

Company: Noble Energy Inc

Well: NCLP AA06-62-1AHNC

Field: Wattenberg

County: Weld State: Colorado

Array Induction	
4 Arm Caliper	
Gamma Ray	
Weld	
Wattenberg	
SWSW Sec.4, T6N, R63W	
NCLP AA06-62-1AHNC	
Noble Energy Inc	
Location:	
SWSW Sec.4, T6N, R63W	Elev.: K.B. 4733.00 ft
SHL: 713' FSL x 100' FWL	G.L. 4709.00 ft
	D.F. 4732.00 ft
Permanent Datum:	Ground Level
Log Measured From:	Kelly Bushing
Drilling Measured From:	Kelly Bushing
API Serial No.	Section: 4
05-123-39106-00	Township: 6N
	Range: 63W

Logging Date	04-Jul-2014
Run Number	Run 1
Depth Driller	6086.00 ft
Schlumberger Depth	6092.00 ft
Bottom Log Interval	6092.00 ft
Top Log Interval	848.00 ft
Casing Driller Size @ Depth	9.625 in @ 844.00 ft
Casing Schlumberger	848 ft
Bit Size	8.75 in
Type Fluid In Hole	LSND WBM
Density	9.8 lbm/gal
Viscosity	45 s
Fluid Loss	6.4 cm3
PH	9.6
Source of Sample	Flowline
RM @ Meas Temp	0.65 ohm.m @ 86.5 degF
RMF @ Meas Temp	0.49 ohm.m @ 86.5 degF
RMC @ Meas Temp	0.81 ohm.m @ 86.5 degF
Source RMF	Calculated
RM @ BHT	0.34 @ 171
RMF @ BHT	0.26 @ 171
Max Recorded Temperatures	171 degF
Circulation Stopped	04-Jul-2014 07:00:00
Logger on Bottom	Time
Unit Number	Location: Time
Recorded By	2135 Ft. Morgan, CO
Witnessed By	Aleksei Bekhterev
	Charles Collier

Disclaimer

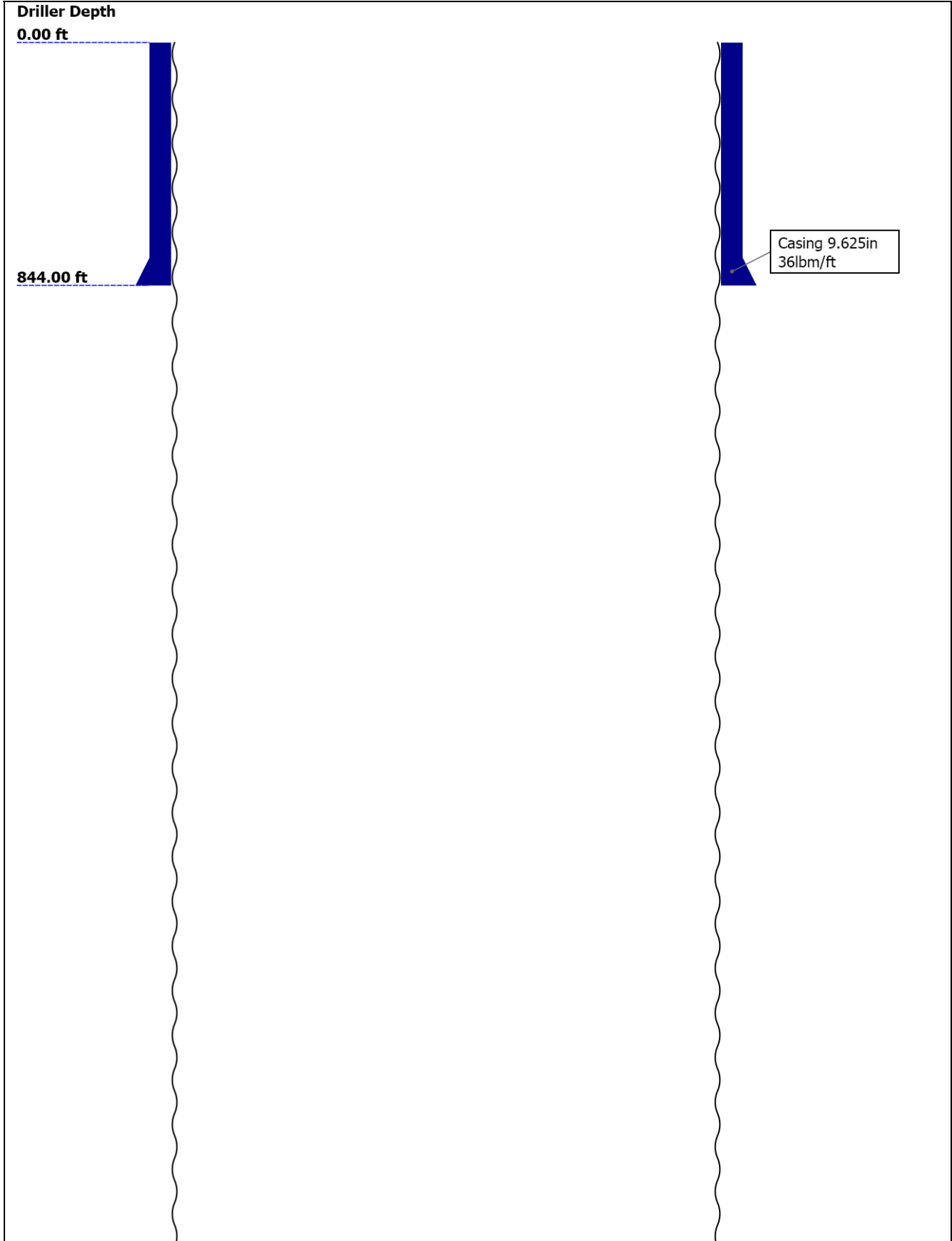
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

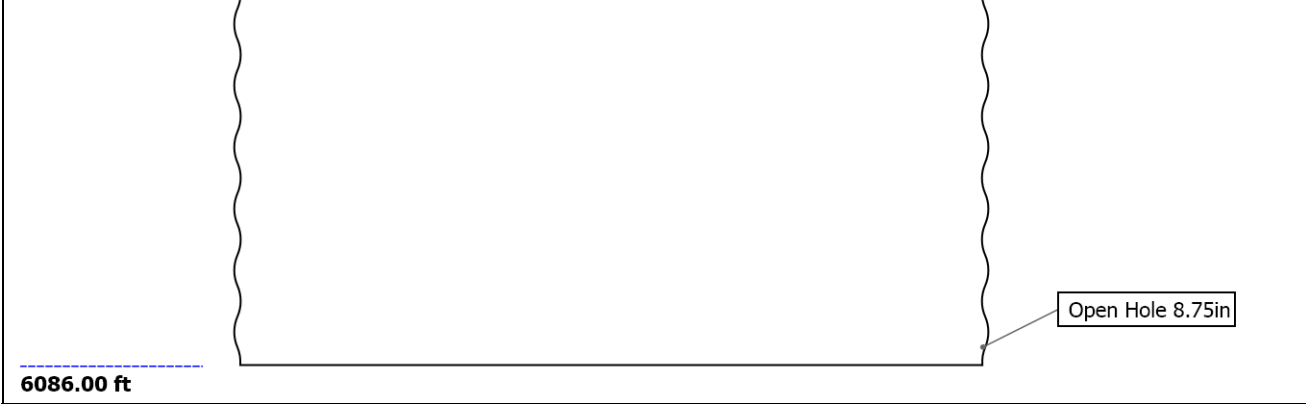
Contents

- 1. Header
- 2. Disclaimer
- 3. Contents
- 4. Well Sketch
- 5. Borehole Size/Casing/Tubing Record
- 6. Operational Run Summary
- 7. Borehole Fluids
- 8. Remarks and Equipment Summary
- 9. Depth Summary
- 10. Survey Record
- 11. Run 1 5" Triple Combo
  - 11.1 Integration Summary
  - 11.2 Software Version
  - 11.3 Composite Summary
  - 11.4 Log ( Import of KM 5in Triple Combo )
  - 11.5 Parameter Listing
- 12. Run 1 5" Triple Combo

