

<div><div>Company: Nalcor Energy Oil and Gas</div><div>Well: Nalcor et al Seamus 1</div><div>Field: Parson's Pond</div><div>Rig: Stoneham #11</div></div> <div><div>Province: Newfoundland</div></div>									
<div><div>PLATFORM EXPRESS</div><div>ARRAY INDUCTION – SP LOG</div></div>									
Rig:		Stoneham #11							
Field:		Parson's Pond							
Location:		Latitude: 49.98 N							
Well:		Nalcor et al Seamus 1							
Company:		Nalcor Energy Oil and Gas							
LOCATION									
Latitude: 49.98 N		Longitude: 57.70 W		Elev.: 20.69 m		K.B. 26.99 m		G.L. 20.69 m	
Permanent Datum:		Ground Level		Elev.: 20.69 m		D.F. 26.69 m			
Log Measured From:		Kelly Bushing		6.30 m		above Perm. Datum			
Drilling Measured From:		Kelly Bushing							
API Serial No.		Latitude 49.98 N		Longitude 57.70 W					
Logging Date				15-May-2010					
Run Number				Run 1					
Depth Driller				3160 m					
Schlumberger Depth				3129.2 m					
Bottom Log Interval				3126.8 m					
Top Log Interval				2292.5 m					
Casing Driller Size @ Depth				244.500 mm @ 2292.4 m					
Casing Schlumberger				2292.5 m					
Bit Size				216.000 mm					
Type Fluid In Hole				Gel Chem					
Density		Viscosity		1170 kg/m3		60 s			
Fluid Loss		PH		7.6 cm3		9.7			
Source Of Sample				Mud Pit					
RM @ Measured Temperature				0.950 ohm.m @ 21 degC					
RMF @ Measured Temperature				0.710 ohm.m @ 21 degC					
RMC @ Measured Temperature				1.450 ohm.m @ 21 degC					
Source RMF		RMC		Calculated		Calculated			
RM @ MRT		RMF @ MRT		0.546 @ 53		0.408 @ 53			
Maximum Recorded Temperatures				53 degC					
Circulation Stopped		Time		15-May-2010		8:30			
Logger On Bottom		Time		15-May-2010		18:25			
Unit Number		Location		6061 St.John's					
Recorded By		Greg Au							
Witnessed By		R. Strickland							

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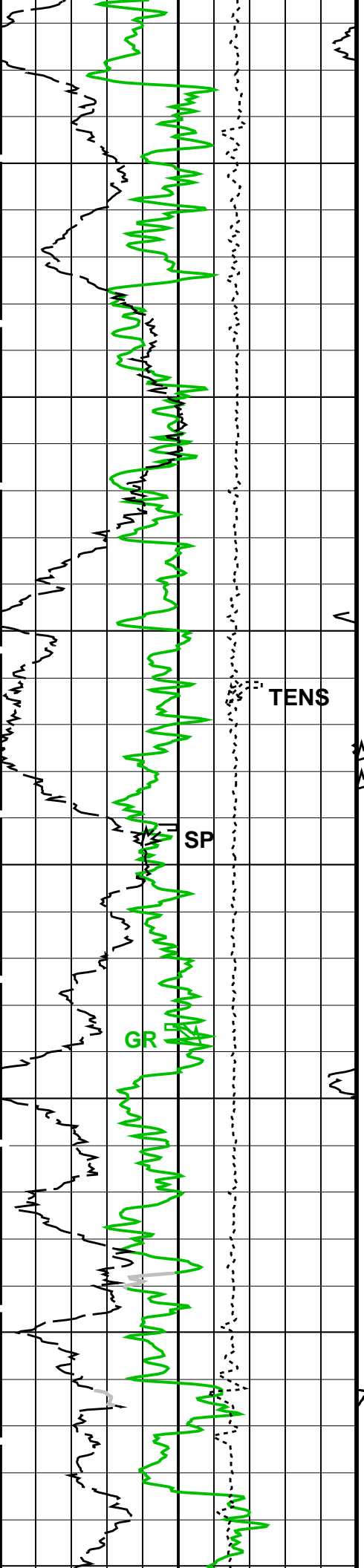
Logging Date					
Run Number					
Depth Driller					
Schlumberger Depth					
Bottom Log Interval					
Top Log Interval					
Casing Driller Size @ Depth		@			
Casing Schlumberger					
Bit Size					
Type Fluid In Hole					
Density	Viscosity				
Fluid Loss	PH				
Source Of Sample					
RM @ Measured Temperature		@			
RMF @ Measured Temperature		@			
RMC @ Measured Temperature		@			
Source RMF	RMC				
RM @ MRT	RMF @ MRT	@		@	
Maximum Recorded Temperatures					
Circulation Stopped	Time				
Logger On Bottom	Time				
Unit Number	Location				
Recorded By					
Witnessed By					

OTHER SERVICES1	OTHER SERVICES2
OS1: PEX-AIT	OS1:
OS2: DSI-FMI	OS2:
OS3: MDT	OS3:
OS4: VSP	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
All tools run as per tool sketch	
AIT run with 3 x 1.5" standoffs	
2 x AH-107 knuckle joints run above AIT for eccentralization	
HGNS run using a standard bowspring for eccentralization	
Nuclear measurements recorded on both Sandstone, Limestone, and Dolomite matrices	

Due to hole conditions the repeat log was done below casing as per request by client

DOWNHOLE EQUIPMENT			
LEH-QT			15.98
LEH-QT			
SAH-F			15.10
SAH-F			
DTC-H	CTEM		13.61
ECH-KC 9932	TelStatus	—	13.33
DTCH0-A 8855	ToolStatu	—	12.69
DTCH1-A	HGNS HTEM	—	12.69
	HMCA	—	12.47
HILTH-FTB	HGNS Gamm		12.69
HGNSD-H 4706			
HMCA-H			
HGNH 3771			
NLS-KL			
NSR-F 5004			
HACCZ-H			
HCNT-H	HGNS Neut	—	10.69
HGR	HGNS Neut	—	10.54
HRCC-H 3990			
HRMS-H 3971			
HRGD-H 3996	HGNS sens	—	9.83
GLS-VJ 5237			
MCFL Device-H			
HILT Nucl. LS-H 28928			
HILT Nucl. SS-H 42002			
HILT Nucl. BS-H 26963			
BOW-SPR	HRCC cart	—	8.61
NPV-N			
	MCFL	—	6.95
	HILT cali	—	6.80
	HRDD-LS	—	6.69
	HRDD-SS		
	HRDD-BS		





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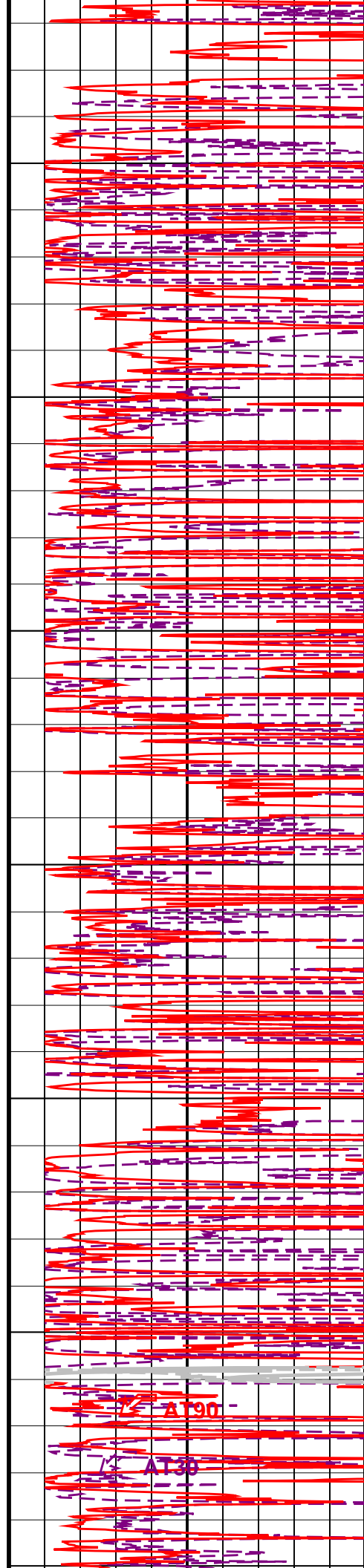
TENS

STIA  
STIT

2400

SP

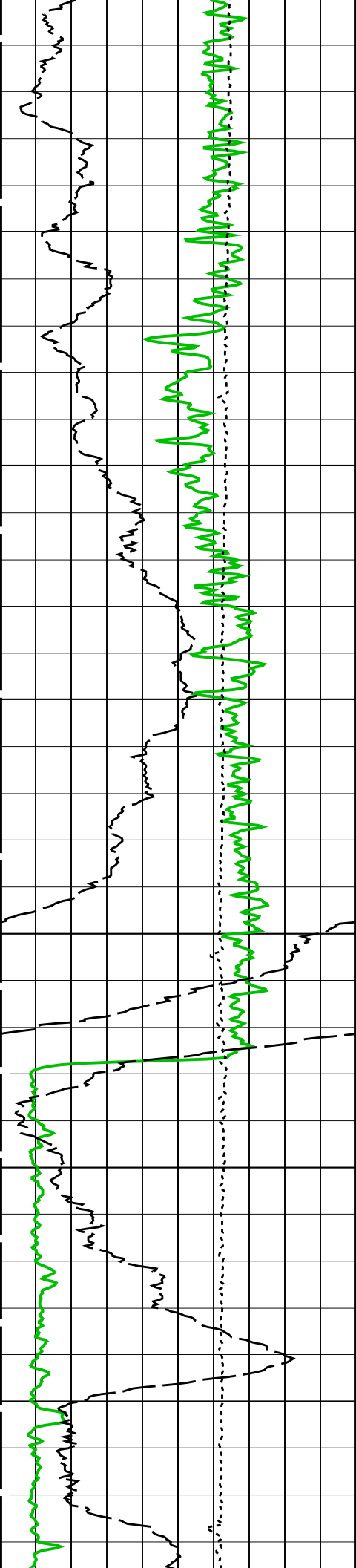
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AT90

AT30

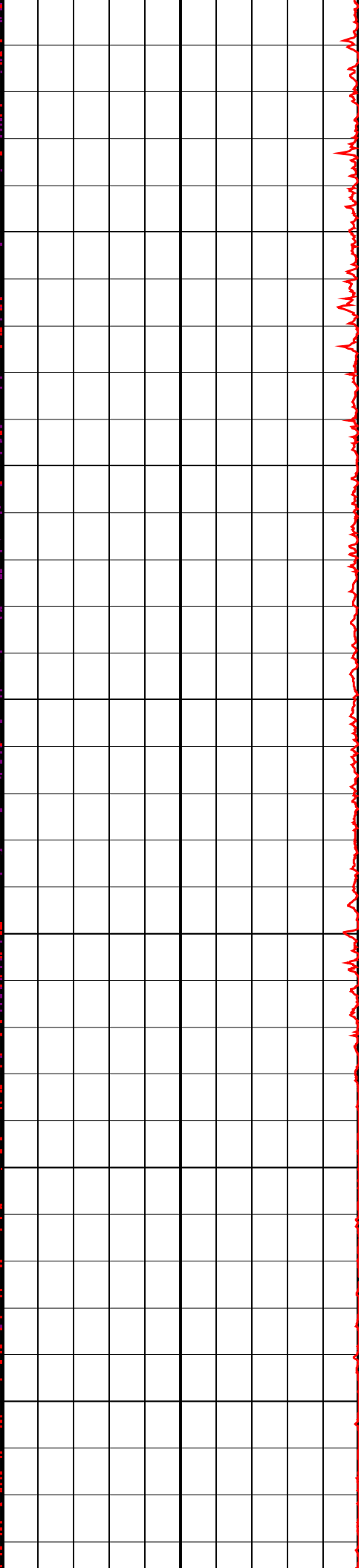
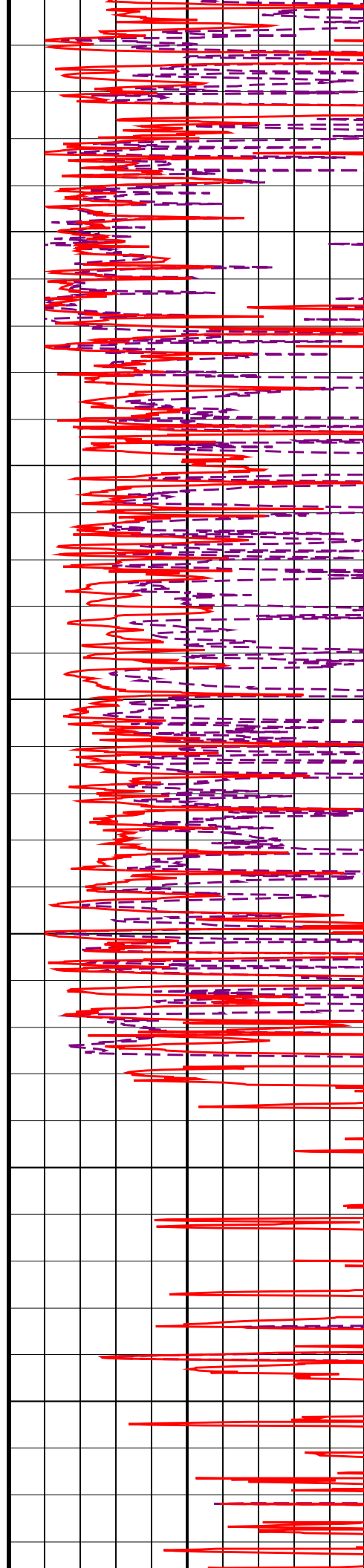
ATCO90



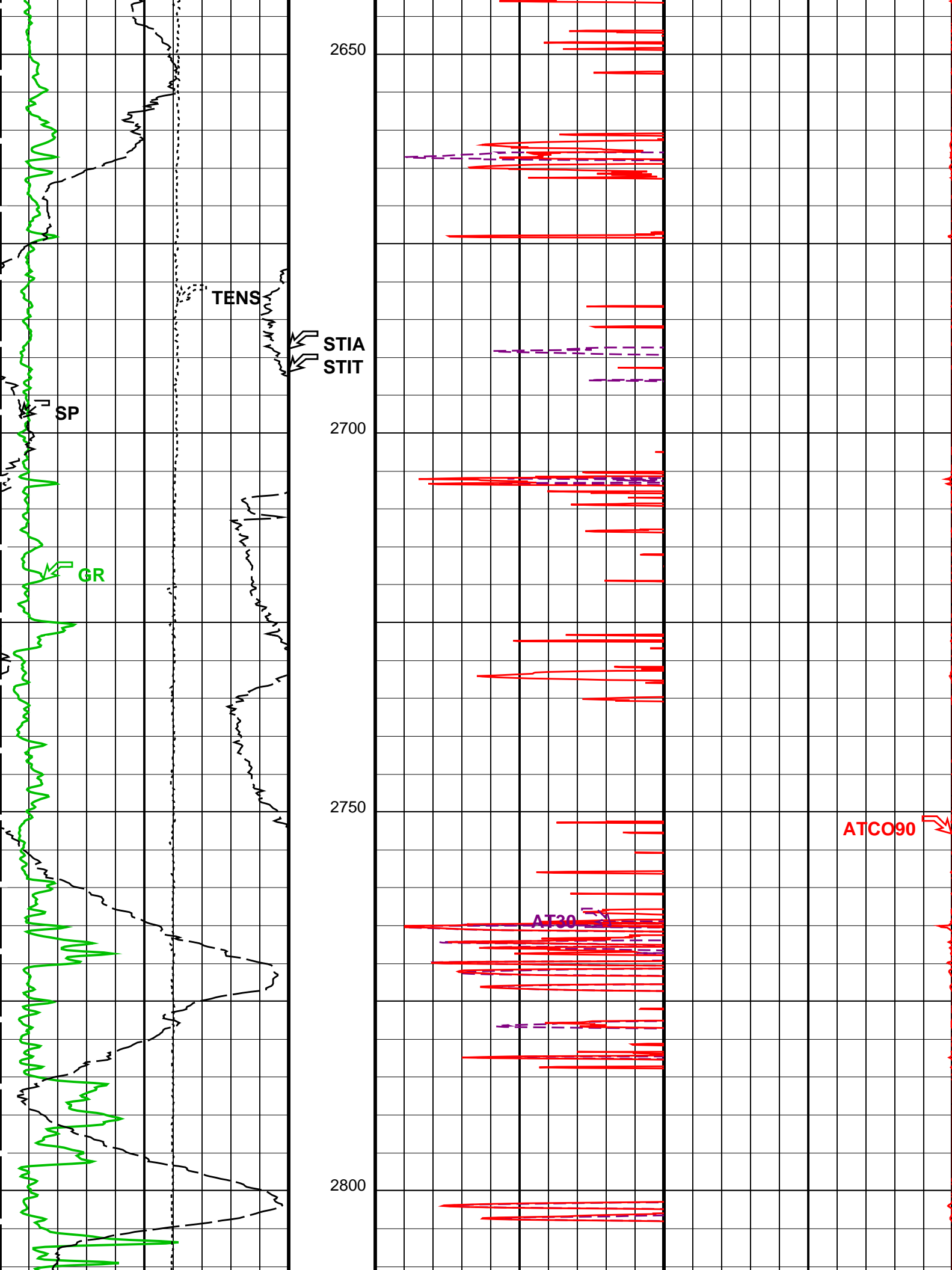
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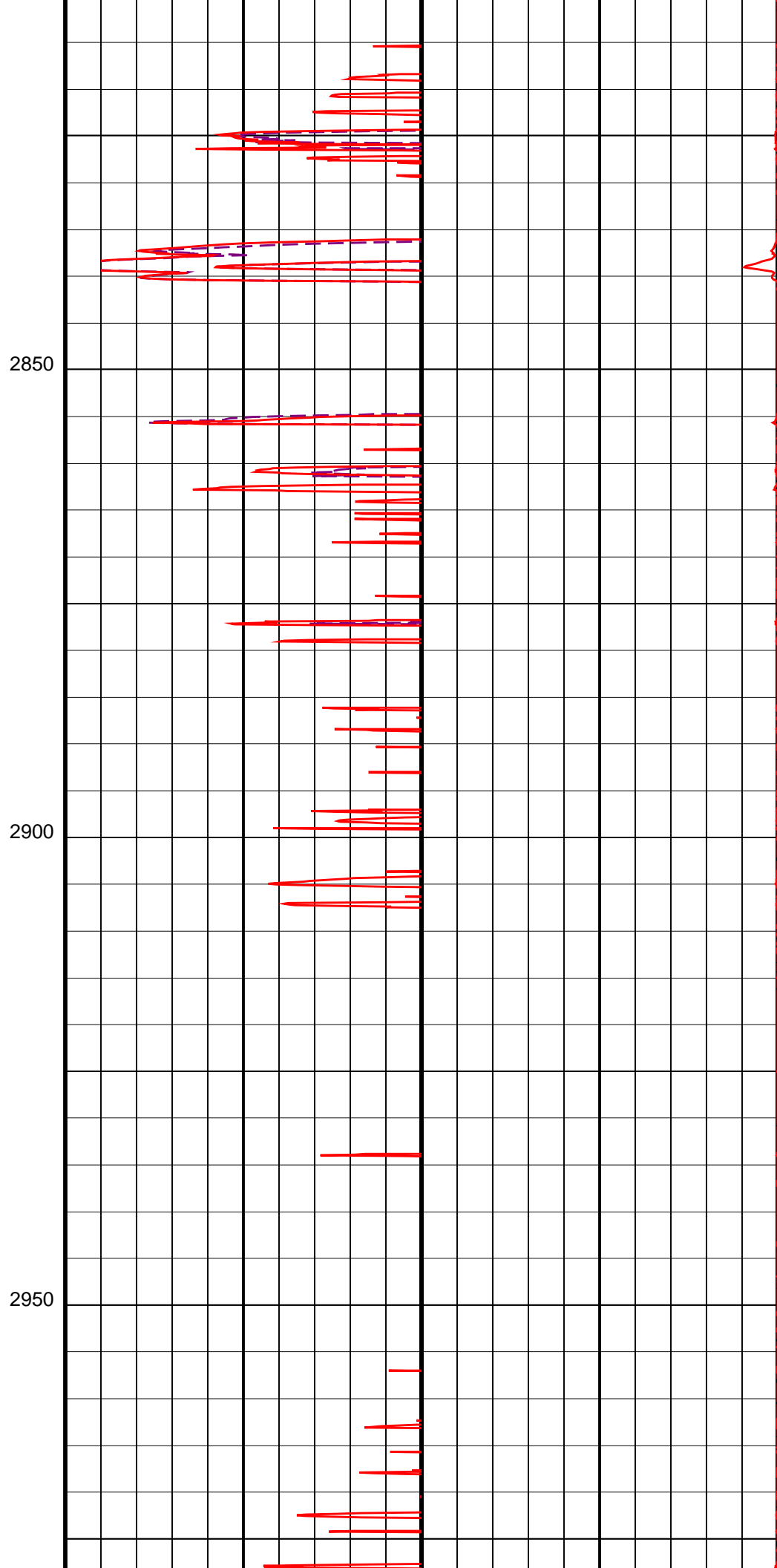
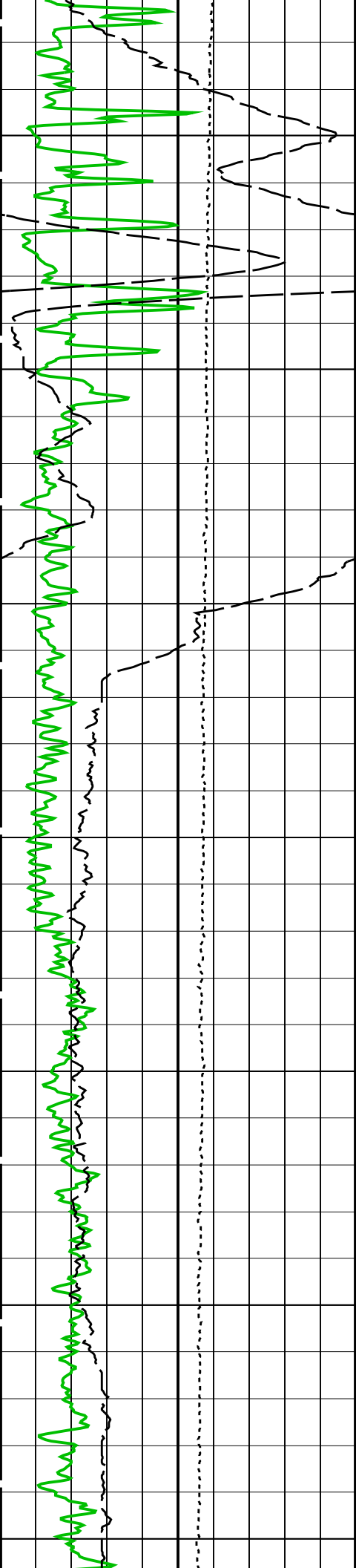
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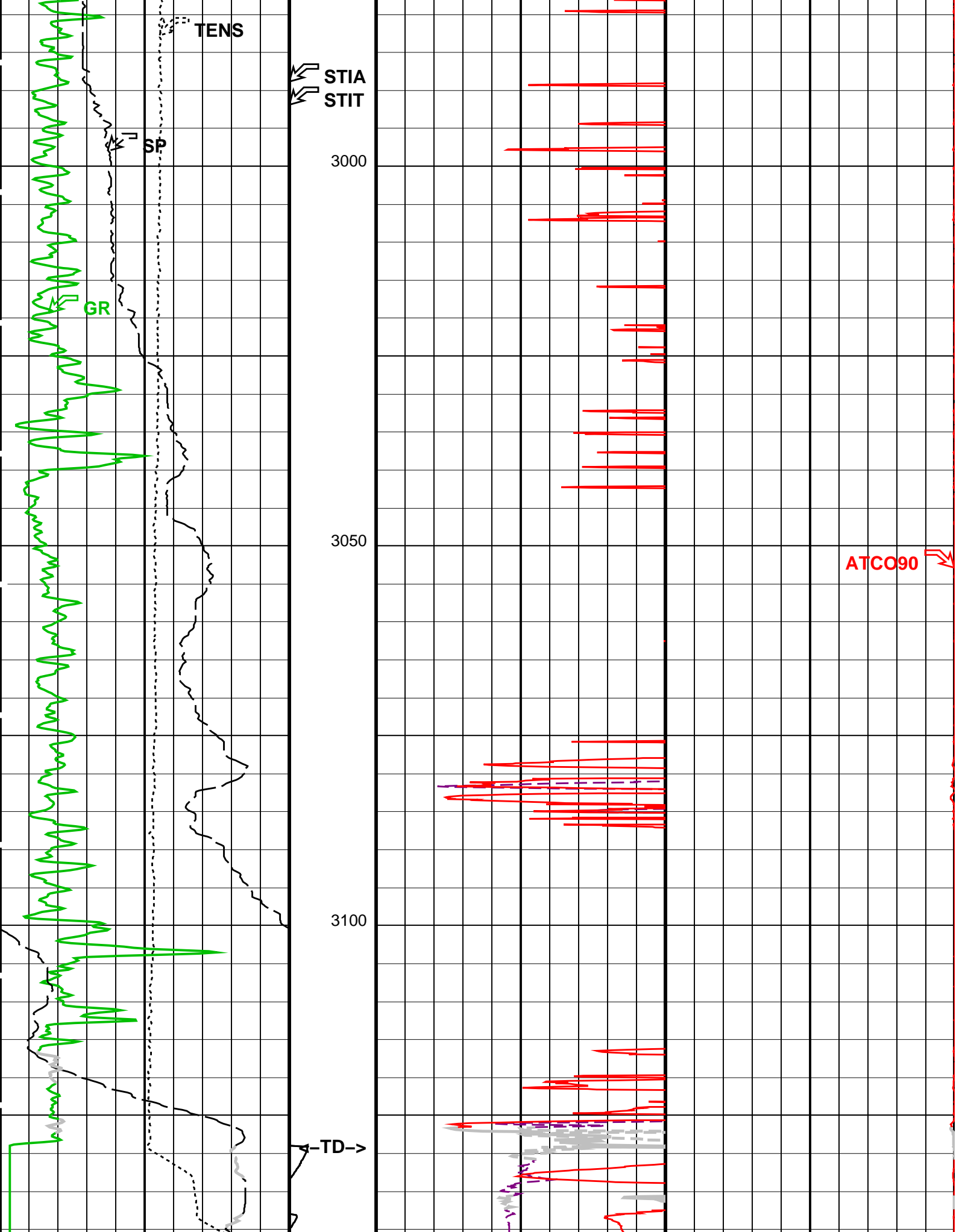


Northward section line









SP (SP)		AIT 30 Inch Investigation (AT30)	
-80	(MV)	20	0 (OHMM) 50
Gamma Ray (GR)		AIT 90 Inch Investigation (AT90)	
0	(GAPI)	150	0 (OHMM) 50
Tension (TENS)		AIT 90 Inch Investigation Conductivity (ATCO90)	
25000	(N)	0	1000 (MM/M) 0

