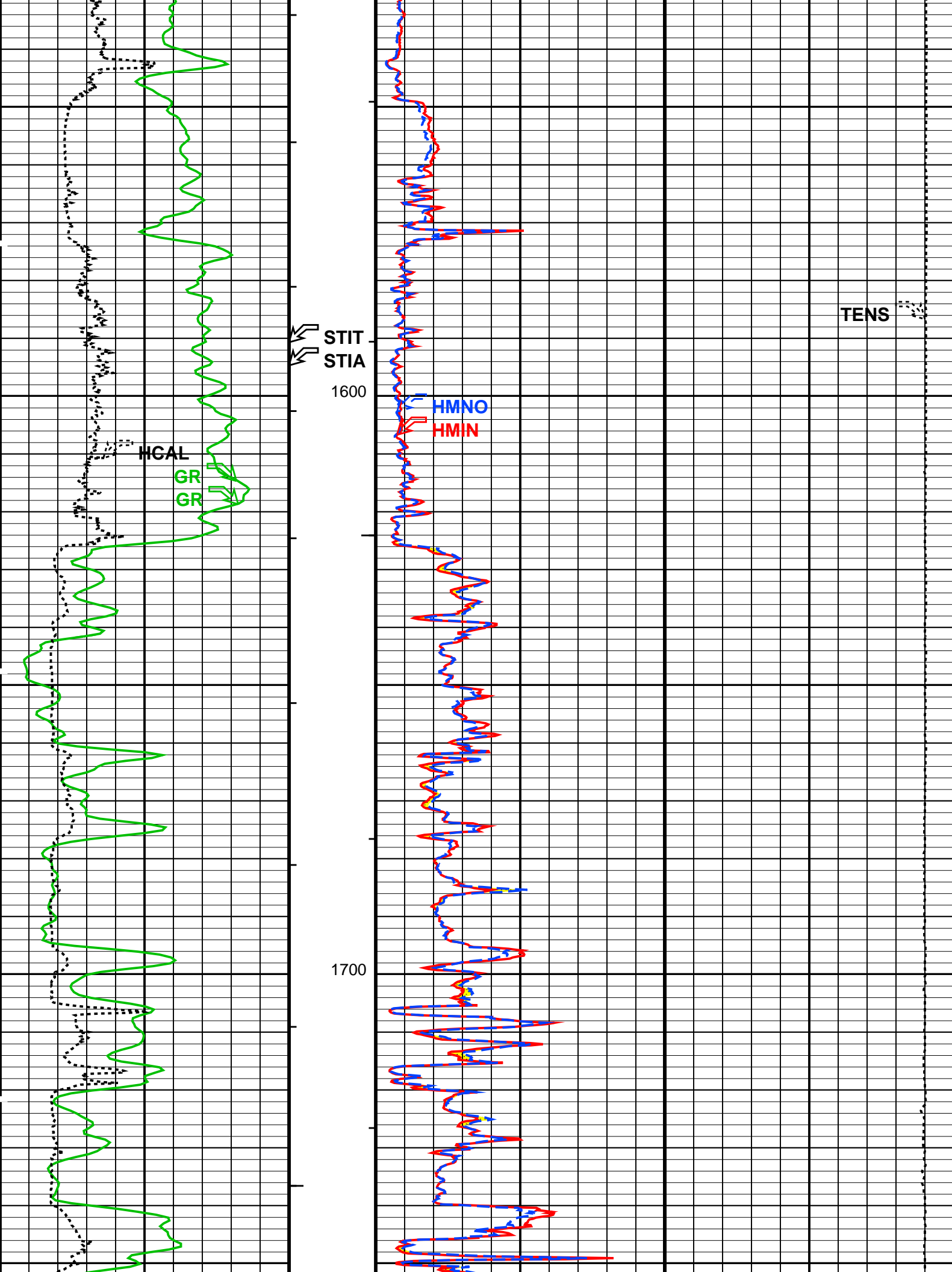


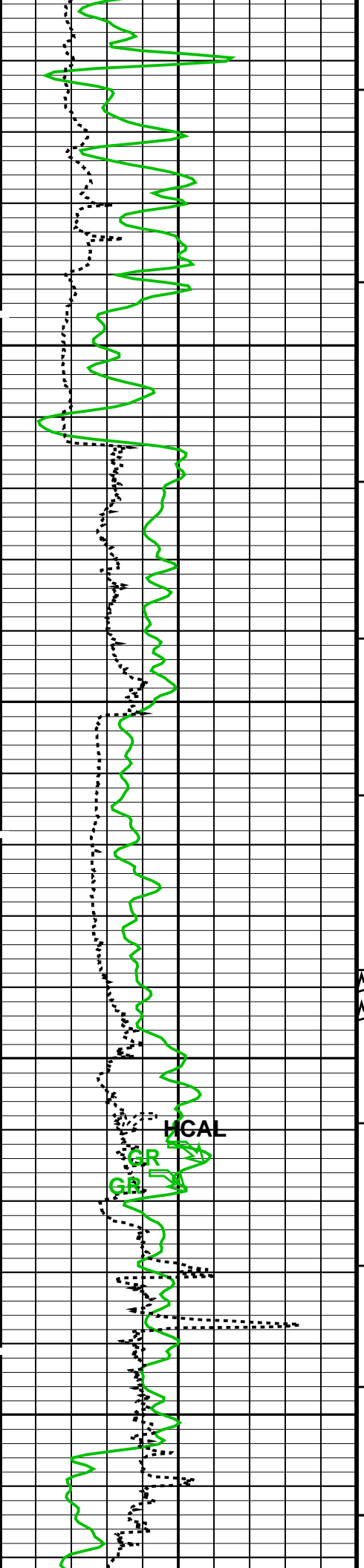












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1900

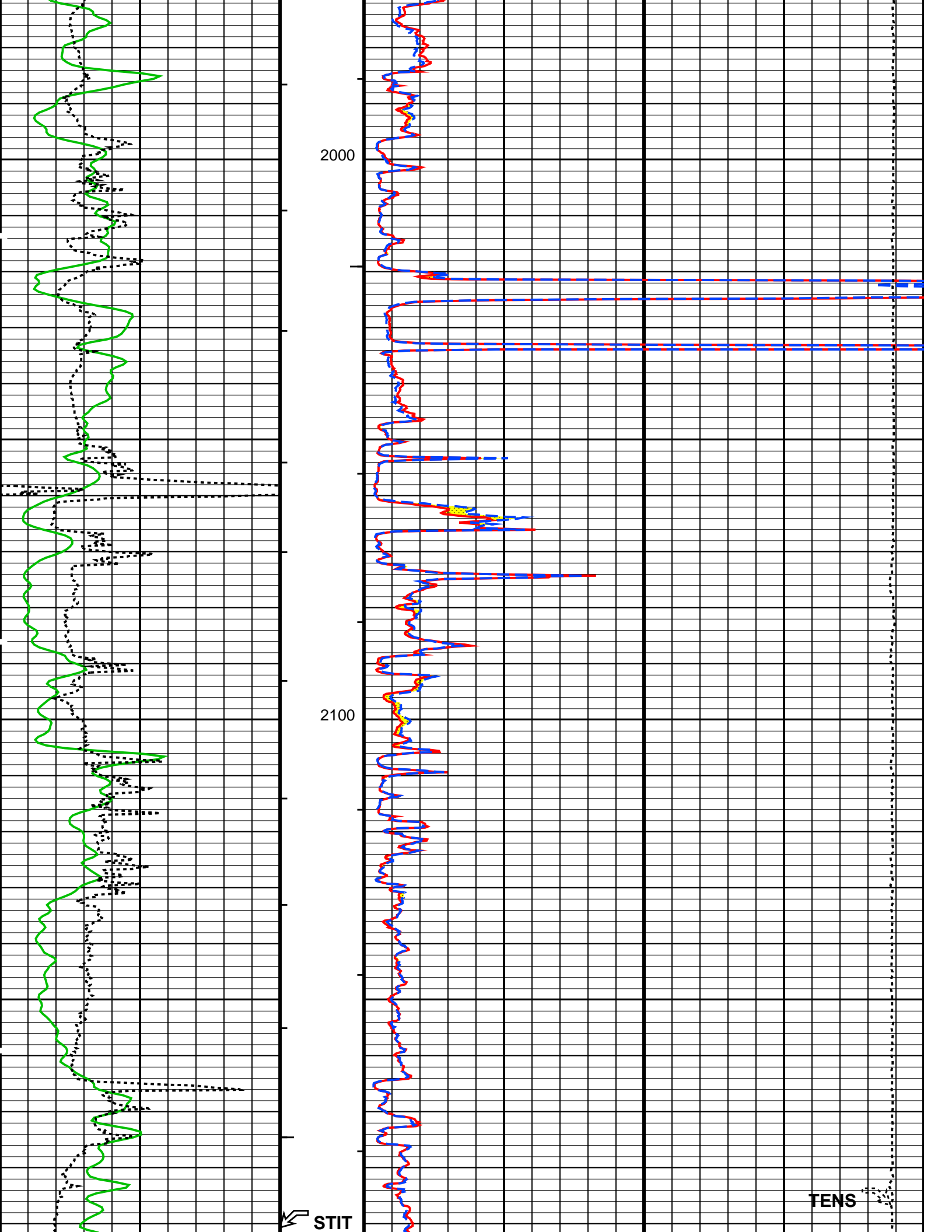
1800

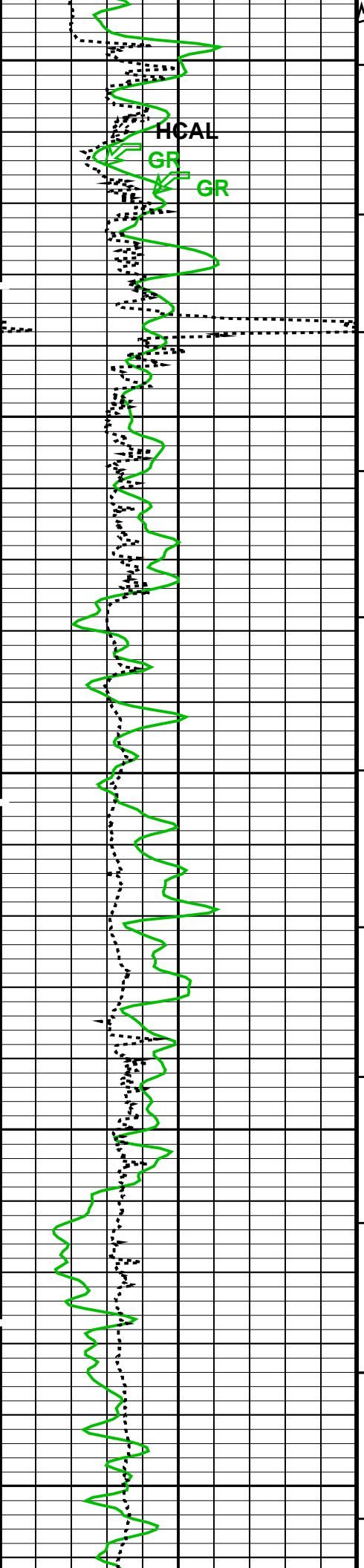
TENS

HCAL

HMNO

HMIN





STIA

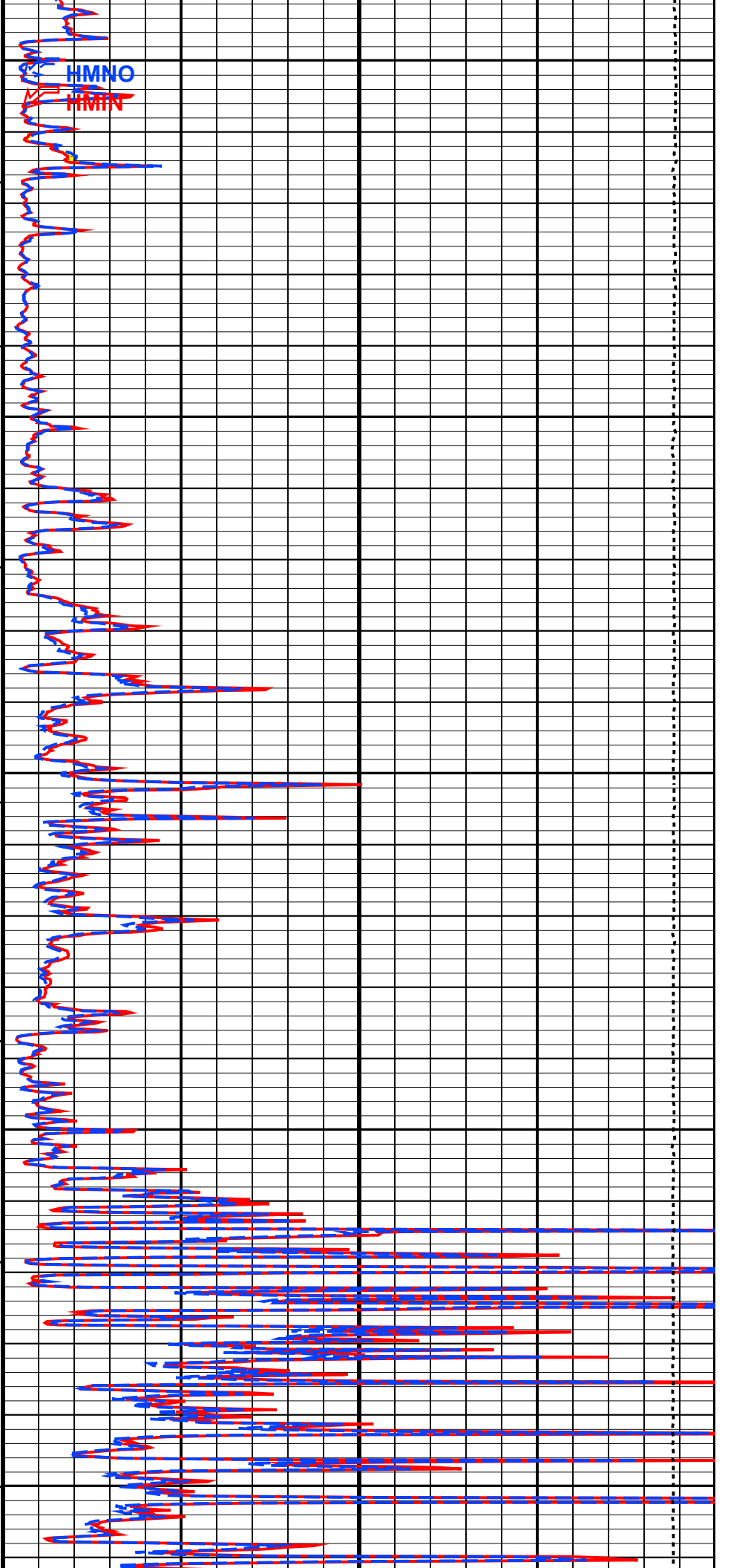
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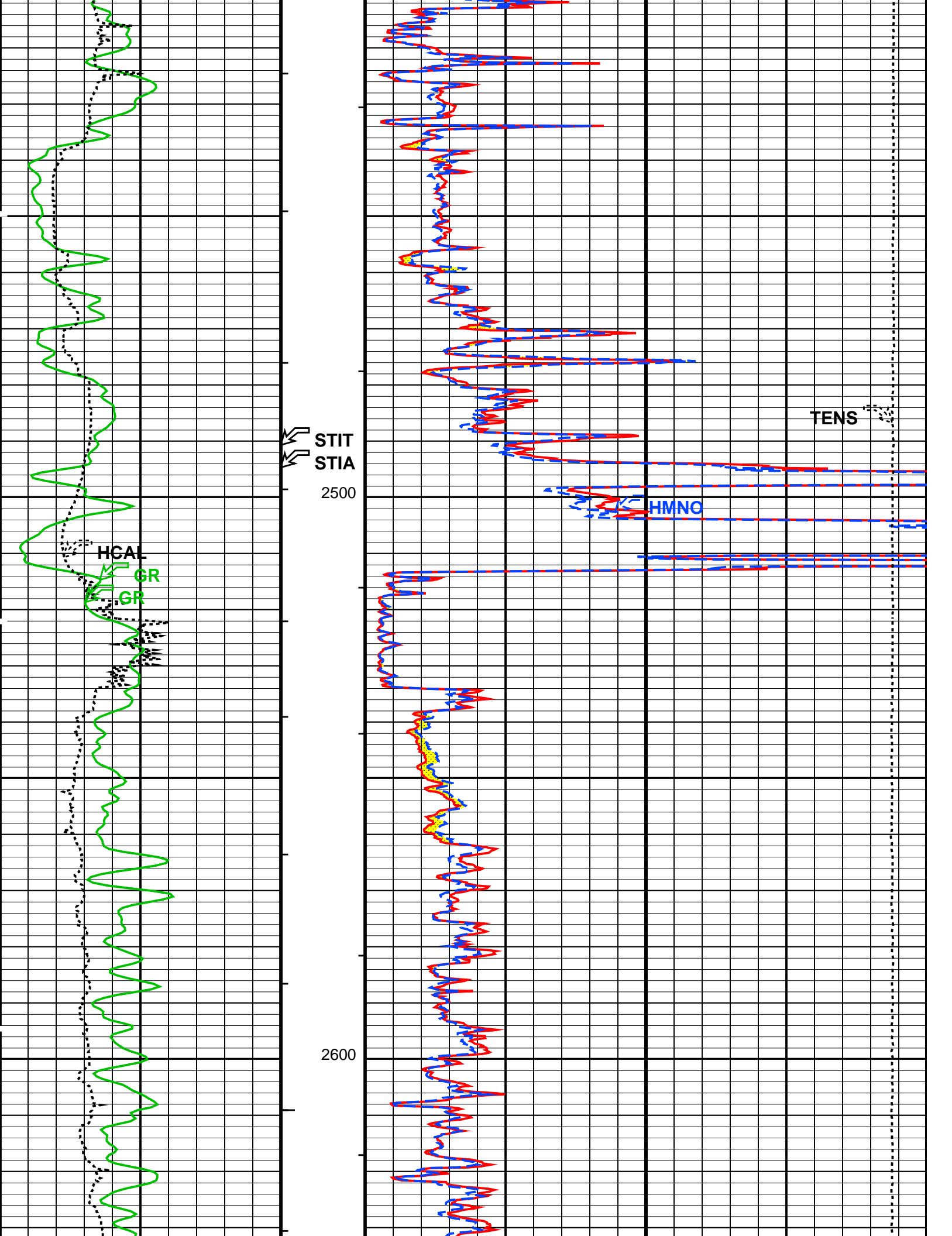
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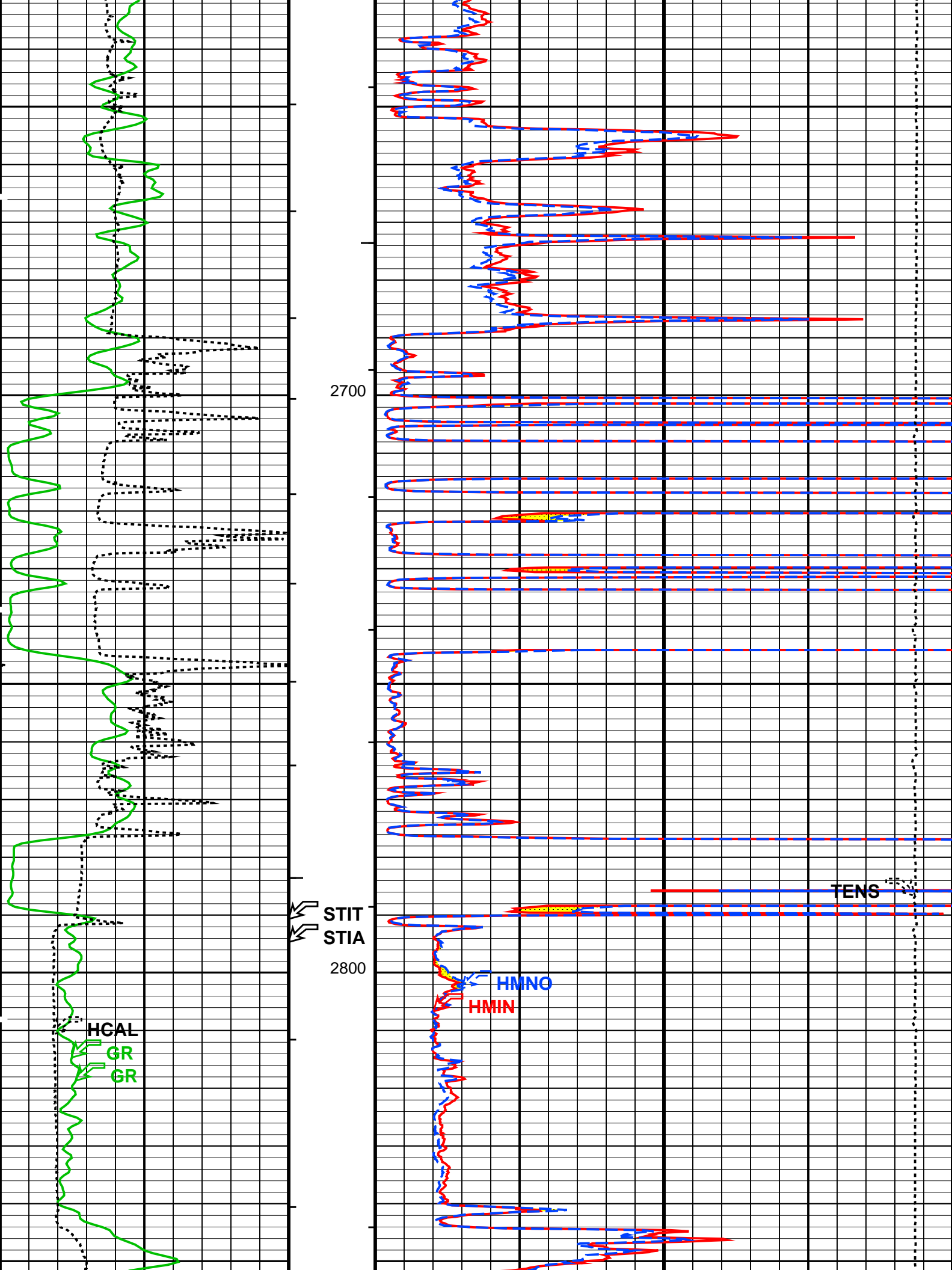
HMIN