- 12.1 Composite Summary
- 12.2 Log ( Import of KM 5in Triple Combo RA )
- 13. Calibration Report
- 14. Tail

Well Sketch





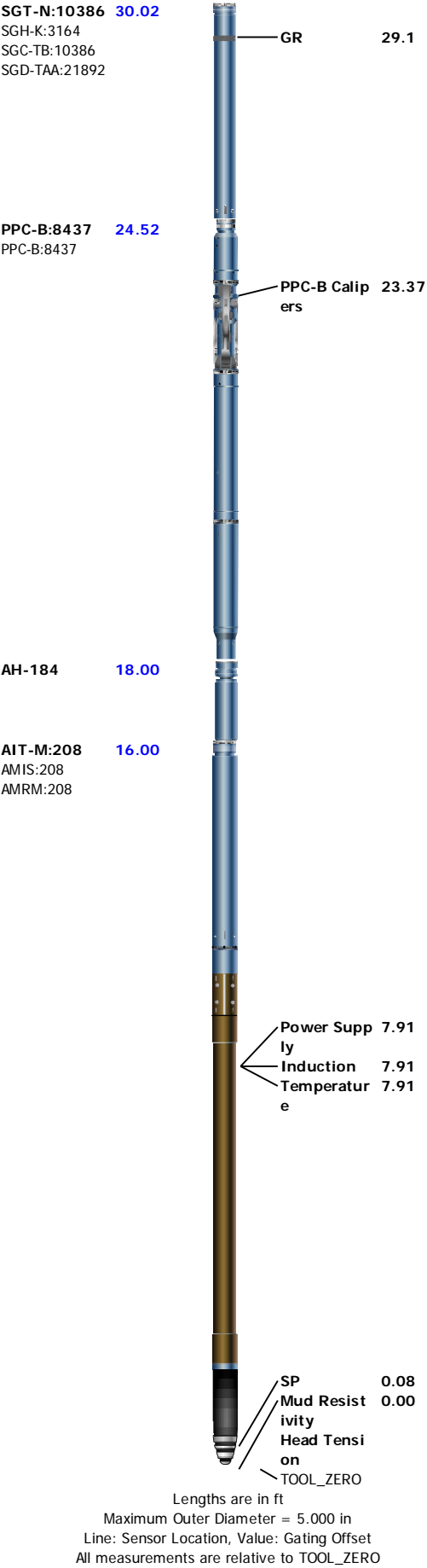
Borehole Size/Casing/Tubing Record

Bit						
Bit Size ( in )	8.75					
Top Driller ( ft )	0					
Top Logger ( ft )	0					
Bottom Driller ( ft )	6086					
Bottom Logger ( ft )	6092					
Casing						
Size ( in )	9.625					
Weight ( lbm/ft )	36					
Inner Diameter ( in )	8.921					
Grade	N/A					
Top Driller ( ft )	0					
Top Logger ( ft )	0					
Bottom Driller ( ft )	844					
Bottom Logger ( ft )	848					

Operational Run Summary

Parameter ( unit )	Run 1					
Date Log Started	04-Jul-2014					
Time Log Started	10:28:26					
Date Log Finished	04-Jul-2014					
Time Log Finished	12:22:43					
Top Log Interval ( ft )	848.00					
Bottom Log Interval ( ft )	6092.00					
Total Depth ( ft )	6092.00					
Max Hole Deviation ( deg )	10.05					
Azimuth of Max Deviation ( deg )	218.81					
Bit Size ( in )	8.750					
Logging Unit Number	2135					
Logging Unit Location	Ft. Morgan, CO					
Recorded By	Aleksei Bekhterev					
Witnessed By	Charles Collver					

Service Order Number		CY37-00022					
Borehole Fluids							
Parameter( unit )	Run 1						
Fluid Type	Water						
Fluid Name	LSND WBM						
Max Recorded Temperatures ( degF )	171						
Source of Sample	Flowline						
Salinity ( ppm )	2300						
Density ( lbm/gal )	9.8						
Funnel Viscosity ( s )	45						
Fluid Loss ( cm3 )	6.4						
PH	9.6						
Date/Time Circulation Stopped	04-Jul-2014 07:00:00						
Date Logger on Bottom	NaN						
Time Logger on Bottom	NaN						
Source RMF	Calculated						
RMC	Calculated						
RM @ Meas Temp ( ohm.m@degF )	0.65 @ 86.5						
RMF @ Meas Temp ( ohm.m@degF )	0.49 @ 86.5						
RMC @ Meas Temp ( ohm.m@degF )	0.81 @ 86.5						
RM @ BHT ( ohm.m@degF )	0.34 @ 171						
RMF @ BHT ( ohm.m@degF )	0.26 @ 171						
RMC @ BHT ( ohm.m@degF )	0.43 @ 171						
Total Solid ( % )							
High Gravity Solids ( % )							
Remarks and Equipment Summary							
Run 1: Toolstring				Run 1: Remarks			
Equip name	Length	MP name	Offset	This is subsequent trip in the well			
LEH-QT	51.93			Toolstring ran as per toolsketch			
LEH-QT				ILE-F used as a weight bar without bow-spring			
DTC-H:8906	49.02			Survey data provided by client			
ECH-KC:9984		CTEM	48.12	Rig: H&P 322			
DTC-H:8906		HV	0.00	Crew: Jeff Schossow, Derrick Hunter, Aleksei Bekhterev			
		ToolStatus	46.02				
		TelStatus	46.02				
ILE-F	46.02						
Adaptor_Hea	38.02						
d							



## Depth Summary

	Run 1		
--	-------	--	--

## Depth Measuring Device

Type	IDW-B		
------	-------	--	--

Serial Number			
Calibration Date			
Calibrator Serial Number			
Calibration Cable Type			
Wheel Correction 1	0		
Wheel Correction 2	0		

Tension Device

Type	CMTD-B/A		
Serial Number			
Calibration Date			
Calibrator Serial Number			
Number of Calibration Points	0		

Logging Cable

Type	7-46NT-XS		
Serial Number			
Length	24000.00 ft		
Conveyance Type	Wireline		
Rig Type	Land Rig		

Run 1:Depth Control Parameters	Depth Control Remarks
--------------------------------	-----------------------

Log Sequence	First Log In the Well	All Schlumbereger depth policies followed
Rig Up Length At Surface		IDW used as primary depth device
Rig Up Length At Bottom		Z-chart used as secondary depth reference
Rig Up Length Correction		
Stretch Correction		
Tool Zero Check At Surface		

Survey Record	
---------------	--

Survey Calculation

Method :	Minimum Radius of Curvature	DLS Method :	Lubinski
North Reference :	True North	Total Correction Formula :	Magnetic Dec

Rig Location

Latitude :	40.510480 degrees	Longitude :	-104.45086 degrees
------------	-------------------	-------------	--------------------

Tie In Point

Measured Depth:	0.00 ft	Inclination:	0.00 deg	Azimuth:	0.00 deg
True Vertical Depth:	0.00 ft	North Displacement:	0.00 ft	East Displacement:	0.00 ft