# PIP SUMMARY

Time Mark Every 60 S

## Parameters

DLIS Name	Description	Value
AIT-M: Array Induction Tool – M		
ABHM	Array Induction Borehole Correction Mode	2_ComputeStandoff
ABHV	Array Induction Borehole Correction Code Version Number	900
ABLM	Array Induction Basic Logs Mode	6_One_Two_and_Four
ABLV	Array Induction Basic Logs Code Version Number	223
ACDE	Array Induction Casing Detection Enable	No
ACEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered
ACSED	Array Induction Casing Shoe Estimated Depth	-50000 M
AETP	Array Induction Enable Sonde Error Temp&Pres Corr	Yes
AFRSV	Array Induction Response Set Version for Four ft Resolution	41.70.24.20
AIGS	Array Induction Select Akima Interpolation Gating	On
AMRF	Array Induction Mud Resistivity Factor	1
AORSV	Array Induction Response Set Version for One ft Resolution	41.70.24.20
ARFV	Array Induction Radial Profiling Code Version Number	701
ARPV	Array Induction Radial Parametrization Code Version Number	232
ASTA	Array Induction Tool Standoff	38.1 MM
ATRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	Internal
AULV	Array Induction User Level Control	Normal
AZRSV	Array Induction Response Set Version for Z Resolution	00.10.25.00
BHT	Bottom Hole Temperature (used in calculations)	58.4 DEGC
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	1
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	20 DEG
GGRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST
GTSE	Generalized Temperature Selection	HSTS_HTEM
SHT	Surface Hole Temperature	30 DEGC
SPNV	SP Next Value	0 MV
HILTH-FTB: High resolution Integrated Logging Tool-DTS		
BHT	Bottom Hole Temperature (used in calculations)	58.4 DEGC
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	1
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	20 DEG
GGRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST
GTSE	Generalized Temperature Selection	HSTS_HTEM
SHT	Surface Hole Temperature	30 DEGC
HOLEV: Integrated Hole/Cement Volume		
BHT	Bottom Hole Temperature (used in calculations)	58.4 DEGC
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	20 DEG
GGRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST
GTSE	Generalized Temperature Selection	HSTS_HTEM
SHT	Surface Hole Temperature	30 DEGC
STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	TDL
STKT	STI Stuck Threshold	1.5 M
TDD	Total Depth – Driller	3160.00 M
TDL	Total Depth – Logger	3160.00 M
System and Miscellaneous		
BS	Bit Size	216.000 MM
DFD	Drilling Fluid Density	1170.00 K/M3
DO	Depth Offset for Playback	5.0 M
DORL	Depth Offset for Repeat Analysis	0.0 M
FLEV	Fluid Level	0.00 M
MST	Mud Sample Temperature	21.00 DEGC
PP	Playback Processing	RECOMPUTE
TD	Total Depth	3160 M

Format: AIT\_COND\_D600

Vertical Scale: 1:600

Graphics File Created: 15-May-2010 20:21

# OP System Version: 17C0-154

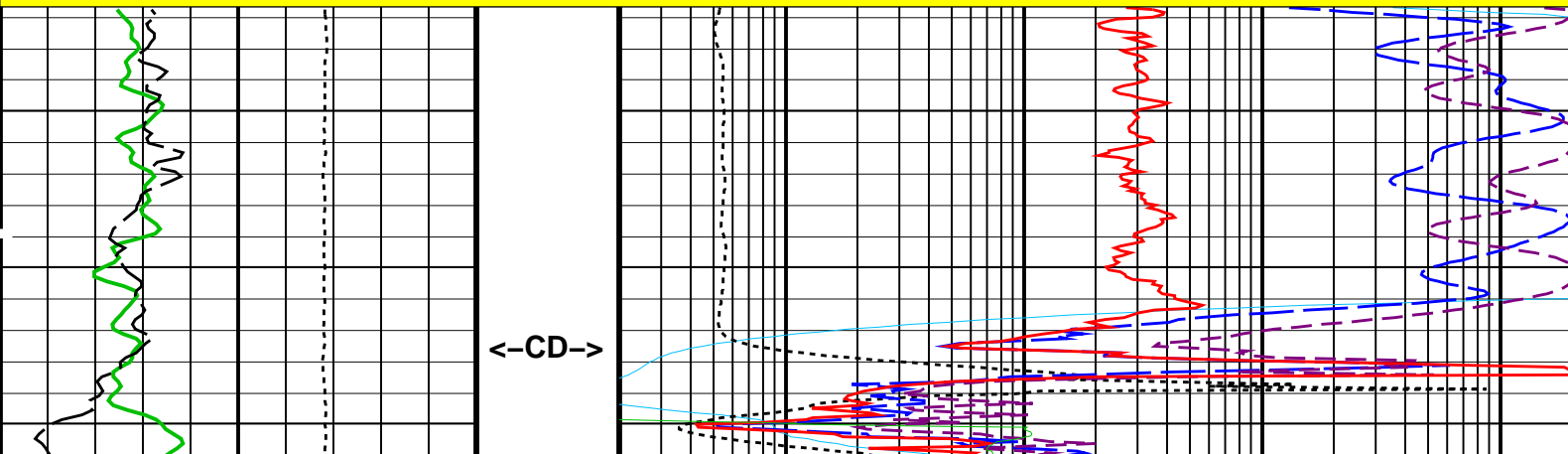
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DEFAULT	AIT_TLD_MCFL_CNL_009LUP	FN:9	PRODUCER 15-May-2010 18:24 3135.5 M 2218.0 M
Output DLIS Files			
DEFAULT	AIT_TLD_MCFL_CNL_016PUP	FN:23	PRODUCER 15-May-2010 20:21
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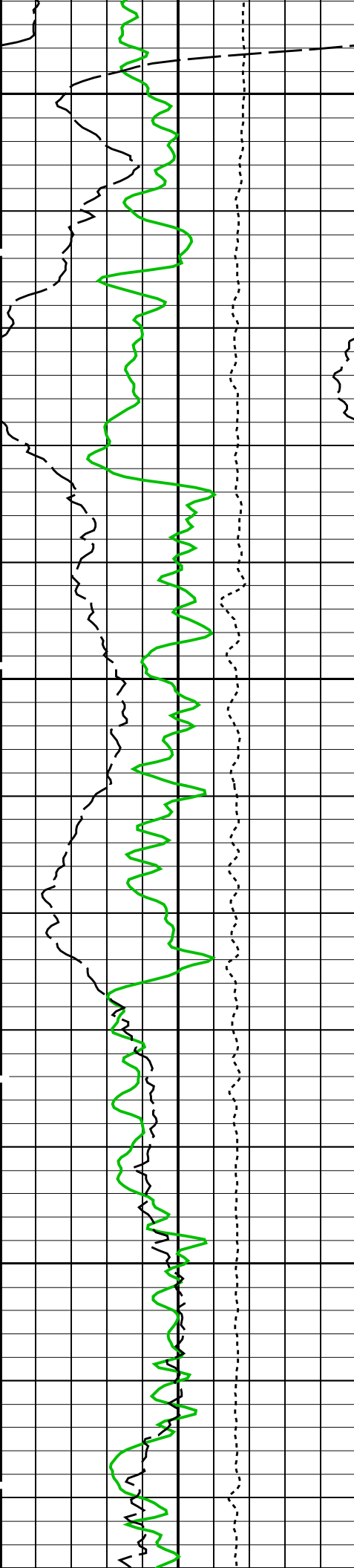
Company: Nalcor Energy Oil and Gas				Well: Nalcor et al Seamus 1		
Input DLIS Files						
DEFAULT	AIT_TLD_MCFL_CNL_009LUP	FN:9	PRODUCER	15-May-2010 18:24	3135.5 M	2218.0 M
Output DLIS Files						
DEFAULT	AIT_TLD_MCFL_CNL_016PUP	FN:23	PRODUCER	15-May-2010 20:21	3140.5 M	2223.1 M
CUSTOMER	AIT_TLD_MCFL_CNL_016PUP	FN:24	PRODUCER	15-May-2010 20:21	3140.5 M	2223.1 M

OP System Version: 17C0-154			
AIT-M DTC-H	17C0-154 17C0-154	HILTH-FTB	17C0-154

Time Mark Every 60 S		PIP SUMMARY	
<div> <div>Tension (TENS)</div> <div>25000 (N) 0</div> </div> <div> <div>Gamma Ray (GR)</div> <div>(GAPI) 150</div> </div> <div> <div>SP (SP)</div> <div>(MV) 20</div> </div>		<div>AIT 90 Inch Investigation (AT90)</div> <div>0.2 (OHMM) 2000</div> <div>AIT 30 Inch Investigation (AT30)</div> <div>0.2 (OHMM) 2000</div> <div>Std. Res. Invaded Zone Resistivity (RXOZ)</div> <div>0.2 (OHMM) 2000</div> <div>AIT 60 Inch Investigation (AT60)</div> <div>0.2 (OHMM) 2000</div> <div>AIT 20 Inch Investigation (AT20)</div> <div>0.2 (OHMM) 2000</div> <div>AIT 10 Inch Investigation (AT10)</div> <div>0.2 (OHMM) 2000</div>	

\*\*\*MAIN LOG: ARRAY INDUCTION-SP LOG\*\*\*

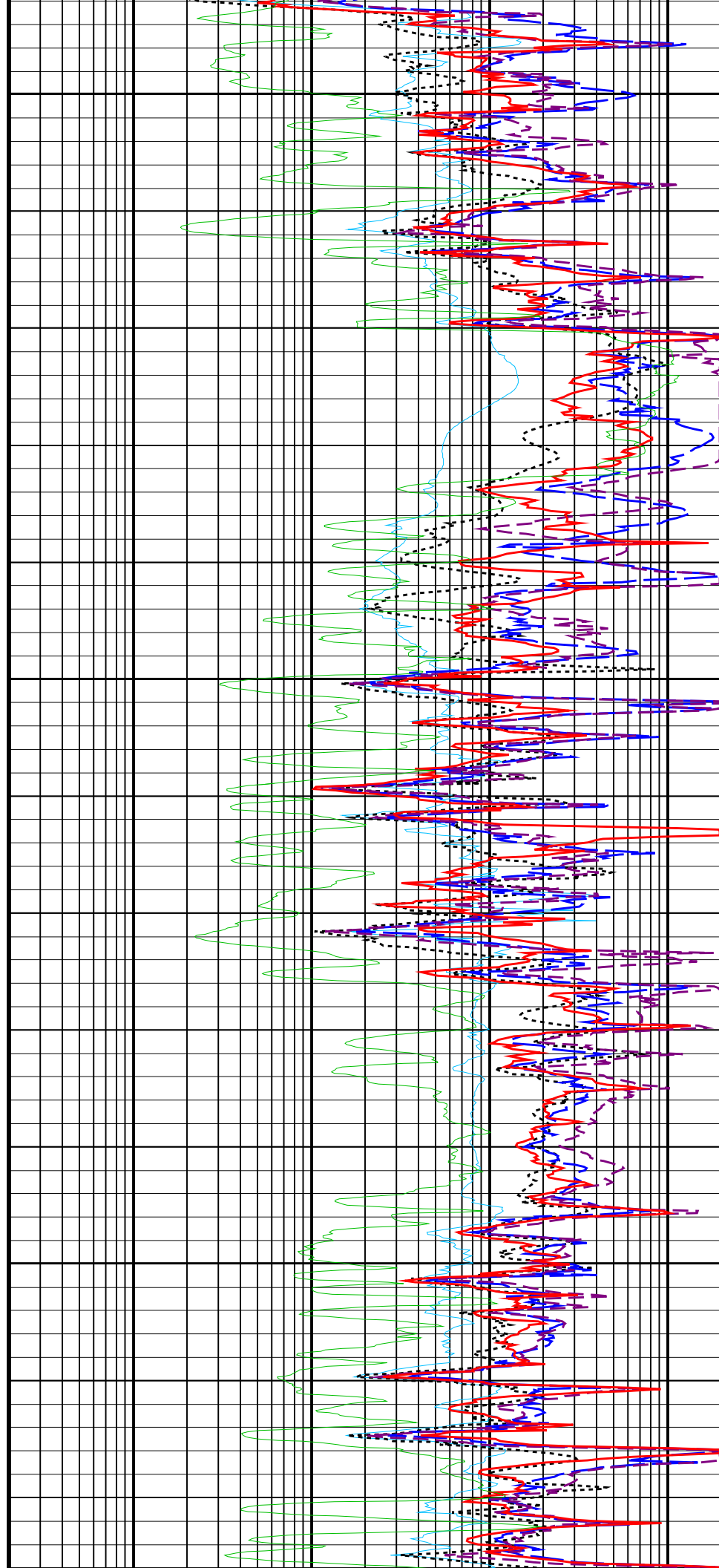


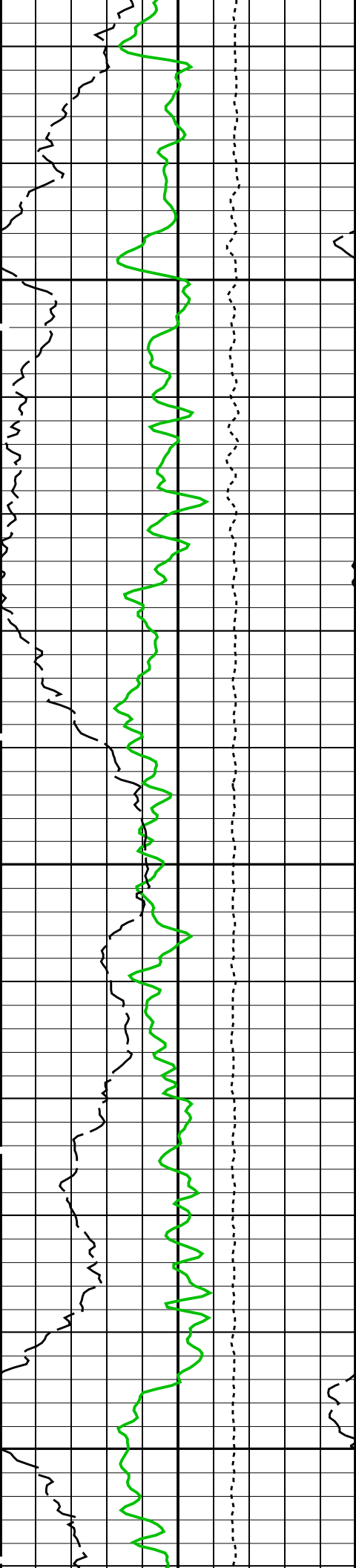


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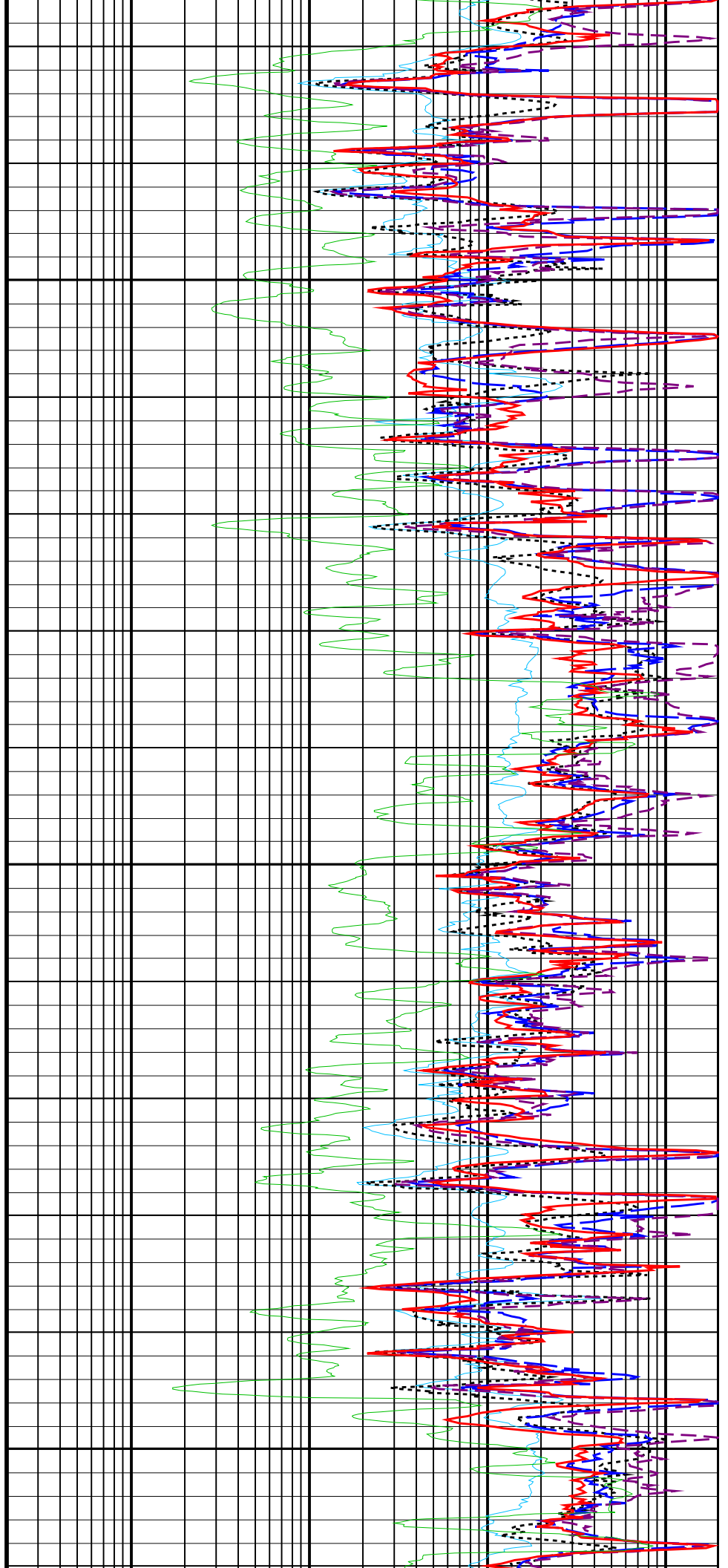


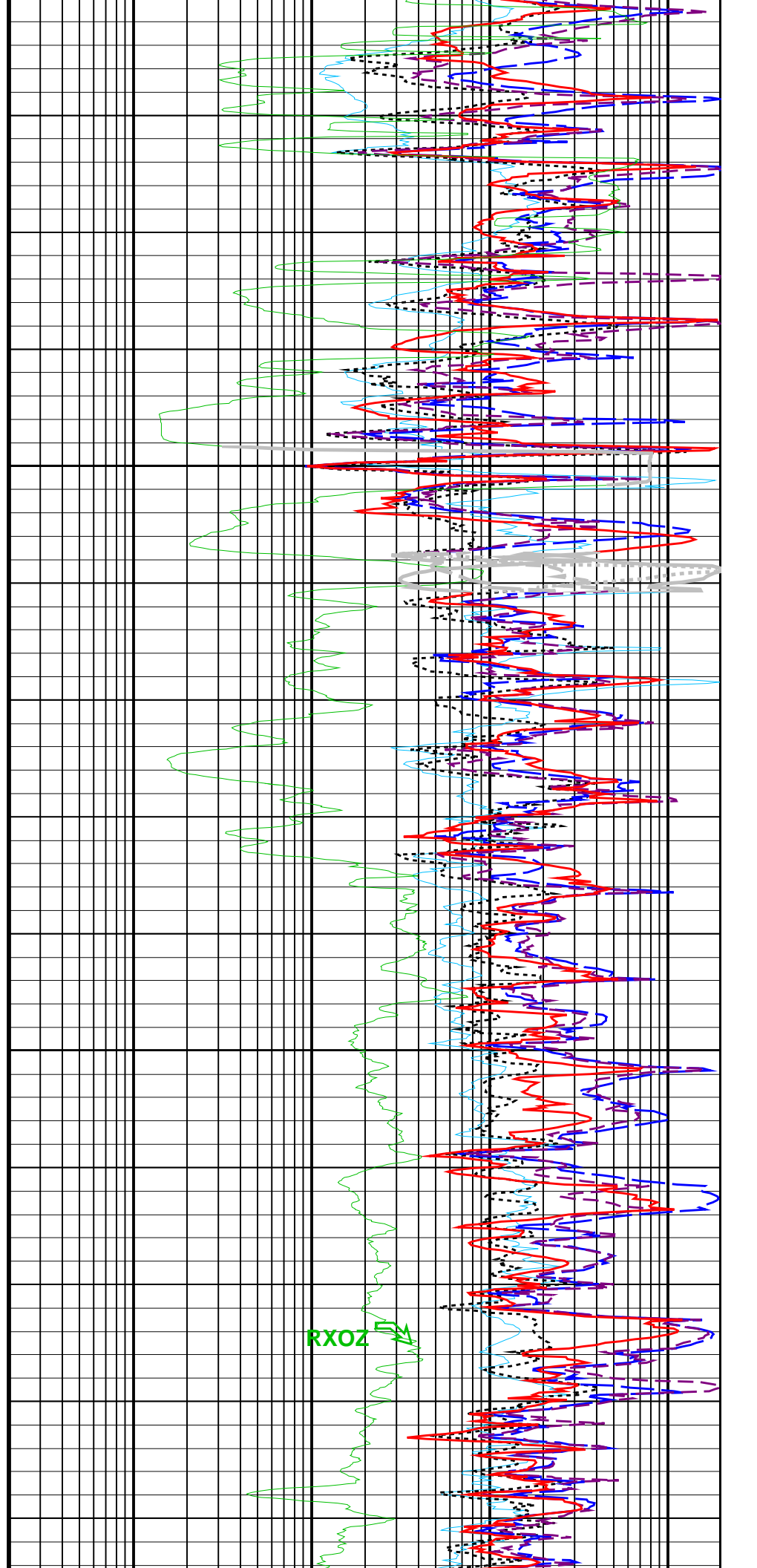
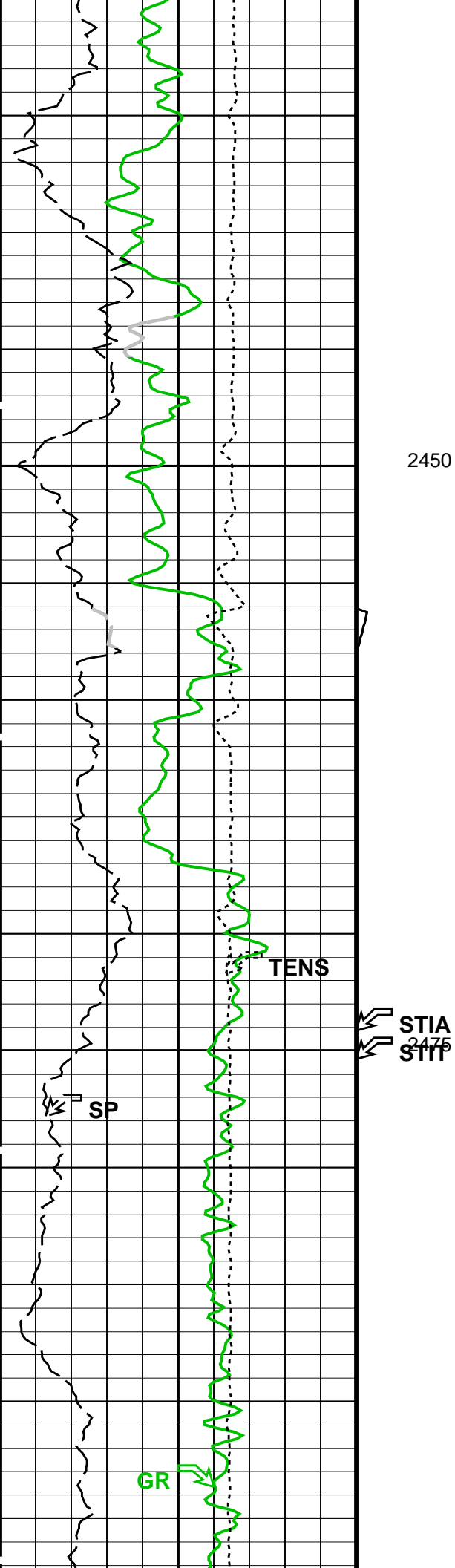


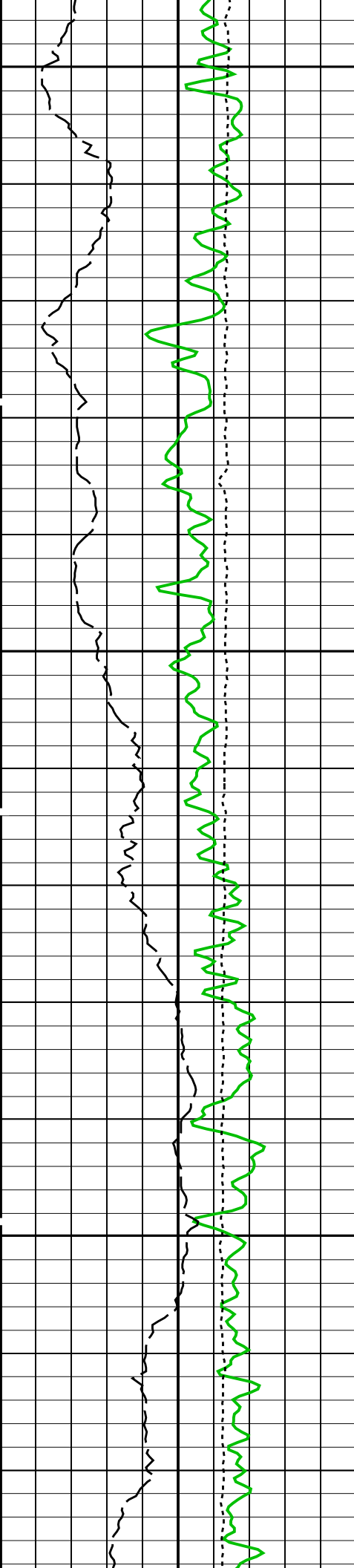
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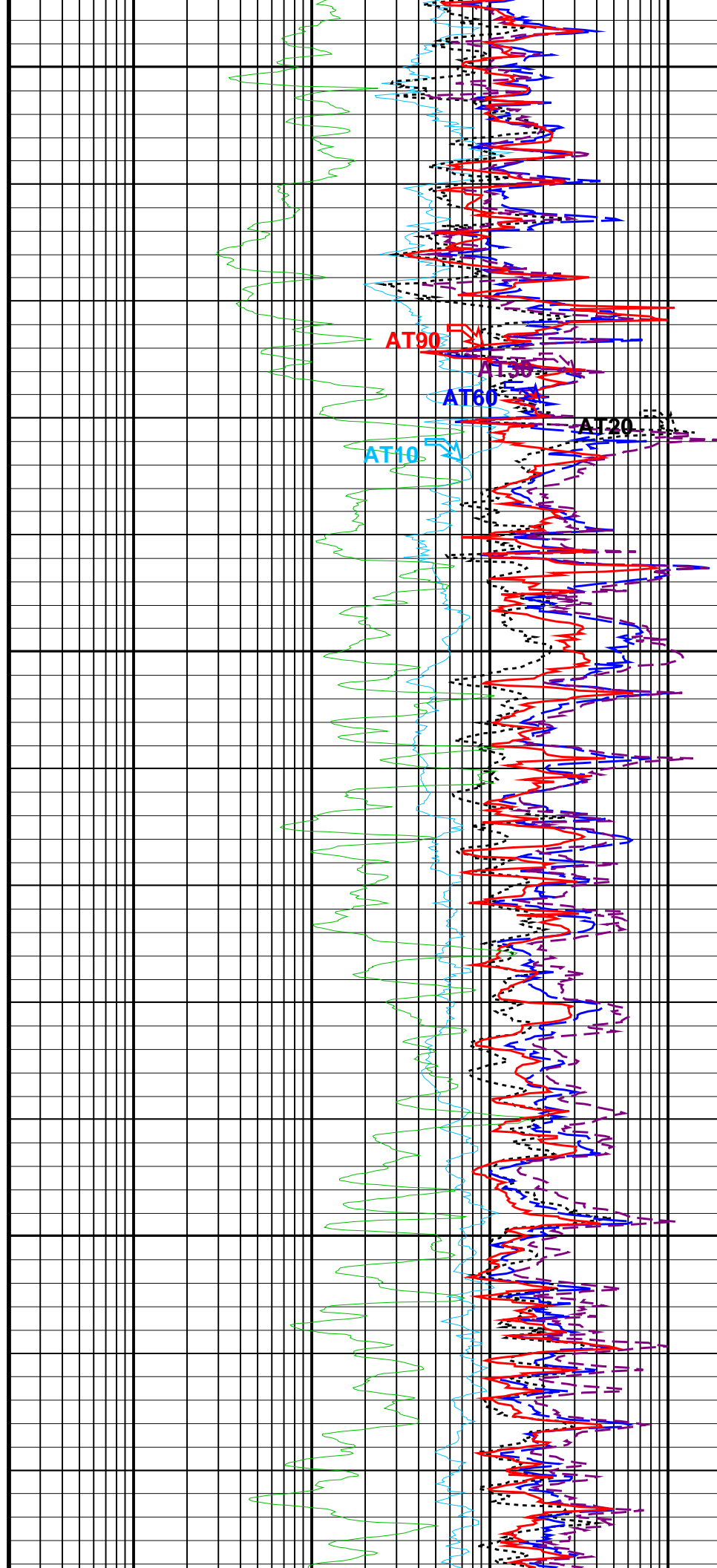