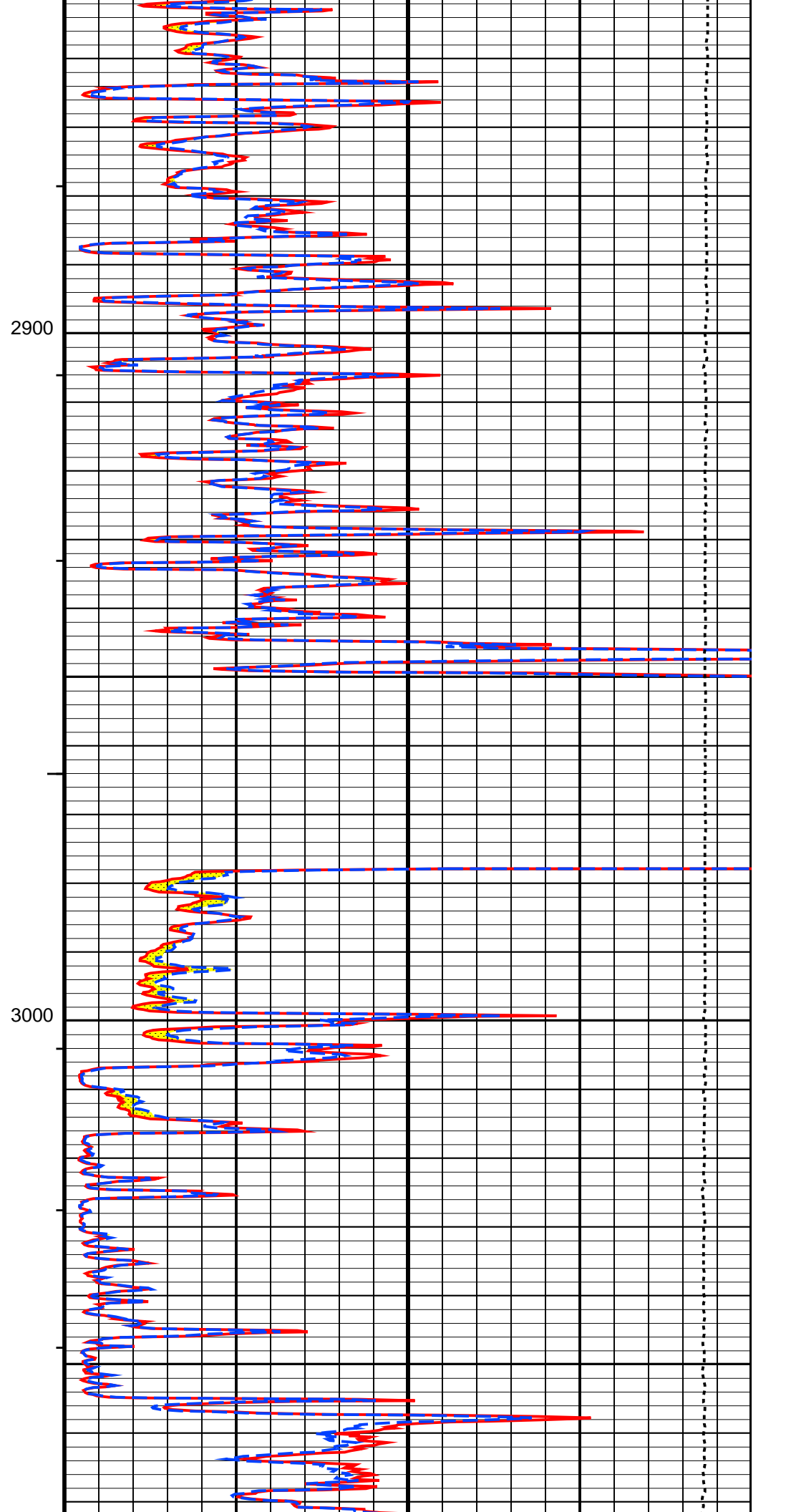
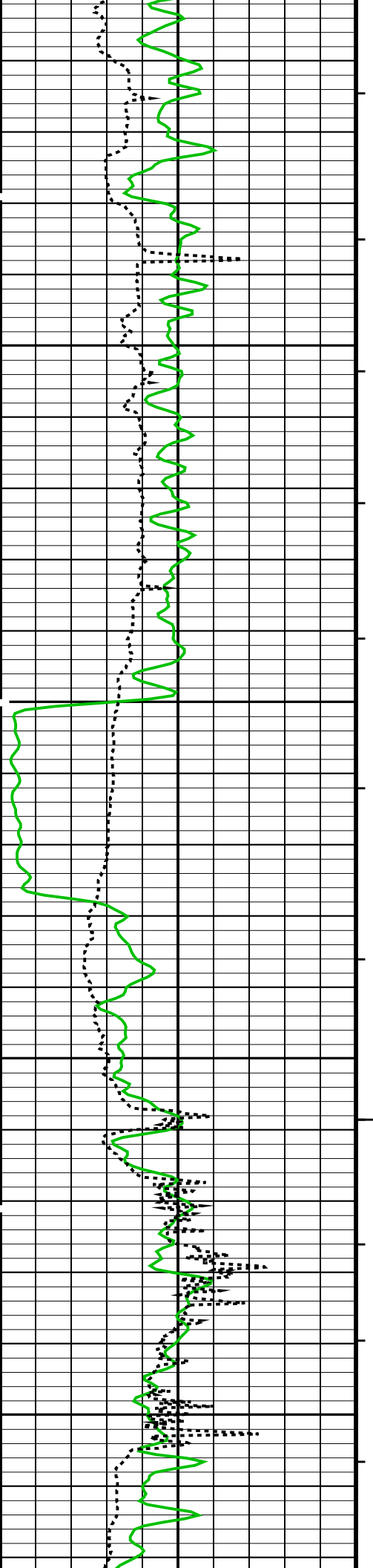
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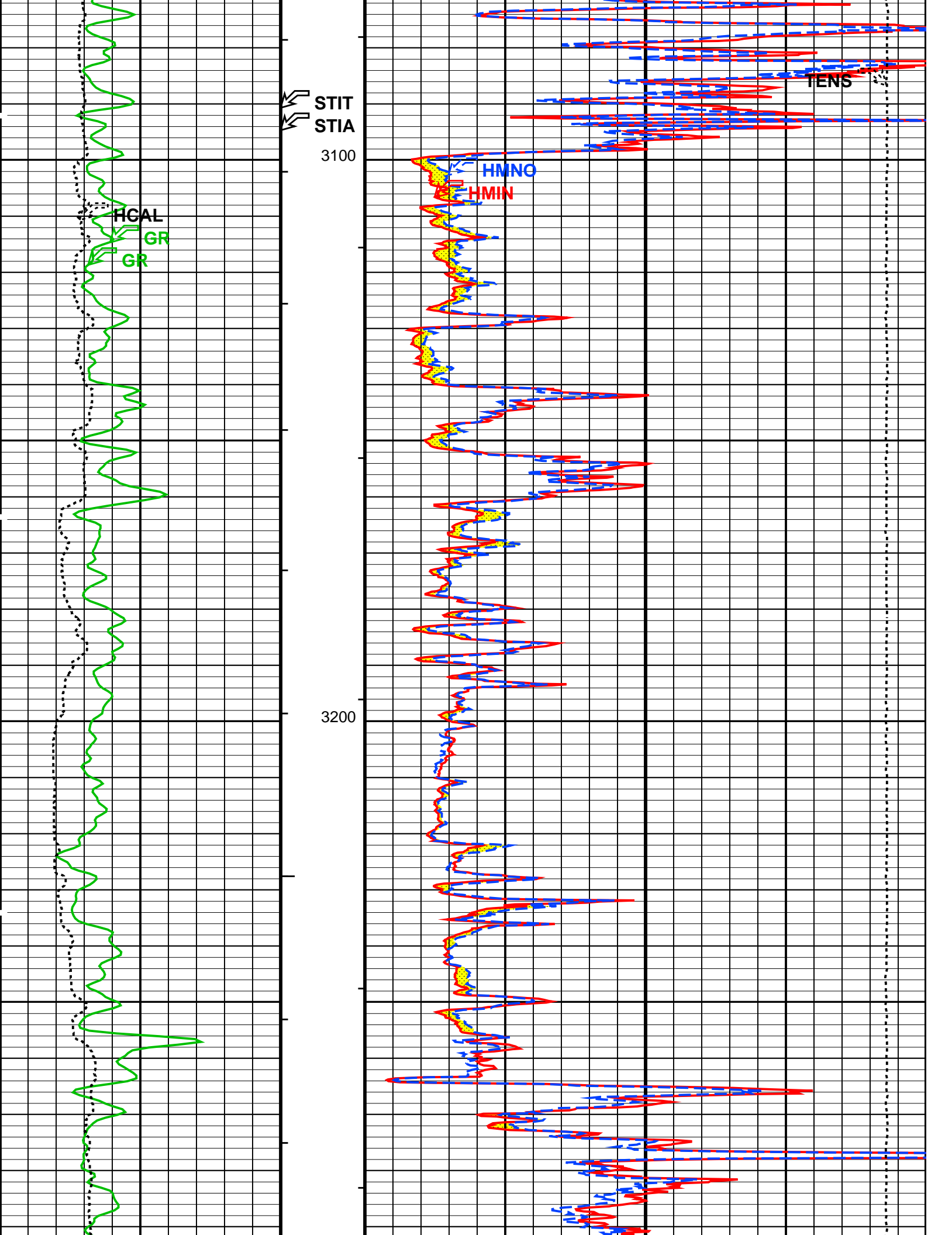
2400

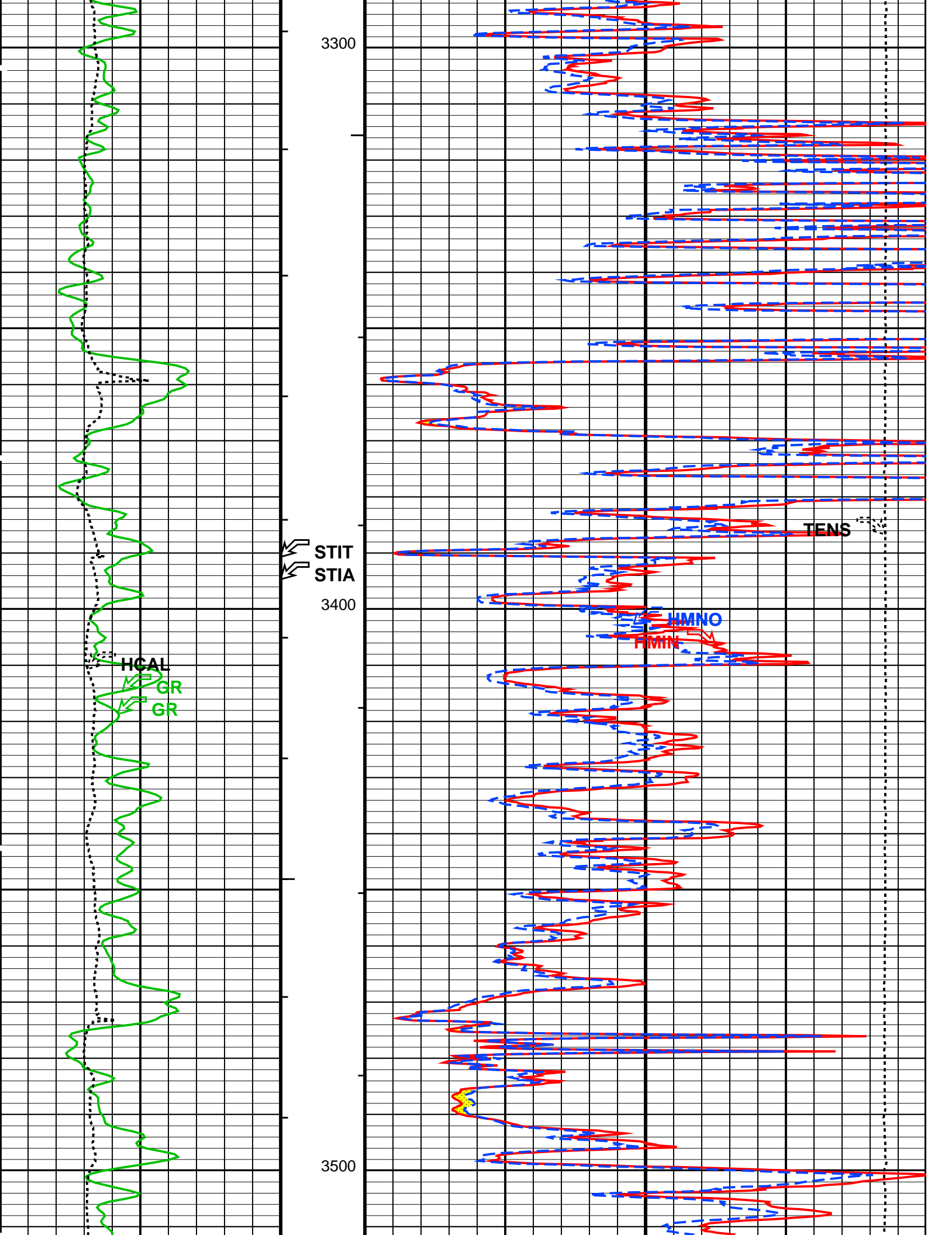


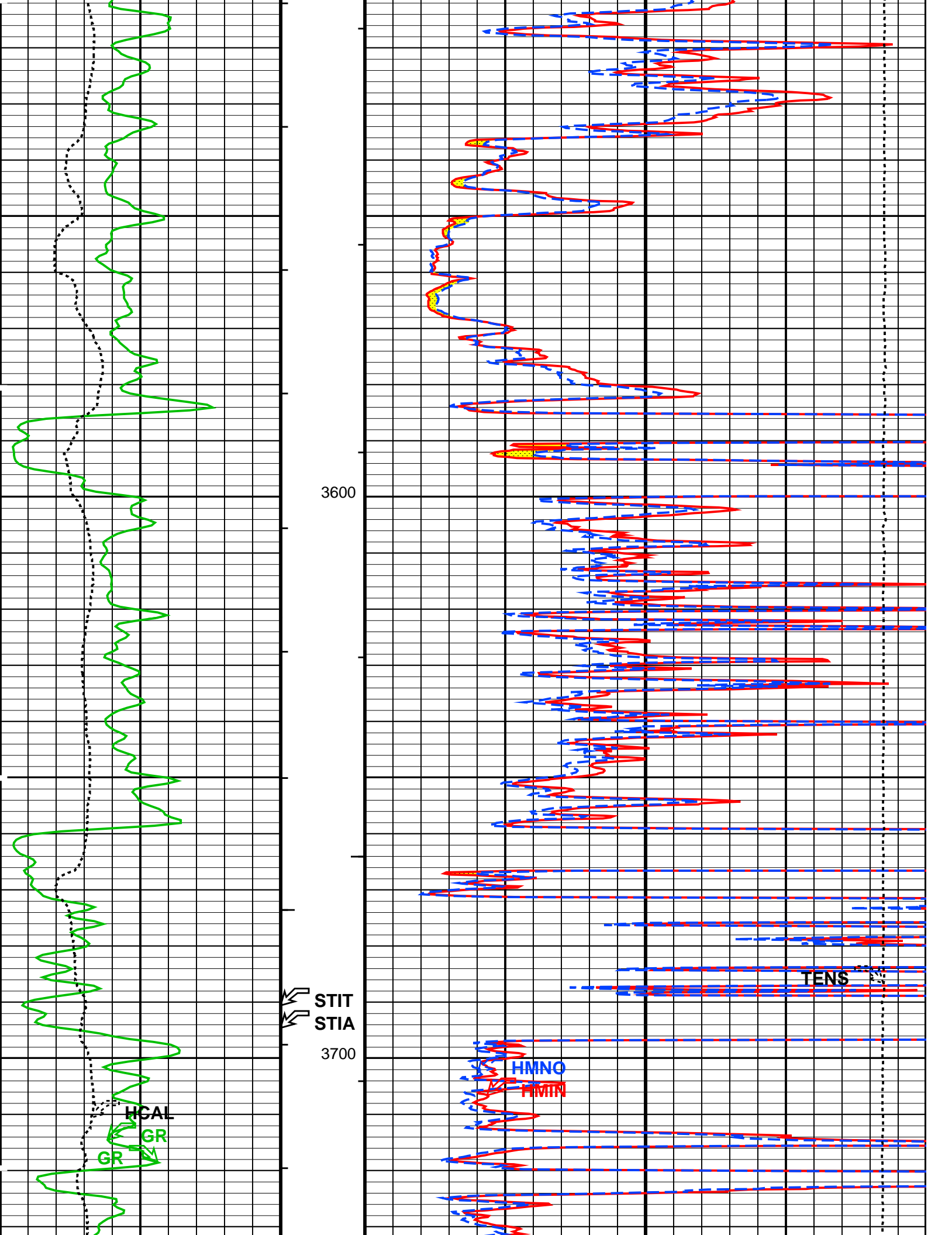


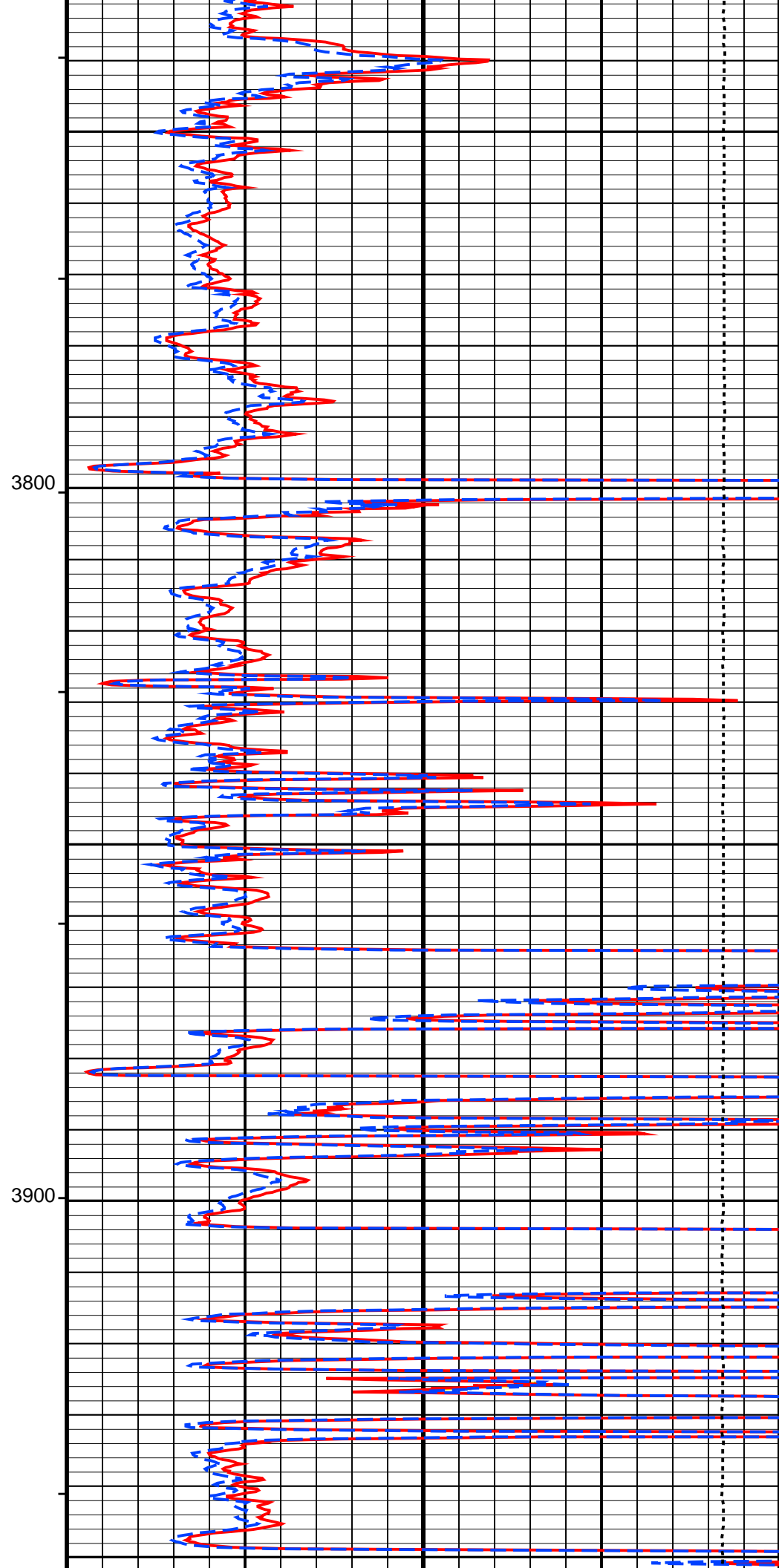
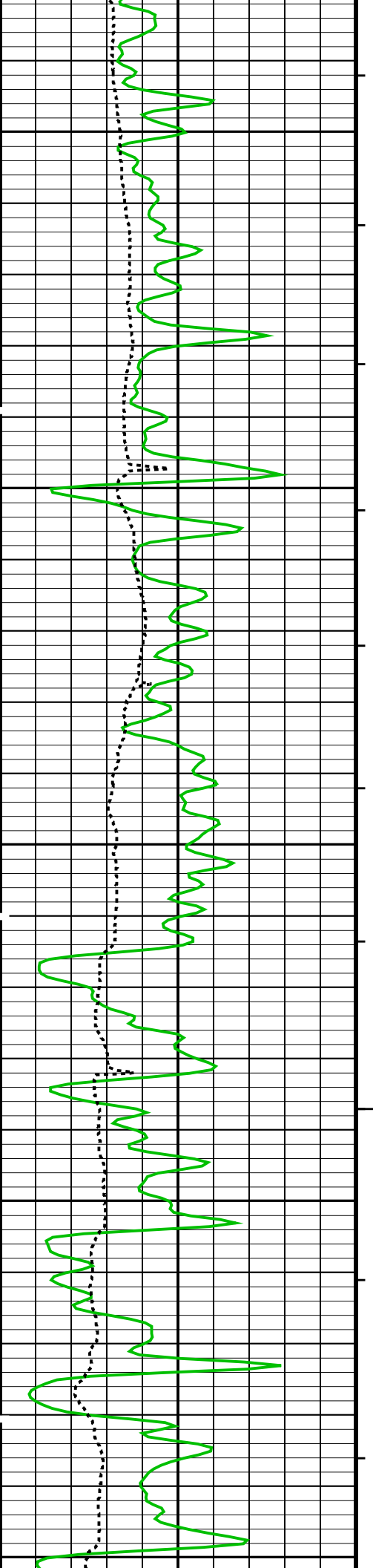