Survey Quality Index

9 : Manual	28 : Tie-In Point
------------	-------------------

Survey Correction Index

0 : No correction
-------------------

Survey Description Index

0 : Not Flagged Survey
------------------------

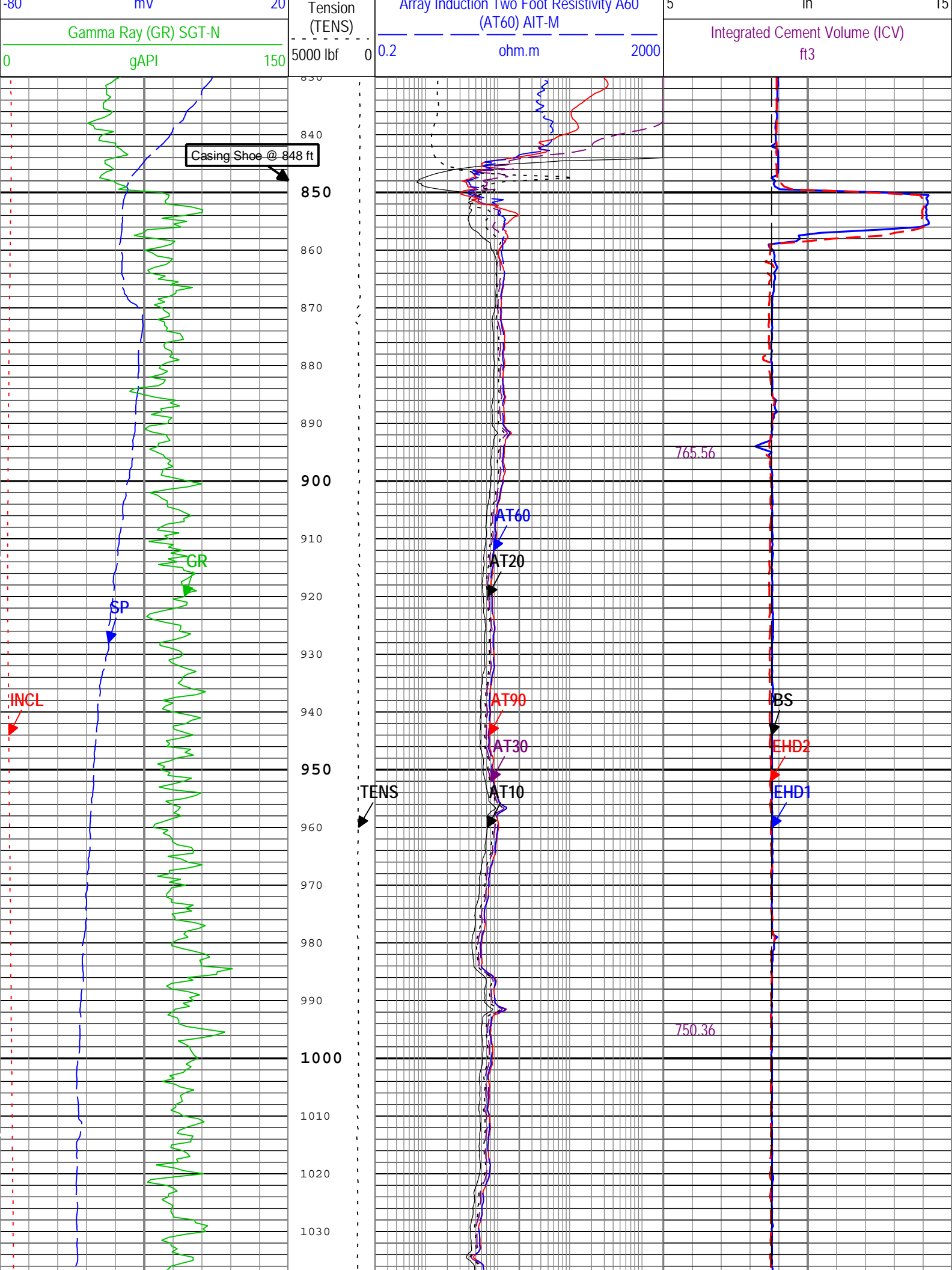
Seq	MD (ft)	Incl (deg)	Azim (deg)	Course (ft)	TVD (ft)	V Sec (ft)	N/ -S (ft)	E/ -W (ft)	Closure (ft)	at Azim (deg)	DLS deg/100ft	Tool Type	QI	CI	DI
1	0.00	0.00	0.00	- - - -	0.00	0.00	0.00	0.00	0.00	90.00	0.00	TIP	28	0	0
2	300.00	0.20	61.67	300.00	300.00	0.25	0.25	0.46	0.52	61.67	0.07	Other	9	0	0
3	600.00	0.30	77.27	300.00	600.00	0.67	0.67	1.69	1.80	68.35	0.04	Other	9	0	0
4	841.00	0.40	312.57	241.00	840.99	1.38	1.38	1.68	2.17	50.70	0.26	Other	9	0	0
5	917.00	0.26	275.03	76.00	916.99	1.57	1.57	1.32	2.07	39.93	0.33	Other	9	0	0
6	1103.00	0.59	257.57	186.00	1102.99	1.40	1.40	-0.04	1.41	358.41	0.19	Other	9	0	0
7	1196.00	0.56	246.10	93.00	1195.98	1.12	1.12	-0.92	1.44	320.44	0.13	Other	9	0	0
8	1289.00	0.59	254.70	93.00	1288.98	0.81	0.81	-1.80	1.97	294.13	0.10	Other	9	0	0
9	1382.00	0.73	259.01	93.00	1381.97	0.57	0.57	-2.84	2.89	281.27	0.16	Other	9	0	0
10	1475.00	0.57	257.43	93.00	1474.97	0.35	0.35	-3.88	3.90	275.20	0.17	Other	9	0	0
11	1569.00	0.46	240.27	94.00	1568.96	0.06	0.06	-4.66	4.66	270.79	0.20	Other	9	0	0
12	1664.00	0.34	260.74	95.00	1663.96	-0.17	-0.17	-5.27	5.28	268.15	0.19	Other	9	0	0
13	1759.00	0.58	263.42	95.00	1758.96	-0.27	-0.27	-6.03	6.04	267.43	0.25	Other	9	0	0