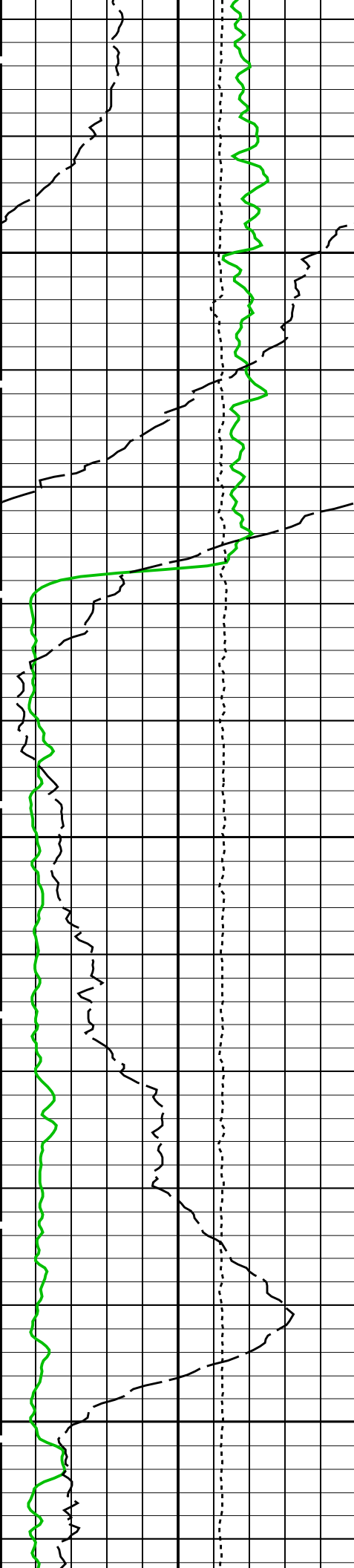
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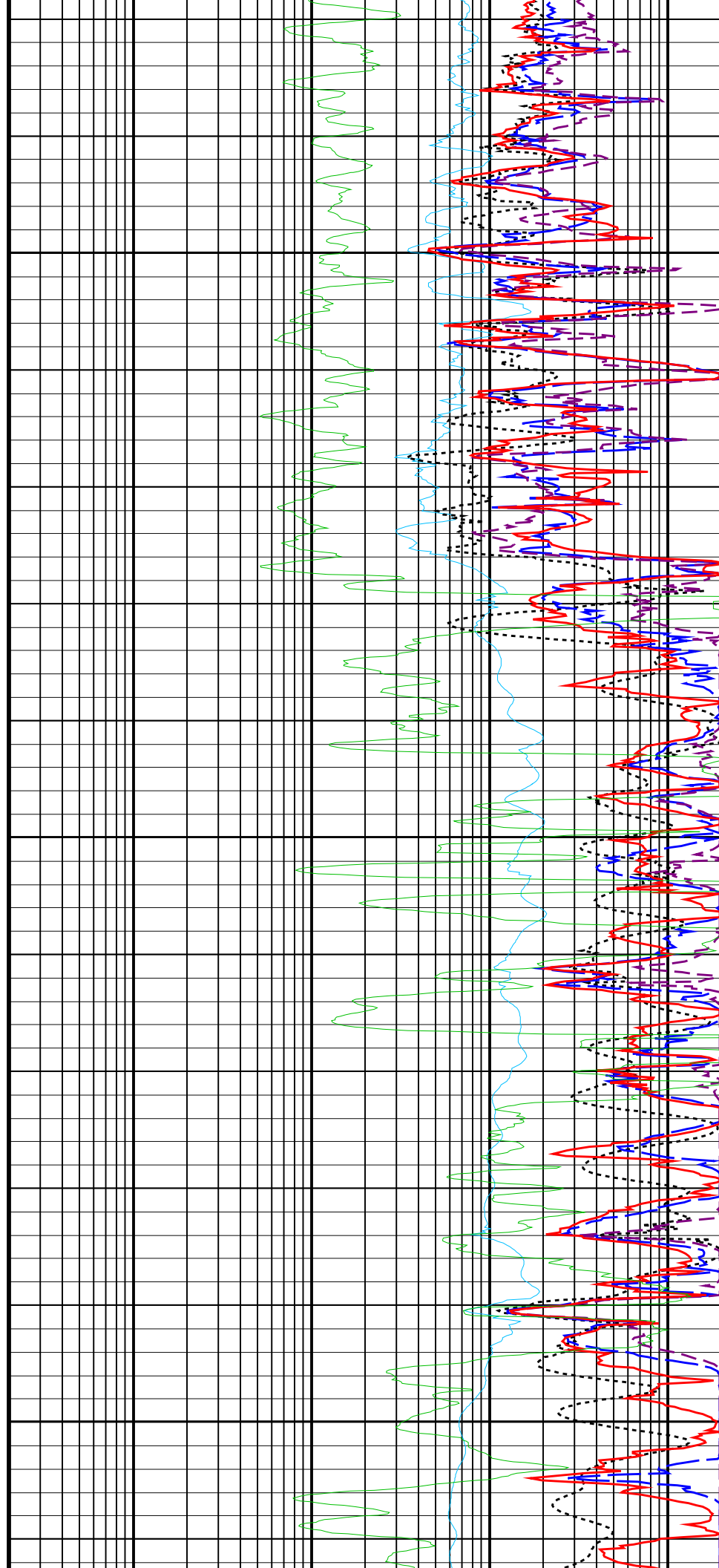




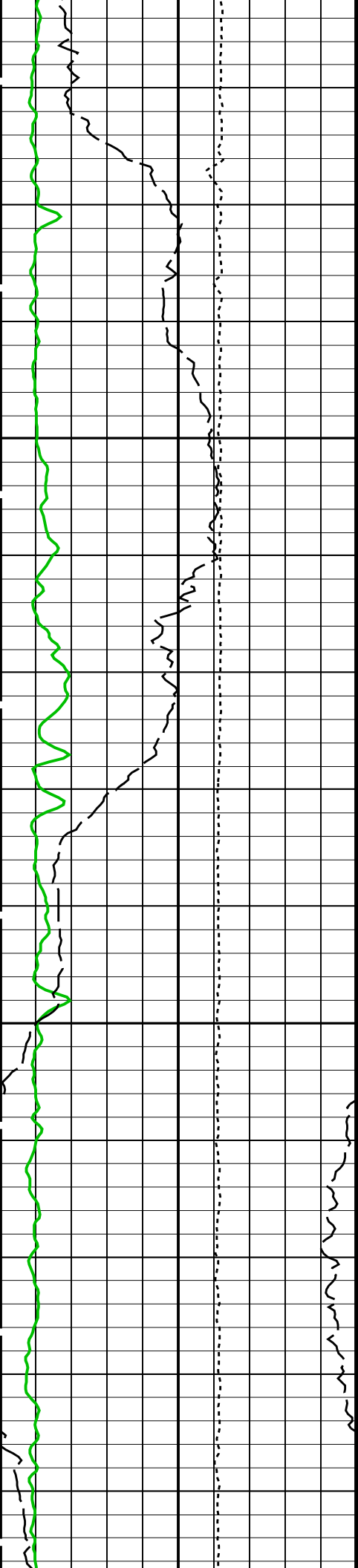
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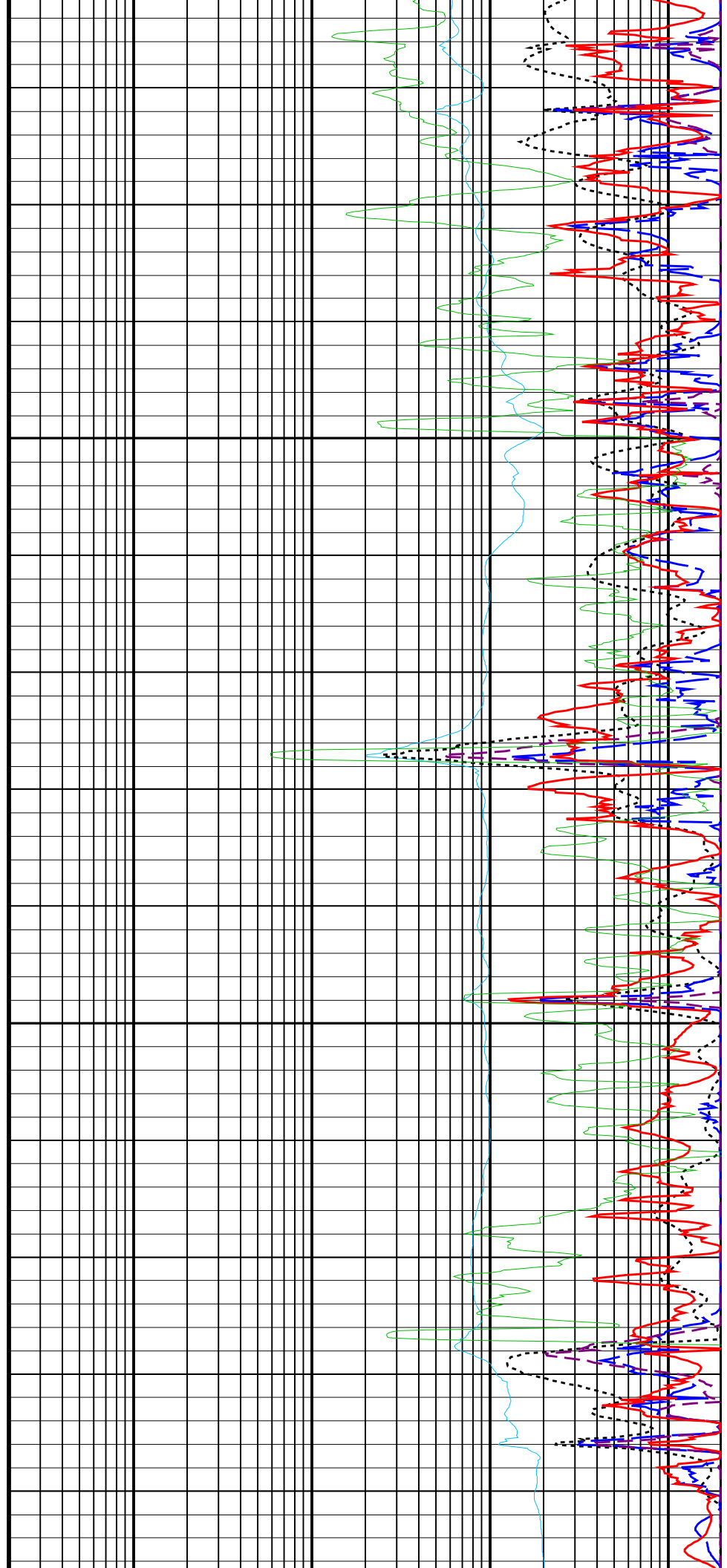


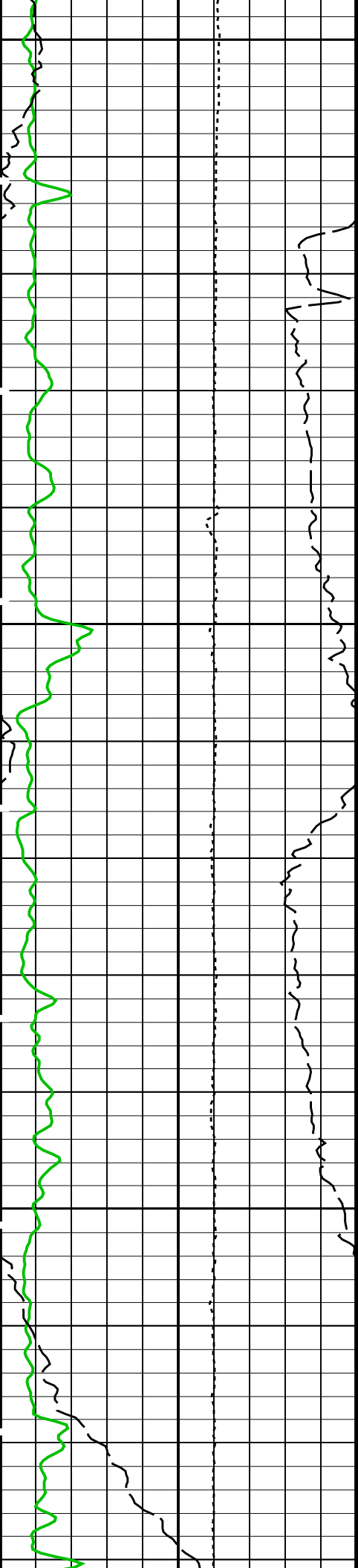




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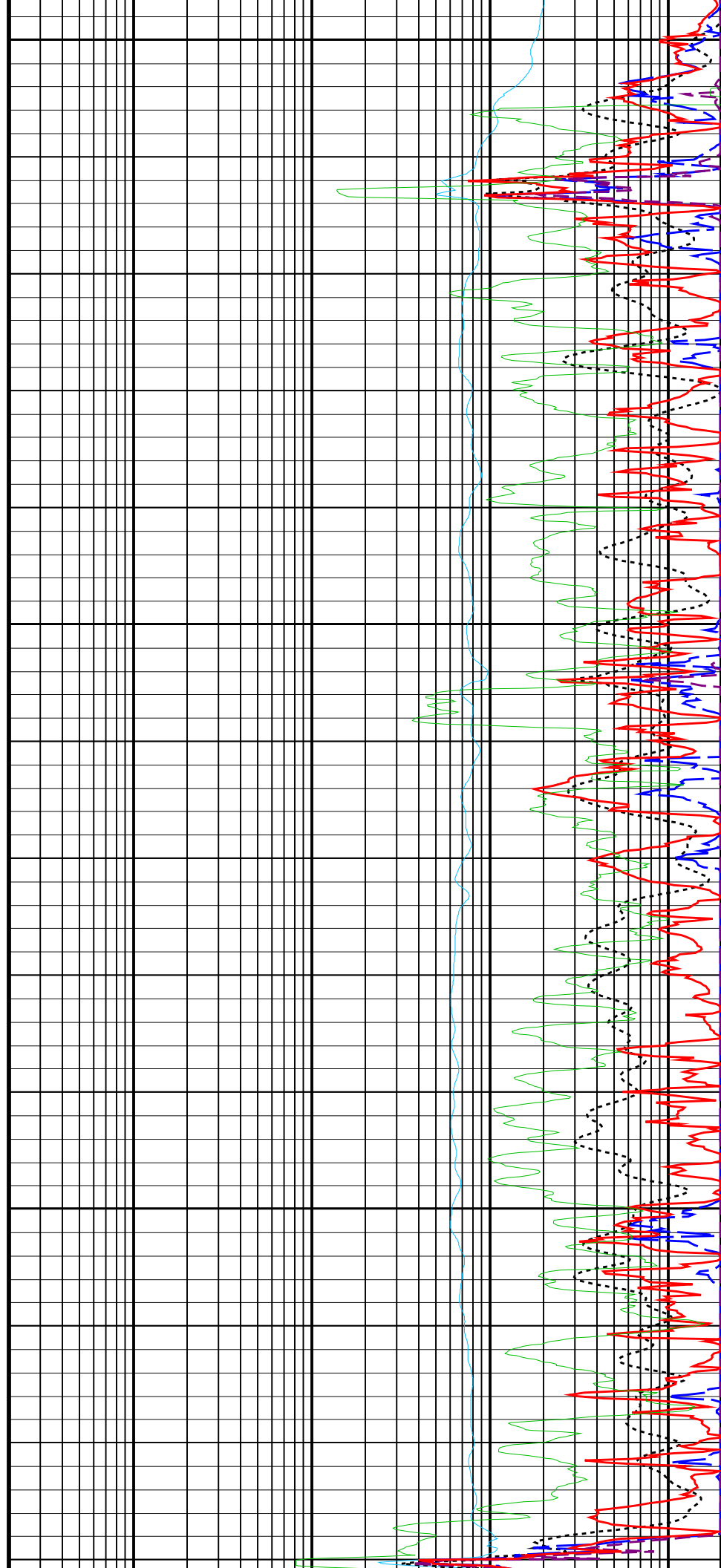


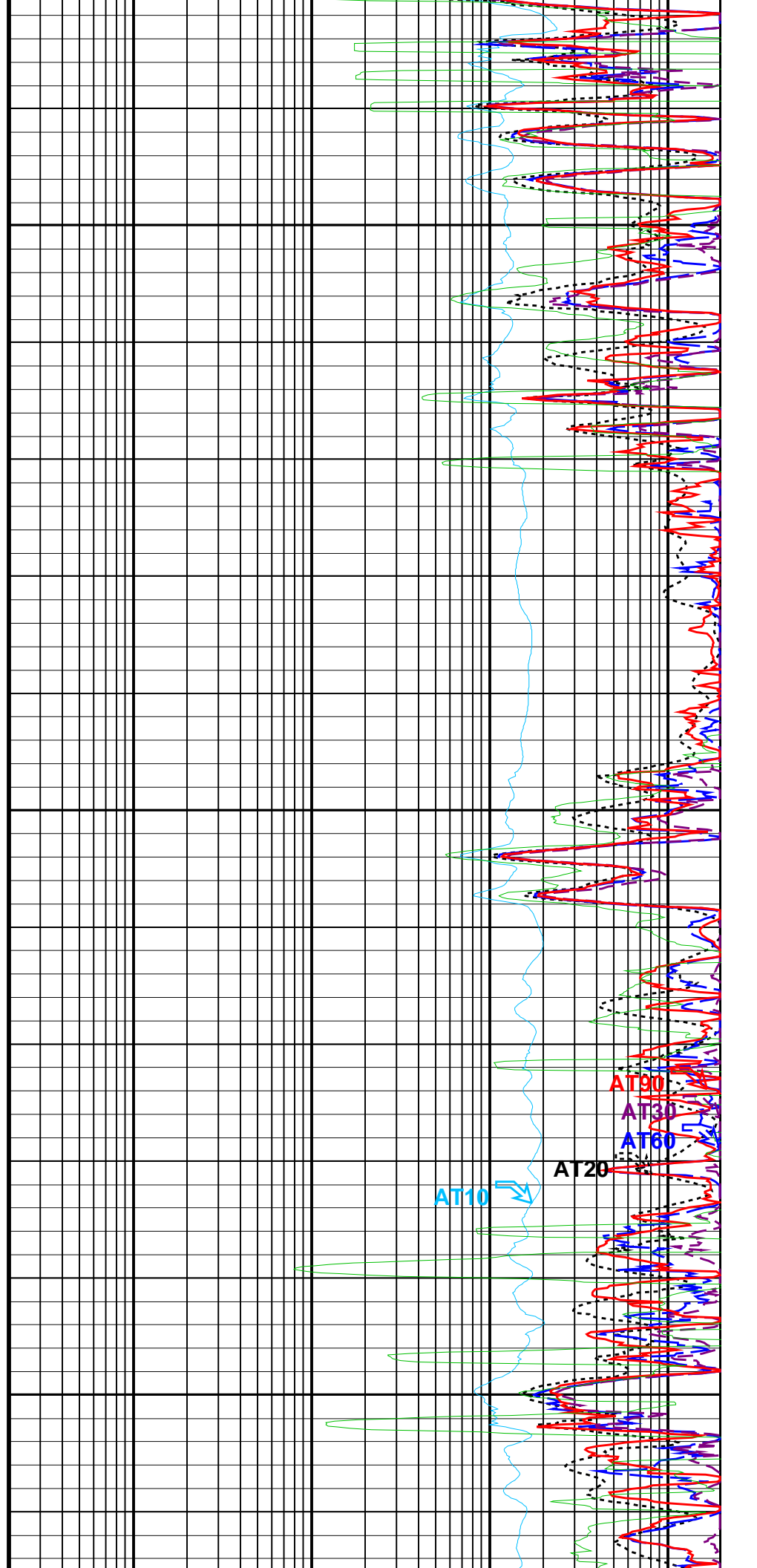
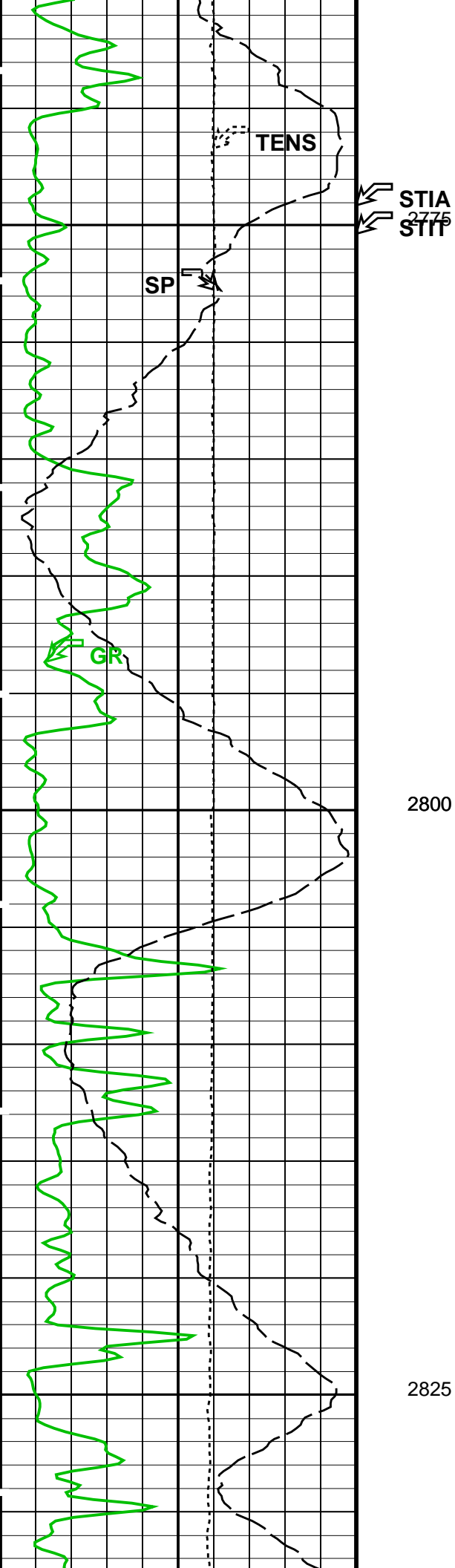


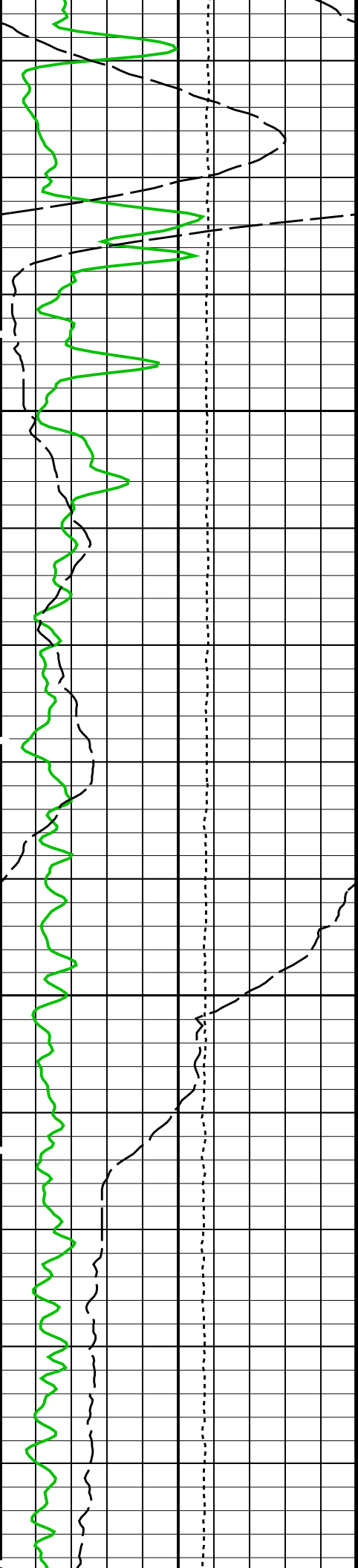
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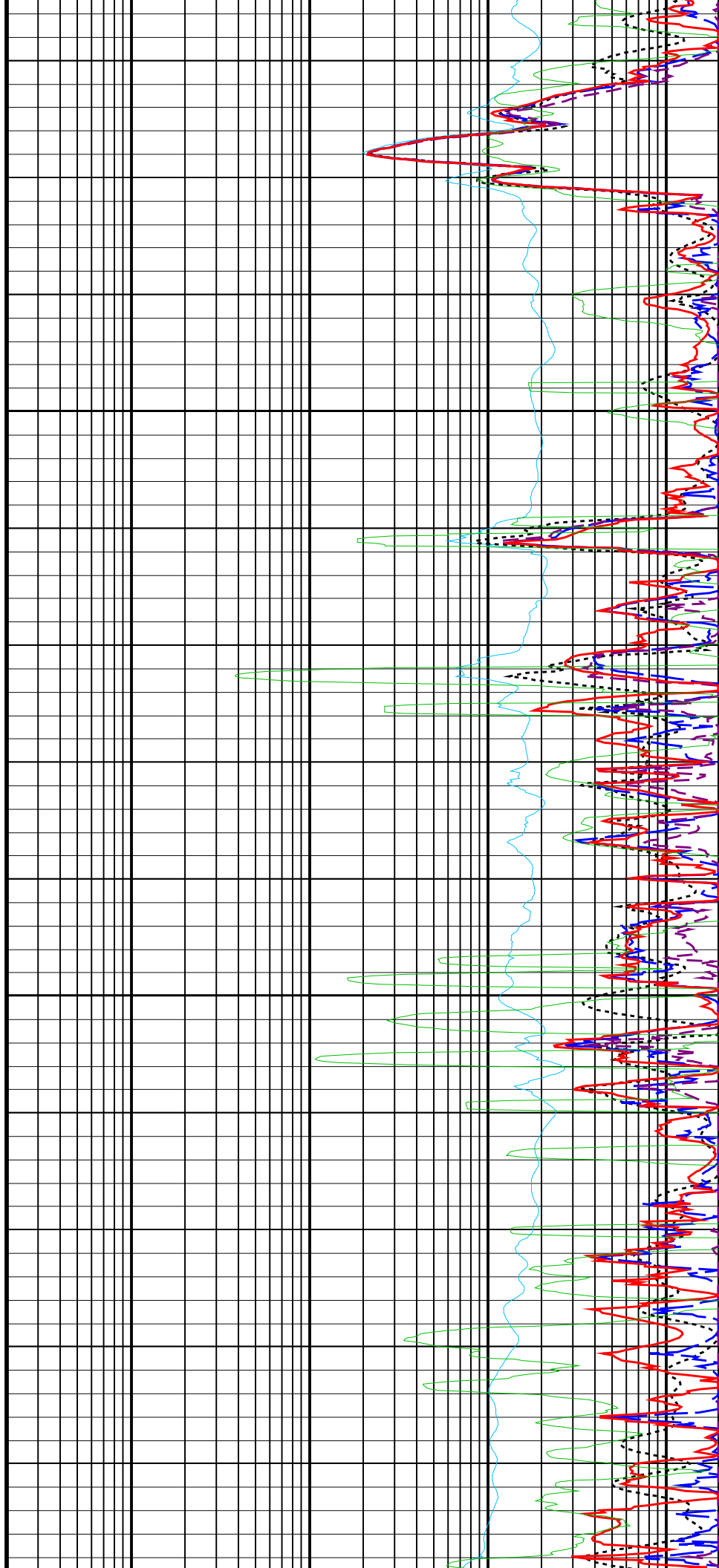