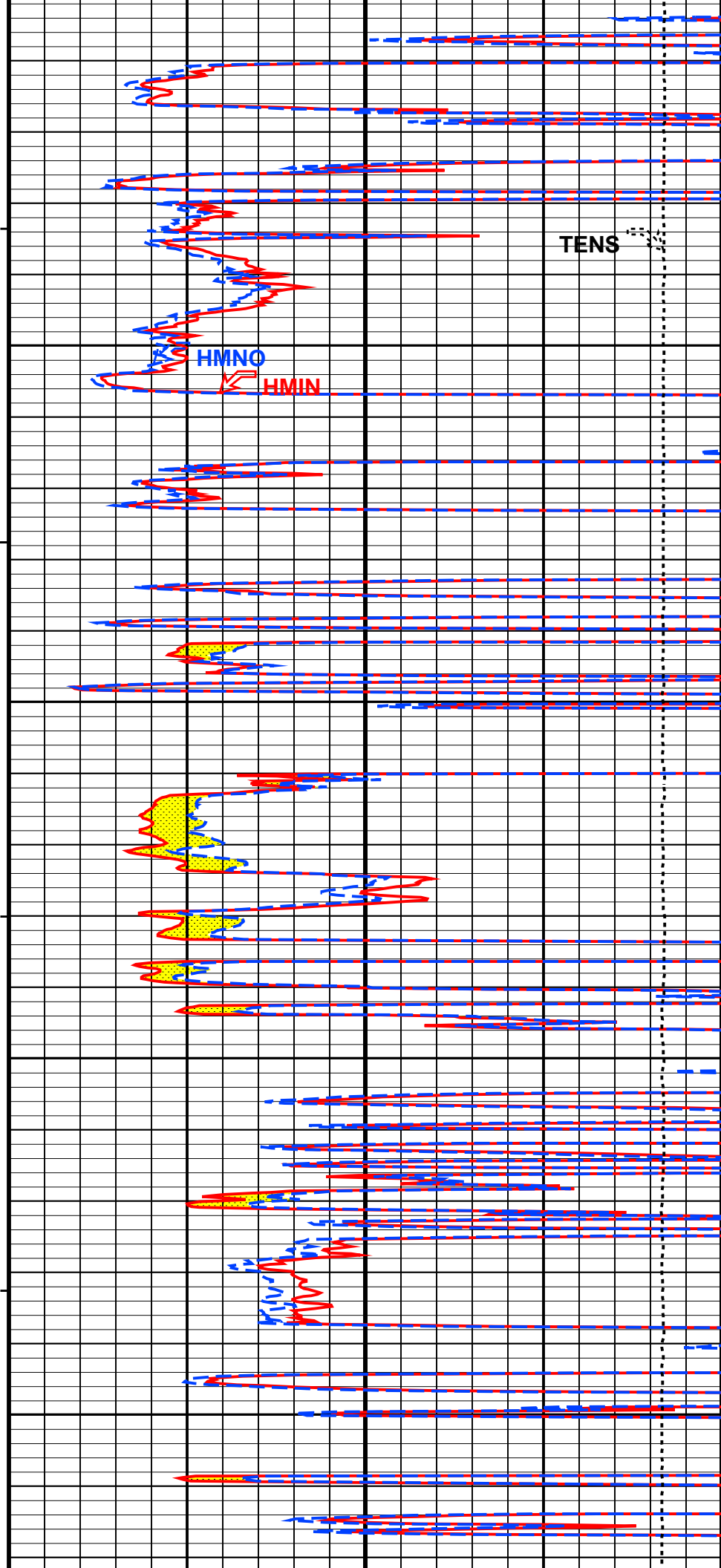
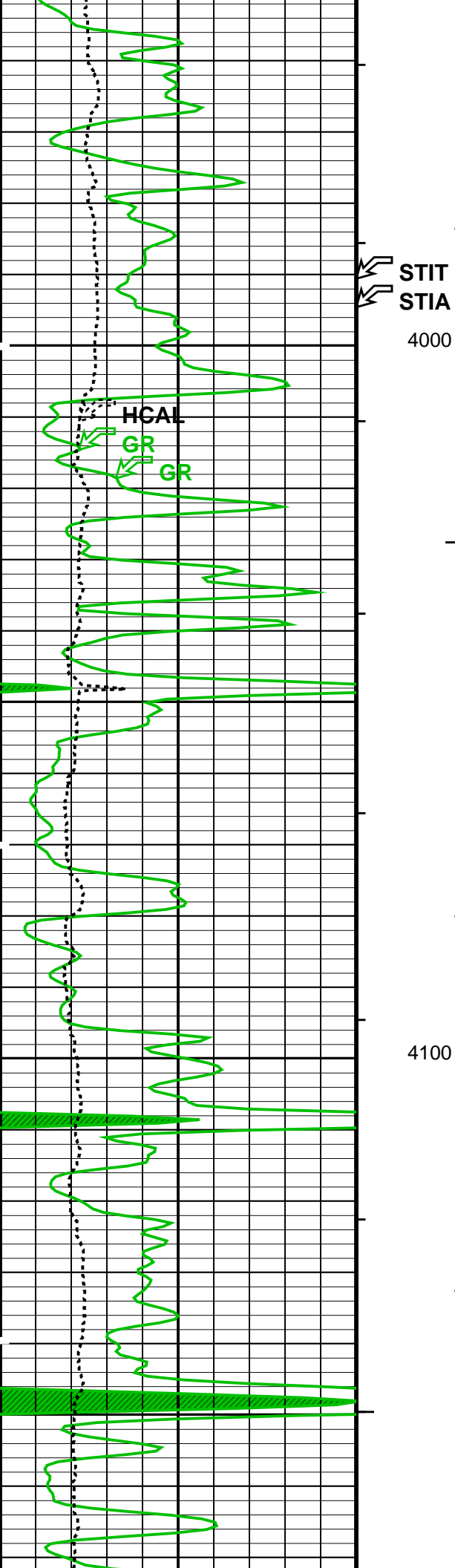