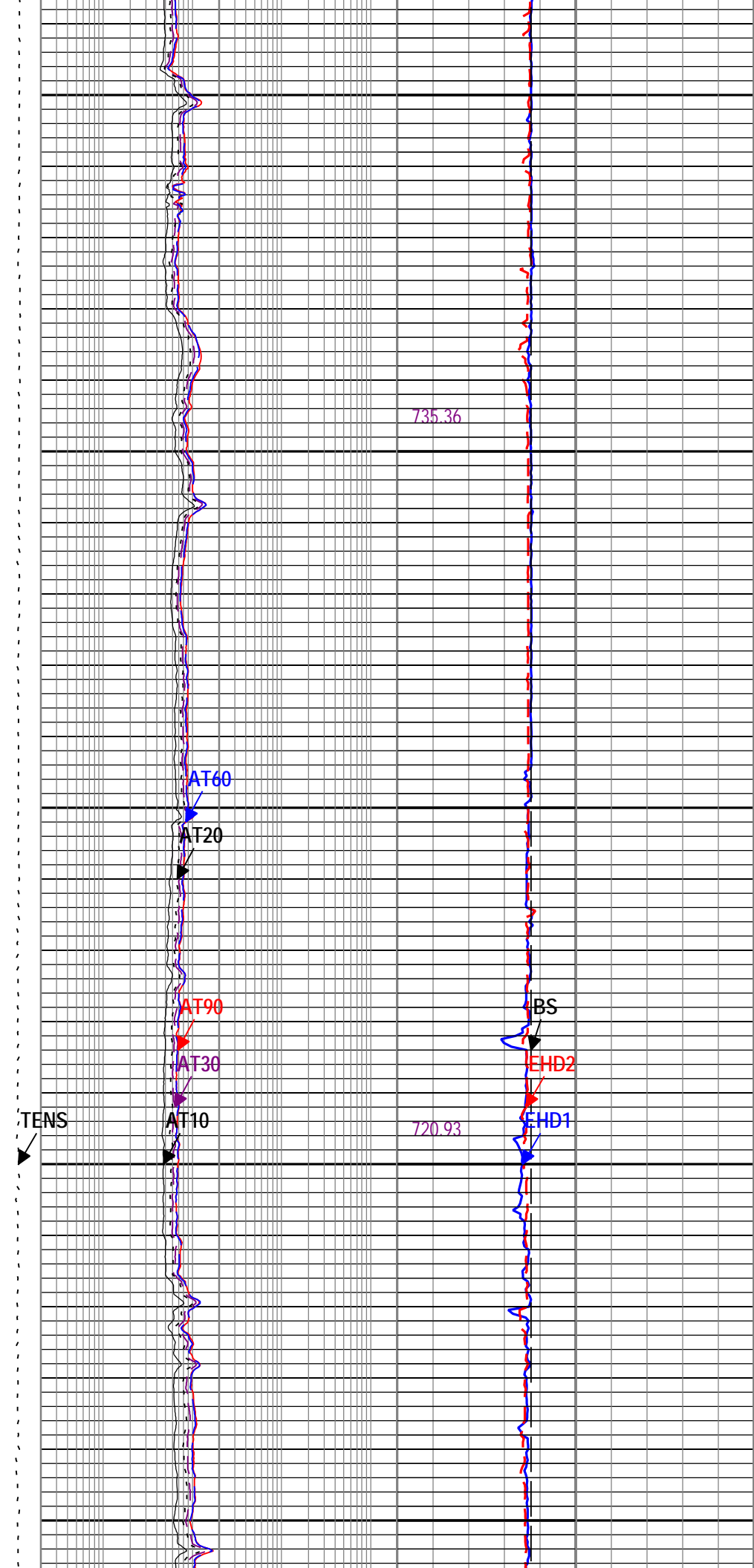
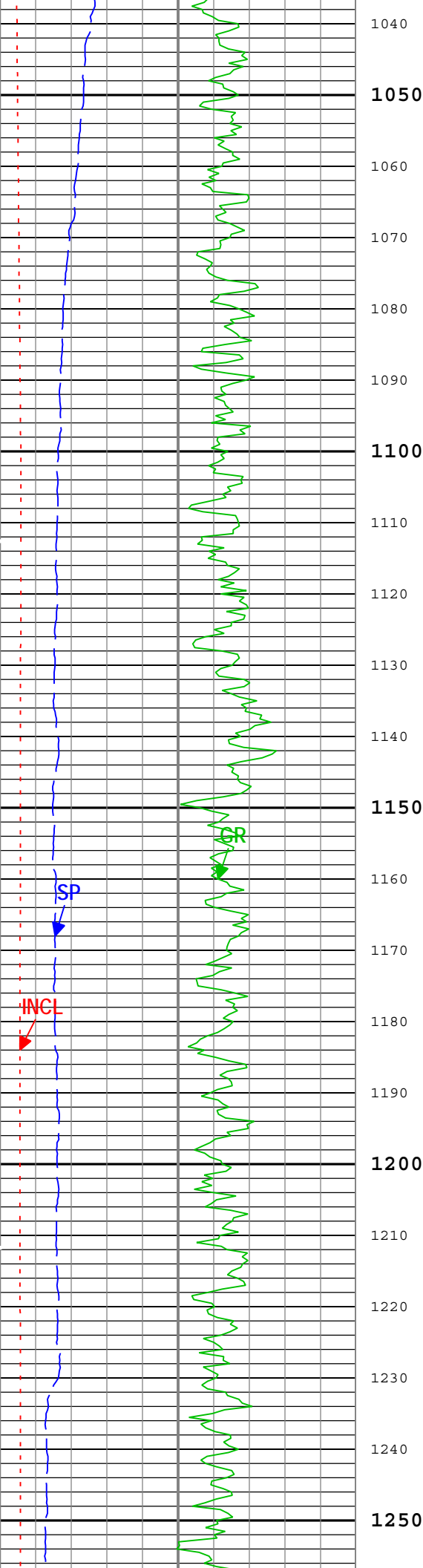
Run 1				
5" Triple Combo				
Integration Summary				
Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
ICV	Integrated Cement Volume	GCSE_UP_PASS, FCD	777.33	ft3