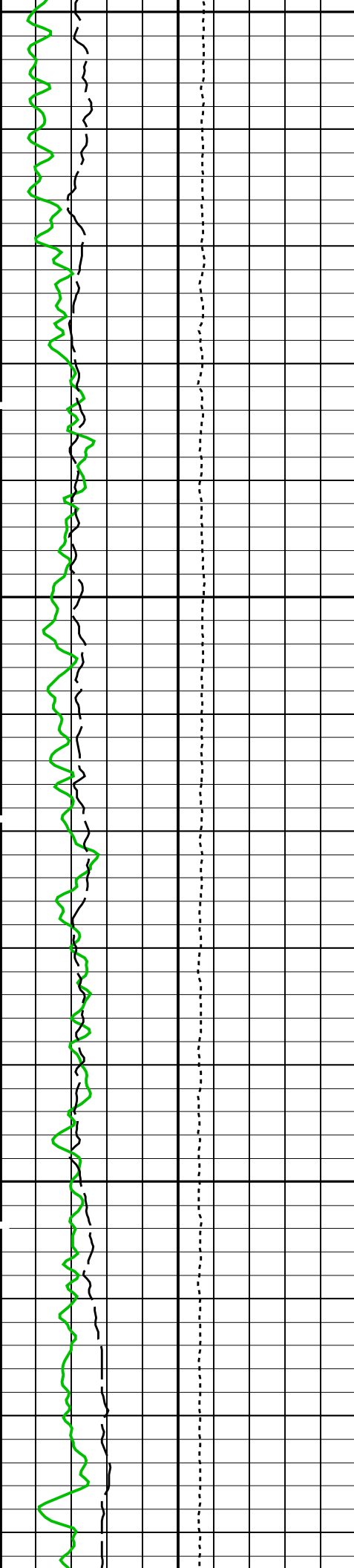




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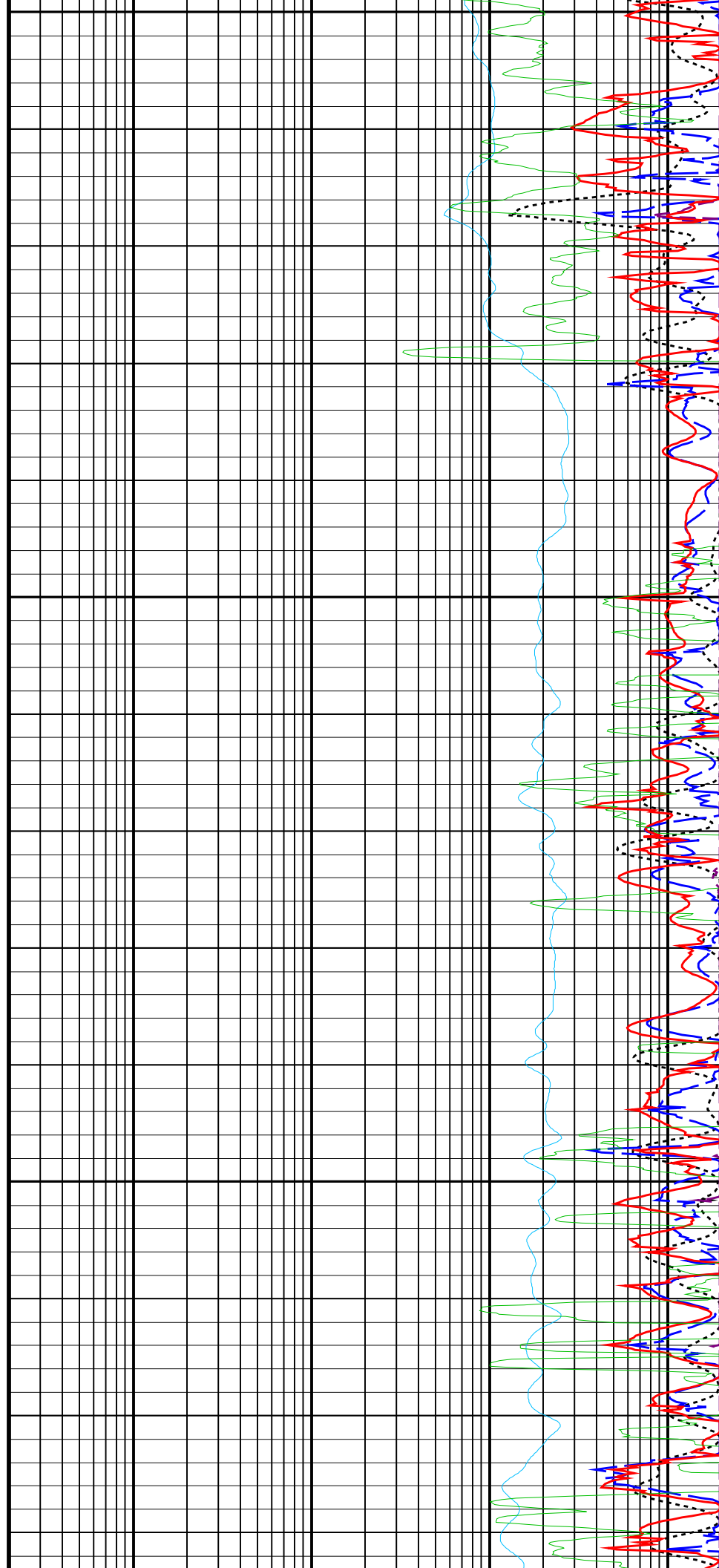


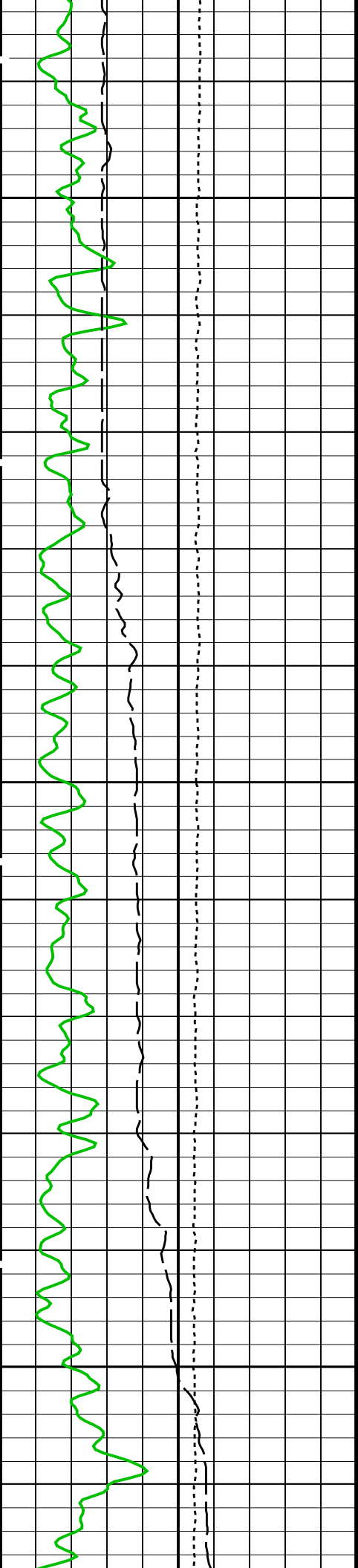


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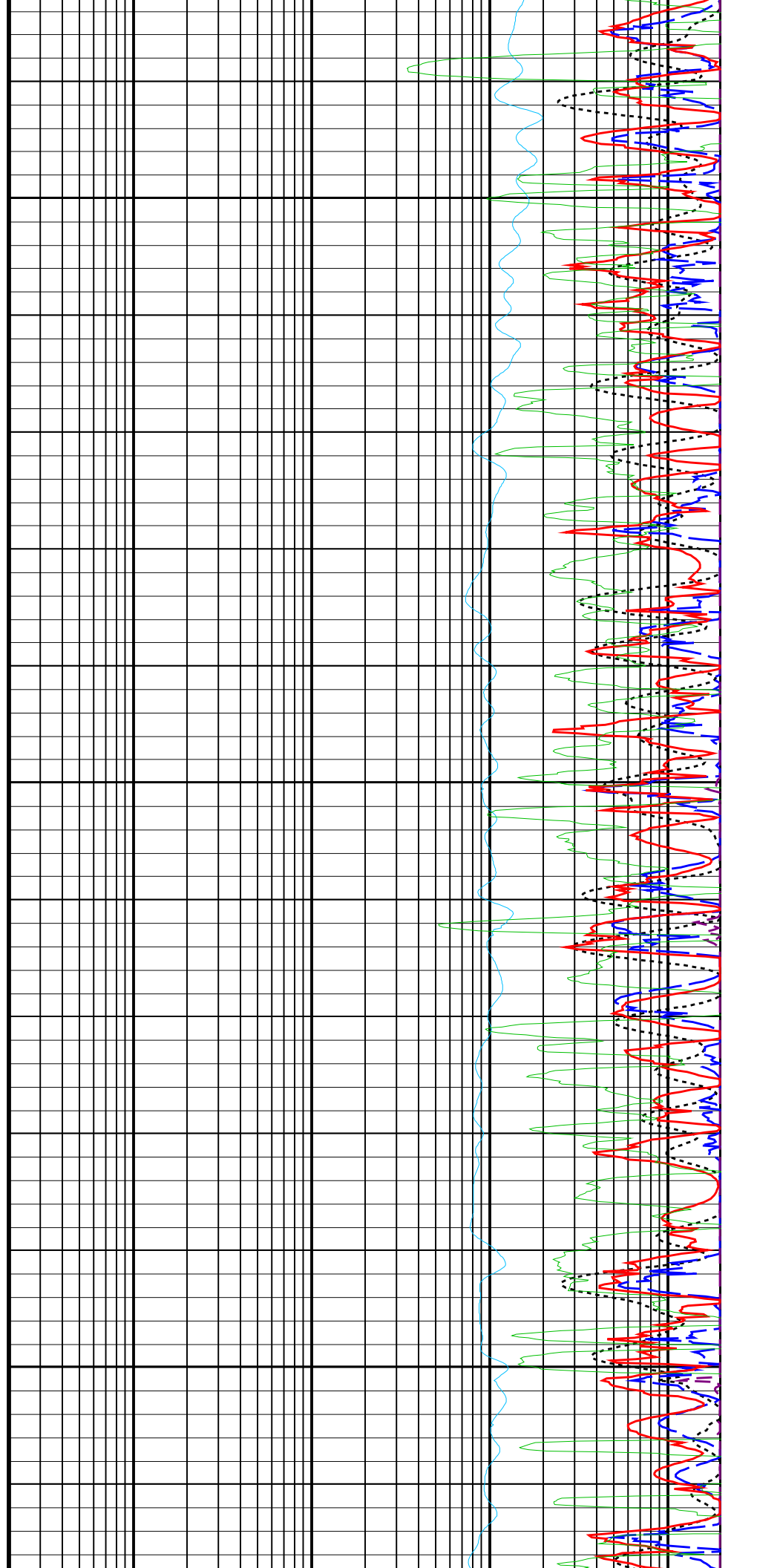


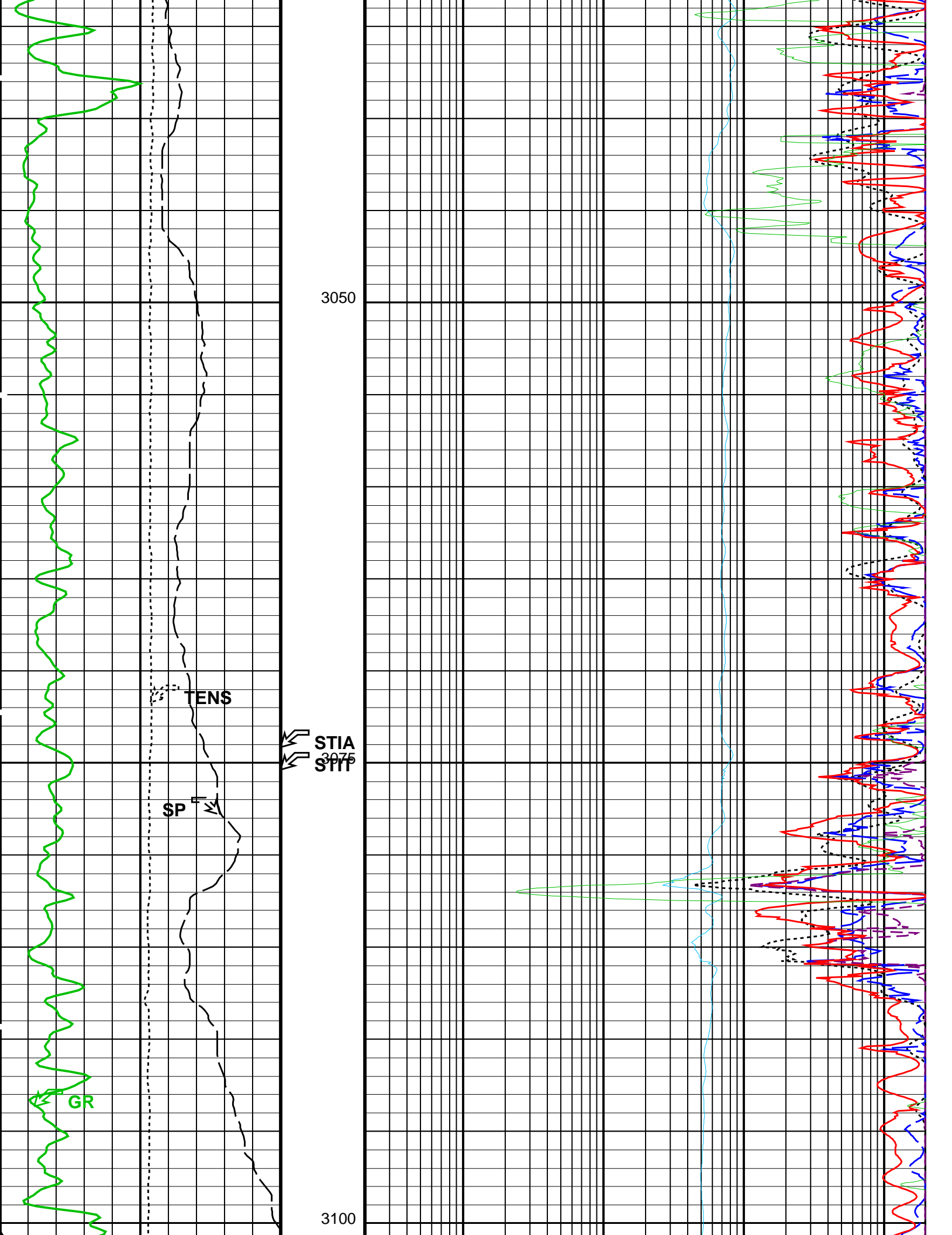


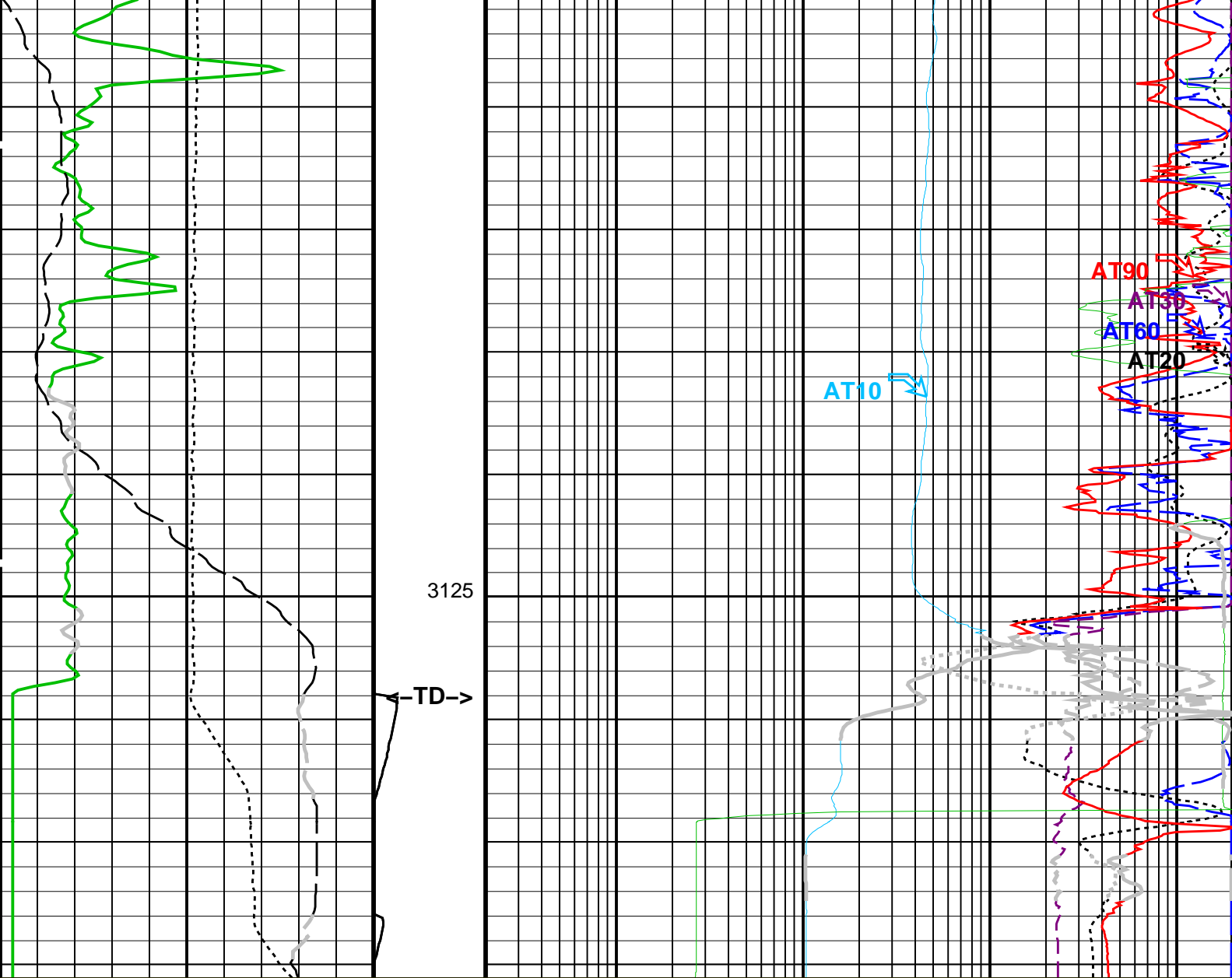
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3000

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\*\*\*MAIN LOG: ARRAY INDUCTION-SP LOG\*\*\*

SP (SP)	
(MV)	
-80	20
Gamma Ray (GR)	
(GAPI)	
0	150
Tension (TENS)	
25000 (N)	
0	0

0.2	AIT 10 Inch Investigation (AT10)	2000
(OHMM)		
0.2	AIT 20 Inch Investigation (AT20)	2000
(OHMM)		
0.2	AIT 60 Inch Investigation (AT60)	2000
(OHMM)		
0.2	Std. Res. Invaded Zone Resistivity (RXOZ)	2000
(OHMM)		
0.2	AIT 30 Inch Investigation (AT30)	2000
(OHMM)		
0.2	AIT 90 Inch Investigation (AT90)	2000
(OHMM)		

PIP SUMMARY

Time Mark Every 60 S

Parameters		
DLIS Name	Description	Value
AIT-M	Array Induction Tool - M	
AAPL	Array Induction Answer Product Level/Depth Log/View only	



AAFL	Array Induction Product Level (Depth Log/view only)	3_BholeCorr_BasicLogs_RadialProcessing		
ABHM	Array Induction Borehole Correction Mode	2_ComputeStandoff		
ABHV	Array Induction Borehole Correction Code Version Number	900		
ABLM	Array Induction Basic Logs Mode	6_One_Two_and_Four		
ABLV	Array Induction Basic Logs Code Version Number	223		
ACDE	Array Induction Casing Detection Enable	No		
ACEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered		
ACSED	Array Induction Casing Shoe Estimated Depth	-50000	M	
ADITM	Array Induction Desired Tool Mode	0x00_Log_000		
AEBC	Array Induction Enable Borehole Correction	Yes		
AEBL	Array Induction Enable Basic Logs	Yes		
AERP	Array Induction Enable Radial Processing	Yes		
AETP	Array Induction Enable Sonde Error Temp&Pres Corr	Yes		
AFRSV	Array Induction Response Set Version for Four ft Resolution	41.70.24.20		
AFVN	Array Induction Firmware Code Version Number	1		
AIGS	Array Induction Select Akima Interpolation Gating	On		
ALNV	Array Induction Log Not Valid Flag	Log_Valid-No_Default_Parameters		
AMRD	Array Induction Mud Resistivity Calibration Depth	0	M	
AMRF	Array Induction Mud Resistivity Factor	1		
AORSV	Array Induction Response Set Version for One ft Resolution	41.70.24.20		
ARFV	Array Induction Radial Profiling Code Version Number	701		
ARPM	Array Induction Radial Processing Mode	0_One		
ARPV	Array Induction Radial Parametrization Code Version Number	232		
ARTS	AIT Rt Selection (for ALLRES computation)	AITM_OneResTrueDeep		
ASTA	Array Induction Tool Standoff	38.1	MM	
ATRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20		
ATSE	Array Induction Temperature Selection (Sonde Error Correction)	Internal		
ATTY	Array Induction Tool Type (of acquired data)	AITM		
AULV	Array Induction User Level Control	Normal		
AZRSV	Array Induction Response Set Version for Z Resolution	00.10.25.00		
BHS	Borehole Status	OPEN		
BHT	Bottom Hole Temperature (used in calculations)	58.4	DEGC	
FEXP	Form Factor Exponent	2		
FNUM	Form Factor Numerator	1		
FPHI	Form Factor Porosity Source	DPHZ		
GCSE	Generalized Caliper Selection	HCAL		
GDEV	Average Angular Deviation of Borehole from Normal	20	DEG	
GGRD	Geothermal Gradient	0.018227	DC/M	
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST		
GTSE	Generalized Temperature Selection	HSTS_HTEM		
ISSBAR	Barite Mud Switch	NOBARITE		
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE		
RTCO	RTCO - Rt Invasion Correction	YES		
SHT	Surface Hole Temperature	30	DEGC	
SPNV	SP Next Value	0	MV	
HILTH-FTB: High resolution Integrated Logging Tool-DTS				
BHFL	Borehole Fluid Type	WATER		
BHFL_TLD	HILT Nuclear Mud Base	WATER		
BHS	Borehole Status	OPEN		
BHT	Bottom Hole Temperature (used in calculations)	58.4	DEGC	
BSCO	Borehole Salinity Correction Option	NO		
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	1000	K/M3	
FEXP	Form Factor Exponent	2		
FNUM	Form Factor Numerator	1		
FPHI	Form Factor Porosity Source	DPHZ		
FSAL	Formation Salinity	-50000	PPM	
FSCO	Formation Salinity Correction Option	NO		
GCLF	Germany Coal-like Formation Option	NO		
GCSE	Generalized Caliper Selection	HCAL		
GDEV	Average Angular Deviation of Borehole from Normal	20	DEG	
GGRD	Geothermal Gradient	0.018227	DC/M	
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST		
GTSE	Generalized Temperature Selection	HSTS_HTEM		
HACPP	Accelerometer PROM Presence	PRESENT_DOWNHOLE		
HART	Accelerometer Reference Temperature	25	DEGC	
HDCOD	HILT Density Coal detection	2000	K/M3	
HDSAD	HILT Density Salt detection	2100	K/M3	
HILT_GAS_DENSITY	HILT Gas Downhole Density	0	K/M3	
HILT_GAS_OPTION	HILT Gas Computation Option	OFF		
HNCOD	HILT Neutron Coal detection	0.45	V/V	
HNSAD	HILT Neutron Salt detection	0.05	V/V	
HPHIECUT	HILT effective Porosity Cutoff	0.05	V/V	
HSCO	Hole Size Correction Option	YES		
HSIS	HILT Shale Indicator Selection	GR		
HSSO	HRDD Nuclear Source Strength Option	NORMAL		
HSWCUT	HILT Water Saturation from AITH cutoff	50	%	
ISSBAR	Barite Mud Switch	NOBARITE		
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE		
MCCO	Mud Cake Correction Option	NO		

MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2710	K/M3
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	NO	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	VeryHiRes	
NSAR	HRDD Depth Sampling Rate	12.7	MM
PEA_FILTER	PEA Filter	NO_FILTER	
PEFC_FILTER	PEFC Filter	NO_FILTER	
PHIMAX	HILT max porosity	0.35	V/V
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SEXP_HILT	HILT Saturation Exponent	2	
SHT	Surface Hole Temperature	30	DEGC
SOCN	Standoff Distance	3.175	MM
SOCO	Standoff Correction Option	YES	
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	58.4	DEGC
FCD	Future Casing (Outer) Diameter	177.8	MM
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	20	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HVCS	Integrated Hole Volume Caliper Selection	HCAL	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	30	DEGC
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	1.5	M
TDD	Total Depth - Driller	3160.00	M
TDL	Total Depth - Logger	3160.00	M
System and Miscellaneous			
ALTDCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	216.000	MM
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	244.500	MM
CWEI	Casing Weight	64.74	KG/M
DFD	Drilling Fluid Density	1170.00	K/M3
DO	Depth Offset for Playback	5.0	M
DORL	Depth Offset for Repeat Analysis	0.0	M
FLEV	Fluid Level	0.00	M
MST	Mud Sample Temperature	21.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	0.7100	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	3160	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: AIT\_HRLA\_D240    Vertical Scale: 1:240    Graphics File Created: 15-May-2010 20:21