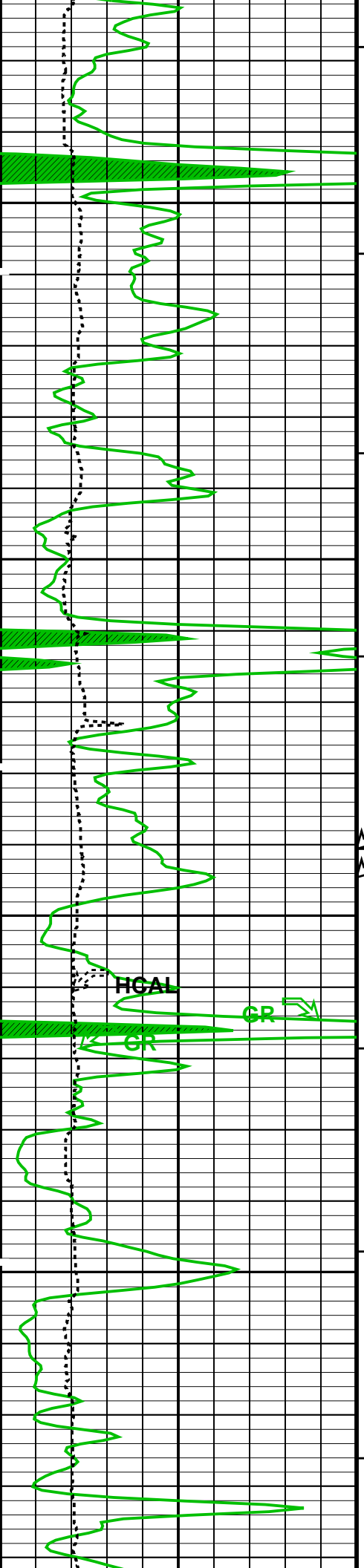








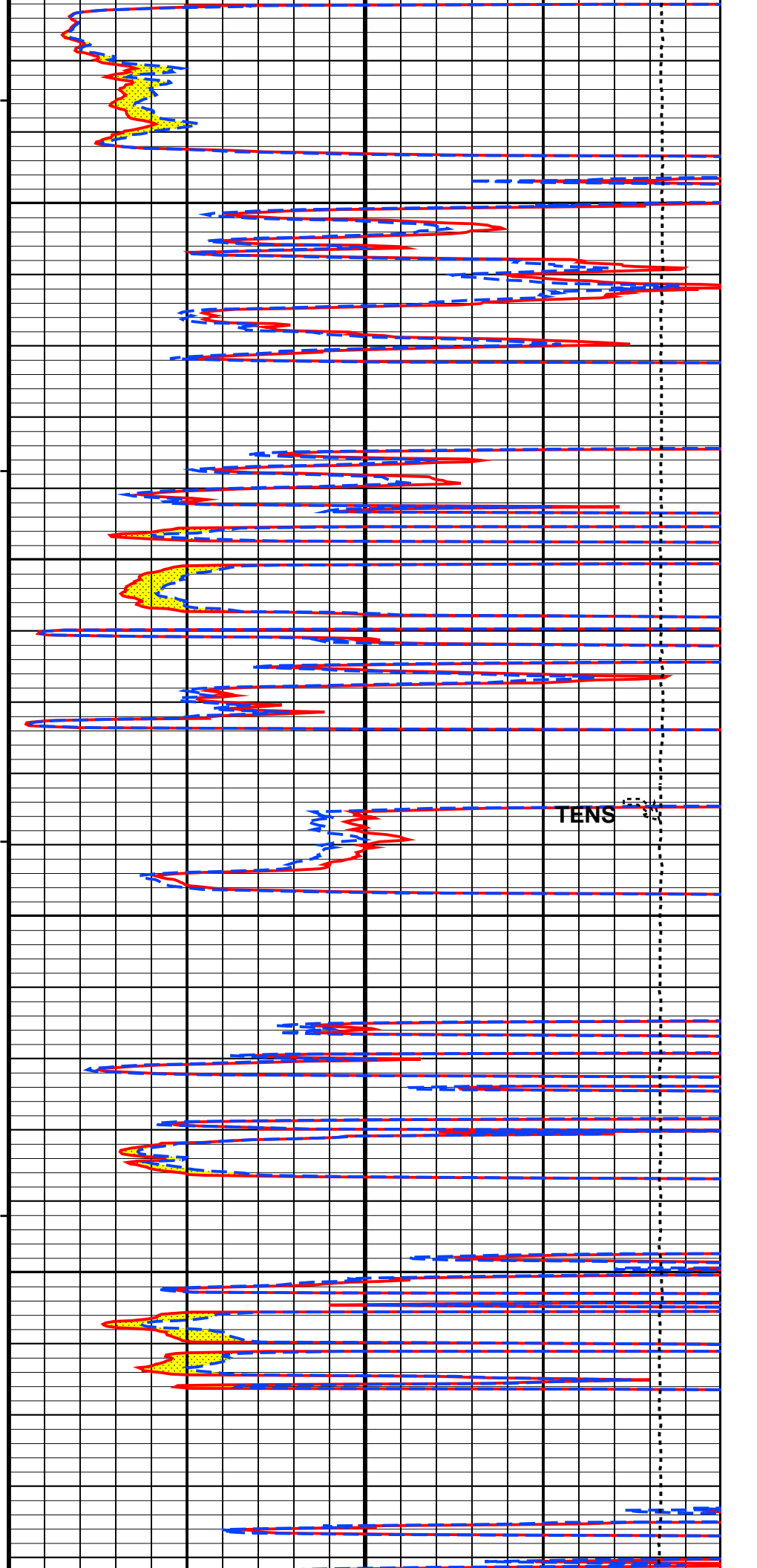


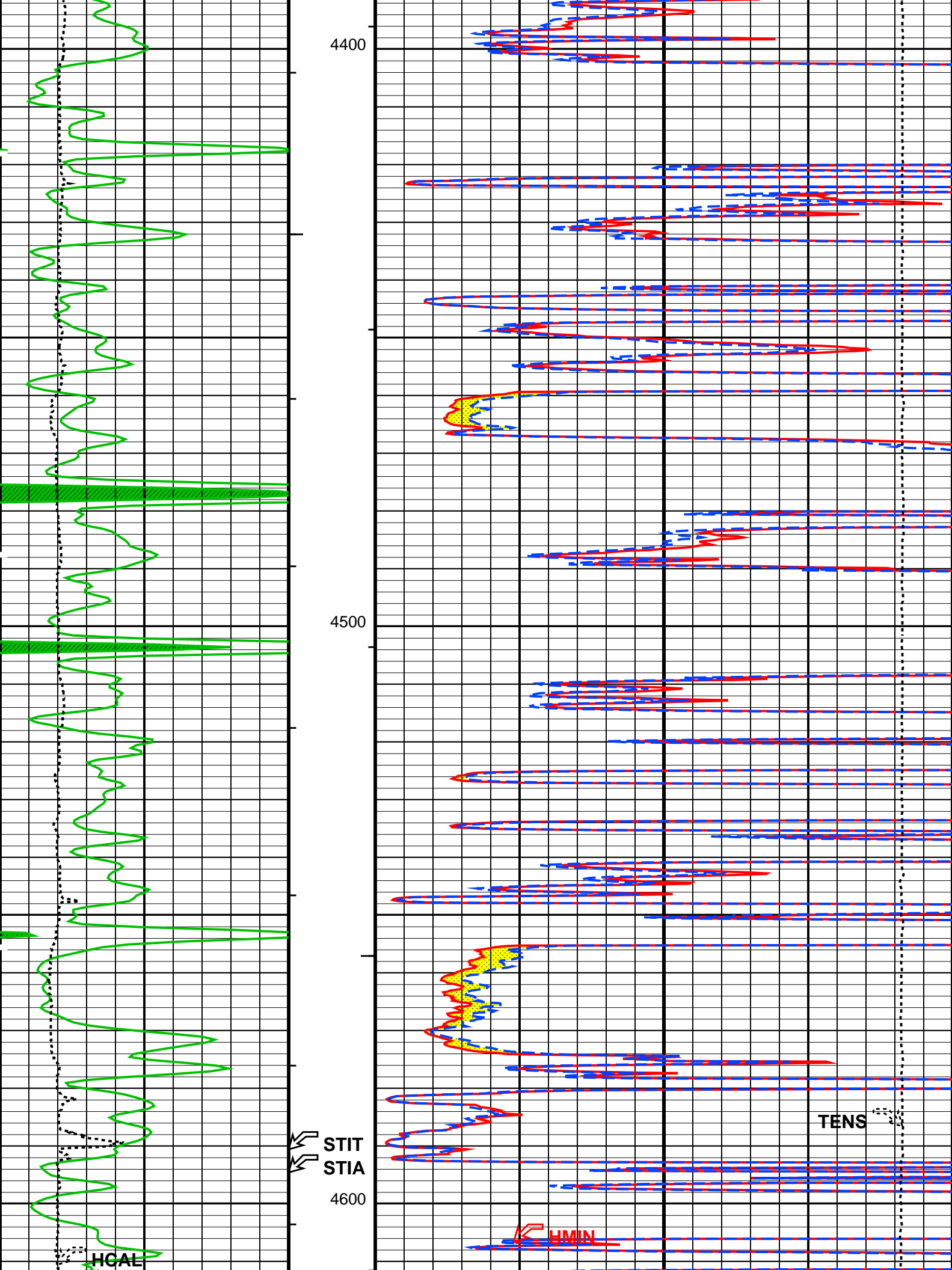


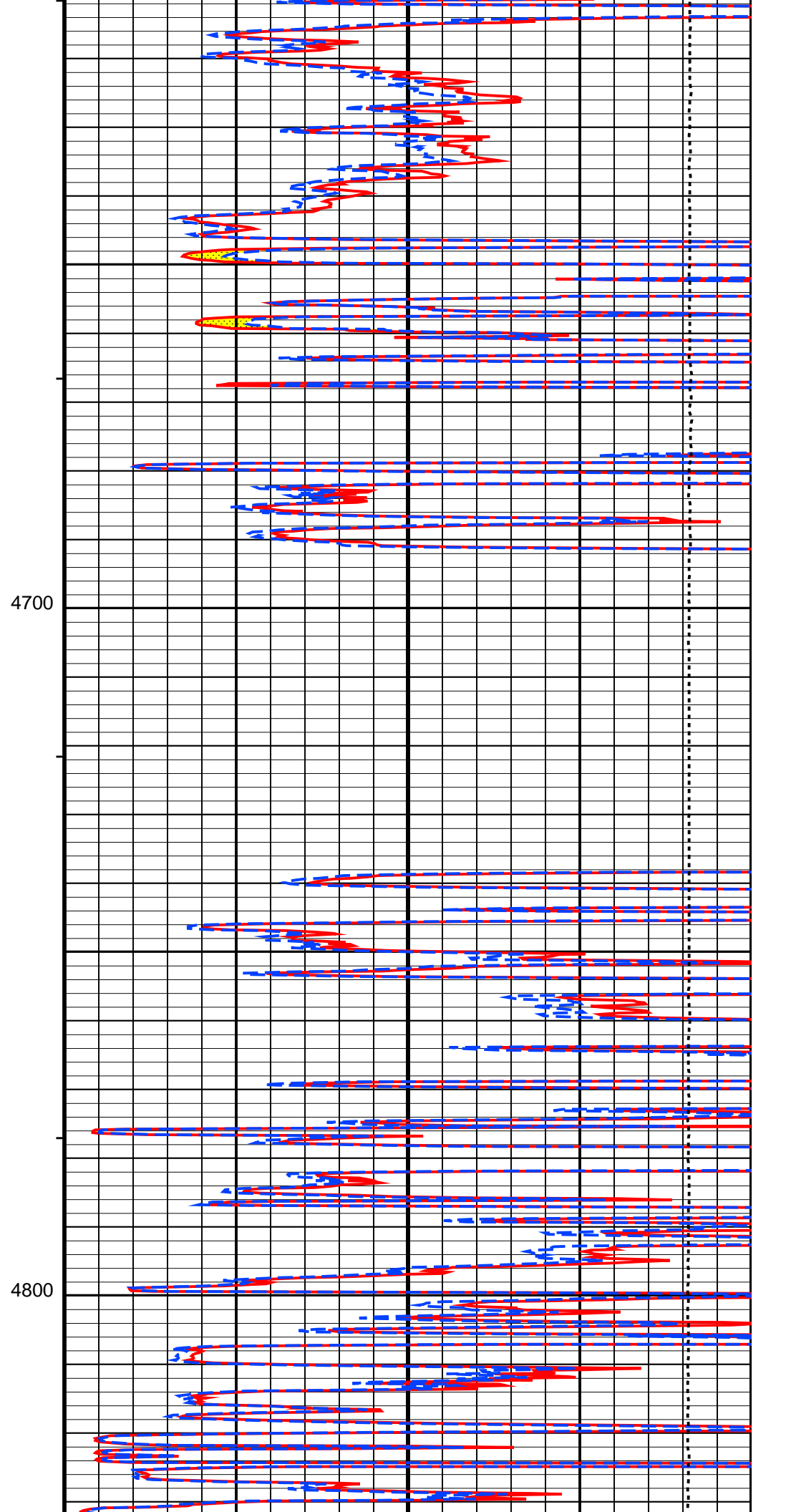
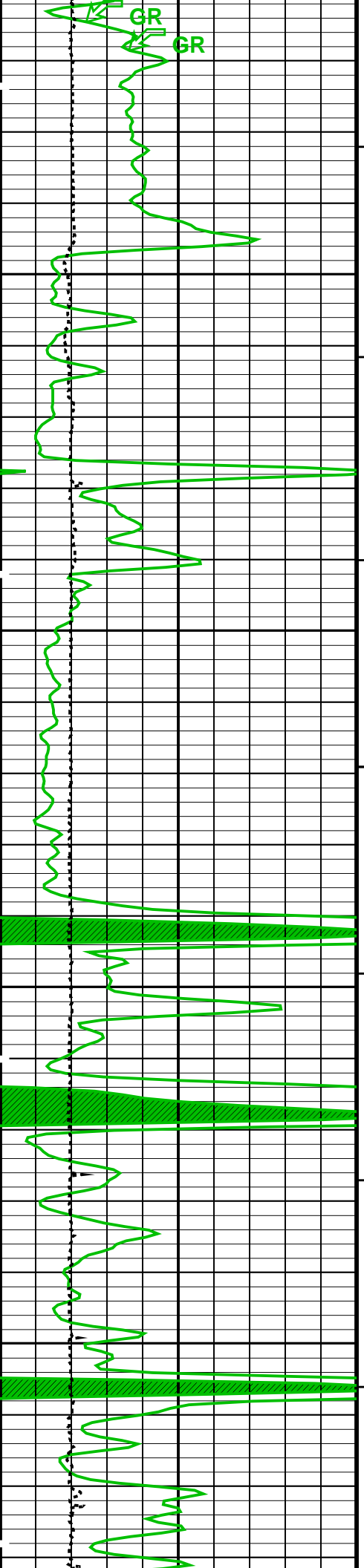
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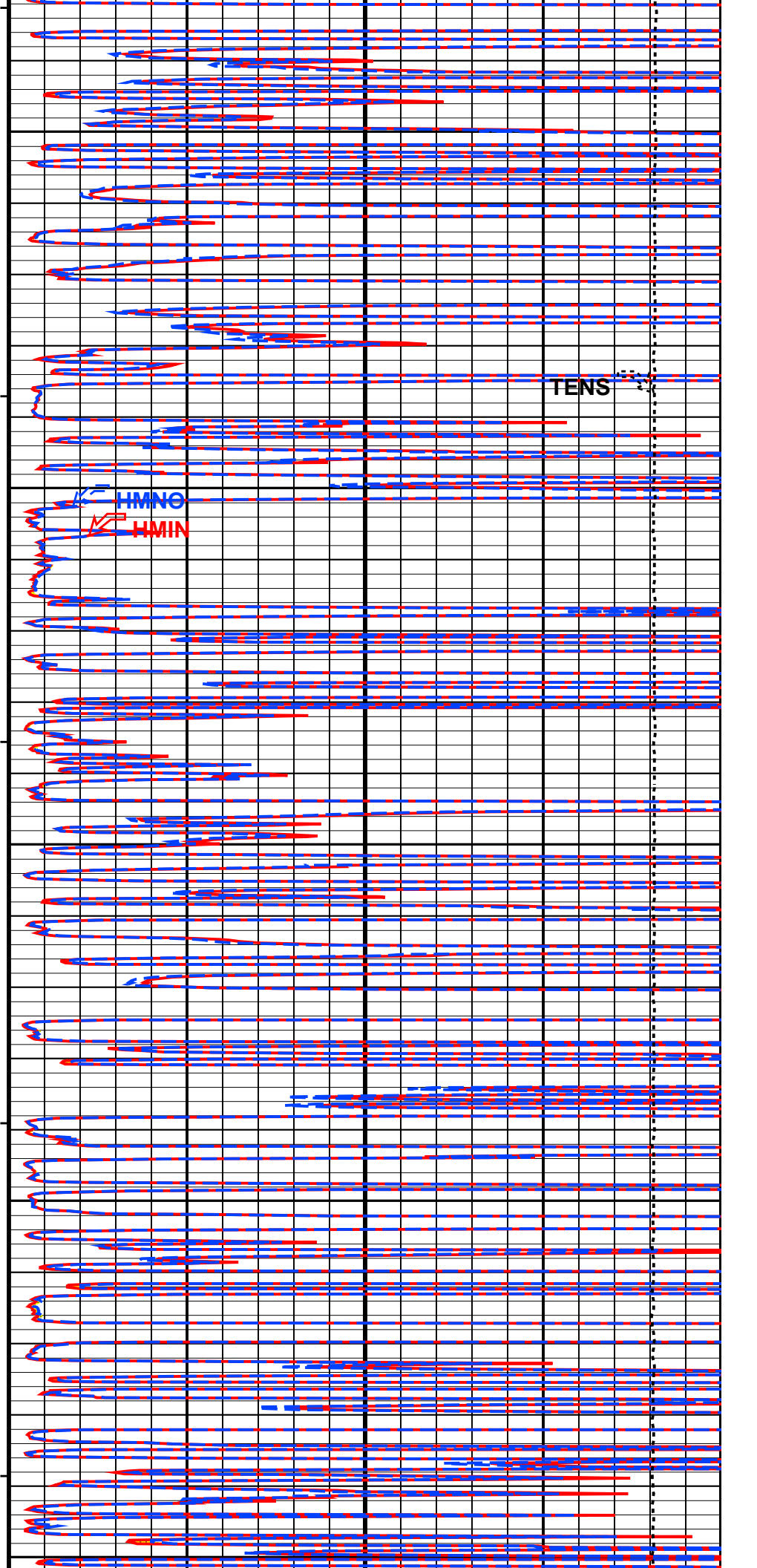
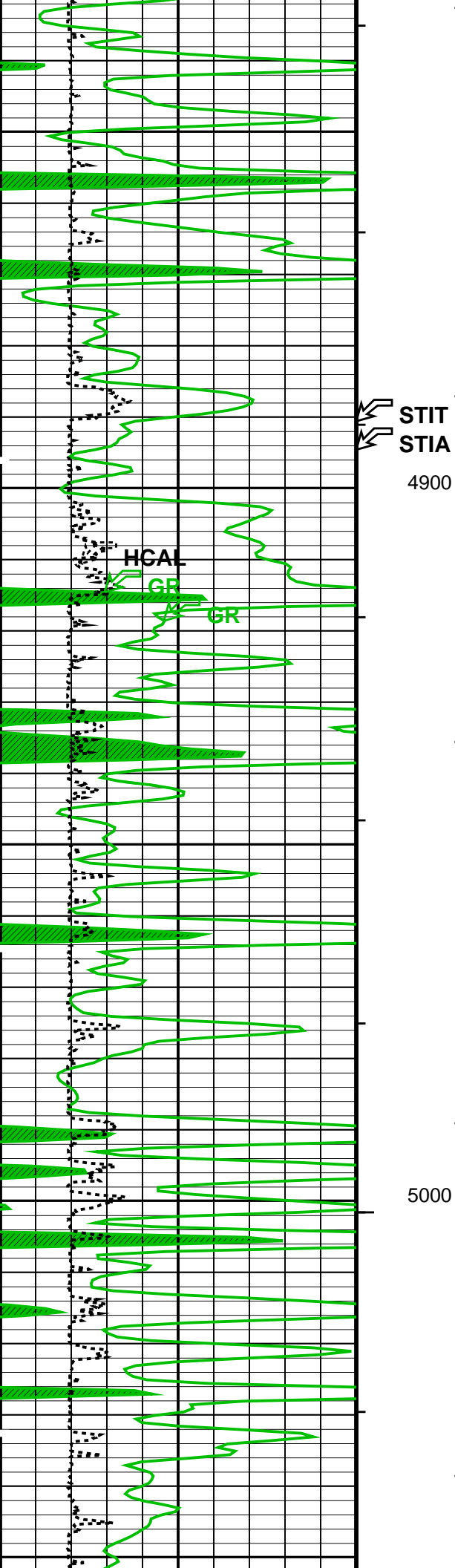
STIT
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4300

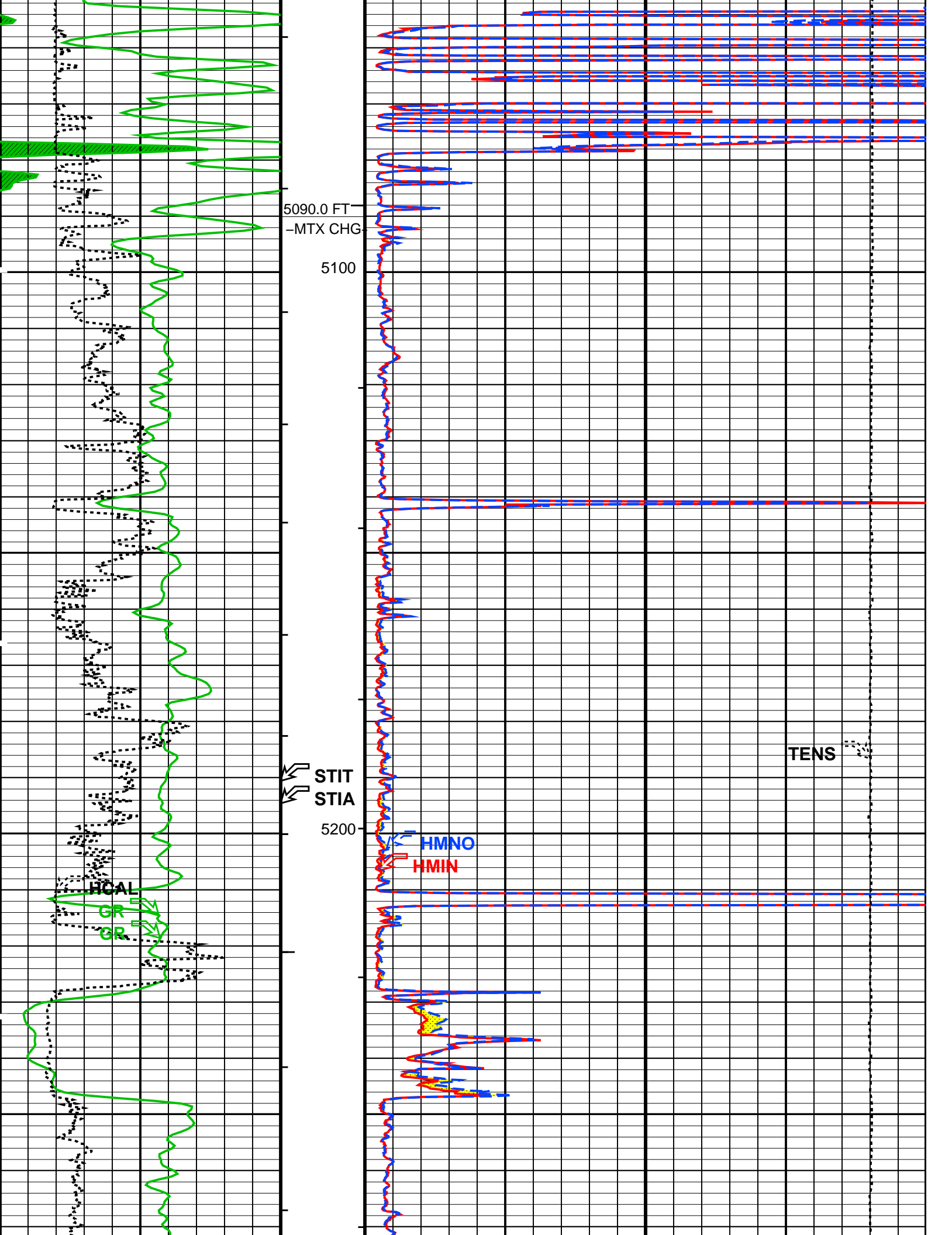
TENS

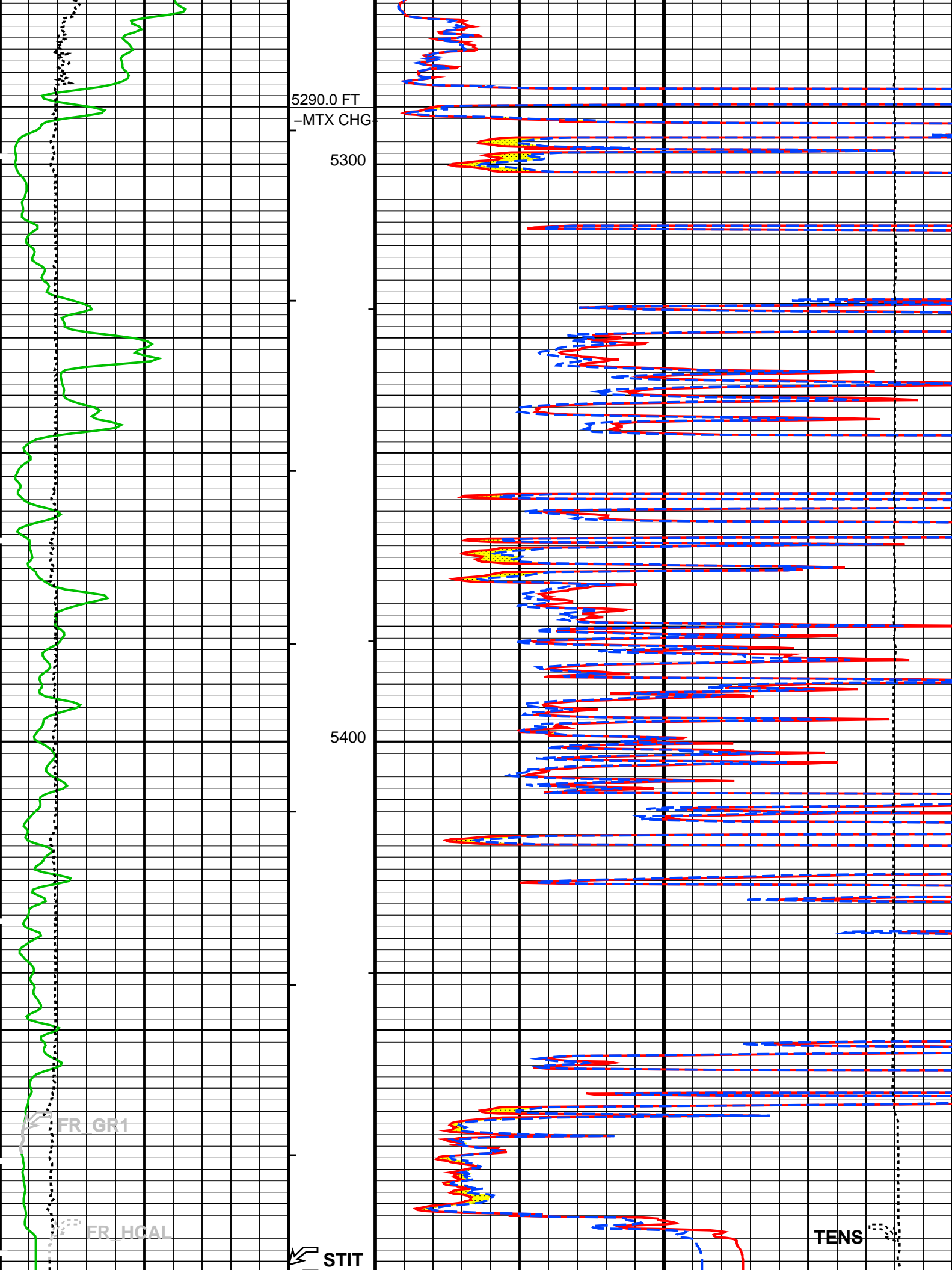


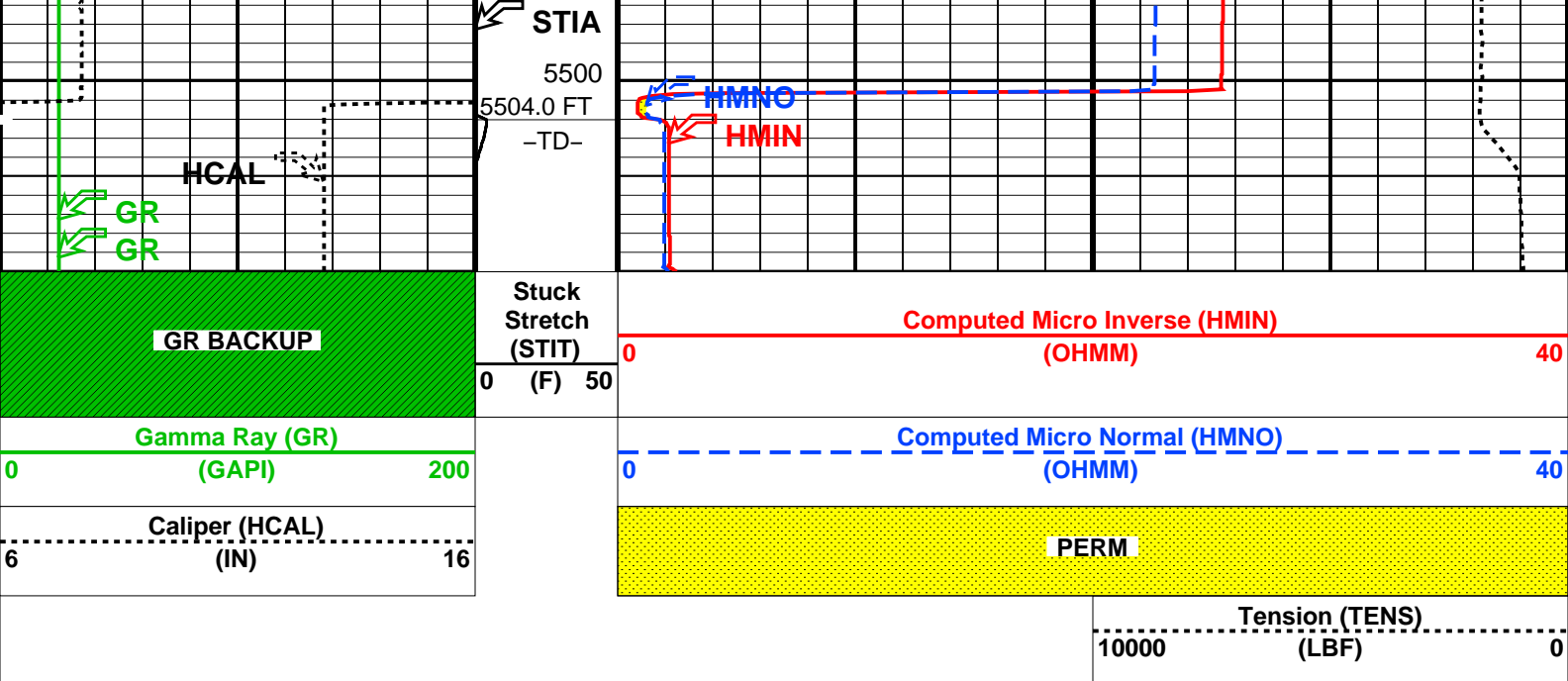












PIP SUMMARY

- └ Integrated Hole Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
 - └ Integrated Cement Volume Minor Pip Every 10 F3
 - └ Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
MPOF	HILTB-CTS: High resolution Integrated Logging Tool-CTS MCFL Processing Operation Mode	ON
FCD	HOLEV: Integrated Hole/Cement Volume	5.5 IN
HVCS	Future Casing (Outer) Diameter	AUTOMATIC
STI	Integrated Hole Volume Caliper Selection	
LBFR	STI: Stuck Tool Indicator	TDL
STKT	Trigger for MAXIS First Reading Label	2.5 FT
TDD	STI Stuck Threshold	5515.00 FT
TDL	Total Depth - Driller	5504.00 FT
	Total Depth - Logger	
	System and Miscellaneous	
BS	Bit Size	7.875 IN
DORL	Depth Offset for Repeat Analysis	0.0 FT
TD	Total Depth	5504 FT

Format: MLT Vertical Scale: 5" per 100'

Graphics File Created: 08-Feb-2010 05:59

OP System Version: 17C0-154

HILTB-CTS 17C0-154

Output DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_007LUP FN:6 PRODUCER 08-Feb-2010 05:59

Schlumberger

REPEAT ANALYSIS

Input DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_006PUP FN:5 PRODUCER 08-Feb-2010 05:58 5524.5 FT 4403.5 FT

Output DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_007LUP FN:6 PRODUCER 08-Feb-2010 05:59