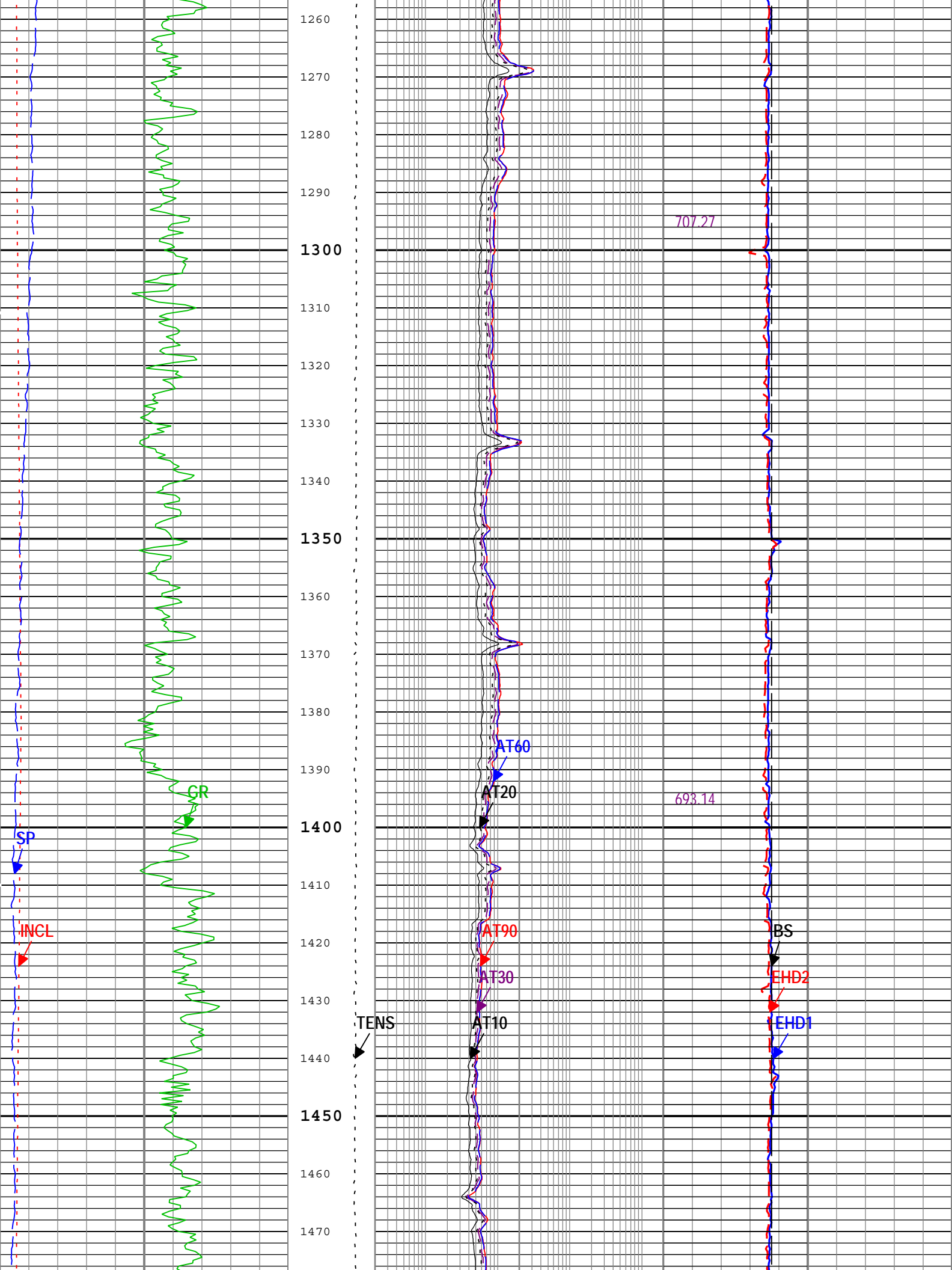
\_\_\_\_\_

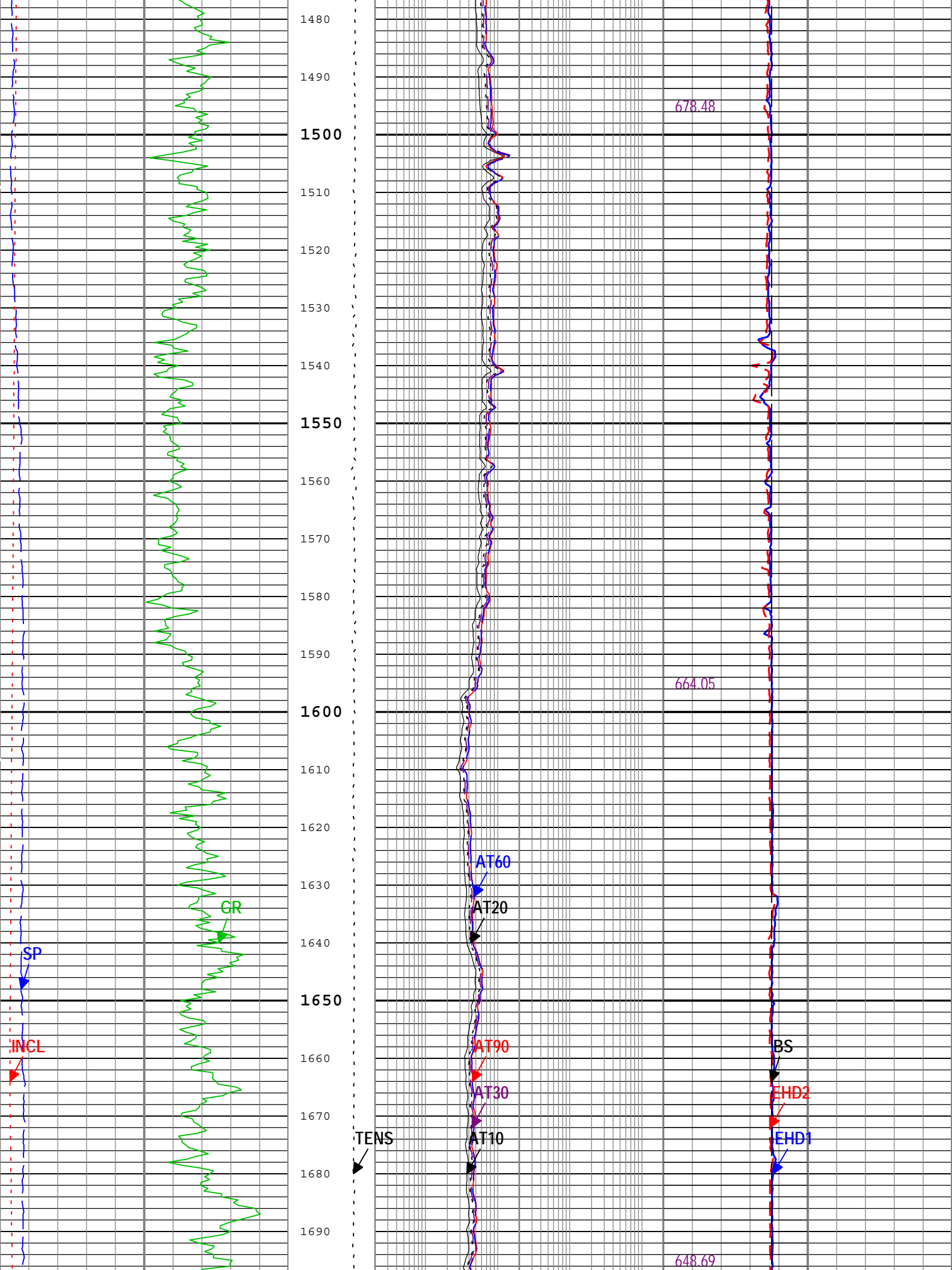
Acquisition System						Version			
MaxWell						4.0.9163.3000			
Application Patch						Patch-SP-10767_18214-4.0.9163.3001			
						Patch-Hotfix_Task_Tree_GDI_SP2-20806-4.0.9434.3002			
Computation		Description						Version	
Borehole		Borehole Ensemble provides common Borehole Parameters and Channels						4.0.9433.3000	
Tool Elements		Description				Software Version		Firmware Version	
PPC-B		PPC-B Element is used for usual logging at wellsite and check/diagnostics.				4.0.9433.3000		1.0	
AMIS		Array Induction Sonde - M				4.0.9427.3000		1	
SGC-TB		Scintillation Gamma Cartridge				4.0.9360.3000			
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
Run 1	Main[3]:Up	Up	64.12 ft	6095.03 ft	04-Jul-2014 11:18:09 AM	04-Jul-2014 12:20:48 PM	ON	-3.42 ft	Yes
All depths are referenced to toolstring zero									
Log	Company:Noble Energy Inc					Well:NCLP AA06-62-1AHNC			
Run 1: Main[3]:Up:S011									
Description: HGNS standard resolution porosities for Platform Express    Format: Log ( Import of KM 5in Triple Combo )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 04-Jul-2014 13:13:55									
Channel	Source		Sampling						
AT10	AIT-M:AMIS:AMIS		3in						
AT20	AIT-M:AMIS:AMIS		3in						
AT30	AIT-M:AMIS:AMIS		3in						
AT60	AIT-M:AMIS:AMIS		3in						
AT90	AIT-M:AMIS:AMIS		3in						
BS	Borehole		6in						
EHD1	PPC-B:PPC-B:PPC-B		6in						
EHD2	PPC-B:PPC-B:PPC-B		6in						
GR	SGT-N:SGT-N:SGC-TB		6in						
ICV	Borehole		6in						
INCL	WLWorkflow		6in						
SP	AIT-M:AMIS:AMIS		6in						
TENS	WLWorkflow		6in						
TIME_1900	WLWorkflow		0.1in						
TIME_1900 - Time Marked every 60.00 (s)									
<div>Hole inclination (INCL)</div> <div>0deg10</div>			<div>Array Induction Two Foot Resistivity A10 (AT10) AIT-M</div> <div>0.2ohm.m2000</div>				<div>Enhanced Hole Diameter 1 (ellipse-based algorithm) (EHD1) PPC-B</div> <div>5in15</div>		
			<div>Array Induction Two Foot Resistivity A30 (AT30) AIT-M</div> <div>0.2ohm.m2000</div>						
			<div>Array Induction Two Foot Resistivity A90 (AT90) AIT-M</div> <div>0.2ohm.m2000</div>						
			<div>Array Induction Two Foot Resistivity A20 (AT20) AIT-M</div> <div>0.2ohm.m2000</div>						
			<div>Array Induction Two Foot Resistivity A60 (AT60) AIT-M</div> <div>0.2ohm.m2000</div>						
<div>Spontaneous Potential (SP) AIT-M</div> <div>00mV20</div>			Cable		<div>Enhanced Hole Diameter 2 (ellipse-based algorithm) (EHD2) PPC-B</div> <div>5in15</div>				
					<div>Bit Size (BS)</div> <div>5in1</div>				