## OP System Version: 17C0-154

AIT-M                      17C0-154                      HILTH-FTB                      17C0-154  
DTC-H                      17C0-154

### Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_009LUP	FN:9	PRODUCER	15-May-2010 18:24	3135.5 M	2218.0 M
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### Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_016PUP	FN:23	PRODUCER	15-May-2010 20:21
CUSTOMER	AIT_TLD_MCFL_CNL_016PUP	FN:24	PRODUCER	15-May-2010 20:21

Company: Nalcor Energy Oil and Gas    Well: Nalcor et al Seamus 1

### Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_009LUP	FN:9	PRODUCER	15-May-2010 18:24	3135.5 M	2218.0 M
DEFAULT	AIT_TLD_MCFL_CNL_015PUP	FN:21	PRODUCER	15-May-2010 20:19	2404.9 M	2276.4 M

Output DLIS Files

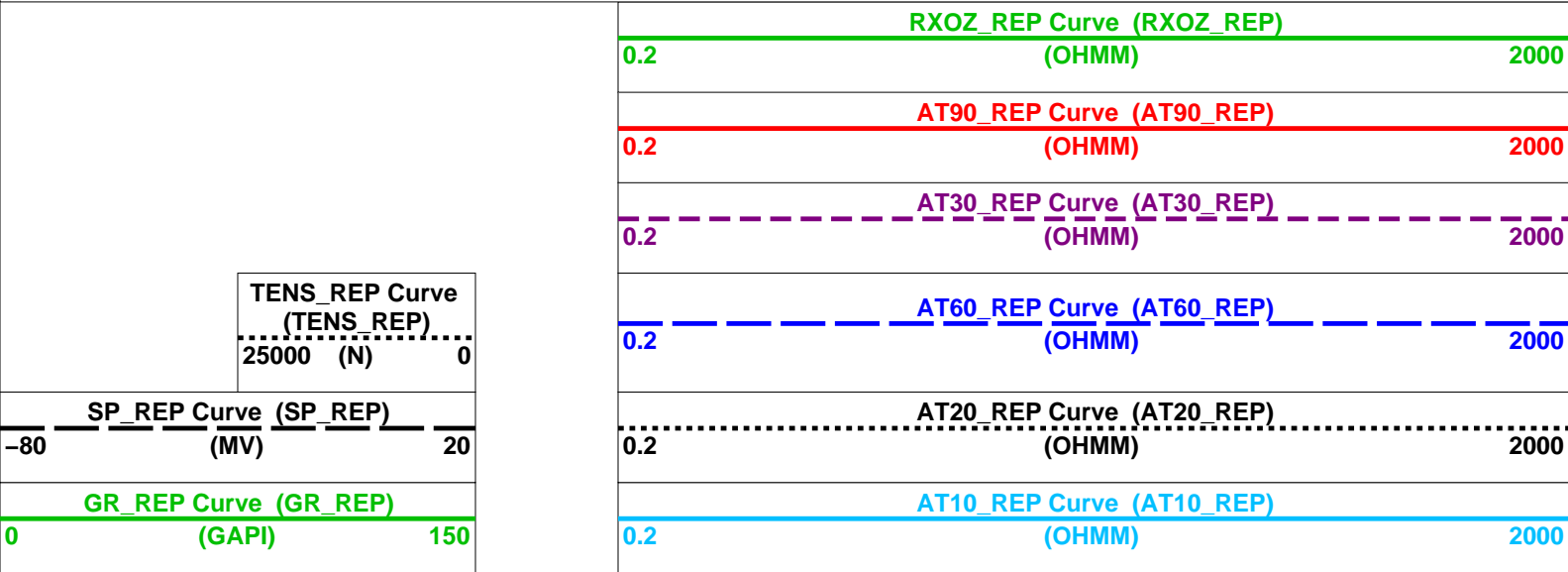
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CUSTOMER	AIT_TLD_MCFL_CNL_016PUP	FN:24	PRODUCER	15-May-2010 20:21	3140.5 M	2223.1 M

OP System Version: 17C0-154

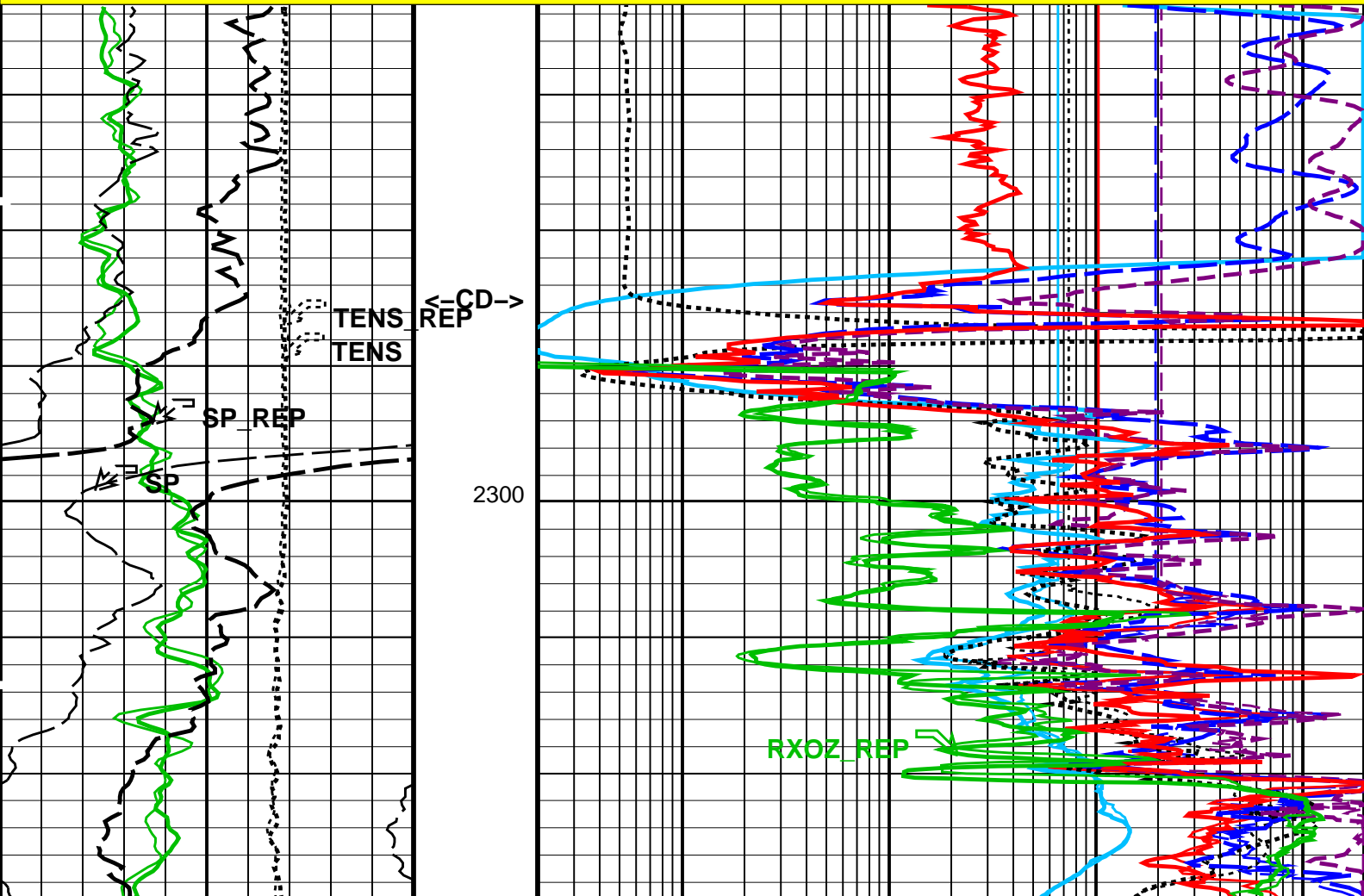
AIT-M	17C0-154	HILTH-FTB	17C0-154
DTC-H	17C0-154		

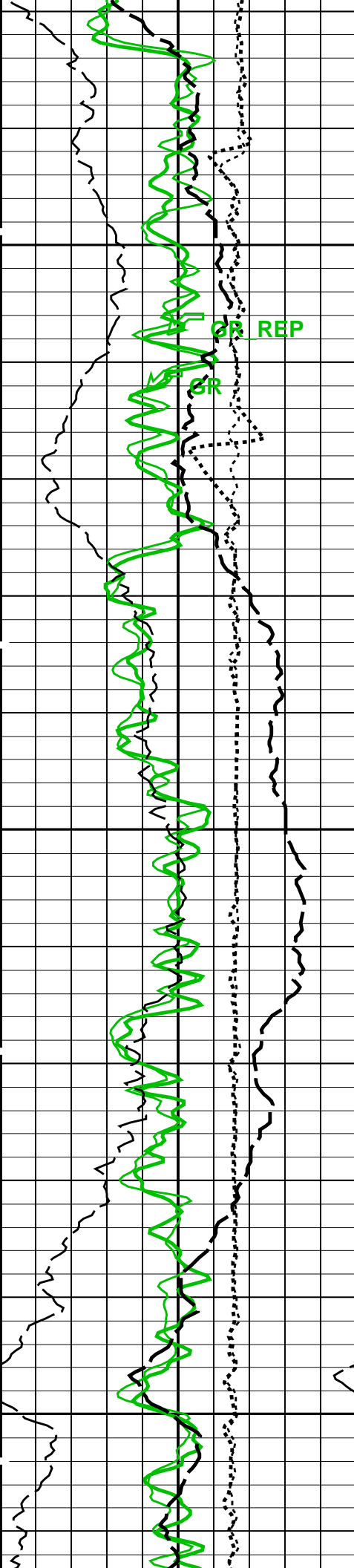
PIP SUMMARY

Time Mark Every 60 S



\*\*\*REPEAT ANALYSIS: ARRAY INDUCTION-SP LOG\*\*\*

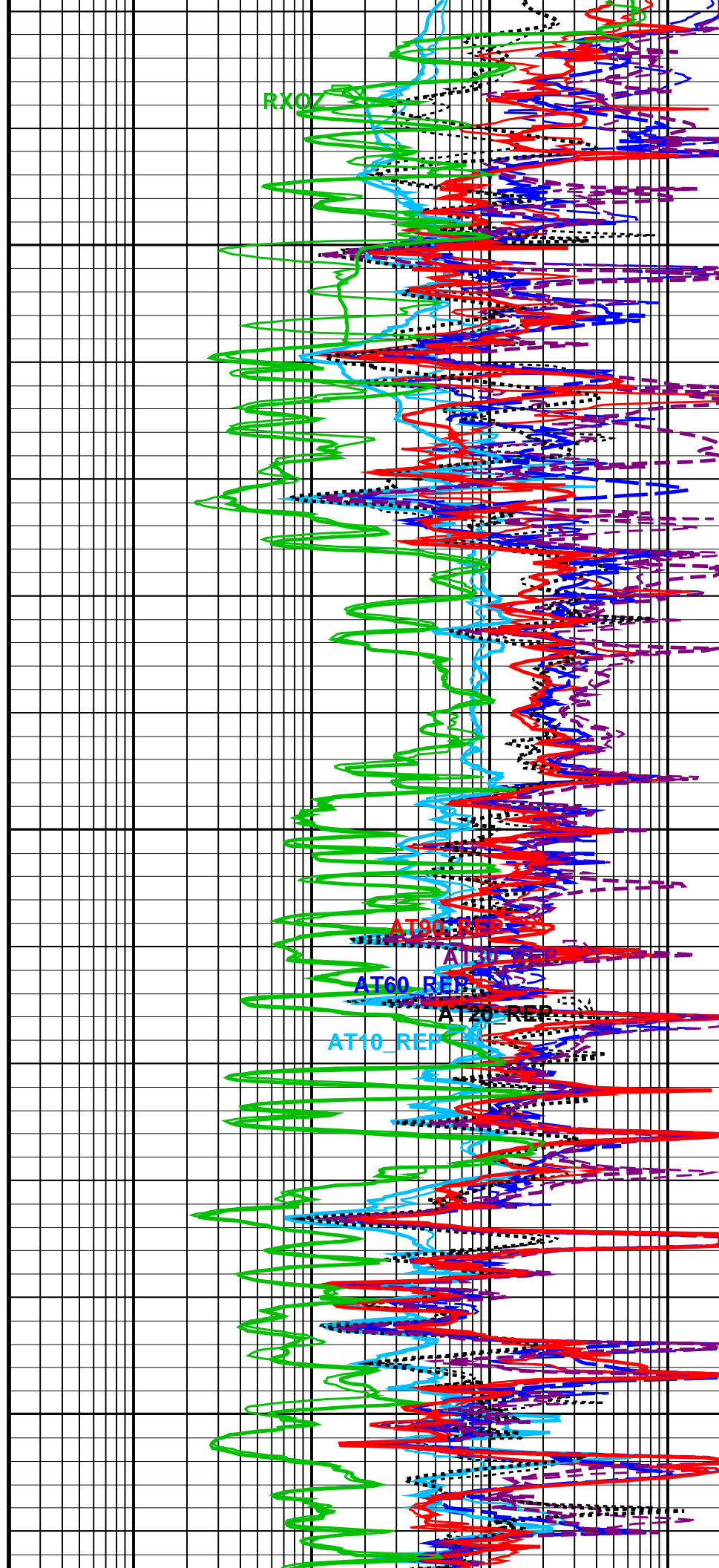


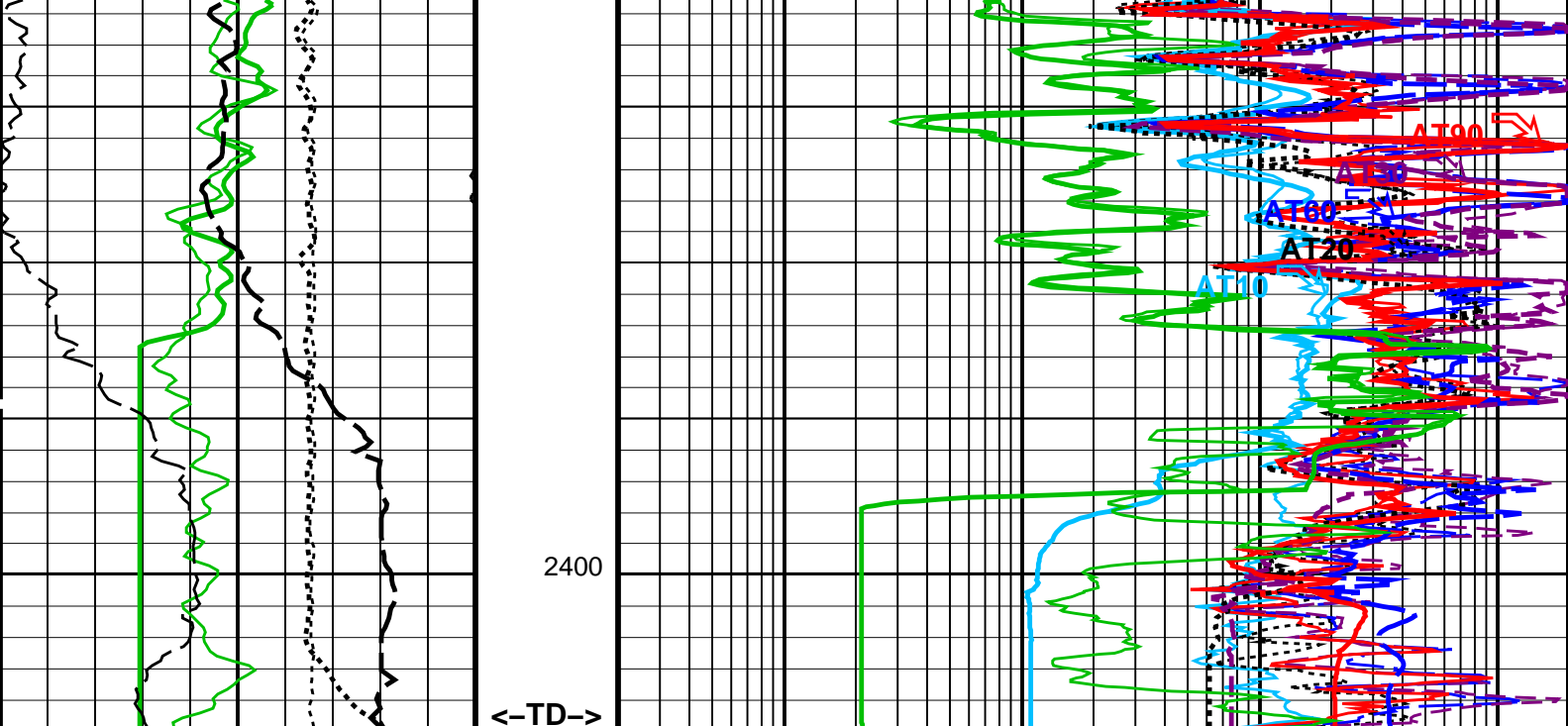


2325

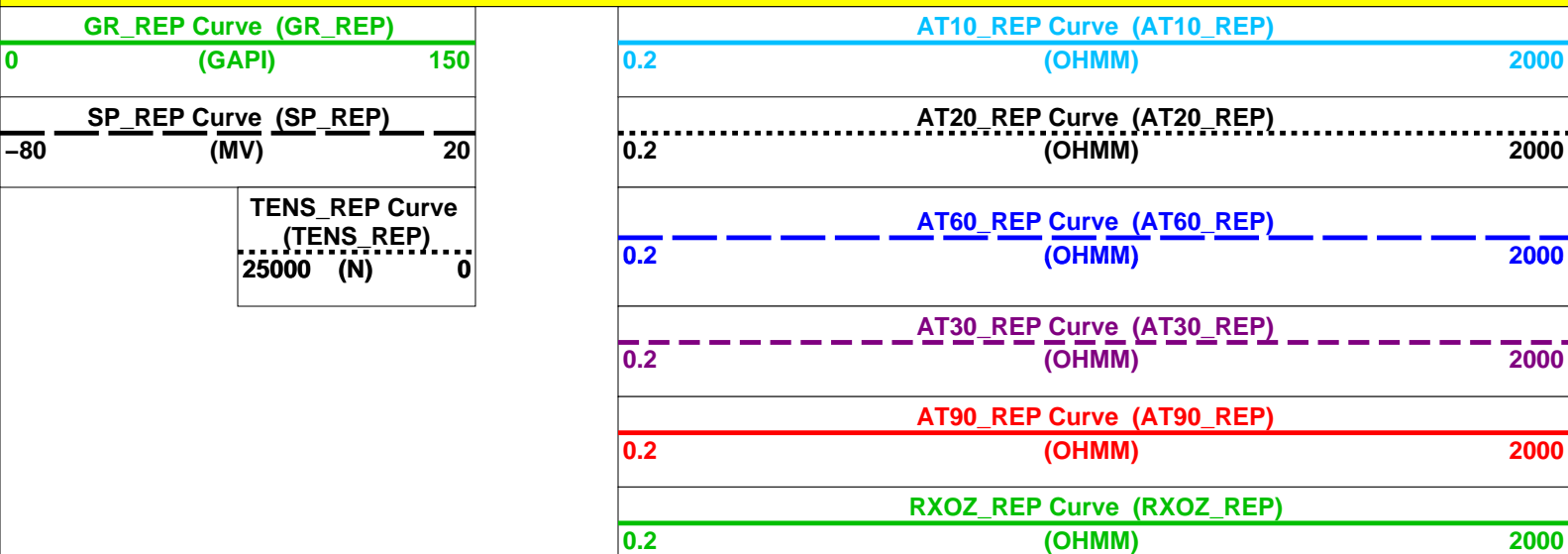
2350

2375





\*\*\*REPEAT ANALYSIS: ARRAY INDUCTION-SP LOG\*\*\*



PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
AIT-M: Array Induction Tool - M		
ABHM	Array Induction Borehole Correction Mode	2_ComputeStandoff
ABHV	Array Induction Borehole Correction Code Version Number	900
ABLM	Array Induction Basic Logs Mode	6_One_Two_and_Four
ABLV	Array Induction Basic Logs Code Version Number	223
ACDE	Array Induction Casing Detection Enable	No
ACEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered
ACSED	Array Induction Casing Shoe Estimated Depth	-50000 M
AETP	Array Induction Enable Sonde Error Temp&Pres Corr	Yes
AFRSV	Array Induction Response Set Version for Four ft Resolution	41.70.24.20
AIGS	Array Induction Select Akima Interpolation Gating	On
AMRF	Array Induction Mud Resistivity Factor	1
AORSV	Array Induction Response Set Version for One ft Resolution	41.70.24.20
ARFV	Array Induction Radial Profiling Code Version Number	701
ARPV	Array Induction Radial Parametrization Code Version Number	232
ASTA	Array Induction Tool Standoff	38.1 MM
ATRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	Internal
AULV	Array Induction User Level Control	Normal
AZRSV	Array Induction Response Set Version for Z Resolution	00.10.25.00
BHT	Bottom Hole Temperature (used in calculations)	58.4 DEGC

BHT	Bottom Hole Temperature (used in calculations)	58.4	DEGC
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	20	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
SHT	Surface Hole Temperature	30	DEGC
SPNV	SP Next Value	0	MV
HILTH-FTB: High resolution Integrated Logging Tool-DTS			
BHT	Bottom Hole Temperature (used in calculations)	58.4	DEGC
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	20	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MPOF	MCFL Processing Operation Mode	ON	
SHT	Surface Hole Temperature	30	DEGC
HOLEV: Integrated Hole/Cement Volume			
BHT	Bottom Hole Temperature (used in calculations)	58.4	DEGC
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	20	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
SHT	Surface Hole Temperature	30	DEGC
System and Miscellaneous			
BS	Bit Size	216.000	MM
DFD	Drilling Fluid Density	1170.00	K/M3
DO	Depth Offset for Playback	5.0	M
DORL	Depth Offset for Repeat Analysis	0.0	M
FLEV	Fluid Level	0.00	M
MST	Mud Sample Temperature	21.00	DEGC
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	3160	M

Format: AIT\_HRLA\_D240\_REP      Vertical Scale: 1:240      Graphics File Created: 15-May-2010 20:21

## OP System Version: 17C0-154

AIT-M	17C0-154	HILTH-FTB	17C0-154
DTC-H	17C0-154		

### Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_009LUP	FN:9	PRODUCER	15-May-2010 18:24	3135.5 M	2218.0 M
DEFAULT	AIT_TLD_MCFL_CNL_015PUP	FN:21	PRODUCER	15-May-2010 20:19	2404.9 M	2276.4 M

### Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_016PUP	FN:23	PRODUCER	15-May-2010 20:21		
CUSTOMER	AIT_TLD_MCFL_CNL_016PUP	FN:24	PRODUCER	15-May-2010 20:21		

Company: Nalcor Energy Oil and Gas      Well: Nalcor et al Seamus 1

### Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_009LUP	FN:9	PRODUCER	15-May-2010 18:24	3135.5 M	2218.0 M
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### Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_023PUP	FN:31	PRODUCER	15-May-2010 20:39	2783.0 M	2578.0 M
CUSTOMER	AIT_TLD_MCFL_CNL_023PUP	FN:32	PRODUCER	15-May-2010 20:39	2783.0 M	2578.0 M

## OP System Version: 17C0-154

AIT-M	17C0-154	HILTH-FTB	17C0-154
DTC-H	17C0-154		

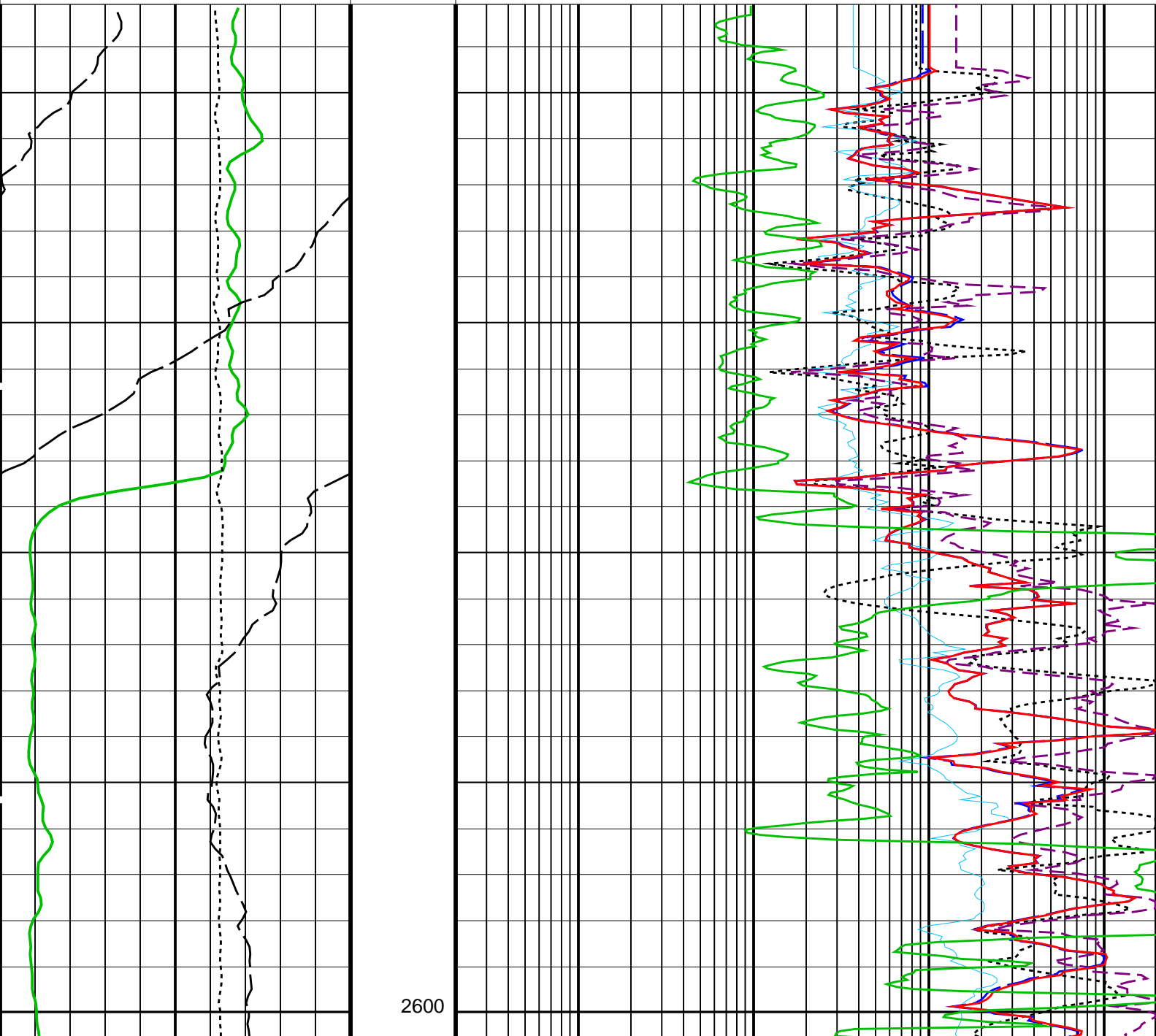
## Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
BHT	60.2 DEGC	58.4 DEGC	2677.7 20:39:58