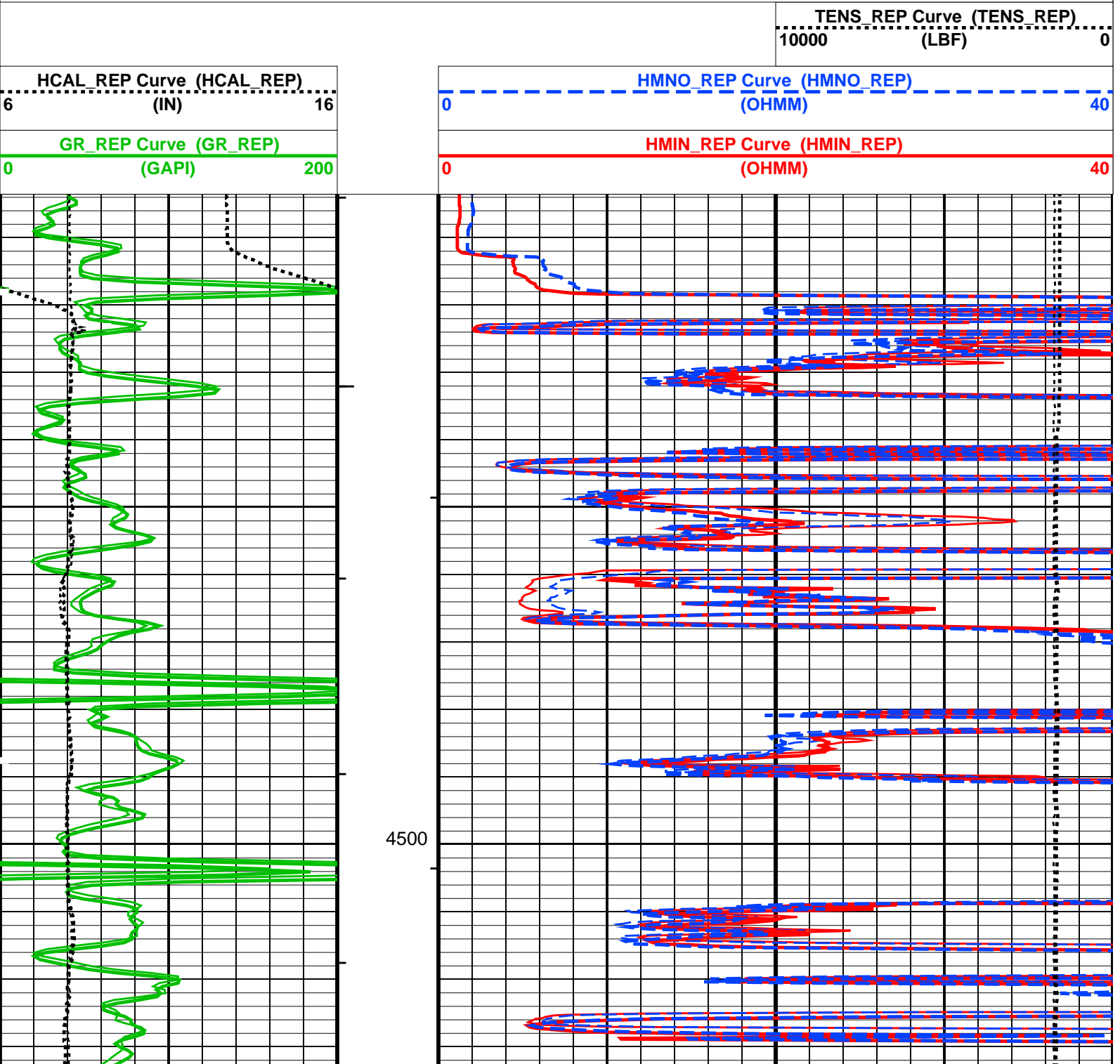
OP System Version: 17C0-154

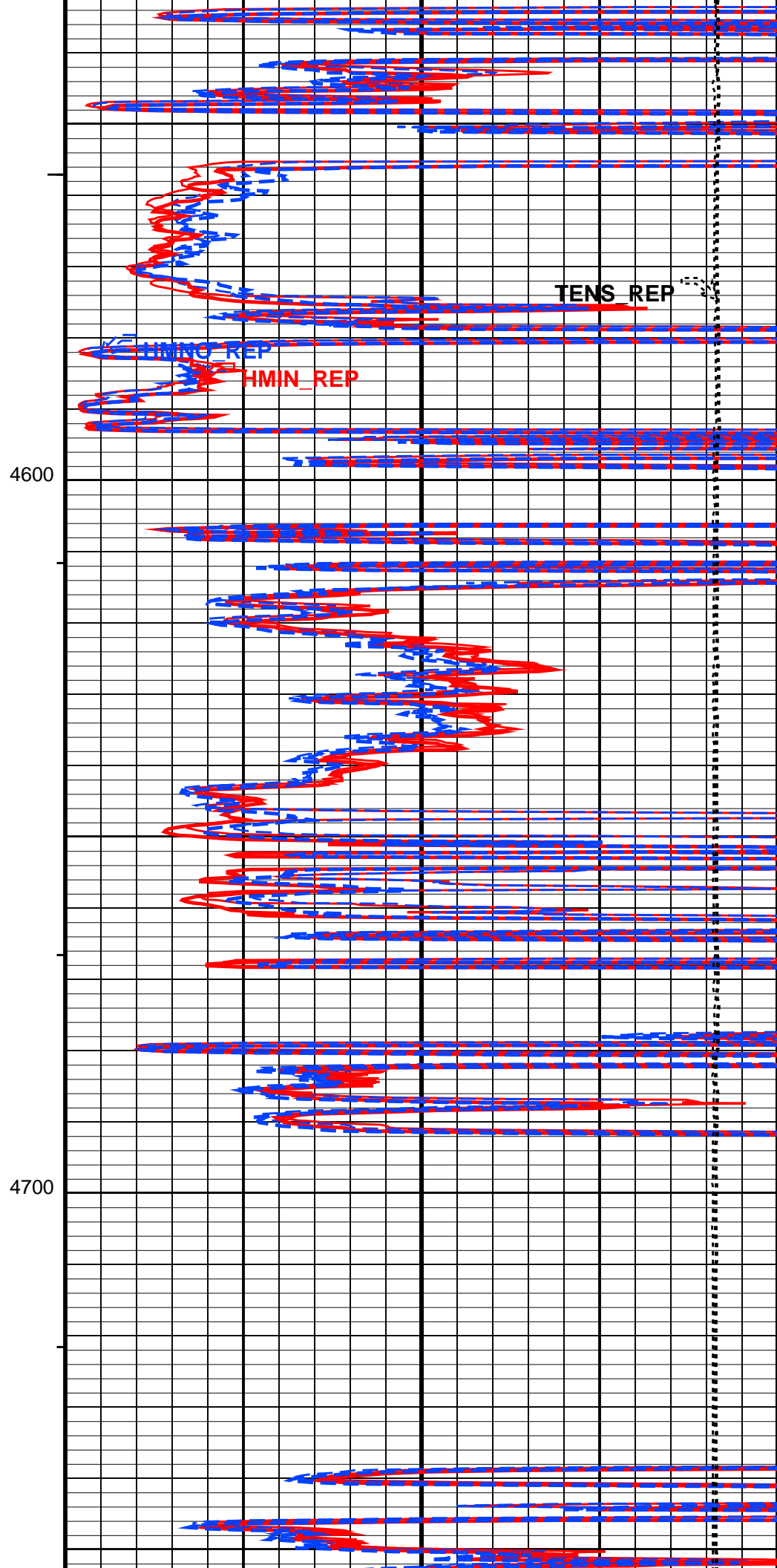
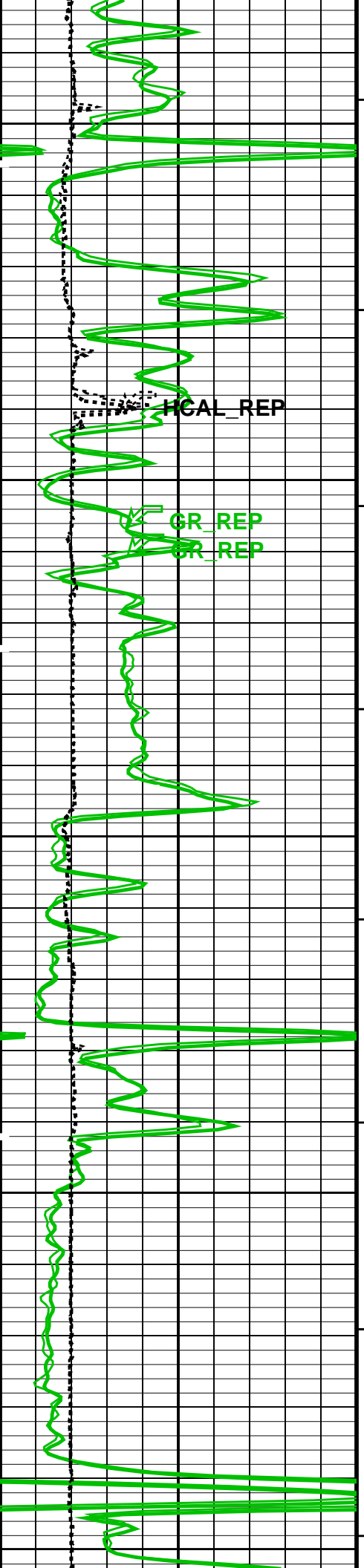
HILTB-CTS 17C0-154

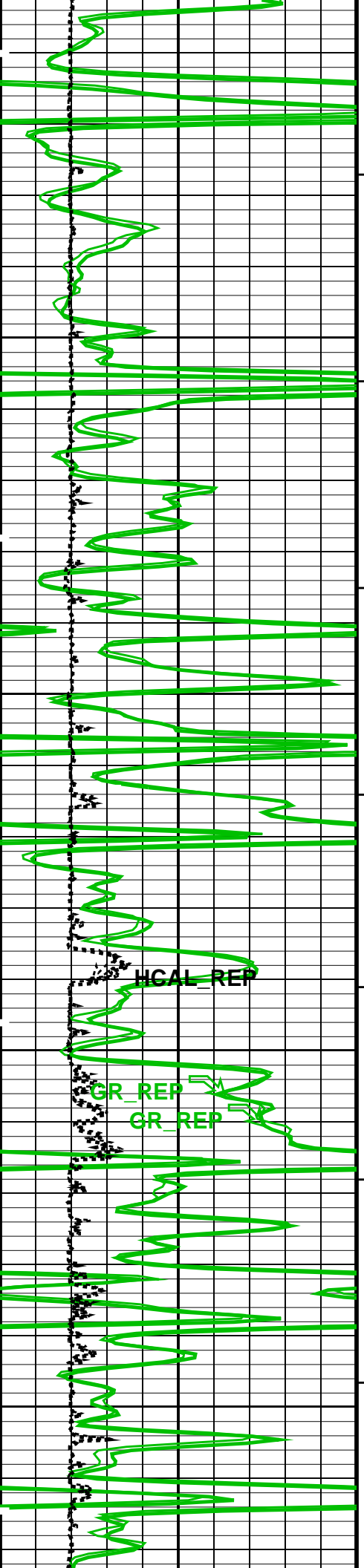
PIP SUMMARY

- └ Integrated Hole Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
 - └ Integrated Cement Volume Minor Pip Every 10 F3
 - └ Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S