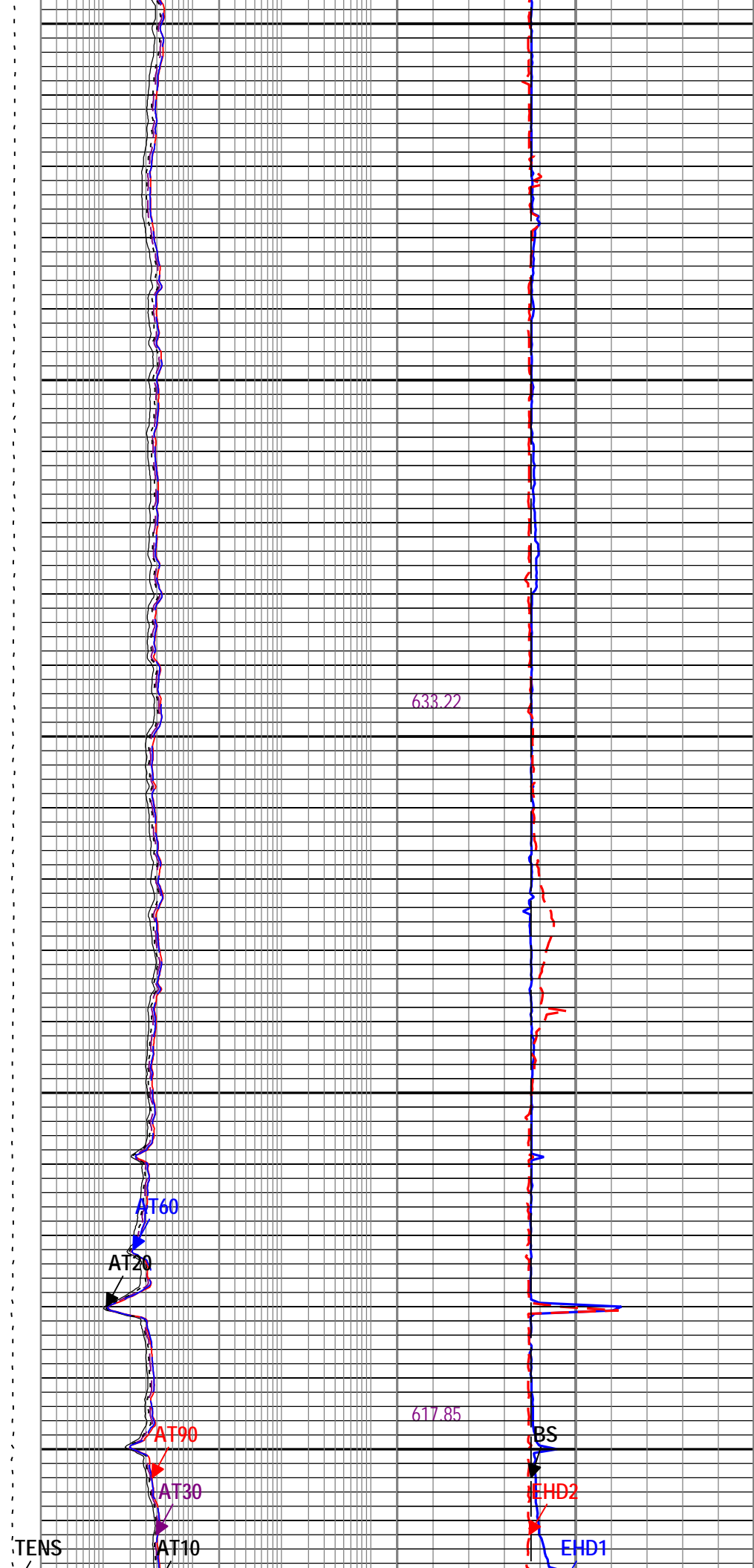
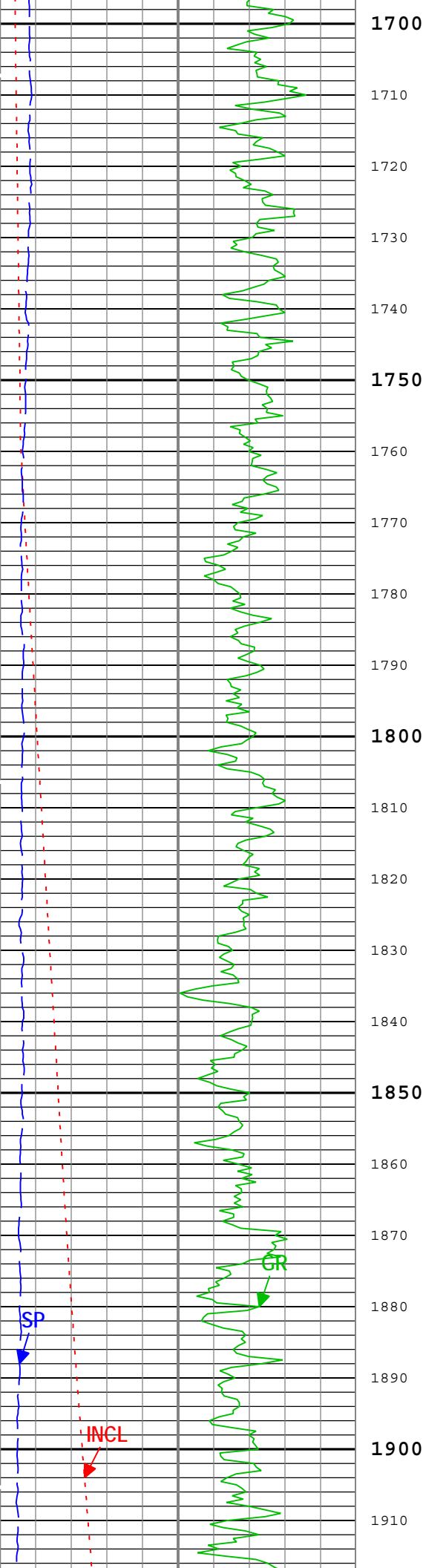