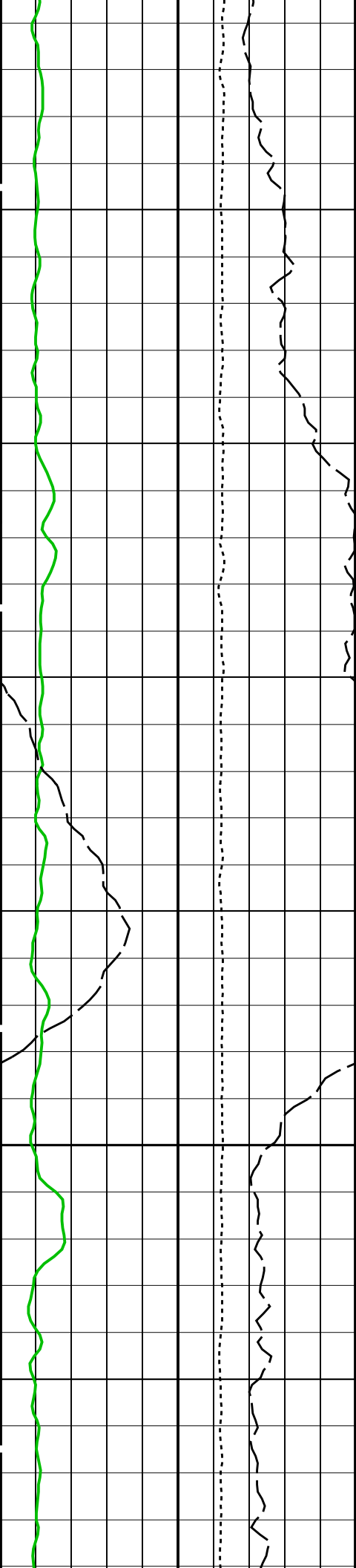
PIP SUMMARY

Time Mark Every 60 S

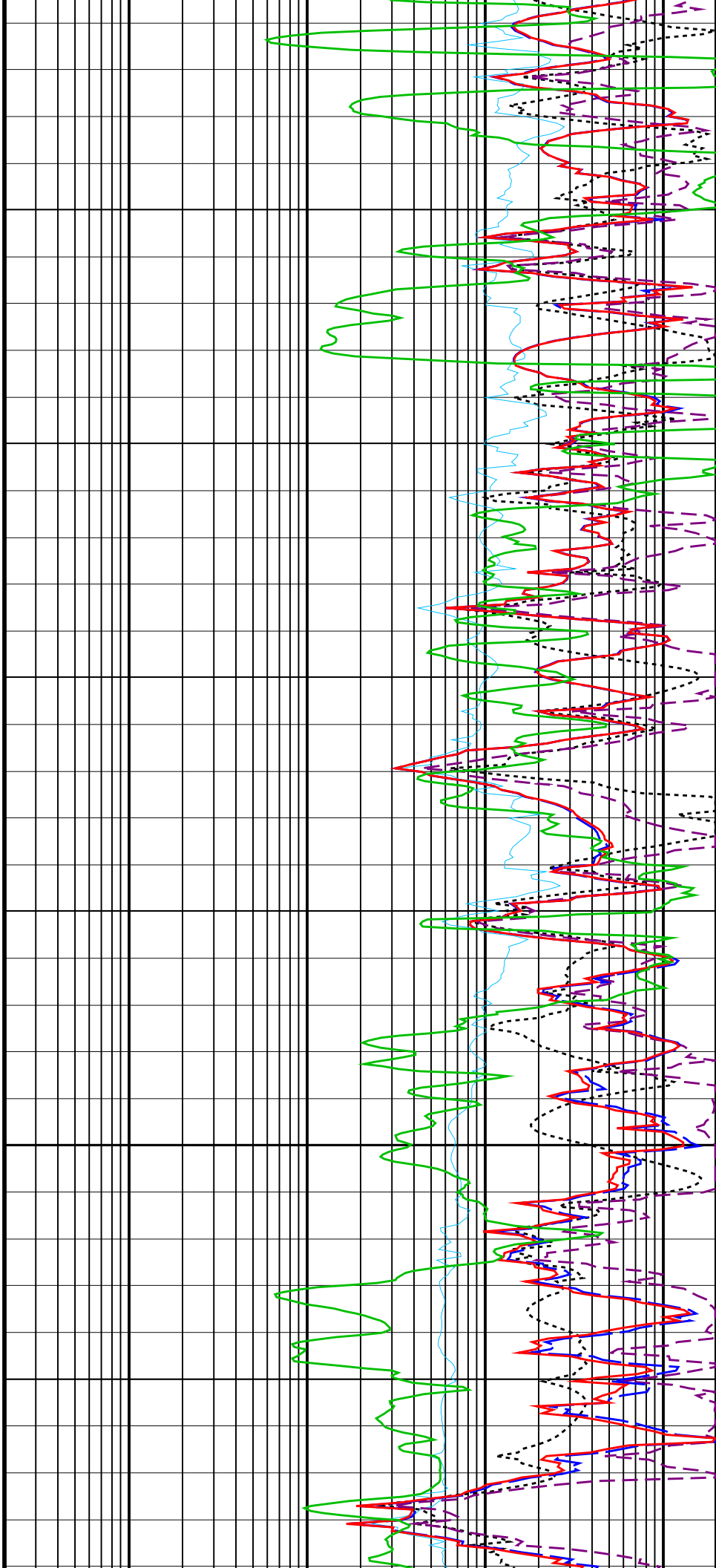
<div><div>Tension (TENS) 25000 (N)0</div><div>Gamma Ray (GR) (GAPI)0150</div><div>SP (SP) (MV)-8020</div></div>	H. Res. Invaded Zone Resistivity (RX08)	2000
	0.2 (OHMM)	
	AIT 90 Inch Investigation (AO90)	2000
	0.2 (OHMM)	
	AIT 60 Inch Investigation (AO60)	2000
	0.2 (OHMM)	
	AIT 30 Inch Investigation (AO30)	2000
	0.2 (OHMM)	
	AIT 10 Inch Investigation (AO10)	2000
	0.2 (OHMM)	
	AIT 20 Inch Investigation (AO20)	2000
	0.2 (OHMM)	



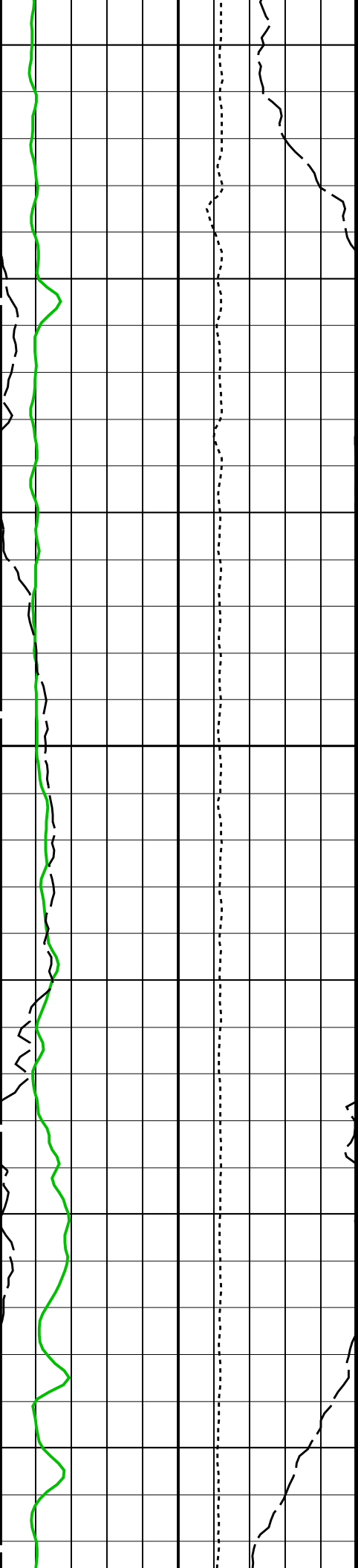




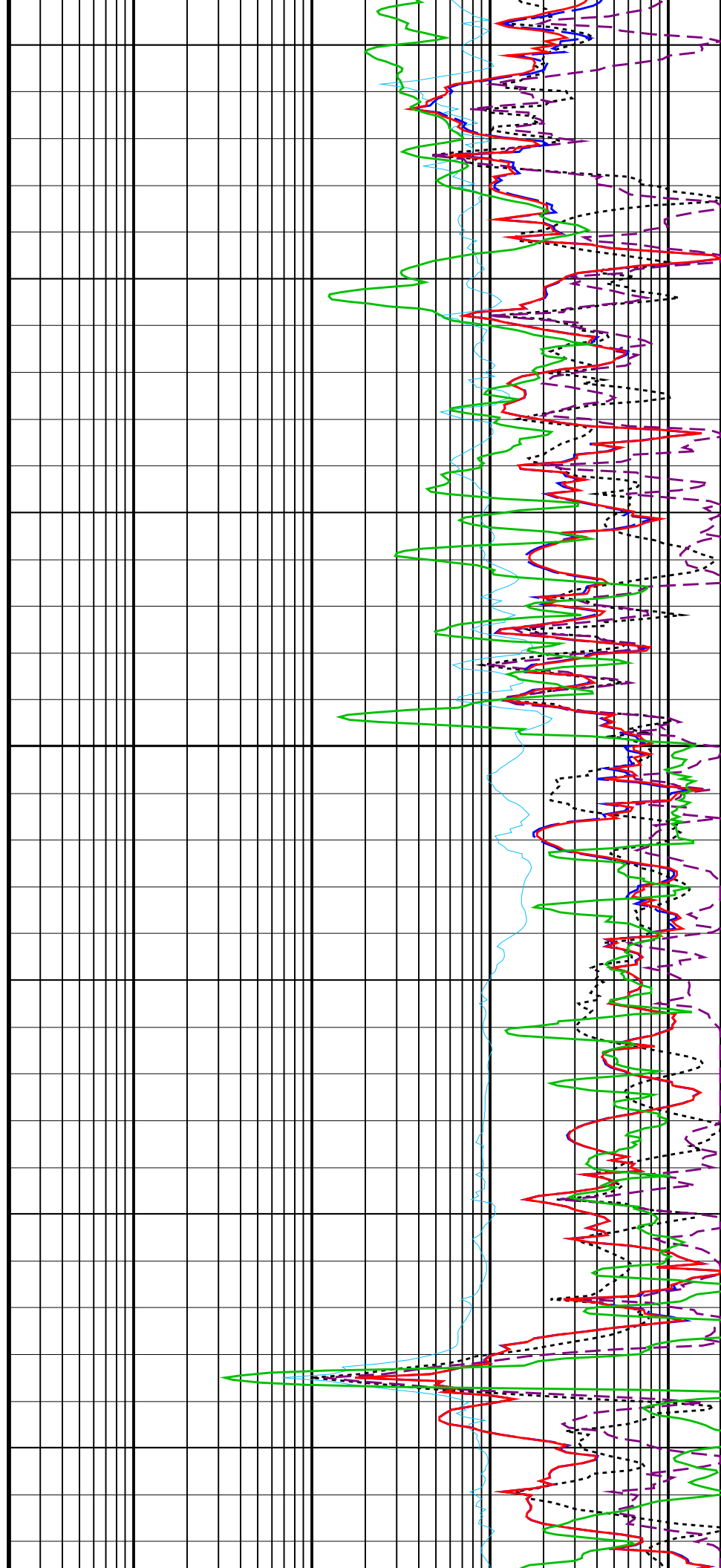
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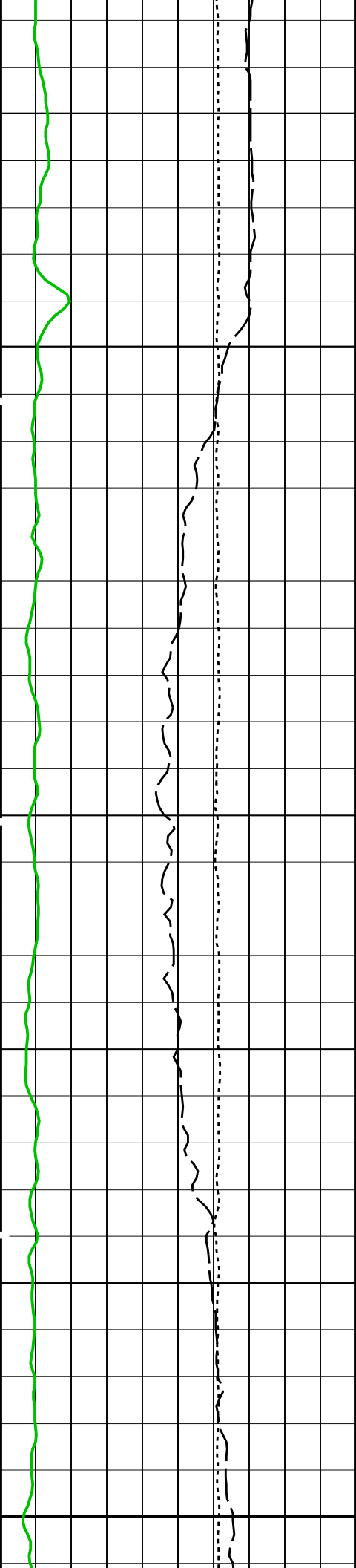






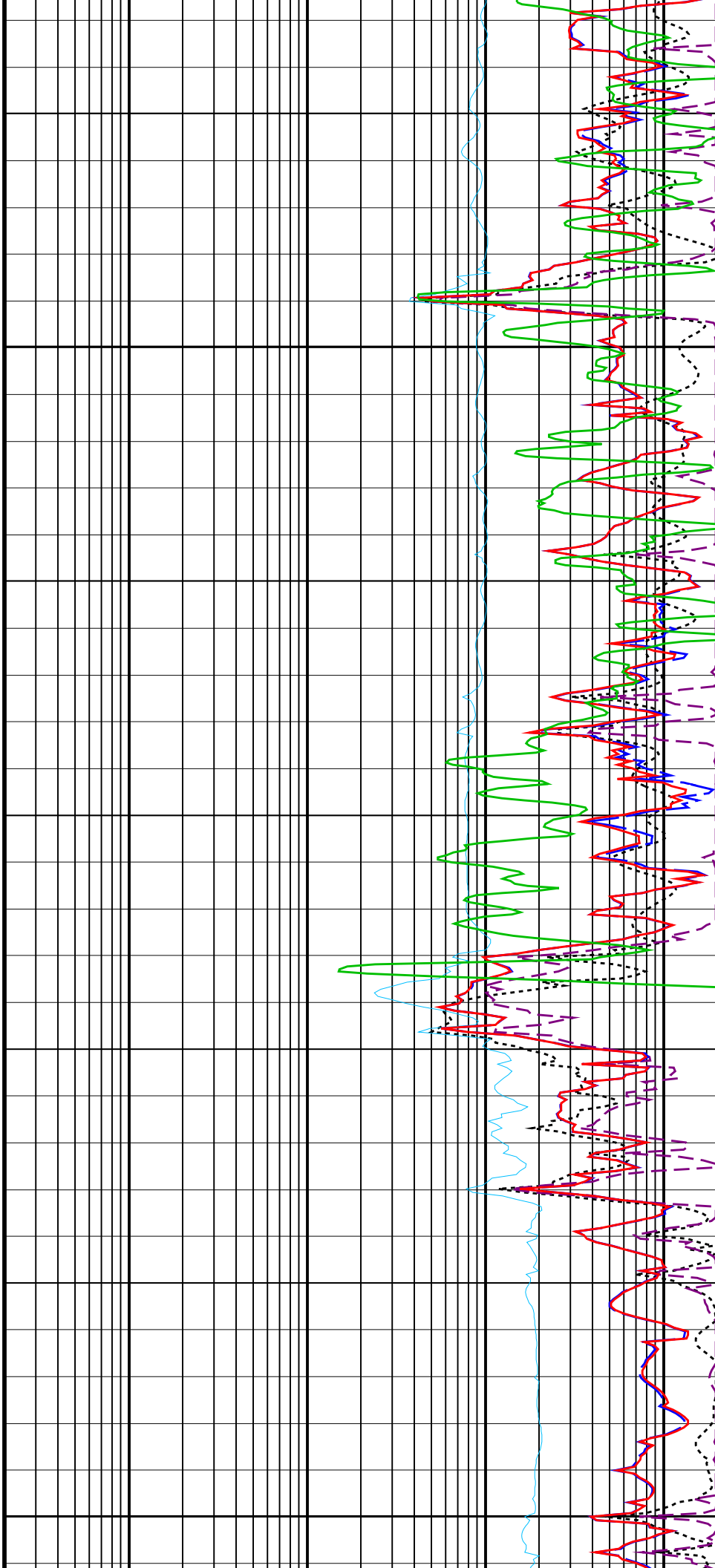
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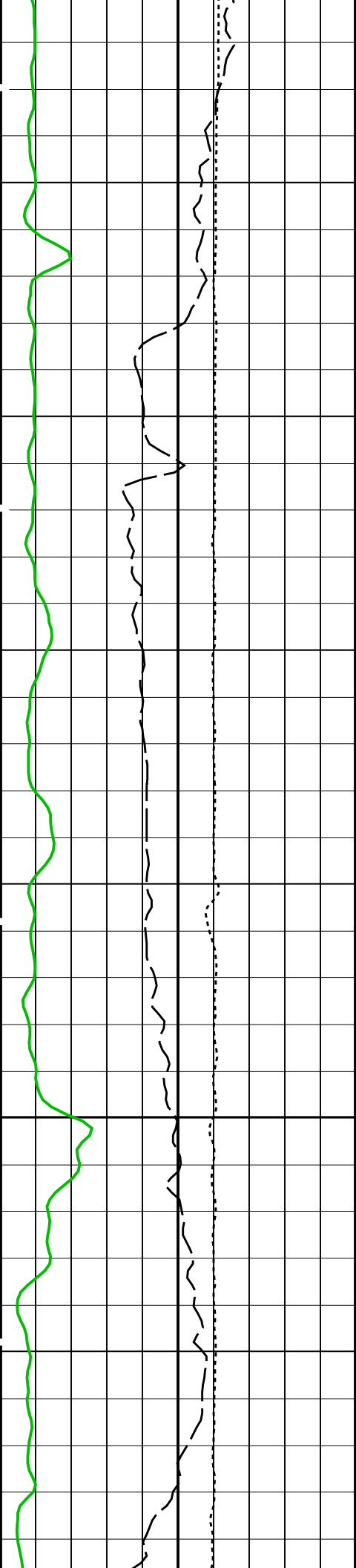




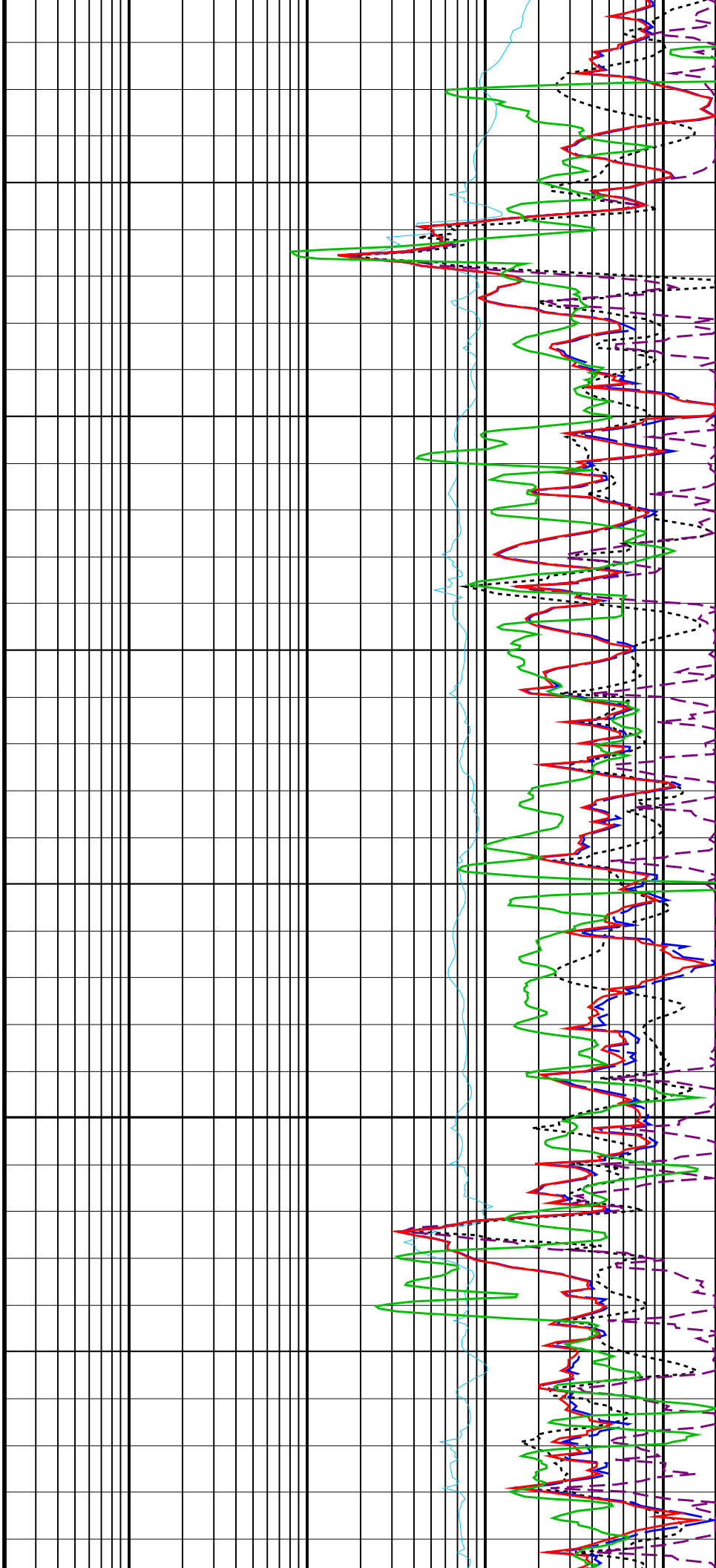
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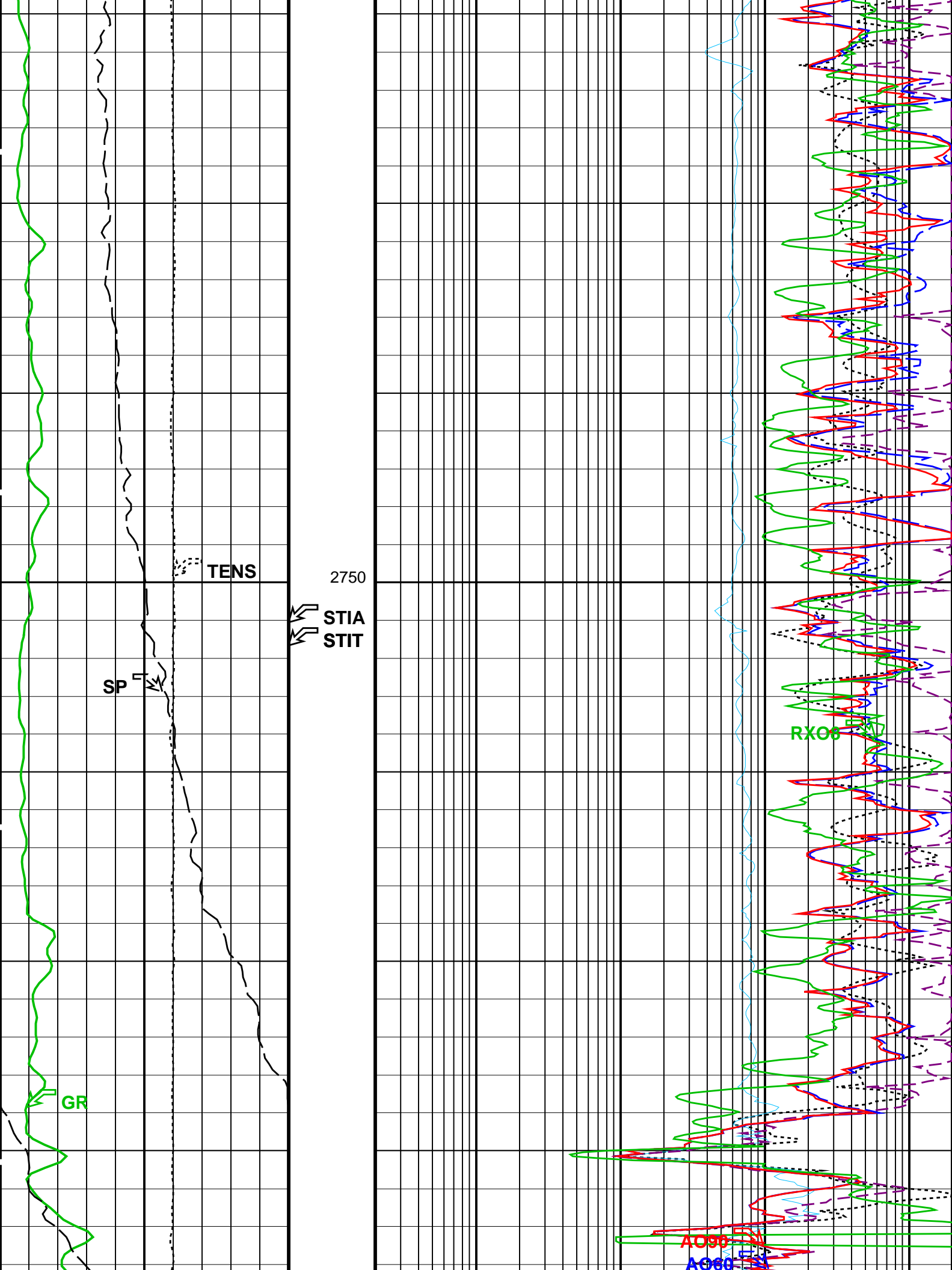
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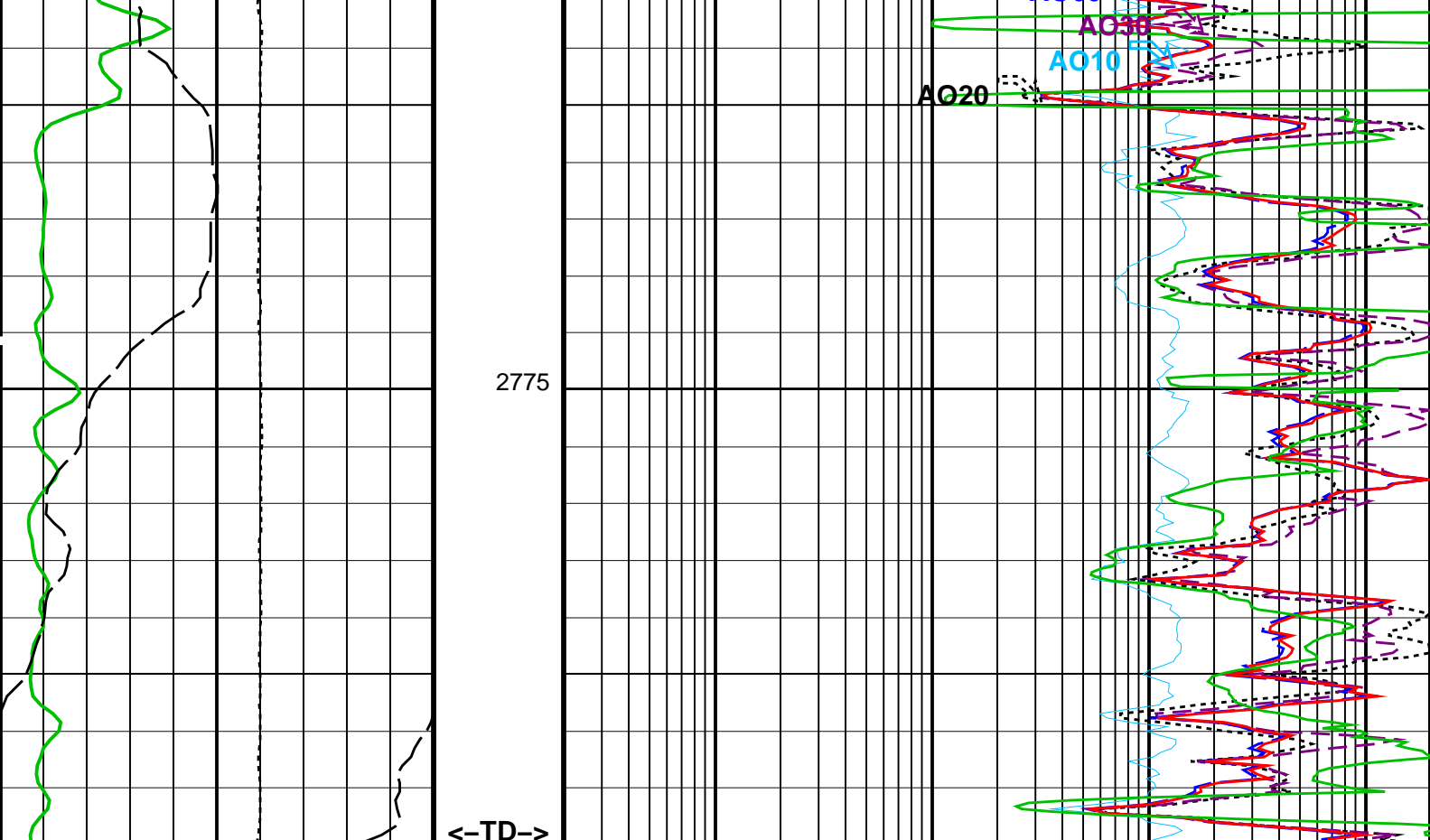