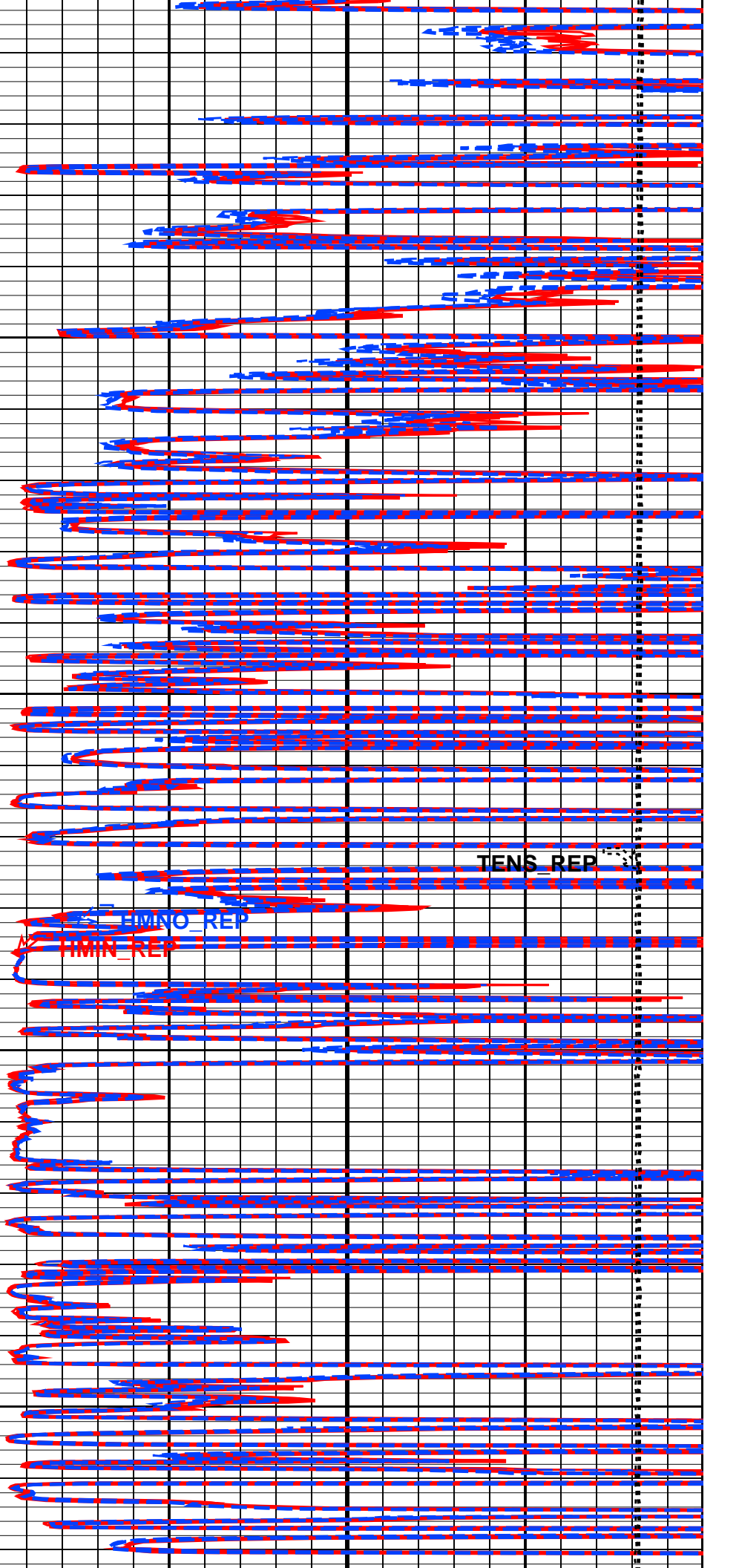


4800

4900

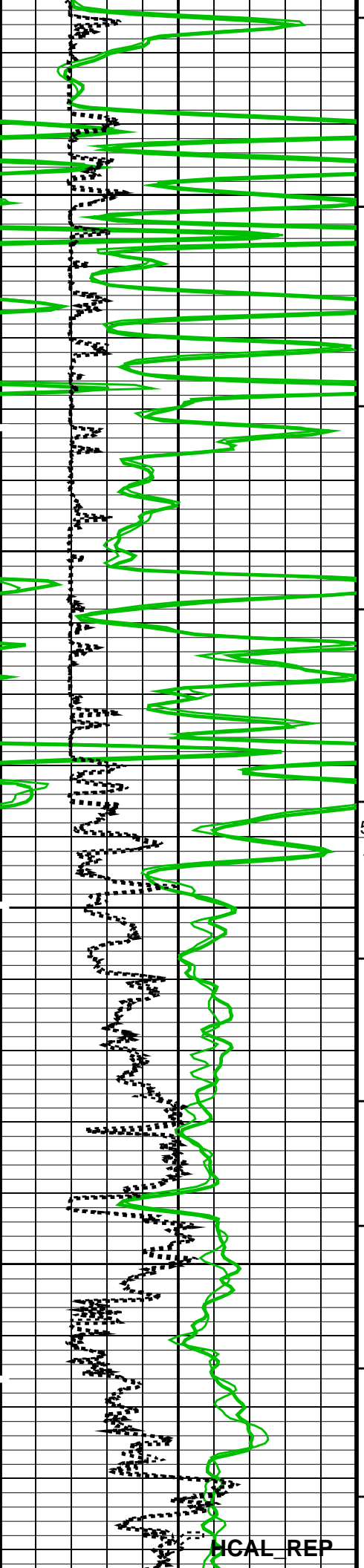
HGAL_REP

GR_REP
GR_REP



HMNO_REP
HMIN_REP

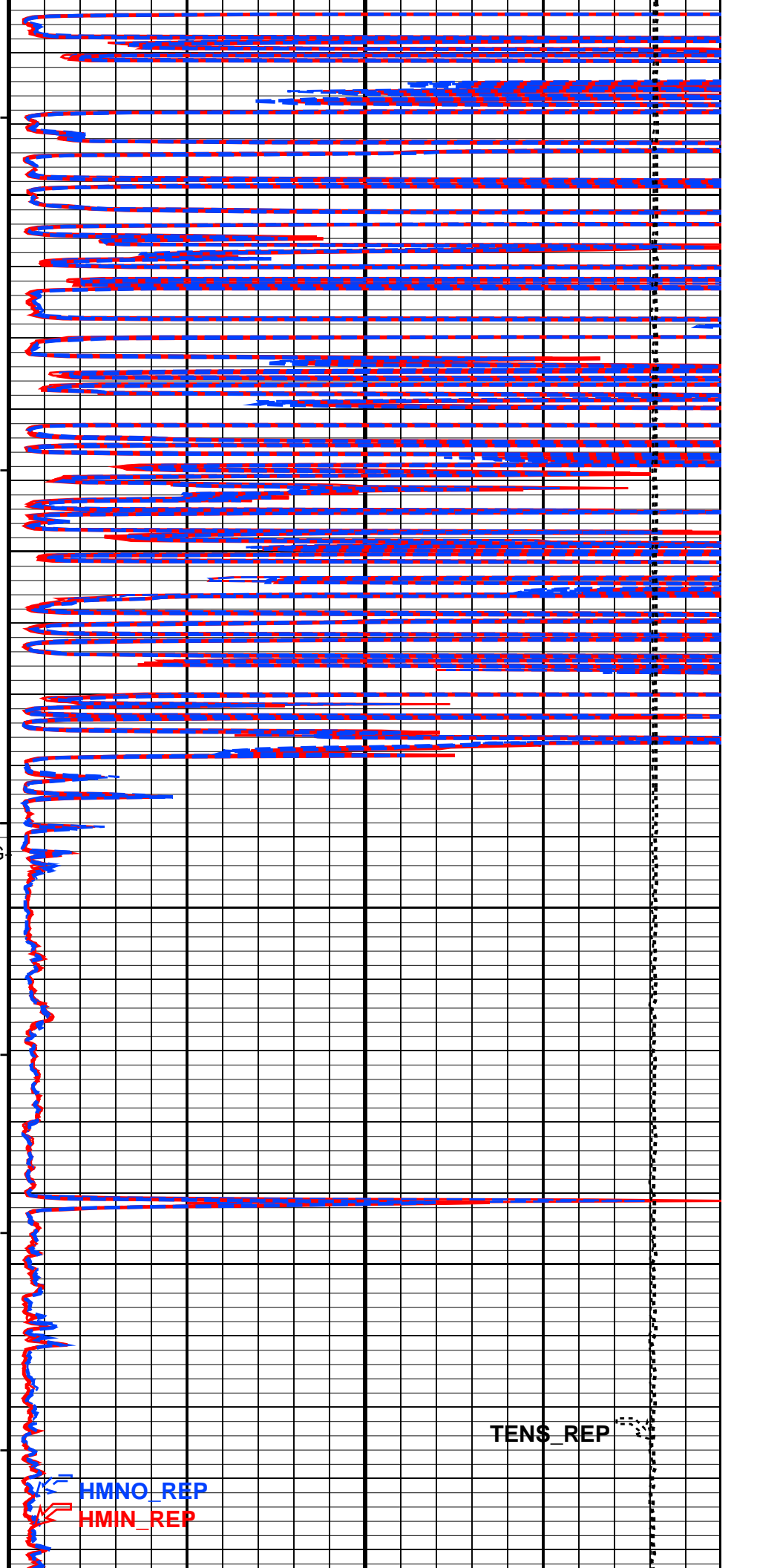
TENS_REP



5000

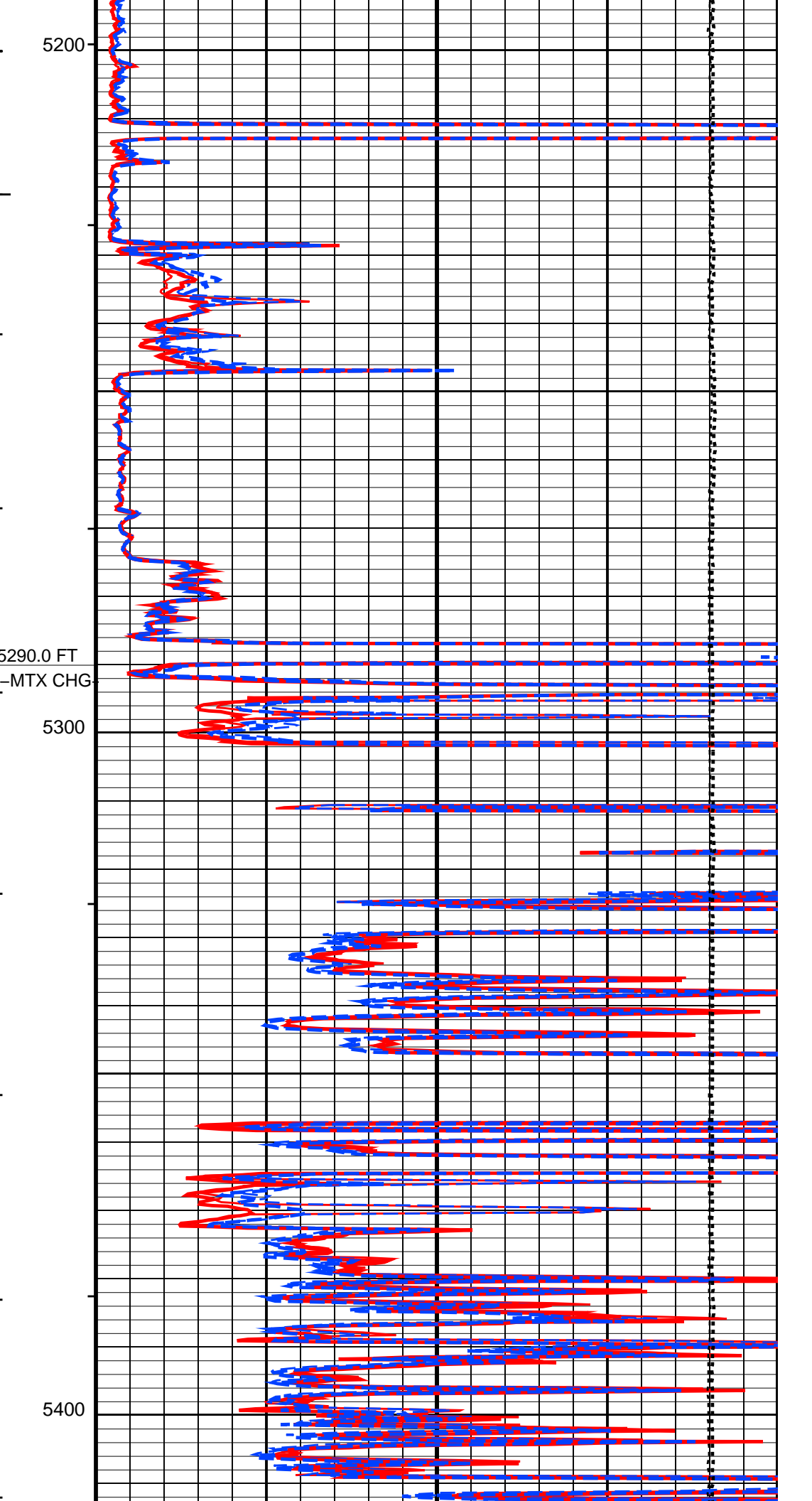
5090.0 FT
-MTX CHG

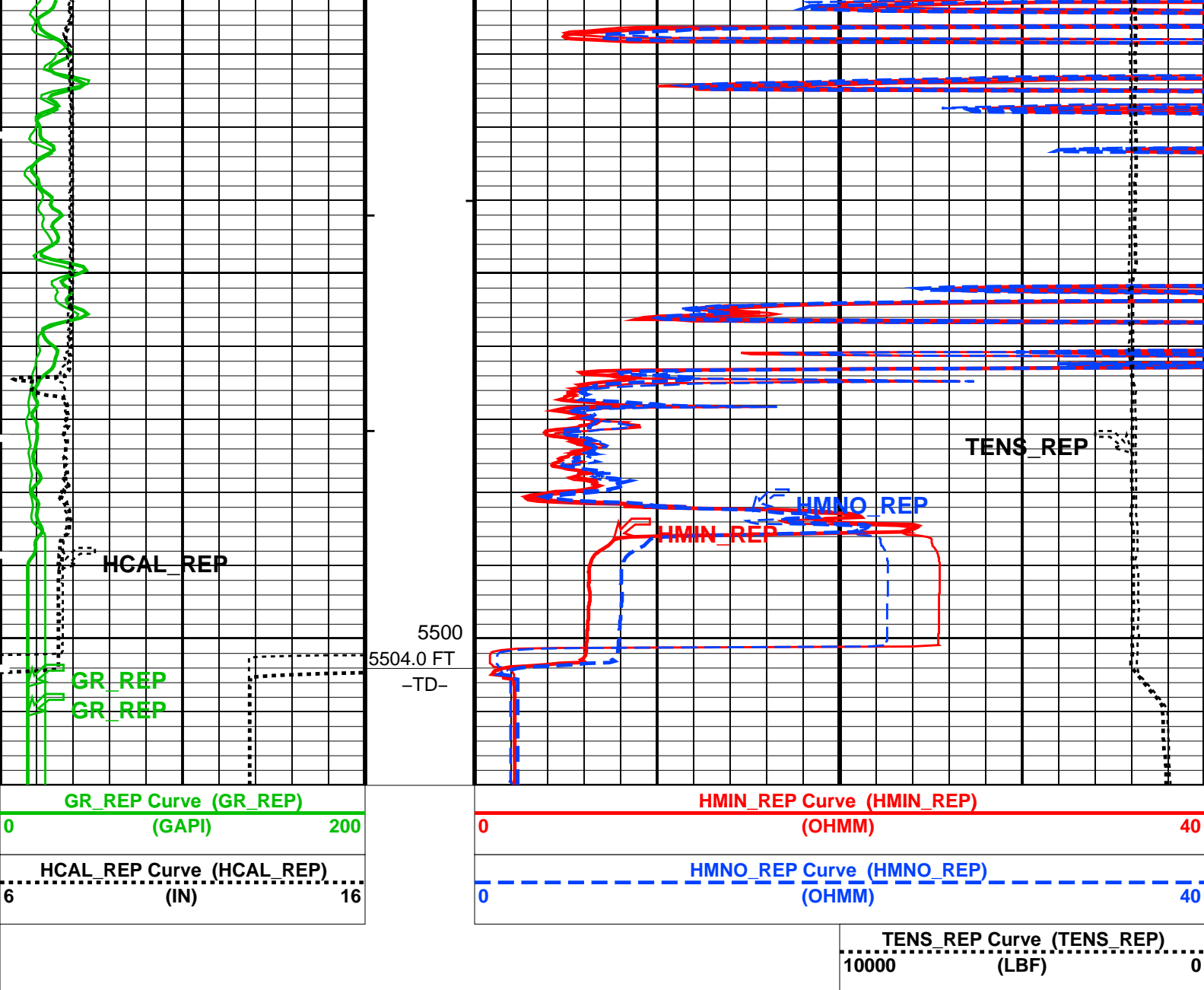
5100



TENS_REP

HMNO_REP
HMIN_REP





PIP SUMMARY

- └ Integrated Hole Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
 - └ Integrated Cement Volume Minor Pip Every 10 F3
 - └ Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
MPOF	HILTB-CTS: High resolution Integrated Logging Tool-CTS MCFL Processing Operation Mode	ON
FCD	HOLEV: Integrated Hole/Cement Volume	
HVCS	Future Casing (Outer) Diameter	5.5 IN
	Integrated Hole Volume Caliper Selection	AUTOMATIC
	System and Miscellaneous	
BS	Bit Size	7.875 IN
DORL	Depth Offset for Repeat Analysis	0.0 FT
TD	Total Depth	5504 FT

Format: MLT_REP Vertical Scale: 5" per 100'

Graphics File Created: 08-Feb-2010 05:59

OP System Version: 17C0-154

HILTB-CTS 17C0-154

Input DLIS Files

Output DLIS Files

Schlumberger

HIRES MICROLOG 10" = 100'

MAXIS Field Log

Input DLIS Files

Output DLIS Files

Integrated Hole/Cement Volume Summary

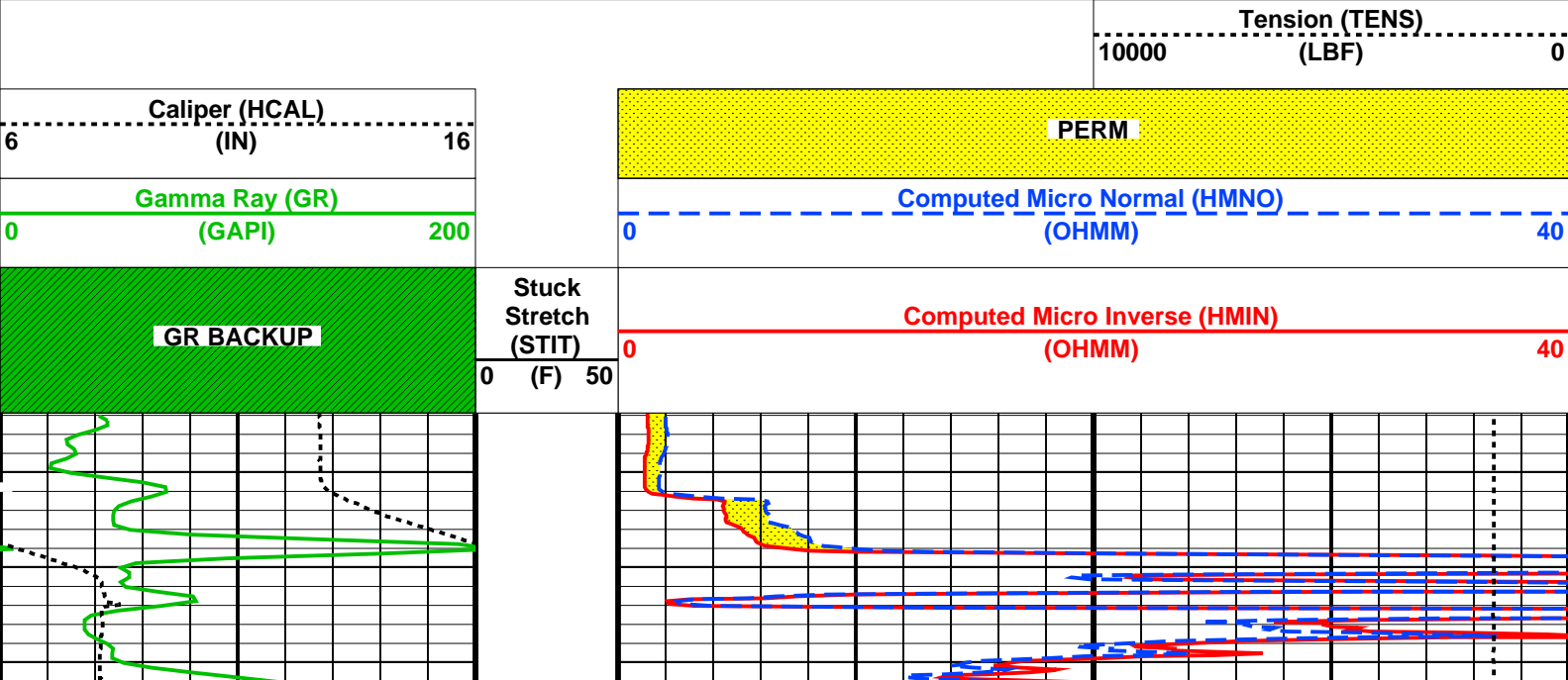
Hole Volume = 407.62 F3
Cement Volume = 226.06 F3 (assuming 5.50 IN casing O.D.)
Computed from 5504.0 FT to 4404.0 FT using data channel(s) HCAL

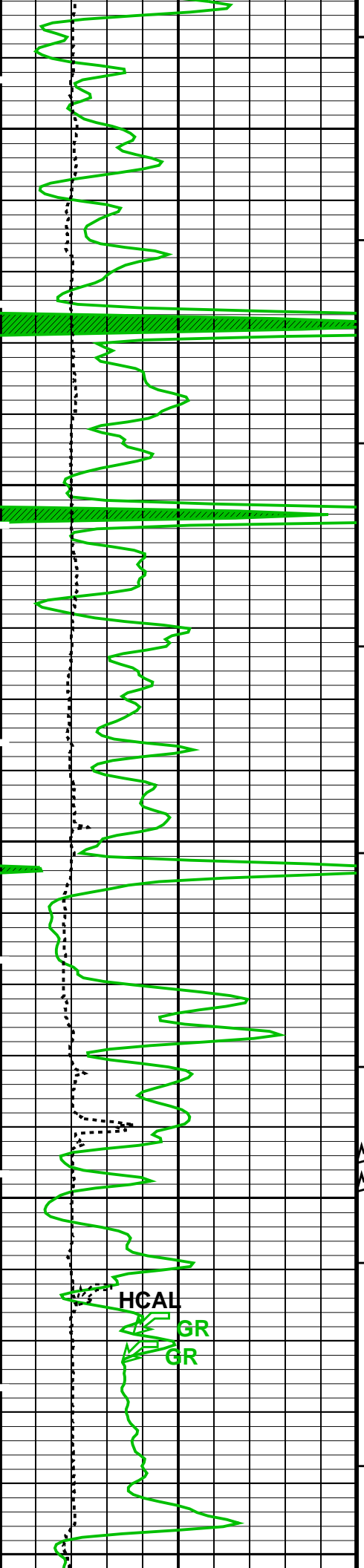
OP System Version: 17C0-154

PIP SUMMARY

- └ Integrated Hole Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
 - └ Integrated Cement Volume Minor Pip Every 10 F3
 - └ Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S



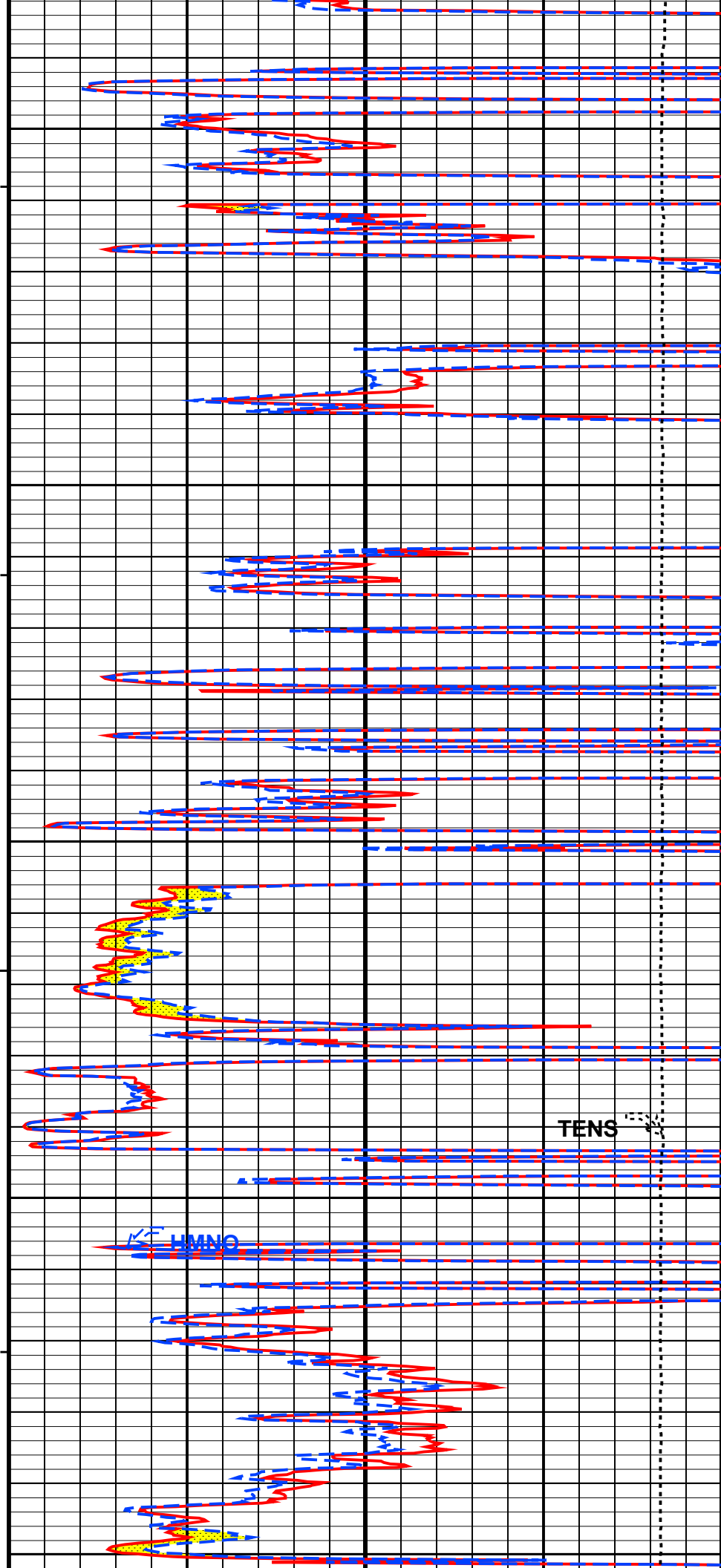


4500

STIT
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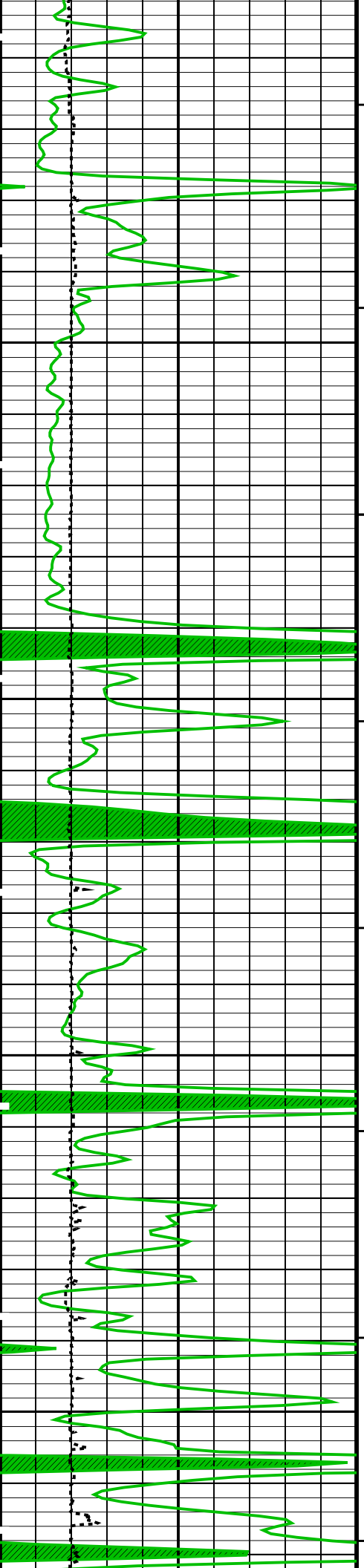
HCAL