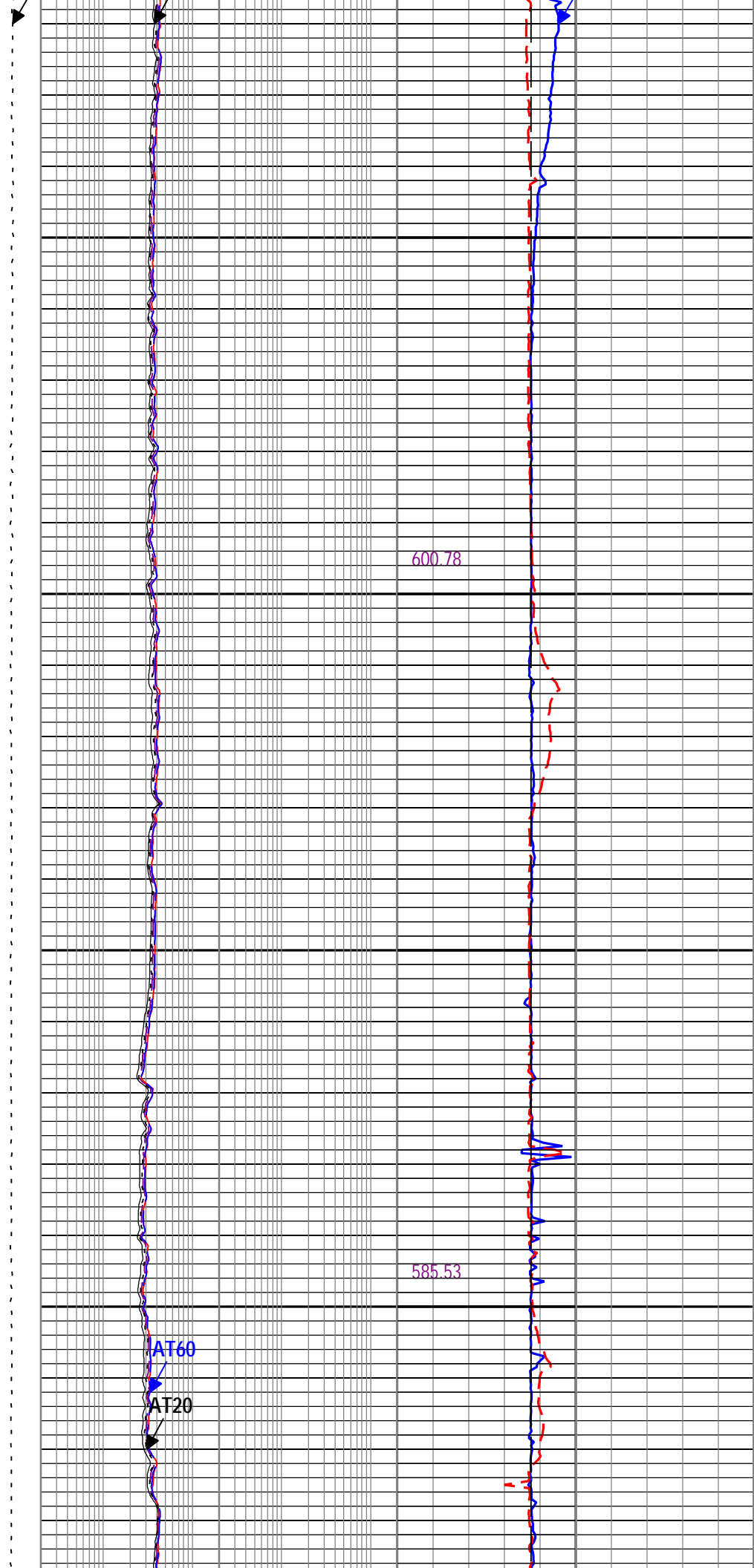
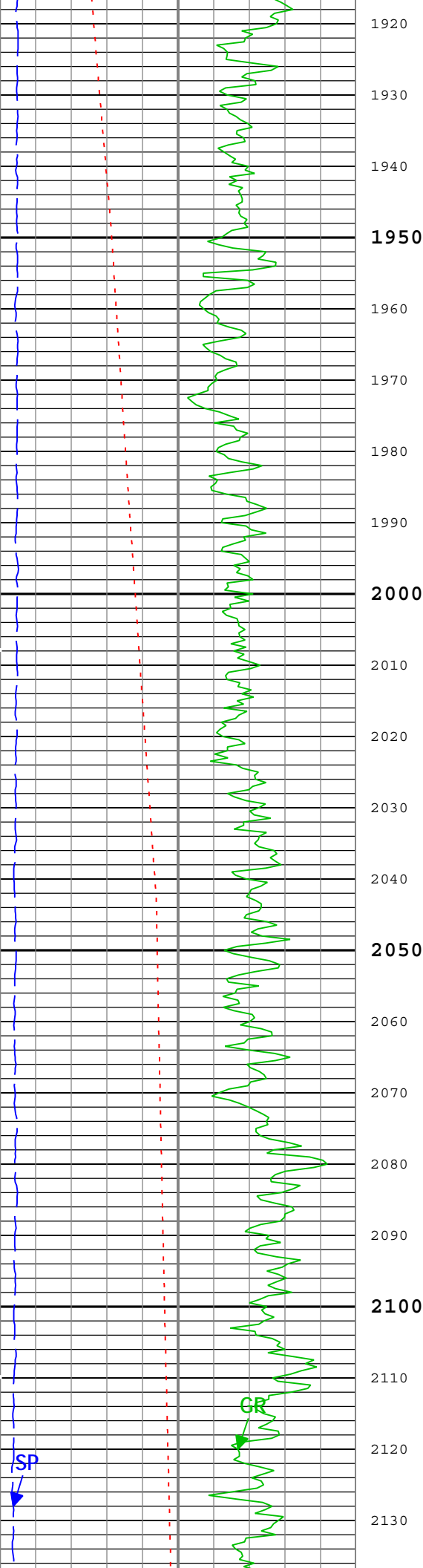