2725







SP (SP) (MV)		AIT 20 Inch Investigation (AO20)	
-80	20	0.2	2000
Gamma Ray (GR) (GAPI)		AIT 10 Inch Investigation (AO10)	
0	150	0.2	2000
Tension (TENS) 25000 (N)		AIT 30 Inch Investigation (AO30)	
	0	0.2	2000
		AIT 60 Inch Investigation (AO60)	
		0.2	2000
		AIT 90 Inch Investigation (AO90)	
		0.2	2000
		H. Res. Invaded Zone Resistivity (RXO8)	
		0.2	2000

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
AIT-M: Array Induction Tool – M			
ABHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
ABHV	Array Induction Borehole Correction Code Version Number	900	
ABLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
ABLV	Array Induction Basic Logs Code Version Number	223	
ACDE	Array Induction Casing Detection Enable	No	
ACEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
ACSED	Array Induction Casing Shoe Estimated Depth	–50000	M
AETP	Array Induction Enable Sonde Error Temp&Pres Corr	Yes	
AFRSV	Array Induction Response Set Version for Four ft Resolution	41.70.24.20	
AIGS	Array Induction Select Akima Interpolation Gating	On	
AMRF	Array Induction Mud Resistivity Factor	1	
AORSV	Array Induction Response Set Version for One ft Resolution	41.70.24.20	
ARFV	Array Induction Radial Profiling Code Version Number	701	
ARPV	Array Induction Radial Parametrization Code Version Number	232	
ASTA	Array Induction Tool Standoff	38.1	MM
ATRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20	

ATSE	Array Induction Temperature Selection(Sonde Error Correction)	Internal	
AULV	Array Induction User Level Control	Normal	
AZRSV	Array Induction Response Set Version for Z Resolution	00.10.25.00	
BHT	Bottom Hole Temperature (used in calculations)	58.4	DEGC
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	20	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
SHT	Surface Hole Temperature	30	DEGC
SPNV	SP Next Value	0	MV
HILTH-FTB: High resolution Integrated Logging Tool-DTS			
BHT	Bottom Hole Temperature (used in calculations)	58.4	DEGC
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	20	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MPOF	MCFL Processing Operation Mode	ON	
SHT	Surface Hole Temperature	30	DEGC
HOLEV: Integrated Hole/Cement Volume			
BHT	Bottom Hole Temperature (used in calculations)	58.4	DEGC
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	20	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
SHT	Surface Hole Temperature	30	DEGC
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	1.5	M
TDD	Total Depth - Driller	3160.00	M
TDL	Total Depth - Logger	3129.20	M
System and Miscellaneous			
BS	Bit Size	216.000	MM
DFD	Drilling Fluid Density	1170.00	K/M3
DO	Depth Offset for Playback	5.0	M
FLEV	Fluid Level	0.00	M
MST	Mud Sample Temperature	21.00	DEGC
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	3129.2	M

Format: AIT\_HIRES    Vertical Scale: 1:120    Graphics File Created: 15-May-2010 20:39

## OP System Version: 17C0-154

AIT-M	17C0-154	HILTH-FTB	17C0-154
DTC-H	17C0-154		

### Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_009LUP	FN:9	PRODUCER	15-May-2010 18:24	3135.5 M	2218.0 M
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### Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_023PUP	FN:31	PRODUCER	15-May-2010 20:39		
CUSTOMER	AIT_TLD_MCFL_CNL_023PUP	FN:32	PRODUCER	15-May-2010 20:39		

### Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_009LUP	FN:9	PRODUCER	15-May-2010 18:24	3135.5 M	2218.0 M
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### Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_016PUP	FN:23	PRODUCER	15-May-2010 20:21	3140.5 M	2223.1 M
CUSTOMER	AIT_TLD_MCFL_CNL_016PUP	FN:24	PRODUCER	15-May-2010 20:21	3140.5 M	2223.1 M

## HRDD Processing Flags Statistical Analysis:

Percentages computed on interval 10264.1 to 7531.1 ft (3128.5 to 2295.5 m)

Pef Flags Up	50.7 %			
Density Flags Up	0.2 %			
	Window 1	Window 2	Window 3	Window 4
BS Average Reconstruction Error	4.40 %	2.68 %	0.02 %	
SS Average Reconstruction Error	−0.14 %	−0.87 %	−1.19 %	1.00 %
LS Average Reconstruction Error	2.85 %	2.93 %	−0.63 %	−0.45 %

OP System Version: 17C0–154

AIT–M	17C0–154	HILTH–FTB	17C0–154
DTC–H	17C0–154		

PIP SUMMARY

Time Mark Every 60 S

Gamma Ray (GR)				
0 (GAPI) 150				
Std. Res. Resistivity Standoff (RSOZ)		AIT QC Fully Calibrated A8 Signal (AQABN[7])		
65 (MM) 0		2 (MM/M) 20000		
HILT Caliper (HCAL)		AIT QC Fully Calibrated A7 Signal (AQABN[6])		
125 (MM) 375		2 (MM/M) 20000		
Std. Res. Density Standoff (DSOZ)		AIT QC Fully Calibrated A6 Signal (AQABN[5])		Pe Correction (HPRA)
65 (MM) 0		2 (MM/M) 20000		−3 (----) 3
Bit Size (BS)		AIT QC Fully Calibrated A5 Signal (AQABN[4])		BS Delta Rho (HDRB)
125 (MM) 375		2 (MM/M) 20000		−0.5 (G/C3) 0.5
AIT Mud Full Cal (AMF)		AIT QC Fully Calibrated A4 Signal (AQABN[3])		Density Correction (HDRA)
0 (OHMM) 10		2 (MM/M) 20000		−0.25 (G/C3) 0.25
AIT Input Bhole Diameter (AIBD)		AIT QC Fully Calibrated A3 Signal (AQABN[2])		Hdrx (HDRX)
125 (MM) 375		2 (MM/M) 20000		0.5 (----) 1.5
AIT Bhole/Form Signal Ratio (ABFR)		AIT QC Fully Calibrated A2 Signal (AQABN[1])		Delta Neutron Porosity (DNPH)
0 (----) 25		2 (MM/M) 20000		−0.1 (V/V) 0.1
HGNS Deviation (GDEV)	Tension (TENS)	AIT QC Fully Calibrated A1 Signal (AQABN[0])		GR Borehole Correction Factor (CFGR)
−5 (DEG) 45	(N) 25000 0	2 (MM/M) 20000		0.5 (----) 1.5

\*\*\*MAIN PASS – LOG QUALITY IMAGE\*\*\*

\*\*\* Flag Tracks \*\*\*

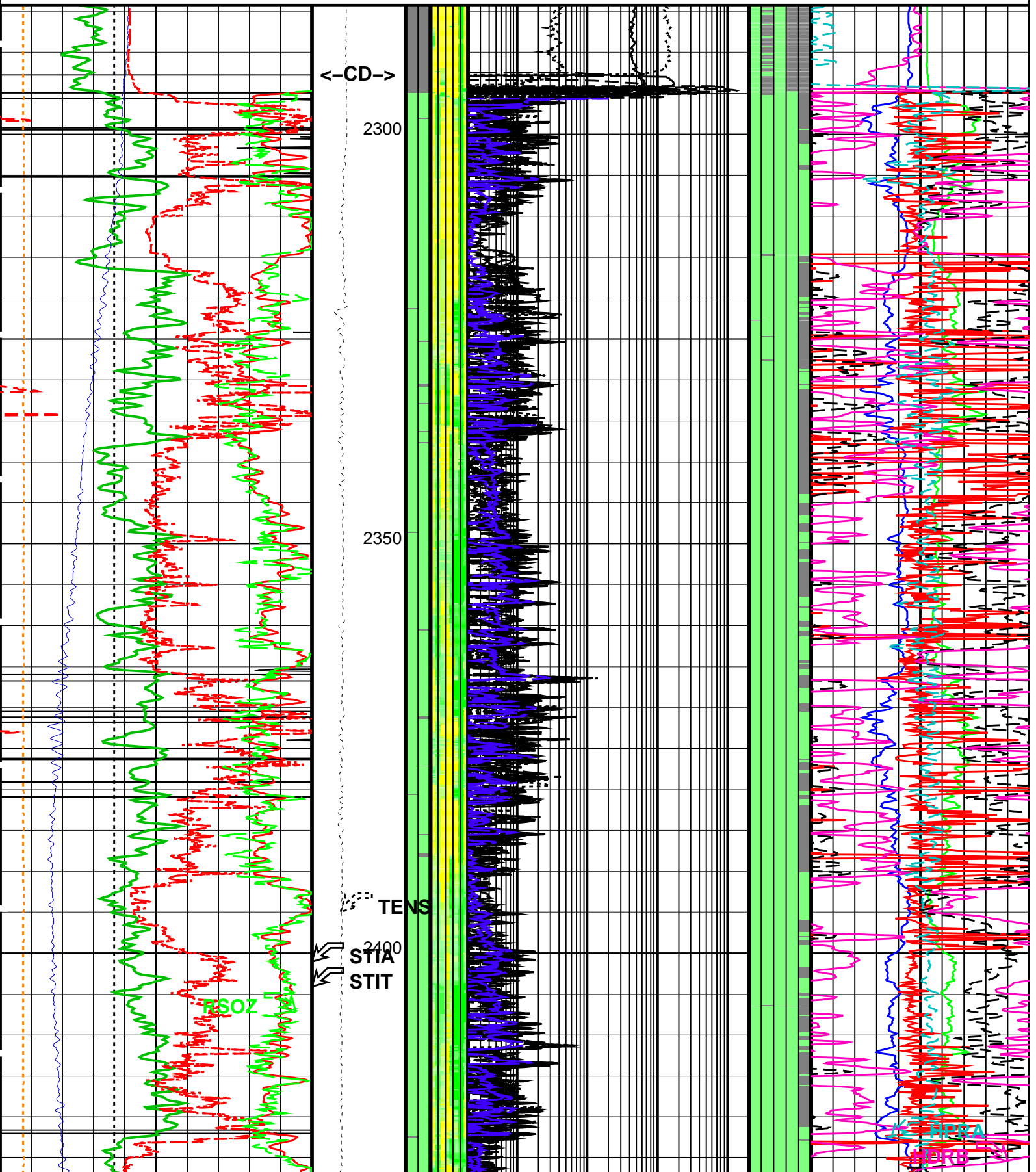
White = Absent    Green = Good    Yellow = Warn    Red/Black = Bad

RESISTIVITY TRACK :

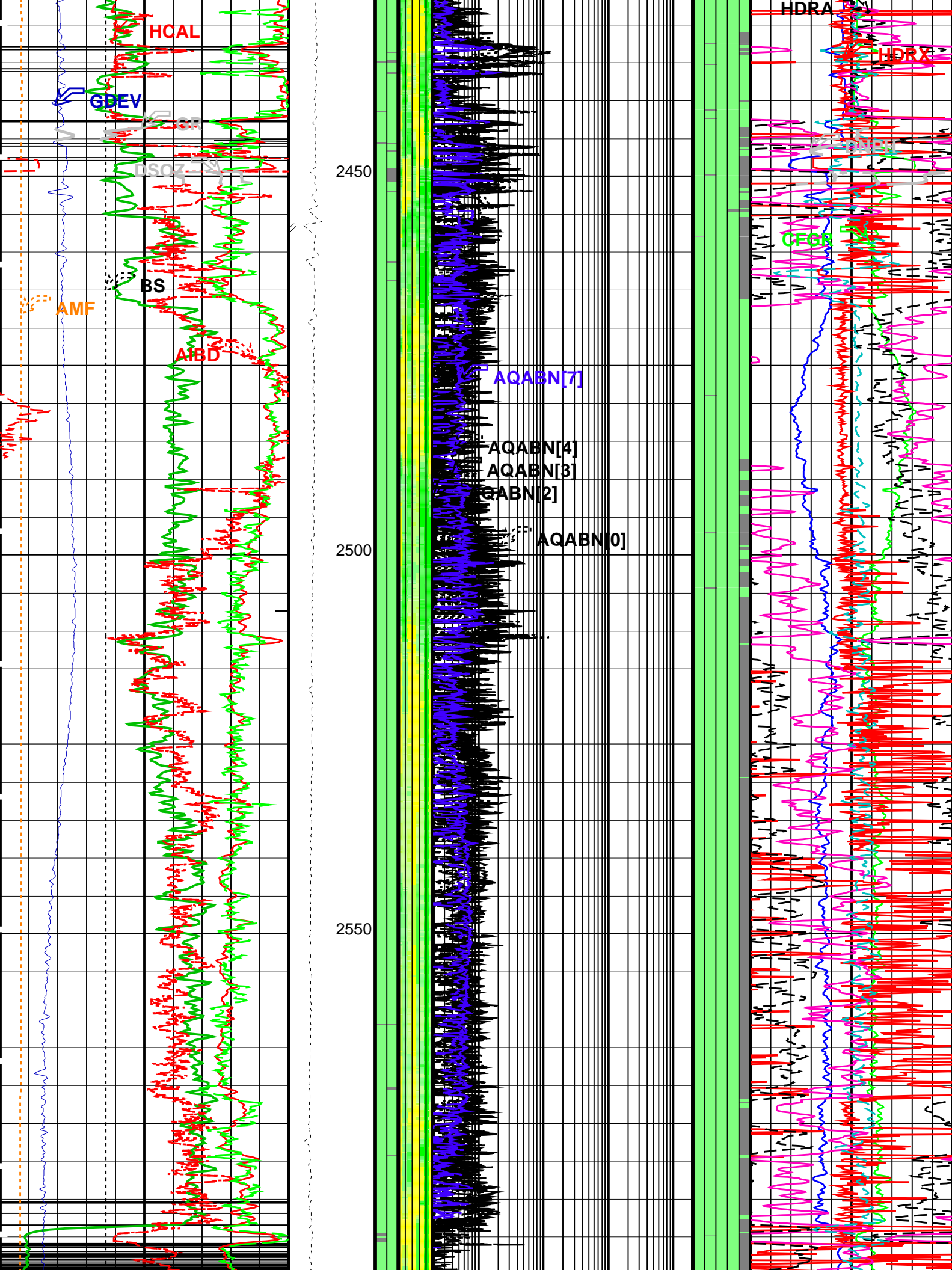
- MCFL Hardware
- RXO Processing
- HAIT Hardware
- HAIT Array[1–2]
- HAIT Array[3–4]
- HAIT Array[5–6]

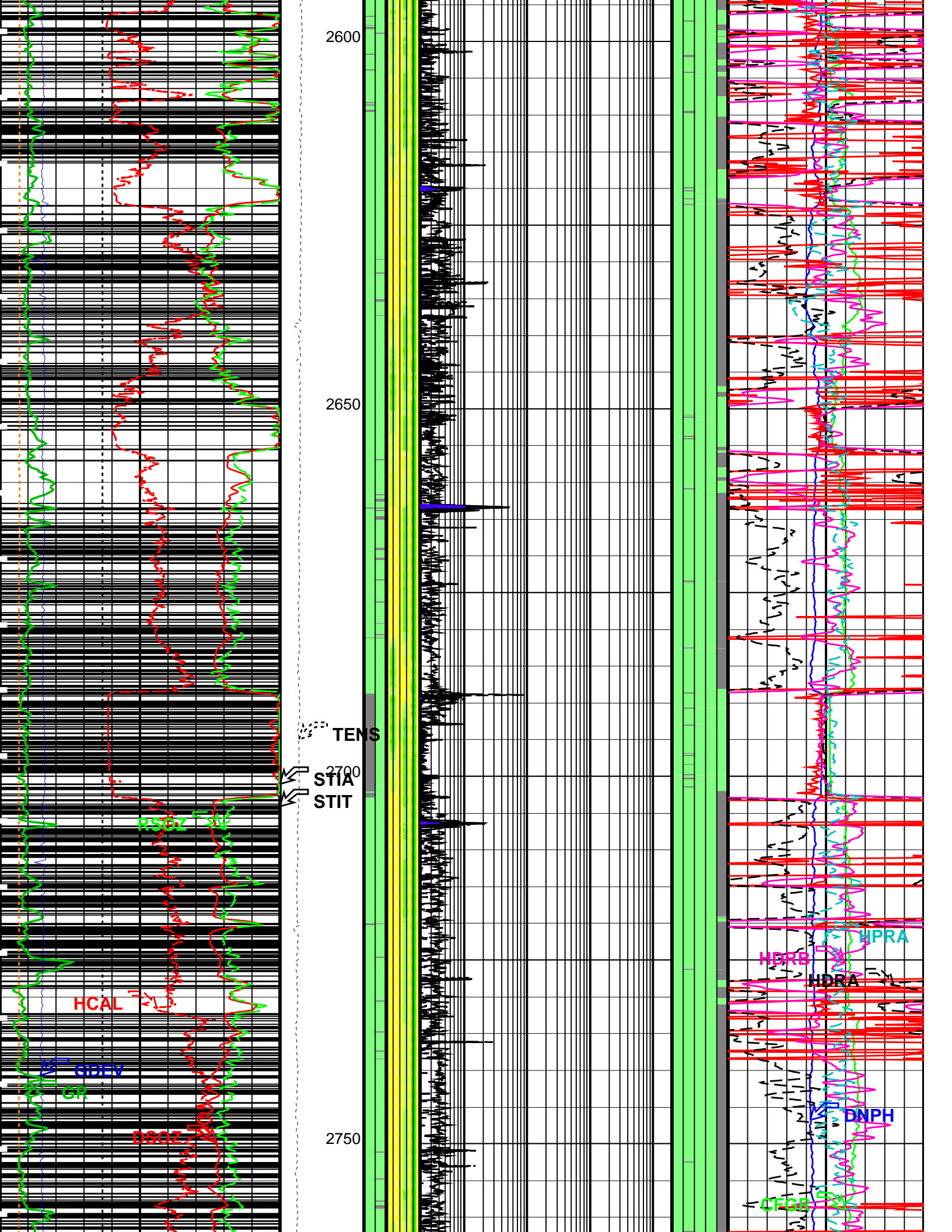
## NUCLEAR TRACK :

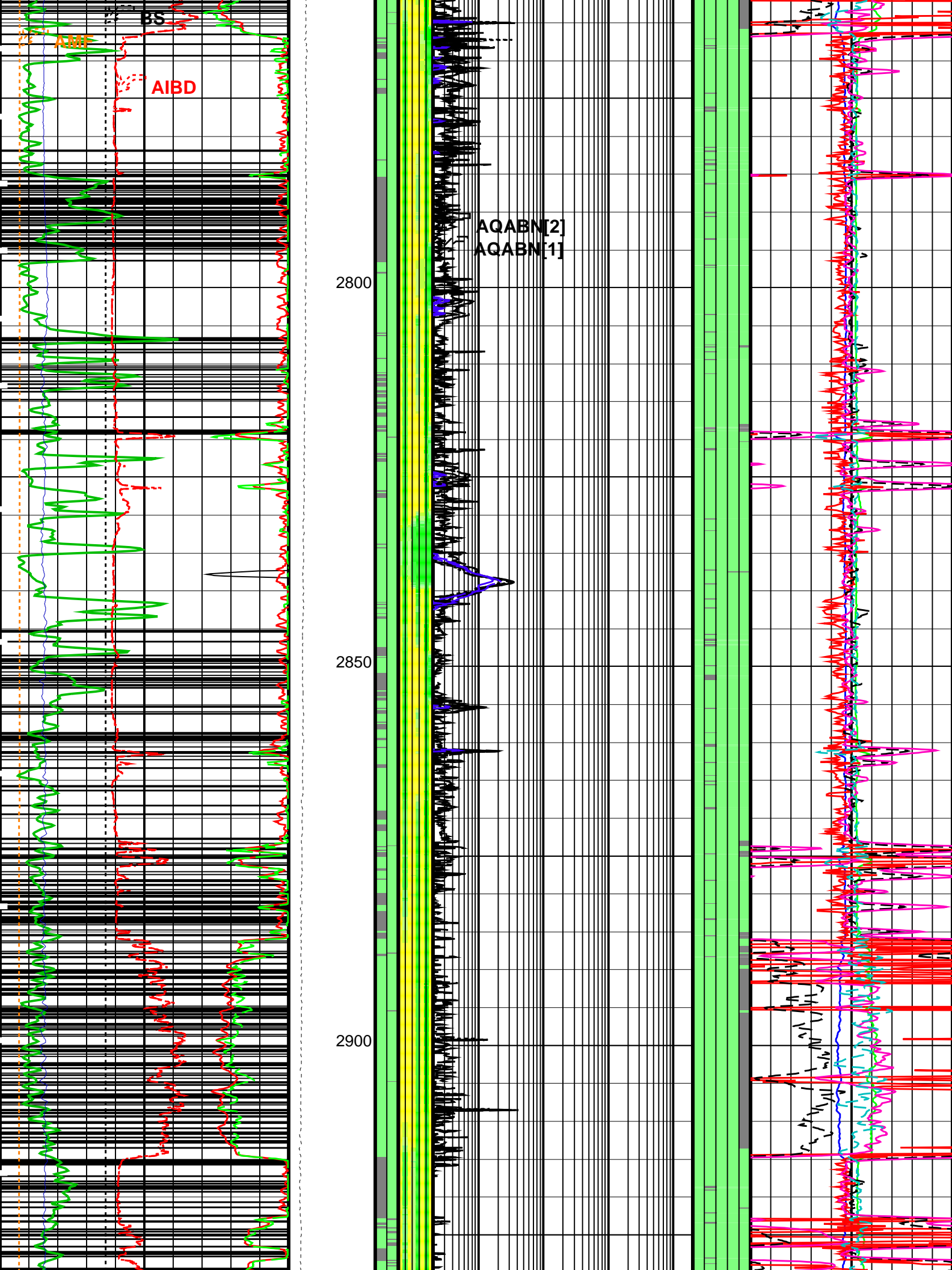
1. Accelerometer
2. Density Detector
3. Neutron Porosity
4. Density Computation
5. Pef Computation