GR
GR



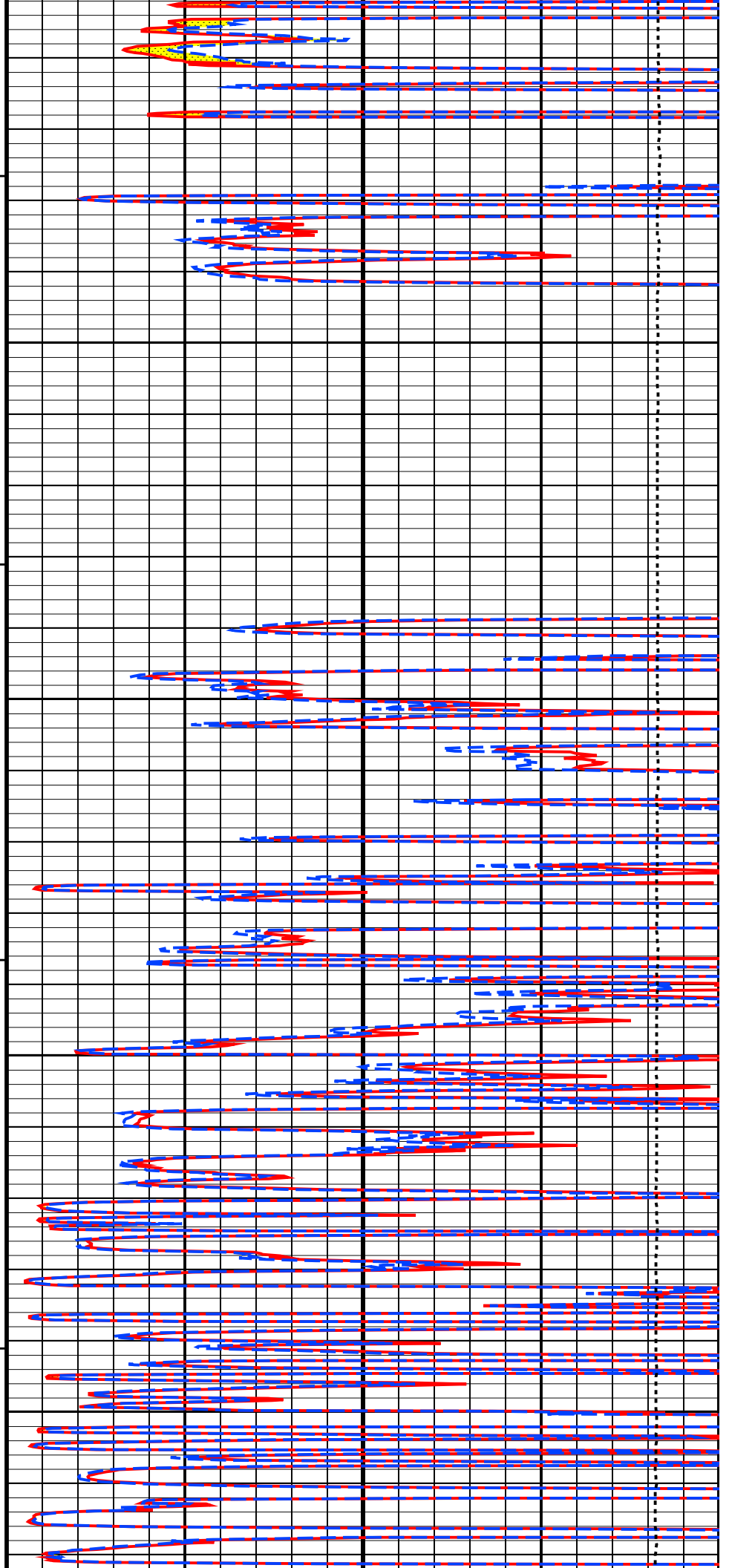
HMNO

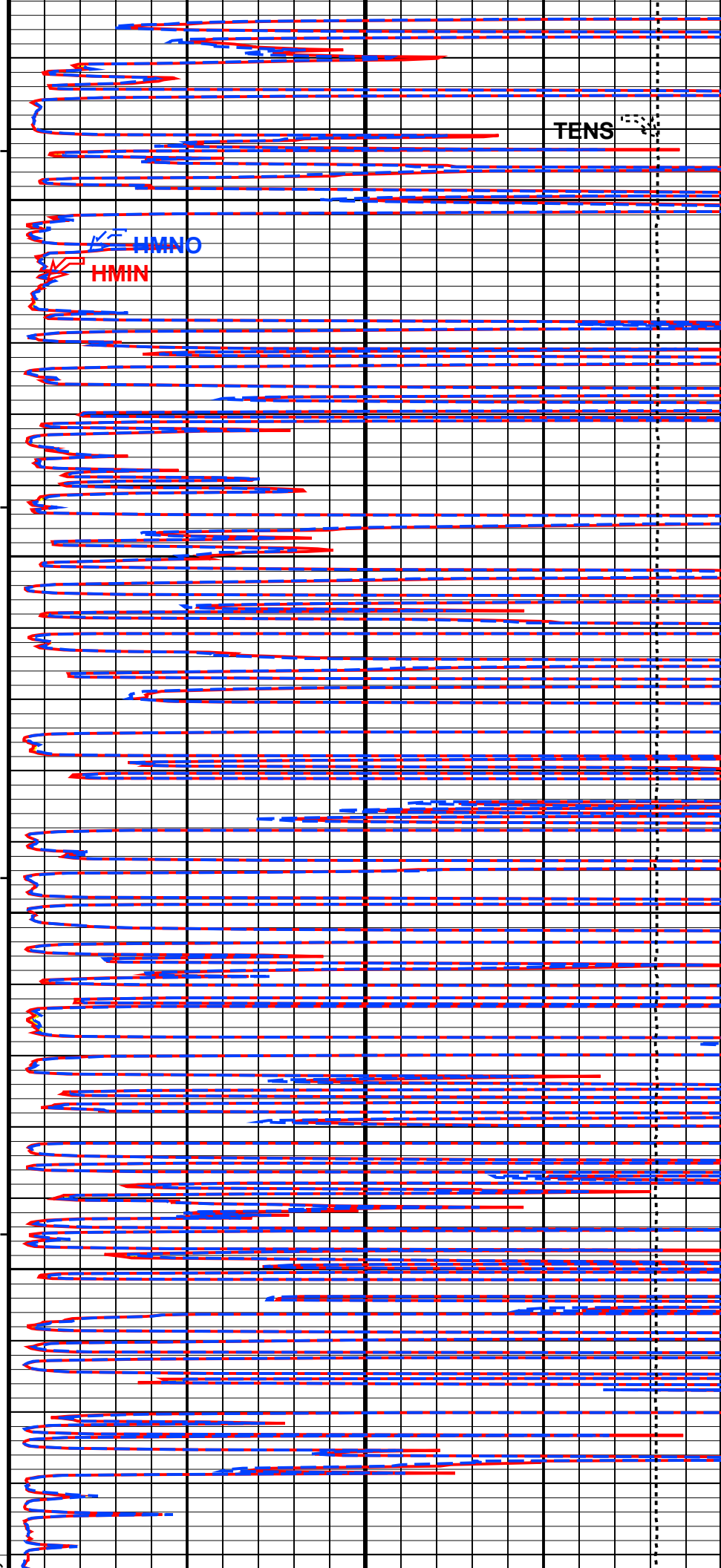
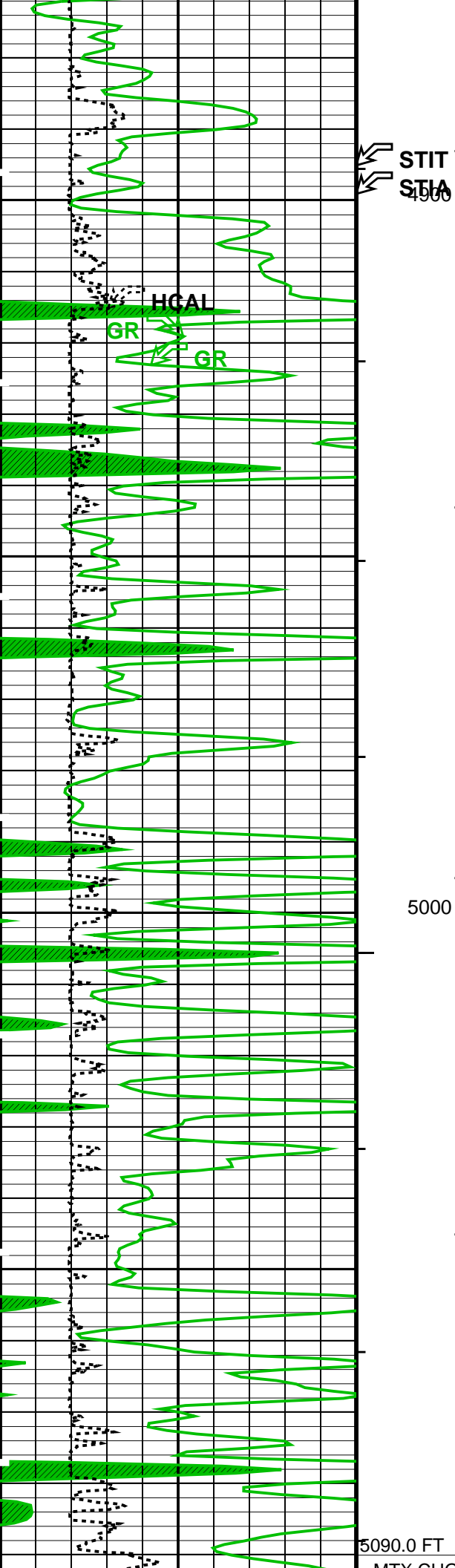
TENS

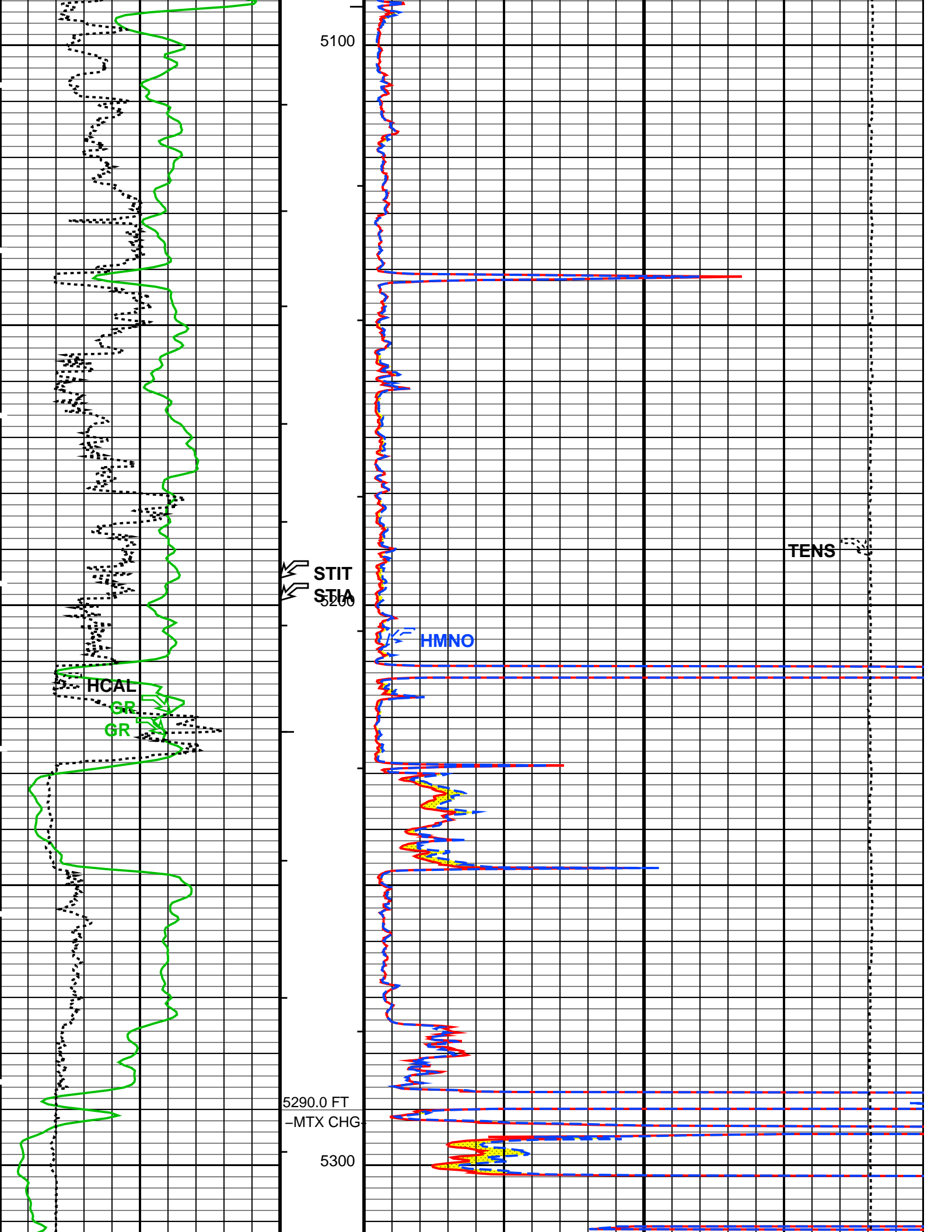


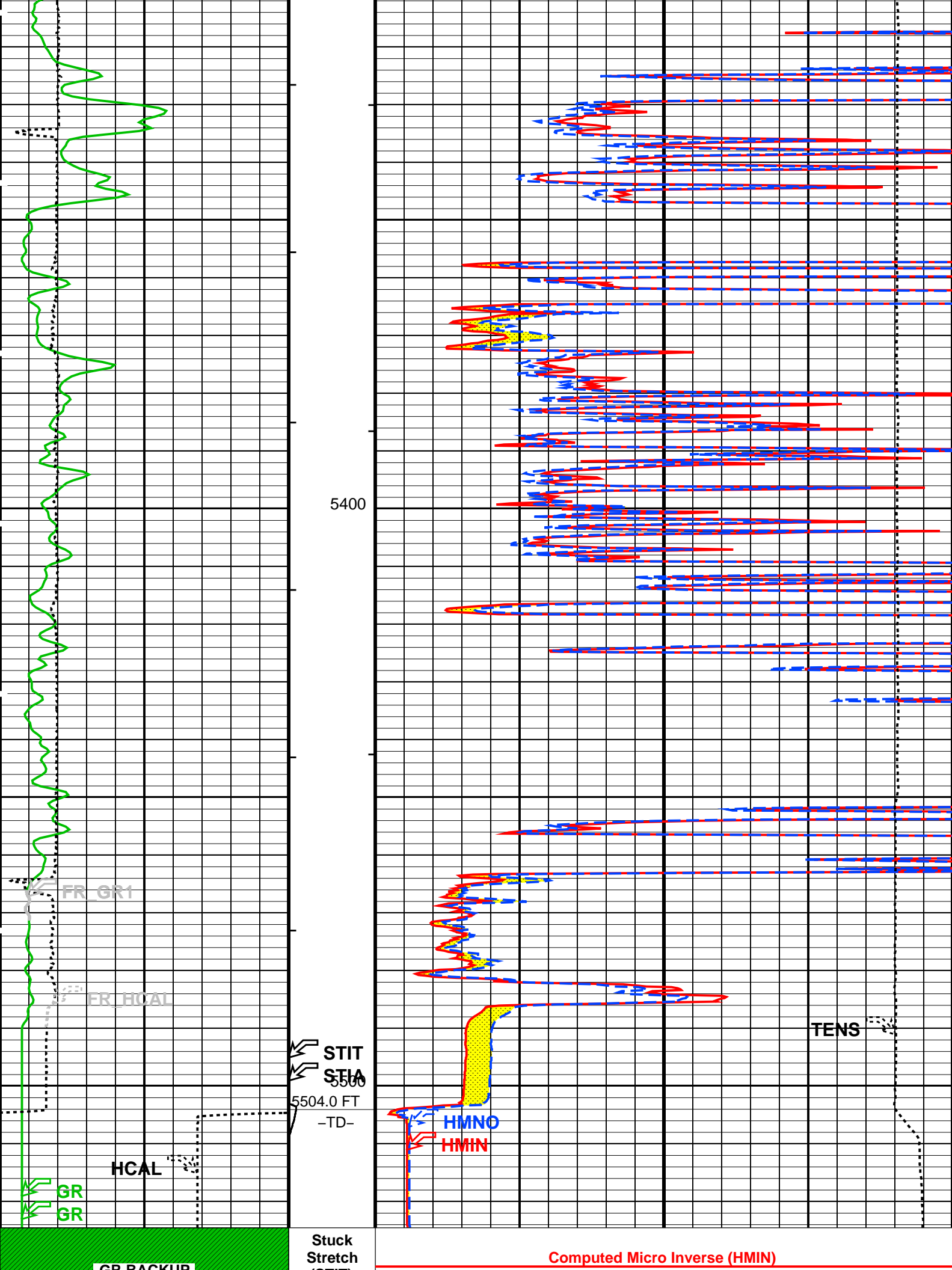
4700

4800









GR BACKUP	(STIT)	0	(F)	50	(OHMM)	40
Gamma Ray (GR)					Computed Micro Normal (HMNO)	
(GAPI)		0			(OHMM)	40
Caliper (HCAL)					PERM	
(IN)		6				
					Tension (TENS)	
					(LBF)	0

PIP SUMMARY						
└ Integrated Hole Volume Minor Pip Every 10 F3						
└ Integrated Hole Volume Major Pip Every 100 F3						
└ Integrated Cement Volume Minor Pip Every 10 F3						
└ Integrated Cement Volume Major Pip Every 100 F3						
Time Mark Every 60 S						

Parameters						
DLIS Name	Description				Value	
MPOF	HILTB-CTS: High resolution Integrated Logging Tool-CTS				ON	
	MCFL Processing Operation Mode					
	HOLEV: Integrated Hole/Cement Volume					
FCD	Future Casing (Outer) Diameter				5.5	IN
HVCS	Integrated Hole Volume Caliper Selection				AUTOMATIC	
	STI: Stuck Tool Indicator					
LBFR	Trigger for MAXIS First Reading Label				TDL	
STKT	STI Stuck Threshold				2.5	FT
TDD	Total Depth - Driller				5515.00	FT
TDL	Total Depth - Logger				5504.00	FT
	System and Miscellaneous					
BS	Bit Size				7.875	IN
DO	Depth Offset for Playback				4.0	FT
PP	Playback Processing				NORMAL	
TD	Total Depth				5504	FT

Format: MLT	Vertical Scale: 5" per 100'	Graphics File Created: 08-Feb-2010 05:58
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OP System Version: 17C0-154						
HILTB-CTS	17C0-154					

Input DLIS Files						
DEFAULT	AIT_TLD_MCFL_CNL_005LUP	FN:4	PRODUCER	08-Feb-2010 05:17	5520.0 FT	4399.2 FT
Output DLIS Files						
DEFAULT	AIT_TLD_MCFL_CNL_006PUP	FN:5	PRODUCER	08-Feb-2010 05:58		



BEFORE CALIBRATIONS

MAXIS Field Log						
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Calibration and Check Summary						
Measurement	Nominal	Master	Before	After	Change	Limit
						Units

High resolution Integrated Logging Tool–CTS Wellsite Calibration – Electronics Calibration Check – Thru Cal Mag. & Phase

Master: 30–Nov–2009 14:59 Before: 7–Feb–2010 21:47

Thru Cal Magnitude – 0	0	0.6193	0.6206	N/A	N/A	N/A	V
Thru Cal Magnitude – 1	0	1.271	1.274	N/A	N/A	N/A	V
Thru Cal Magnitude – 2	0	0.6293	0.6303	N/A	N/A	N/A	V
Thru Cal Magnitude – 3	0	0.7116	0.7133	N/A	N/A	N/A	V
Thru Cal Magnitude – 4	0	1.330	1.333	N/A	N/A	N/A	V
Thru Cal Magnitude – 5	0	1.924	1.929	N/A	N/A	N/A	V
Thru Cal Magnitude – 6	0	1.927	1.932	N/A	N/A	N/A	V
Thru Cal Magnitude – 7	0	1.353	1.359	N/A	N/A	N/A	V
Phase – 0	0	68.36	69.82	N/A	N/A	N/A	DEG
Phase – 1	0	67.36	68.84	N/A	N/A	N/A	DEG
Phase – 2	0	63.29	64.81	N/A	N/A	N/A	DEG
Phase – 3	0	62.43	63.94	N/A	N/A	N/A	DEG
Phase – 4	0	55.68	57.25	N/A	N/A	N/A	DEG
Phase – 5	0	53.53	55.15	N/A	N/A	N/A	DEG
Phase – 6	0	53.50	55.12	N/A	N/A	N/A	DEG
Phase – 7	0	48.00	50.00	N/A	N/A	N/A	DEG

High resolution Integrated Logging Tool–CTS Wellsite Calibration – Electronics Calibration Check – Auxilliary

Master: 30–Nov–2009 14:59 Before: 7–Feb–2010 21:47

Array Induction SPA Plus	990.5	992.6	991.8	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	–0.2184	–0.2081	N/A	N/A	N/A	MV
Array Induction Temperature PI	0.9150	0.9194	0.9185	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	–0.0002118	–0.0002118	N/A	N/A	N/A	V

High resolution Integrated Logging Tool–CTS Wellsite Calibration – Test Loop Gain Correction

Master: 30–Nov–2009 14:59

Test Loop Gain Magnitude – 0	0	1.013	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 1	0	1.015	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 2	0	1.016	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 3	0	1.012	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 4	0	0.9923	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 5	0	0.9870	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 6	0	0.9920	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 7	0	1.003	N/A	N/A	N/A	N/A	V
Phase – 0	0	–2.469	N/A	N/A	N/A	N/A	DEG
Phase – 1	0	–0.1516	N/A	N/A	N/A	N/A	DEG
Phase – 2	0	0.9347	N/A	N/A	N/A	N/A	DEG
Phase – 3	0	0.1802	N/A	N/A	N/A	N/A	DEG
Phase – 4	0	0.1003	N/A	N/A	N/A	N/A	DEG
Phase – 5	0	–0.09392	N/A	N/A	N/A	N/A	DEG
Phase – 6	0	0.2377	N/A	N/A	N/A	N/A	DEG
Phase – 7	0	–0.1620	N/A	N/A	N/A	N/A	DEG

High resolution Integrated Logging Tool–CTS Wellsite Calibration – Sonde Error Correction

Master: 30–Nov–2009 14:59

R Sonde Error Correction – 0	0	–76.56	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 1	0	170.5	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 2	0	110.7	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 3	0	61.12	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 4	0	24.14	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 5	0	14.16	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 6	0	9.674	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 7	0	–1.714	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 0	0	–228.6	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 1	0	141.0	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 2	0	–31.72	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 3	0	–44.12	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 4	0	2.293	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 5	0	17.99	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 6	0	–4.867	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 7	0	–0.3559	N/A	N/A	N/A	N/A	MM/M

High resolution Integrated Logging Tool–CTS Wellsite Calibration – Mud Gain Correction