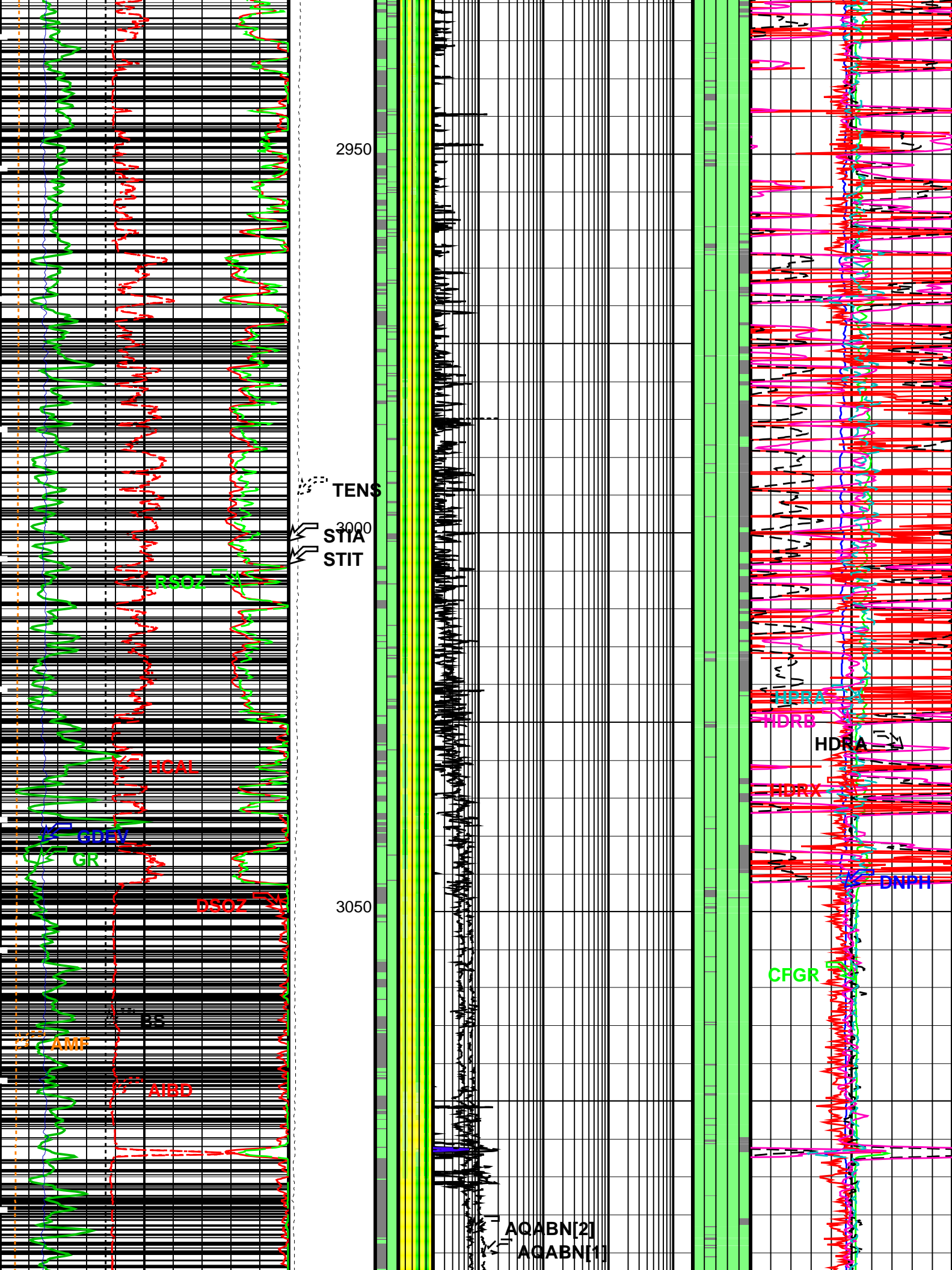


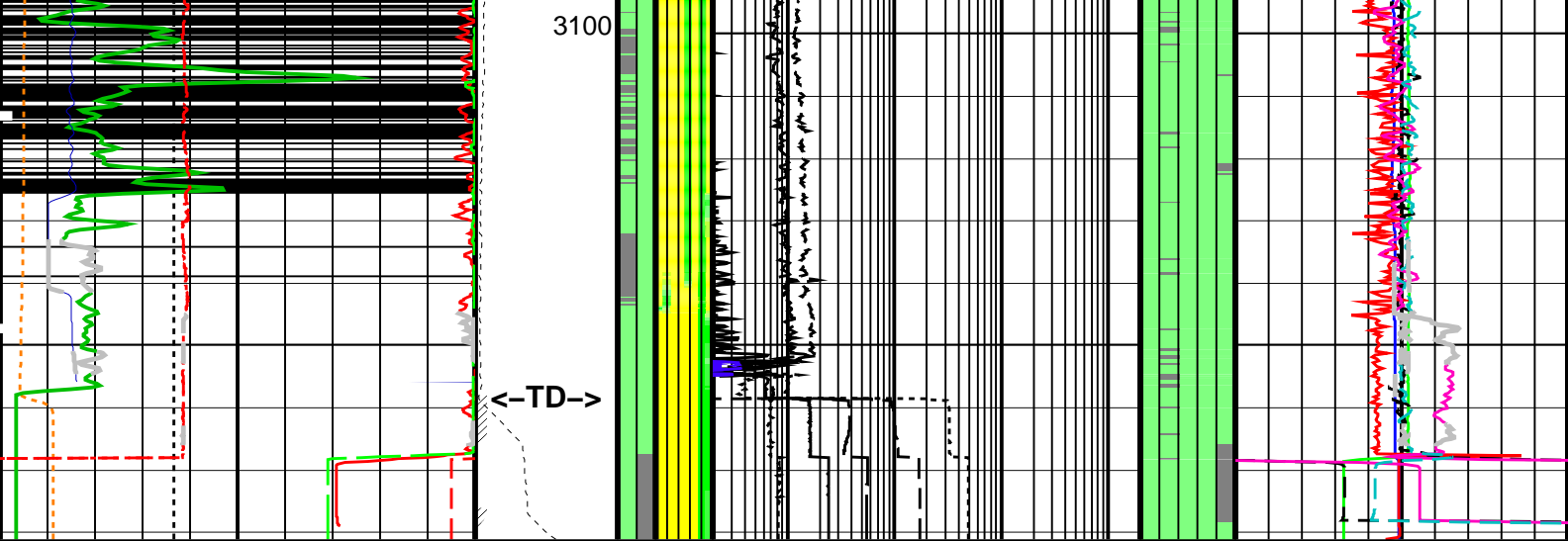












\*\*\* Flag Tracks \*\*\*

White = Absent    Green = Good    Yellow = Warn    Red/Black = Bad

RESISTIVITY TRACK :

1. MCFL Hardware
2. RXO Processing
3. HAIT Hardware
4. HAIT Array[1-2]
5. HAIT Array[3-4]
6. HAIT Array[5-6]
7. HAIT Array[7-8]

NUCLEAR TRACK :

1. Accelerometer
2. Density Detector
3. Neutron Porosity
4. Density Computation
5. Pef Computation

\*\*\*MAIN PASS – LOG QUALITY IMAGE\*\*\*

<p>HGNS Deviation (GDEV) (DEG)</p> <p>-5 45</p>	<p>Tension (TENS) (N)</p> <p>25000 0</p>	<p>AIT QC Fully Calibrated A1 Signal (AQABN[0])</p> <p>2 20000</p>	<p>GR Borehole Correction Factor (CFGR)</p> <p>0.5 1.5</p>
<p>AIT Bhole/Form Signal Ratio (ABFR)</p> <p>0 25</p>		<p>AIT QC Fully Calibrated A2 Signal (AQABN[1])</p> <p>2 20000</p>	<p>Delta Neutron Porosity (DNPH)</p> <p>-0.1 0.1</p>
<p>AIT Input Bhole Diameter (AIBD) (MM)</p> <p>125 375</p>		<p>AIT QC Fully Calibrated A3 Signal (AQABN[2])</p> <p>2 20000</p>	<p>Hdrx (HDRX)</p> <p>0.5 1.5</p>
<p>AIT Mud Full Cal (AMF) (OHMM)</p> <p>0 10</p>		<p>AIT QC Fully Calibrated A4 Signal (AQABN[3])</p> <p>2 20000</p>	<p>Density Correction (HDRA) (G/C3)</p> <p>-0.25 0.25</p>
<p>Bit Size (BS) (MM)</p> <p>125 375</p>		<p>AIT QC Fully Calibrated A5 Signal (AQABN[4])</p> <p>2 20000</p>	<p>BS Delta Rho (HDRB) (G/C3)</p> <p>-0.5 0.5</p>
<p>Std. Res. Density Standoff (DSOZ) (MM)</p> <p>65 0</p>		<p>AIT QC Fully Calibrated A6 Signal (AQABN[5])</p> <p>2 20000</p>	<p>Pe Correction (HPRA)</p> <p>-3 3</p>
<p>HILT Caliper (HCAL) (MM)</p> <p>125 375</p>		<p>AIT QC Fully Calibrated A7 Signal (AQABN[6])</p>	



375 (MM)	2 (MM/M)	20000
Std. Res. Resistivity Standoff (RSOZ)	AIT QC Fully Calibrated A8 Signal (AQABN[7])	
65 (MM)	2 (MM/M)	20000
Gamma Ray (GR)		
0 (GAPI)	150	

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
AIT-M: Array Induction Tool – M			
ABHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
ABLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
ACEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
AETP	Array Induction Enable Sonde Error Temp&Pres Corr	Yes	
AIGS	Array Induction Select Akima Interpolation Gating	On	
AMRF	Array Induction Mud Resistivity Factor	1	
ASTA	Array Induction Tool Standoff	38.1	MM
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	Internal	
AULV	Array Induction User Level Control	Normal	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	58.4	DEGC
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	20	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	30	DEGC
HILTH-FTB: High resolution Integrated Logging Tool-DTS			
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	58.4	DEGC
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCLF	Germany Coal-like Formation Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	20	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MPOF	MCFL Processing Operation Mode	ON	
MWCO	Mud Weight Correction Option	NO	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	VeryHiRes	
NSAR	HRDD Depth Sampling Rate	12.7	MM
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	30	DEGC
SOCN	Standoff Distance	3.175	MM
SOCO	Standoff Correction Option	YES	
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	58.4	DEGC
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	20	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	30	DEGC
STI: Stuck Tool Indicator			
LTSP	Trigger for MAXIS First Reading Label	TDI	

LBFR	Trigger for MAXIS First Reading Label	TDL	1.5	M
STKT	STI Stuck Threshold			
TDD	Total Depth – Driller	3160.00	M	
TDL	Total Depth – Logger	3160.00	M	
System and Miscellaneous				
BS	Bit Size	216.000	MM	
BSAL	Borehole Salinity	-50000.00	PPM	
CSIZ	Current Casing Size	244.500	MM	
CWEI	Casing Weight	64.74	KG/M	
DFD	Drilling Fluid Density	1170.00	K/M3	
DO	Depth Offset for Playback	5.0	M	
DORL	Depth Offset for Repeat Analysis	0.0	M	
FLEV	Fluid Level	0.00	M	
MST	Mud Sample Temperature	21.00	DEGC	
PP	Playback Processing	RECOMPUTE		
RMFS	Resistivity of Mud Filtrate Sample	0.7100	OHMM	
TD	Total Depth	3160	M	

Format: Hilt\_IndLQC\_AIT Vertical Scale: 1:600 Graphics File Created: 15-May-2010 20:21

## OP System Version: 17C0-154

AIT-M 17C0-154 HILTH-FTB 17C0-154  
DTC-H 17C0-154

### Input DLIS Files

DEFAULT AIT\_TLD\_MCFL\_CNL\_009LUP FN:9 PRODUCER 15-May-2010 18:24 3135.5 M 2218.0 M

### Output DLIS Files

DEFAULT AIT\_TLD\_MCFL\_CNL\_016PUP FN:23 PRODUCER 15-May-2010 20:21  
CUSTOMER AIT\_TLD\_MCFL\_CNL\_016PUP FN:24 PRODUCER 15-May-2010 20:21

### Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Array Induction Tool – M Wellsite Calibration – Electronics Calibration Check – Thru Cal Mag. & Phase							
Master: 10-Mar-2010 11:28 Before: 15-May-2010 16:33							
Thru Cal Magnitude – 0	0	0.6110	0.6109	N/A	N/A	N/A	V
Thru Cal Magnitude – 1	0	1.252	1.252	N/A	N/A	N/A	V
Thru Cal Magnitude – 2	0	0.6190	0.6191	N/A	N/A	N/A	V
Thru Cal Magnitude – 3	0	0.7007	0.7008	N/A	N/A	N/A	V
Thru Cal Magnitude – 4	0	1.311	1.311	N/A	N/A	N/A	V
Thru Cal Magnitude – 5	0	1.907	1.907	N/A	N/A	N/A	V
Thru Cal Magnitude – 6	0	1.908	1.908	N/A	N/A	N/A	V
Thru Cal Magnitude – 7	0	1.369	1.369	N/A	N/A	N/A	V
Thru Cal Phase – 0	0	202.8	208.0	N/A	N/A	N/A	DEG
Thru Cal Phase – 1	0	201.8	206.9	N/A	N/A	N/A	DEG
Thru Cal Phase – 2	0	198.2	203.3	N/A	N/A	N/A	DEG
Thru Cal Phase – 3	0	197.4	202.6	N/A	N/A	N/A	DEG
Thru Cal Phase – 4	0	191.3	196.4	N/A	N/A	N/A	DEG
Thru Cal Phase – 5	0	189.6	194.8	N/A	N/A	N/A	DEG
Thru Cal Phase – 6	0	189.6	194.8	N/A	N/A	N/A	DEG
Thru Cal Phase – 7	0	188.8	194.0	N/A	N/A	N/A	DEG
Array Induction Tool – M Wellsite Calibration – Electronics Calibration Check – Auxiliary							
Master: 10-Mar-2010 11:28 Before: 15-May-2010 16:33							
Array Induction SPA Plus	991.0	988.3	988.2	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	-0.1558	-0.1367	N/A	N/A	N/A	MV
Array Induction Temperature PI	0.9170	0.9155	0.9154	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	-0.0001589	-0.0001373	N/A	N/A	N/A	V
Array Induction Tool – M Wellsite Calibration – Test Loop Gain Correction							
Master: 10-Mar-2010 11:28							
Test Loop Gain Correctio – 0	0	1.016	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 1	0	1.017	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 2	0	1.014	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 3	0	1.013	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 4	0	0.9955	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 5	0	0.9948	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 6	0	1.006	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 7	0	1.010	N/A	N/A	N/A	N/A	V

Test Loop Gain Correctio – 0	0	0.5251	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 1	0	0.5984	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 2	0	0.09321	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 3	0	0.07661	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 4	0	0.04668	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 5	0	0.1832	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 6	0	0.5476	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 7	0	0.2810	N/A	N/A	N/A	N/A	DEG

#### Array Induction Tool – M Wellsite Calibration – Sonde Error Correction

Master: 10–Mar–2010 11:28

R Sonde Error Correction – 0	0	–110.7	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 1	0	157.6	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 2	0	130.5	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 3	0	60.75	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 4	0	25.64	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 5	0	15.51	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 6	0	10.89	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 7	0	–1.689	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 0	0	–87.39	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 1	0	91.95	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 2	0	–42.80	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 3	0	–18.29	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 4	0	–11.47	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 5	0	–19.14	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 6	0	–1.742	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 7	0	–0.5896	N/A	N/A	N/A	N/A	MM/M

#### Array Induction Tool – M Wellsite Calibration – Mud Gain Correction

Master: 10–Mar–2010 11:28

Coarse – Mag, Real, Imag – 0	0	1.005	N/A	N/A	N/A	N/A
Coarse – Mag, Real, Imag – 1	0	1.005	N/A	N/A	N/A	N/A
Coarse – Mag, Real, Imag – 2	0	1.005	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 0	0	1.001	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 1	0	1.001	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 2	0	1.001	N/A	N/A	N/A	N/A

#### High resolution Integrated Logging Tool–DTS Wellsite Calibration – Stab Measurement Summary

Before: 15–May–2010 11:50

BS Window Ratio	0.7368	N/A	0.7380	N/A	N/A	N/A	
BS Window Sum	25580	N/A	25600	N/A	N/A	N/A	CPS
<b>SS Window Ratio</b>	<b>0.4768</b>	<b>N/A</b>	<b>0.4764</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	
SS Window Sum	11970	N/A	11980	N/A	N/A	N/A	CPS
LS Window Ratio	0.2989	N/A	0.2979	N/A	N/A	N/A	
LS Window Sum	1429	N/A	1425	N/A	N/A	N/A	CPS

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

Before: 15–May–2010 11:50

BS PM High Voltage (Command)	1513	N/A	1495	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1764	N/A	1790	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1267	N/A	1280	N/A	N/A	N/A	V

#### High resolution Integrated Logging Tool–DTS Wellsite Calibration – Crystal Quality Resolutions Calibration

Before: 15–May–2010 11:50

BS Crystal Resolution	11.17	N/A	11.11	N/A	N/A	N/A	%
SS Crystal Resolution	10.66	N/A	11.11	N/A	N/A	N/A	%
LS Crystal Resolution	8.413	N/A	8.284	N/A	N/A	N/A	%

#### High resolution Integrated Logging Tool–DTS Wellsite Calibration – MCFL Calibration

Before: 15–May–2010 11:51

Raw B0 Resistivity	3875	N/A	3846	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3798	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3804	N/A	N/A	N/A	OHMM

#### High resolution Integrated Logging Tool–DTS Wellsite Calibration – HILT Caliper Calibration

Before: 15–May–2010 11:43

HILT Caliper Zero Measurement	203.2	N/A	188.7	N/A	N/A	N/A	MM
HILT Caliper Plus Measurement	304.8	N/A	300.2	N/A	N/A	N/A	MM

#### High resolution Integrated Logging Tool–DTS Wellsite Calibration – Detector Calibration

Before: 15–May–2010 11:44

Gamma Ray Background	30.00	N/A	16.67	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkg)	182.3	N/A	182.3	N/A	N/A	16.57	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: 14–Apr–2010 12:41 Before: 15–May–2010 11:45

CNTC Background	26.49	26.49	25.76	N/A	N/A	3.974	CPS
CFTC Background	26.70	26.70	25.69	N/A	N/A	4.005	CPS

#### High resolution Integrated Logging Tool–DTS Wellsite Calibration – Ratio Measurement

Master: 14–Apr–2010 12:41

































Master: 14-Apr-2010 12:44	Thermal Near Corr. (Tank)	5800	5411	N/A	N/A	N/A	N/A	CPS
	Thermal Far Corr. (Tank)	2400	2244	N/A	N/A	N/A	N/A	CPS
	CNTC/CFTC (Tank)	2.159	2.412	N/A	N/A	N/A	N/A	
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Accelerometer Calibration								
Before: 15-May-2010 16:31								
	Z-Axis Acceleration	9.810	N/A	9.784	N/A	N/A	N/A	M/S2
High resolution Integrated Logging Tool-DTS Master Calibration – Inversion results								
Master: 12-May-2010 21:49								
	Rho Aluminum	2596	2601	--	--	--	--	K/M3
	Rho Magnesium	1686	1688	--	--	--	--	K/M3
	Pe Aluminum	2.570	2.567	--	--	--	--	
	Pe Magnesium	2.650	2.627	--	--	--	--	
High resolution Integrated Logging Tool-DTS Master Calibration – Deviation Summary								
Master: 12-May-2010 21:49								
	BS Average Deviation	0	0.2831	--	--	--	--	%
	BS Max Deviation	0	0.7776	--	--	--	--	%
	SS Average Deviation	0	0.4247	--	--	--	--	%
	SS Max Deviation	0	1.524	--	--	--	--	%
	LS Average Deviation	0	0.7017	--	--	--	--	%
	LS Max Deviation	0	1.630	--	--	--	--	%
The GLS-VJ source activity is acceptable.								
The HGNS Neutron Master Calibration was done with the following parameters :								
NCT-B Water Temperature	12.0	DEGC.						
Thermal Housing Size	85.522	MM.						
NSR-F serial number	5004							

#### Array Induction Tool – M / Equipment Identification

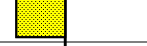



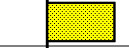





Primary Equipment:  
Rm/SP Bottom Nose  
Array Induction Sonde

AMRM – A  
AMIS – A 1282

Auxiliary Equipment:







Array Induction Tool – M Wellsite Calibration							
Electronics Calibration Check – Thru Cal Mag. & Phase							
Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Thru Cal Phase DEG	Nominal
0	Master	0.6110		0.6100	202.8		197.0
	Before	0.6109			208.0		
1	Master	1.252		1.270	201.8		196.0
	Before	1.252			206.9		
2	Master	0.6190		0.6200	198.2		192.0
	Before	0.6191			203.3		
3	Master	0.7007		0.7000	197.4		191.0
	Before	0.7008			202.6		
4	Master	1.311		1.340	191.3		185.0
	Before	1.311			196.4		
5	Master	1.907		1.960	189.6		182.0
	Before	1.907			194.8		
6	Master	1.908		1.960	189.6		181.0
	Before	1.908			194.8		
7	Master	1.369		1.410	188.8		175.0

Array Induction Tool – M Wellsite Calibration							
Electronics Calibration Check – Auxiliary							
Phase	Array Induction SPA Plus MV		Value	Phase	Array Induction SPA Zero MV		Value
Master			988.3	Master			-0.1558
Before			988.2	Before			-0.1367
941.0 (Minimum)			991.0 (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			0.9155	Master			-0.0001589
Before			0.9154	Before			-0.0001373
0.8710 (Minimum)			0.9170 (Nominal)	0.9630 (Maximum)			
				-0.05000 (Minimum)			0 (Nominal)
							0.05000 (Maximum)
Master: 10-Mar-2010 11:28				Before: 15-May-2010 16:33			

















Array Induction Tool – M Wellsite Calibration							
Sonde Error Correction							
Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M	
0	-110.7				-87.39		
		-231.0 (Minimum)	-56.00 (Nominal)	119.0 (Maximum)		-2250 (Minimum)	0 (Nominal) 2250 (Maximum)
1	157.6				91.95		
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		-625.0 (Minimum)	0 (Nominal) 625.0 (Maximum)
2	130.5				-42.80		
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		-350.0 (Minimum)	0 (Nominal) 350.0 (Maximum)
3	60.75				-18.29		
		39.00 (Minimum)	64.00 (Nominal)	89.30 (Maximum)		-250.0 (Minimum)	0 (Nominal) 250.0 (Maximum)
4	25.64				-11.47		
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		-63.00 (Minimum)	0 (Nominal) 63.00 (Maximum)

		(Minimum)	(Nominal)	(Maximum)		(Minimum)	(Nominal)	(Maximum)
5	15.51				-19.14			
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	10.89				-1.742			
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	-1.689				-0.5896			
		-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)

Master: 10-Mar-2010 11:28

Array Induction Tool – M Wellsite Calibration								
Mud Gain Correction								
Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag		
0	1.005				1.001			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	1.005				1.001			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	1.005				1.001			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Master: 10-Mar-2010 11:28

Array Induction Tool – M Master Calibration							
Electronics Calibration Check – Thru Cal Mag. & Phase							
Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Thru Cal Phase DEG	Nominal
0	Master	0.6110		0.6100	202.8		197.0
1	Master	1.252		1.270	201.8		196.0
2	Master	0.6190		0.6200	198.2		192.0
3	Master	0.7007		0.7000	197.4		191.0
4	Master	1.311		1.340	191.3		185.0
5	Master	1.907		1.960	189.6		182.0
6	Master	1.908		1.960	189.6		181.0
7	Master	1.369		1.410	188.8		175.0
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom -60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)

Master: 10-Mar-2010 11:28

Array Induction Tool – M Master Calibration									
Electronics Calibration Check – Auxiliary									
Phase	Array Induction SPA Plus MV			Value	Phase	Array Induction SPA Zero MV			Value
Master	<div><div></div></div>			988.3	Master	<div><div></div></div>			-0.1558
	941.0 (Minimum)	991.0 (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	<div><div></div></div>			0.9155	Master	<div><div></div></div>			-0.0001589
	0.8710 (Minimum)	0.9170 (Nominal)	0.9630 (Maximum)			-0.05000 (Minimum)	0 (Nominal)	0.05000 (Maximum)	

Master: 10-Mar-2010 11:28

Array Induction Tool – M Master Calibration								
Test Loop Gain Correction								
Idx	Value	Test Loop Gain Correction Magnitude V			Value	Test Loop Gain Correction Phase DEG		
0	1.016	<div><div></div><div></div><div></div><div></div><div></div></div>			0.5251	<div><div></div><div></div><div></div><div></div><div></div></div>		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
1	1.017	<div><div></div><div></div><div></div><div></div><div></div></div>			0.5984	<div><div></div><div></div><div></div><div></div><div></div></div>		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)

2	1.014		0.09321			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
3	1.013		0.07661			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
4	0.9955		0.04668			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
5	0.9948		0.1832			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
6	1.006		0.5476			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
7	1.010		0.2810			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)

Master: 10-Mar-2010 11:28

Master: 10-Mar-2010 11:28

Array Induction Tool – M Master Calibration							
Sonde Error Correction							
Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M	
0	-110.7				-87.39		
	-231.0 (Minimum)	-56.00 (Nominal)	119.0 (Maximum)		-2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	157.6				91.95		
	114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		-625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	130.5				-42.80		
	66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		-350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	60.75				-18.29		
	39.00 (Minimum)	64.00 (Nominal)	89.30 (Maximum)		-250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	25.64				-11.47		
	15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		-63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	15.51				-19.14		
	4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	10.89				-1.742		
	5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	-1.689				-0.5896		
	-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
Master: 10-Mar-2010 11:28							




Master: 10-Mar-2010 11:28

Array Induction Tool – M Master Calibration							
Mud Gain Correction							
Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag	
0	1.005				1.001		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)
1	1.005				1.001		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)
2	1.005				1.001		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)
Master: 10–Mar–2010 11:28							

Master: 10-Mar-2010 11:28

HRMS – H	3971
HRGD – H	3996
MCFL – H	
GLS – VJ	5237
HRCC – H	3990
HGNS – H	4706
HGR –	
HCNT – H	

NCT – B  
GSR – U/Y  
HGNH – 3771

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				16.67	Before				182.3	Before				165.0
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		165.7 (Minimum)	182.3 (Nominal)	198.9 (Maximum)			150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)		
Before: 15–May–2010 11:44														

## High resolution Integrated Logging Tool–DTS Wellsite Calibration

## Zero Measurement

Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		26.49	Master		26.70
Before		25.76	Before		25.69
5.000 (Minimum)	26.49 (Nominal)	40.00 (Maximum)	5.000 (Minimum)	26.70 (Nominal)	40.00 (Maximum)

Master: 14–Apr–2010 12:41

Before: 15–May–2010 11:45

## High resolution Integrated Logging Tool–DTS Wellsite Calibration

## Ratio Measurement

Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/CFTC (Tank)	Value
Master		5411	Master		2244	Master		2.412
4700 (Minimum)	5800 (Nominal)	6900 (Maximum)	1900 (Minimum)	2400 (Nominal)	2900 (Maximum)	2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)

Master: 14–Apr–2010 12:41

High resolution Integrated Logging Tool–DTS  
Wellsite Calibration

## Accelerometer Calibration

Phase	Z–Axis Acceleration M/S2	Value
Before		9.784
9.610 (Minimum)	9.810 (Nominal)	10.01 (Maximum)

Before: 15–May–2010 16:31

## High resolution Integrated Logging Tool–DTS Master Calibration

## Inversion results

Phase	Rho Aluminum K/M3	Value	Phase	Rho Magnesium K/M3	Value
Master		2601	Master		1688
2586 (Minimum)	2596 (Nominal)	2606 (Maximum)	1676 (Minimum)	1686 (Nominal)	1696 (Maximum)
Phase	Pe Aluminum	Value	Phase	Pe Magnesium	Value
Master		2.567	Master		2.627
2.470 (Minimum)	2.570 (Nominal)	2.670 (Maximum)	2.550 (Minimum)	2.650 (Nominal)	2.750 (Maximum)

Master: 12–May–2010 21:49

## 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		0.2831	Master		0.4247	Master		0.7017
-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		0.7776	Master		1.524	Master		1.630
-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: 12–May–2010 21:49

## High resolution Integrated Logging Tool–DTS Master Calibration

## Zero Measurement

Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		26.49	Master		26.70
5.000 (Minimum)	26.49 (Nominal)	40.00 (Maximum)	5.000 (Minimum)	26.70 (Nominal)	40.00 (Maximum)

Master: 14–Apr–2010 12:41

## 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		5411	Master		2244	Master		2.412
4700 (Minimum)	5800 (Nominal)	6900 (Maximum)	1900 (Minimum)	2400 (Nominal)	2900 (Maximum)	2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)

Master: 14–Apr–2010 12:41

DTS Telemetry Tool / Equipment Identification

Primary Equipment:

DTC-H Auxiliary Cartridge  
DTC-H Telemetry Cartridge

DTCH – A  
DTCH – A

8855

Auxiliary Equipment:

DTCH Telemetry Cartridge Housing

ECH – KC

9932

Company: **Nalcor Energy Oil and Gas**

**Schlumberger**

Well: **Nalcor et al Seamus 1**

Field: **Parson's Pond**

Rig: **Stoneham #11**

Province: **Newfoundland**

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ARRAY INDUCTION – SP LOG