Master: 30–Nov–2009 14:59

Coarse – Mag, Real, Imag – 0	0	1.073	N/A	N/A	N/A	N/A	
Coarse – Mag, Real, Imag – 1	0	1.073	N/A	N/A	N/A	N/A	
Coarse – Mag, Real, Imag – 2	0	1.073	N/A	N/A	N/A	N/A	
Fine – Mag, Real, Imag – 0	0	1.072	N/A	N/A	N/A	N/A	
Fine – Mag, Real, Imag – 1	0	1.072	N/A	N/A	N/A	N/A	
Fine – Mag, Real, Imag – 2	0	1.072	N/A	N/A	N/A	N/A	

High resolution Integrated Logging Tool–CTS Wellsite Calibration – Stab Measurement Summary

Before: 7–Feb–2010 21:50

BS Window Ratio	0.7396	N/A	0.7401	N/A	N/A	N/A	
BS Window Sum	10750	N/A	10720	N/A	N/A	N/A	CPS
SS Window Ratio	0.4734	N/A	0.4723	N/A	N/A	N/A	
SS Window Sum	10230	N/A	10190	N/A	N/A	N/A	CPS
LS Window Ratio	0.2960	N/A	0.2985	N/A	N/A	N/A	
LS Window Sum	1161	N/A	1155	N/A	N/A	N/A	CPS

High resolution Integrated Logging Tool–CTS Wellsite Calibration – Photo–multiplier High Voltages Calibrations							
Before: 7–Feb–2010 21:50							
BS PM High Voltage (Command)	1456	N/A	1510	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1782	N/A	1786	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1906	N/A	1905	N/A	N/A	N/A	V
High resolution Integrated Logging Tool–CTS Wellsite Calibration – Crystal Quality Resolutions Calibration							
Before: 7–Feb–2010 21:50							
BS Crystal Resolution	10.98	N/A	11.19	N/A	N/A	N/A	%
SS Crystal Resolution	11.17	N/A	11.26	N/A	N/A	N/A	%
LS Crystal Resolution	9.875	N/A	9.898	N/A	N/A	N/A	%
High resolution Integrated Logging Tool–CTS Wellsite Calibration – MCFL Calibration							
Before: 7–Feb–2010 21:50							
Raw B0 Resistivity	3875	N/A	3857	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3810	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3825	N/A	N/A	N/A	OHMM
High resolution Integrated Logging Tool–CTS Wellsite Calibration – HILT Caliper Calibration							
Before: 7–Feb–2010 21:45							
HILT Caliper Zero Measurement	8.000	N/A	8.596	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	12.76	N/A	N/A	N/A	IN
High resolution Integrated Logging Tool–CTS Wellsite Calibration – Detector Calibration							
Before: 7–Feb–2010 21:46							
Gamma Ray Background	30.00	N/A	106.0	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkgd)	165.0	N/A	180.3	N/A	N/A	15.00	GAPI
High resolution Integrated Logging Tool–CTS Wellsite Calibration – Zero Measurement							
Master: 10–Jan–2010 18:05 Before: 7–Feb–2010 21:46							
CNTC Background	26.74	26.74	26.75	N/A	N/A	4.011	CPS
CFTC Background	26.83	26.83	26.97	N/A	N/A	4.025	CPS
High resolution Integrated Logging Tool–CTS Wellsite Calibration – Ratio Measurement							
Master: 10–Jan–2010 18:05							
Thermal Near Corr. (Tank)	5800	5204	N/A	N/A	N/A	N/A	CPS
Thermal Far Corr. (Tank)	2400	2196	N/A	N/A	N/A	N/A	CPS
CNTC/CFTC (Tank)	2.159	2.370	N/A	N/A	N/A	N/A	
High resolution Integrated Logging Tool–CTS Wellsite Calibration – Accelerometer Calibration							
Before: 8–Feb–2010 4:43							
Z–Axis Acceleration	32.19	N/A	32.07	N/A	N/A	N/A	F/S2
High resolution Integrated Logging Tool–CTS Master Calibration – Inversion results							
Master: 17–Jan–2010 13:20							
Rho Aluminum	2.596	2.602	--	--	--	--	G/C3
Rho Magnesium	1.686	1.687	--	--	--	--	G/C3
Pe Aluminum	2.570	2.556	--	--	--	--	
Pe Magnesium	2.650	2.631	--	--	--	--	
High resolution Integrated Logging Tool–CTS Master Calibration – Deviation Summary							
Master: 17–Jan–2010 13:20							
BS Average Deviation	0	0.1503	--	--	--	--	%
BS Max Deviation	0	0.2503	--	--	--	--	%
SS Average Deviation	0	0.3400	--	--	--	--	%
SS Max Deviation	0	1.741	--	--	--	--	%
LS Average Deviation	0	1.030	--	--	--	--	%
LS Max Deviation	0	2.342	--	--	--	--	%

The GLS–VJ source activity is weak.

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

NCT–B Water Temperature 57.6 DEGF.
Thermal Housing Size 3.362 IN.
NSR–F serial number 5068

High resolution Integrated Logging Tool–CTS / Equipment Identification

Primary Equipment:
Array Induction Tool – H AIT – H 397
Rm/SP Bottom Nose AHRM – A
Array Induction Sonde AHIS – BA 397

Array Induction Sonde
HILT high-Resolution Mechanical Sonde
HILT Rxo Gamma-ray Device
HILT Micro Cylindrically Focused Log Dev
GR Logging Source
HILT High Res. Control Cartridge











HRMS - B 1716
HRGD - B 1854
MCFL -
GLS - VJ 5416
HRCC - B 1906

















Auxiliary Equipment:







High resolution Integrated Logging Tool-CTS Wellsite Calibration							
Electronics Calibration Check - Thru Cal Mag. & Phase							
Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6193		0.6050	68.36		71.00
	Before	0.6206			69.82		
1	Master	1.271		1.270	67.36		70.00
	Before	1.274			68.84		
2	Master	0.6293		0.6230	63.29		66.00
	Before	0.6303			64.81		
3	Master	0.7116		0.7040	62.43		65.00
	Before	0.7133			63.94		
4	Master	1.330		1.337	55.68		59.00
	Before	1.333			57.25		
5	Master	1.924		1.955	53.53		57.00
	Before	1.929			55.15		
6	Master	1.927		1.955	53.50		57.00
	Before	1.932			55.12		
7	Master	1.353		1.415	48.00		53.00
	Before	1.359			50.00		
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom -60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)
Master: 30-Nov-2009 14:59				Before: 7-Feb-2010 21:47			

High resolution Integrated Logging Tool-CTS Wellsite Calibration							
Electronics Calibration Check – Auxilliary							
Phase	Array Induction SPA Plus MV		Value	Phase	Array Induction SPA Zero MV		Value
Master			992.6	Master			-0.2184
Before			991.8	Before			-0.2081
941.0 (Minimum)			990.5 (Nominal)	1040 (Maximum)			
-50.00 (Minimum)			0 (Nominal)	50.00 (Maximum)			
Phase	Array Induction Temperature Plus V		Value	Phase	Array Induction Temperature Zero V		Value
Master			0.9194	Master			-0.0002118
Before			0.9185	Before			-0.0002118
0.8700 (Minimum)			0.9150 (Nominal)	0.9600 (Maximum)			
-0.05000 (Minimum)			0 (Nominal)	0.05000 (Maximum)			
Master: 30-Nov-2009 14:59				Before: 7-Feb-2010 21:47			




High resolution Integrated Logging Tool-CTS Wellsite Calibration					
Test Loop Gain Correction					
Idx	Value	Test Loop Gain Magnitude V	Value	Phase DEG	
0	1.013		-2.469		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	
1	1.015		-0.1516		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	
2	1.016		0.9347		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	

3	1.012		0.1802			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
4	0.9923		0.1003			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
5	0.9870		-0.09392			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
6	0.9920		0.2377			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
7	1.003		-0.1620			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
Master: 30-Nov-2009 14:59						




High resolution Integrated Logging Tool—CTS Wellsite Calibration							
Sonde Error Correction							
Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M	
0	-76.56				-228.6		
		-231.0 (Minimum)	-56.00 (Nominal)	119.0 (Maximum)		-2250 (Minimum)	0 (Nominal) 2250 (Maximum)
1	170.5				141.0		
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		-625.0 (Minimum)	0 (Nominal) 625.0 (Maximum)
2	110.7				-31.72		
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		-350.0 (Minimum)	0 (Nominal) 350.0 (Maximum)
3	61.12				-44.12		
		39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)		-250.0 (Minimum)	0 (Nominal) 250.0 (Maximum)
4	24.14				2.293		
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		-63.00 (Minimum)	0 (Nominal) 63.00 (Maximum)
5	14.16				17.99		
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		-50.00 (Minimum)	0 (Nominal) 50.00 (Maximum)
6	9.674				-4.867		
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		-30.00 (Minimum)	0 (Nominal) 30.00 (Maximum)
7	-1.714				-0.3559		
		-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		-30.00 (Minimum)	0 (Nominal) 30.00 (Maximum)
Master: 30-Nov-2009 14:59							




High resolution Integrated Logging Tool–CTS Wellsite Calibration								
Mud Gain Correction								
Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag		
0	1.073				1.072			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	1.073				1.072			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	1.073				1.072			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
Master: 30–Nov–2009 14:59								




High resolution Integrated Logging Tool-CTS Wellsite Calibration									
Stab Measurement Summary									
Phase	BS Window Ratio			Value	Phase	SS Window Ratio			Value
Before				0.7401	Before				0.4723
	0.7026 (Minimum)	0.7396 (Nominal)	0.7765 (Maximum)			0.4497 (Minimum)	0.4734 (Nominal)	0.4970 (Maximum)	
					Before				0.2985
						0.2812 (Minimum)	0.2960 (Nominal)	0.3108 (Maximum)	



Phase	BS Window Sum	CPS	Value	Phase	SS Window Sum	CPS	Value	Phase	LS Window Sum	CPS	Value
Before			10720	Before			10190	Before			1155
			10220 (Minimum)				10750 (Nominal)				11290 (Maximum)
			9714 (Minimum)				10230 (Nominal)				10740 (Maximum)
			1103 (Minimum)				1161 (Nominal)				1219 (Maximum)

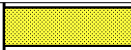

Before: 7-Feb-2010 21:50





High resolution Integrated Logging Tool—CTS 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			1510	Before			1786	Before			1905
	1356 (Minimum)	1456 (Nominal)	1556 (Maximum)		1682 (Minimum)	1782 (Nominal)	1882 (Maximum)		1806 (Minimum)	1906 (Nominal)	2006 (Maximum)
Before: 7-Feb-2010 21:50											




High resolution Integrated Logging Tool—CTS Wellsite Calibration											
Crystal Quality Resolutions Calibration											
Phase	BS Crystal Resolution %		Value	Phase	SS Crystal Resolution %		Value	Phase	LS Crystal Resolution %		Value
Before			11.19	Before			11.26	Before			9.898
	9.983 (Minimum)	10.98 (Nominal)	11.98 (Maximum)		10.17 (Minimum)	11.17 (Nominal)	12.17 (Maximum)		8.875 (Minimum)	9.875 (Nominal)	10.87 (Maximum)
Before: 7-Feb-2010 21:50											

High resolution Integrated Logging Tool-CTS Wellsite Calibration											
MCFL Calibration											
Phase	Raw B0 Resistivity OHMM		Value	Phase	Raw B1 Resistivity OHMM		Value	Phase	Raw B2 Resistivity OHMM		Value
Before			3857	Before			3810	Before			3825
	3565 (Minimum)	3875 (Nominal)	4185 (Maximum)		3524 (Minimum)	3830 (Nominal)	4136 (Maximum)		3524 (Minimum)	3830 (Nominal)	4136 (Maximum)
Before: 7-Feb-2010 21:50											


High resolution Integrated Logging Tool-CTS Wellsite Calibration							
HILT Caliper Calibration							
Phase	HILT Caliper Zero Measurement IN		Value	Phase	HILT Caliper Plus Measurement IN		Value
Before			8.596	Before			12.76
	6.000 (Minimum)	8.000 (Nominal)	10.00 (Maximum)		9.000 (Minimum)	12.00 (Nominal)	15.00 (Maximum)
Before: 7-Feb-2010 21:45							

















High resolution Integrated Logging Tool-CTS Wellsite Calibration							
Detector Calibration							
Phase	Gamma Ray Background GAPI		Value	Phase	Gamma Ray (Jig - Bkgd) GAPI		Value
Before			106.0	Before			180.3
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		157.1 (Minimum)	165.0 (Nominal)	206.3 (Maximum)
Before: 7-Feb-2010 21:46							





High resolution Integrated Logging Tool–CTS Wellsite Calibration								
Zero Measurement								
Phase	CNTC Background CPS		Value	Phase	CFTC Background CPS		Value	
Master			26.74	Master			26.83	
Before			26.75	Before			26.97	
5.000 (Minimum)			26.74 (Nominal)	5.000 (Minimum)			26.83 (Nominal)	40.00 (Maximum)
Master: 10–Jan–2010 18:05				Before: 7–Feb–2010 21:46				

















High resolution Integrated Logging Tool—CTS Wellsite Calibration											
Ratio Measurement											
Phase	Thermal Near Corr. (Tank) CPS		Value	Phase	Thermal Far Corr. (Tank) CPS		Value	Phase	CNTC/CFTC (Tank)		Value
Master			5204	Master			2196	Master			2.370
	4700 (Minimum)	5800 (Nominal)	6900 (Maximum)		1900 (Minimum)	2400 (Nominal)	2900 (Maximum)		2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)
Master: 10—Jan—2010 18:05											

















High resolution Integrated Logging Tool-CTS
Wellsite Calibration

Accelerometer Calibration		
Phase	Z-Axis Acceleration F/S2	Value
Before		32.07
	31.53 (Minimum)	32.19 (Nominal)
		32.84 (Maximum)
Before: 8-Feb-2010 4:43		







High resolution Integrated Logging Tool-CTS Master Calibration							
Electronics Calibration Check – Thru Cal Mag. & Phase							
Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6193		0.6050	68.36		71.00
1	Master	1.271		1.270	67.36		70.00
2	Master	0.6293		0.6230	63.29		66.00
3	Master	0.7116		0.7040	62.43		65.00
4	Master	1.330		1.337	55.68		59.00
5	Master	1.924		1.955	53.53		57.00
6	Master	1.927		1.955	53.50		57.00
7	Master	1.353		1.415	48.00		53.00
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom -60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)
Master: 30-Nov-2009 14:59							

High resolution Integrated Logging Tool-CTS Master Calibration					
Electronics Calibration Check – Auxilliary					
Phase	Array Induction SPA Plus MV	Value	Phase	Array Induction SPA Zero MV	Value
Master		992.6	Master		-0.2184
	941.0 (Minimum)	990.5 (Nominal)		-50.00 (Minimum)	0 (Nominal)
		1040 (Maximum)			50.00 (Maximum)
Phase	Array Induction Temperature Plus V	Value	Phase	Array Induction Temperature Zero V	Value
Master		0.9194	Master		-0.0002118
	0.8700 (Minimum)	0.9150 (Nominal)		-0.05000 (Minimum)	0 (Nominal)
		0.9600 (Maximum)			0.05000 (Maximum)
Master: 30-Nov-2009 14:59					

High resolution Integrated Logging Tool-CTS Master Calibration					
Test Loop Gain Correction					
Idx	Value	Test Loop Gain Magnitude V	Value	Phase DEG	
0	1.013		-2.469		
		0.9500 (Minimum)		-3.000 (Minimum)	
		1.000 (Nominal)		0 (Nominal)	
		1.050 (Maximum)		3.000 (Maximum)	
1	1.015		-0.1516		
		0.9500 (Minimum)		-3.000 (Minimum)	
		1.000 (Nominal)		0 (Nominal)	
		1.050 (Maximum)		3.000 (Maximum)	
2	1.016		0.9347		
		0.9500 (Minimum)		-3.000 (Minimum)	
		1.000 (Nominal)		0 (Nominal)	
		1.050 (Maximum)		3.000 (Maximum)	
3	1.012		0.1802		
		0.9500 (Minimum)		-3.000 (Minimum)	
		1.000 (Nominal)		0 (Nominal)	
		1.050 (Maximum)		3.000 (Maximum)	
4	0.9923		0.1003		
		0.9500 (Minimum)		-3.000 (Minimum)	
		1.000 (Nominal)		0 (Nominal)	
		1.050 (Maximum)		3.000 (Maximum)	
5	0.9870		-0.09392		
		0.9500 (Minimum)		-3.000 (Minimum)	
		1.000 (Nominal)		0 (Nominal)	
		1.050 (Maximum)		3.000 (Maximum)	
6	0.9920		0.2377		
		0.9500 (Minimum)		-3.000 (Minimum)	
		1.000 (Nominal)		0 (Nominal)	
		1.050 (Maximum)		3.000 (Maximum)	
7	1.003		-0.1620		
		0.9500 (Minimum)		-3.000 (Minimum)	
		1.000 (Nominal)		0 (Nominal)	
		1.050 (Maximum)		3.000 (Maximum)	
Master: 30-Nov-2009 14:59					





High resolution Integrated Logging Tool–CTS Master Calibration							
Sonde Error Correction							
Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M	
0	-76.56				-228.6		
		-231.0 (Minimum)	-56.00 (Nominal)	119.0 (Maximum)		-2250 (Minimum)	0 (Nominal) 2250 (Maximum)
1	170.5				141.0		
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		-625.0 (Minimum)	0 (Nominal) 625.0 (Maximum)
2	110.7				-31.72		
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		-350.0 (Minimum)	0 (Nominal) 350.0 (Maximum)
3	61.12				-44.12		
		39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)		-250.0 (Minimum)	0 (Nominal) 250.0 (Maximum)
4	24.14				2.293		
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		-63.00 (Minimum)	0 (Nominal) 63.00 (Maximum)
5	14.16				17.99		
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		-50.00 (Minimum)	0 (Nominal) 50.00 (Maximum)
6	9.674				-4.867		
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		-30.00 (Minimum)	0 (Nominal) 30.00 (Maximum)
7	-1.714				-0.3559		
		-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		-30.00 (Minimum)	0 (Nominal) 30.00 (Maximum)
Master: 30–Nov–2009 14:59							

Master: 30–Nov–2009 14:59







High resolution Integrated Logging Tool–CTS Master Calibration							
Mud Gain Correction							
Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag	
0	1.073				1.072		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)
1	1.073				1.072		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)
2	1.073				1.072		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)

Master: 30–Nov–2009 14:59



Master: 30–Nov–2009 14:59

High resolution Integrated Logging Tool–CTS Master Calibration						
Inversion results						
Phase	Rho Aluminum G/C3			Phase	Rho Magnesium G/C3	
Master				Master		
	2.586 (Minimum)	2.596 (Nominal)	2.606 (Maximum)		1.676 (Minimum)	1.686 (Nominal) 1.696 (Maximum)
Phase	Pe Aluminum			Phase	Pe Magnesium	
Master				Master		
	2.470 (Minimum)	2.570 (Nominal)	2.670 (Maximum)		2.550 (Minimum)	2.650 (Nominal) 2.750 (Maximum)

Master: 17–Jan–2010 13:20

High resolution Integrated Logging Tool–CTS Master Calibration								
Deviation Summary								
Phase	BS Average Deviation %			Value	Phase	SS Average Deviation %		
Master				0.1503	Master			
	-0.6000 (Minimum)	0 (Nominal)	0.6000 (Maximum)			-1.000 (Minimum)	0 (Nominal)	1.000 (Maximum)
Phase	BS Max Deviation %			Value	Phase	SS Max Deviation %		
Master				0.2503	Master			
	-1.600 (Minimum)	0 (Nominal)	1.600 (Maximum)			-2.500 (Minimum)	0 (Nominal)	2.500 (Maximum)
Phase	LS Average Deviation %			Value	Phase	LS Max Deviation %		
Master				1.030	Master			
	-1.500 (Minimum)	0 (Nominal)	1.500 (Maximum)			-3.500 (Minimum)	0 (Nominal)	3.500 (Maximum)

(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Master: 17-Jan-2010 13:20								

High resolution Integrated Logging Tool-CTS Master Calibration							
Zero Measurement							
Phase	CNTC Background CPS		Value	Phase	CFTC Background CPS		Value
Master			26.74	Master			26.83
	5.000 (Minimum)	26.74 (Nominal)	40.00 (Maximum)		5.000 (Minimum)	26.83 (Nominal)	40.00 (Maximum)
Master: 10-Jan-2010 18:05							

High resolution Integrated Logging Tool—CTS Master Calibration											
Tank Measurement											
Phase	Thermal Near Corr. (Tank) CPS		Value	Phase	Thermal Far Corr. (Tank) CPS		Value	Phase	CNTC/CFTC (Tank)		Value
Master	<div><div></div></div>		5204	Master	<div><div></div></div>		2196	Master	<div><div></div></div>		2.370
	4700 (Minimum)	5800 (Nominal)	6900 (Maximum)		1900 (Minimum)	2400 (Nominal)	2900 (Maximum)		2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)
Master: 10—Jan—2010 18:05											

Company: Vecta Oil & Gas, Ltd.

Schlumberger

Well: Huron 23-9

Field: Wildcat

County: Cheyenne

State: Colorado

Platform Express
Micro Log