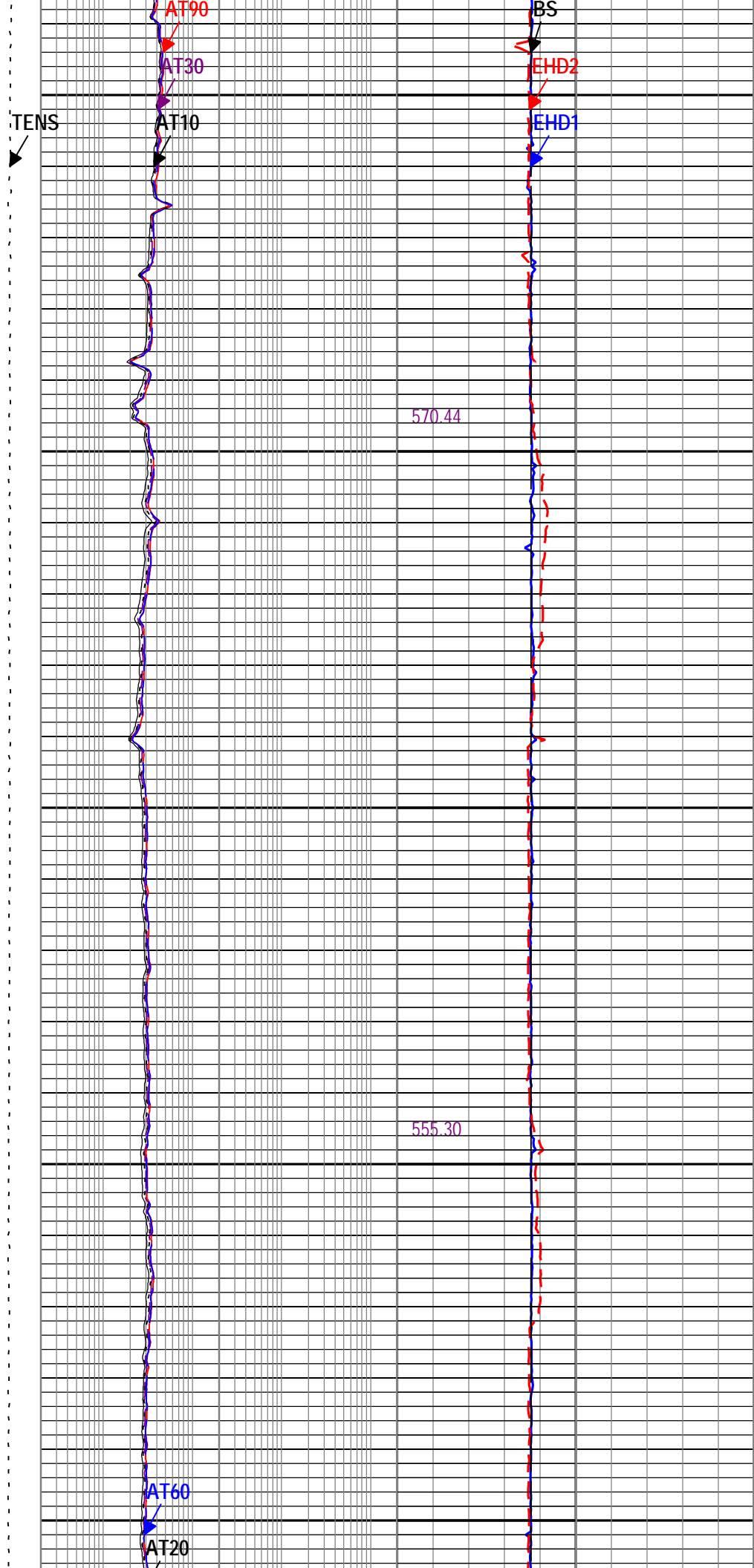
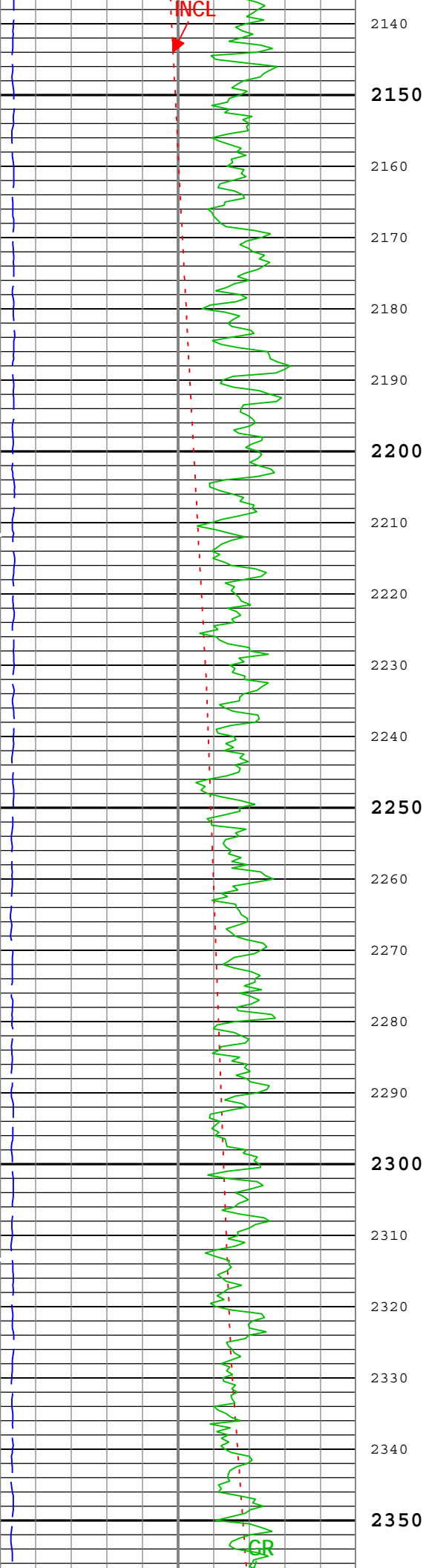


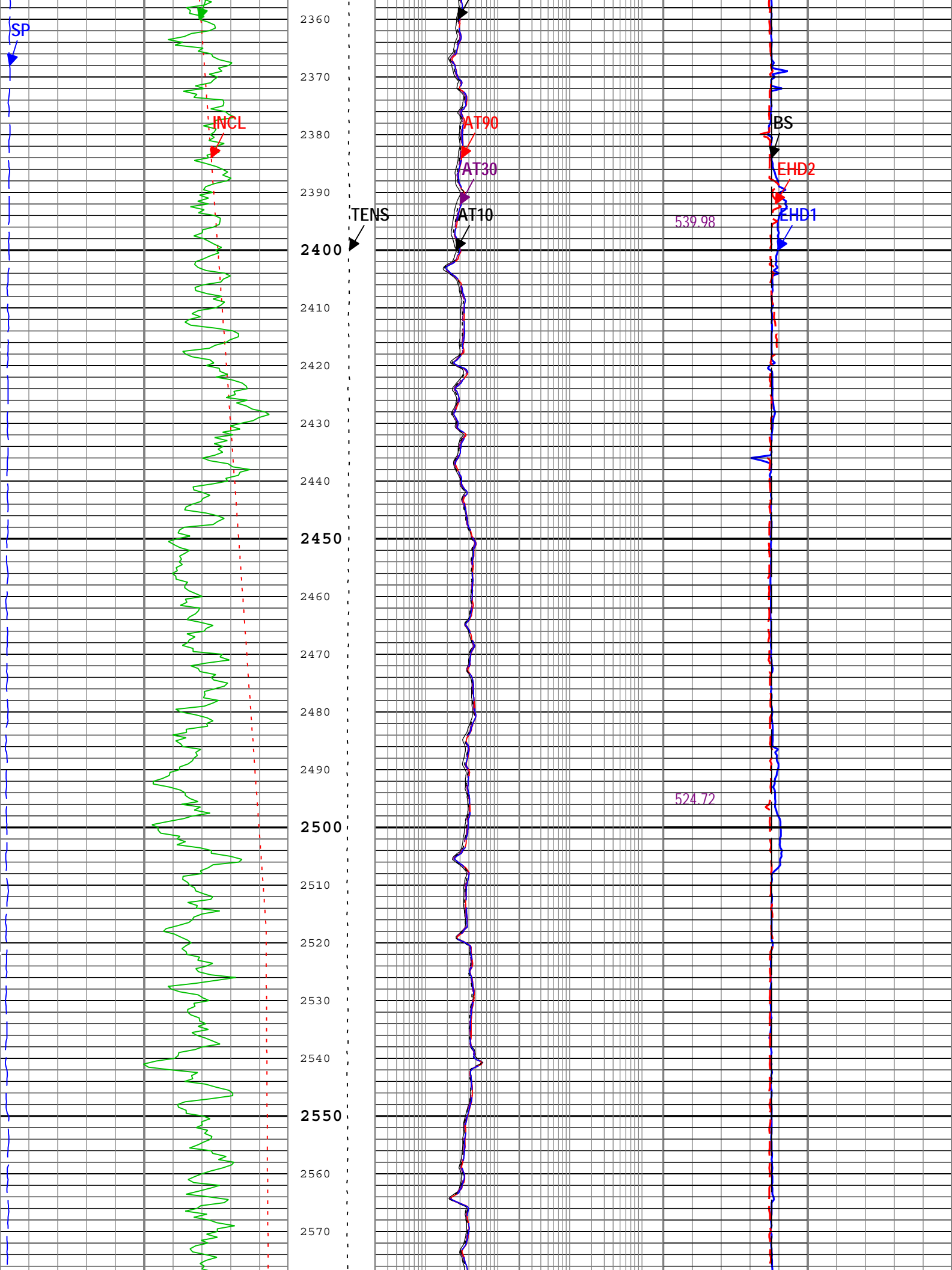




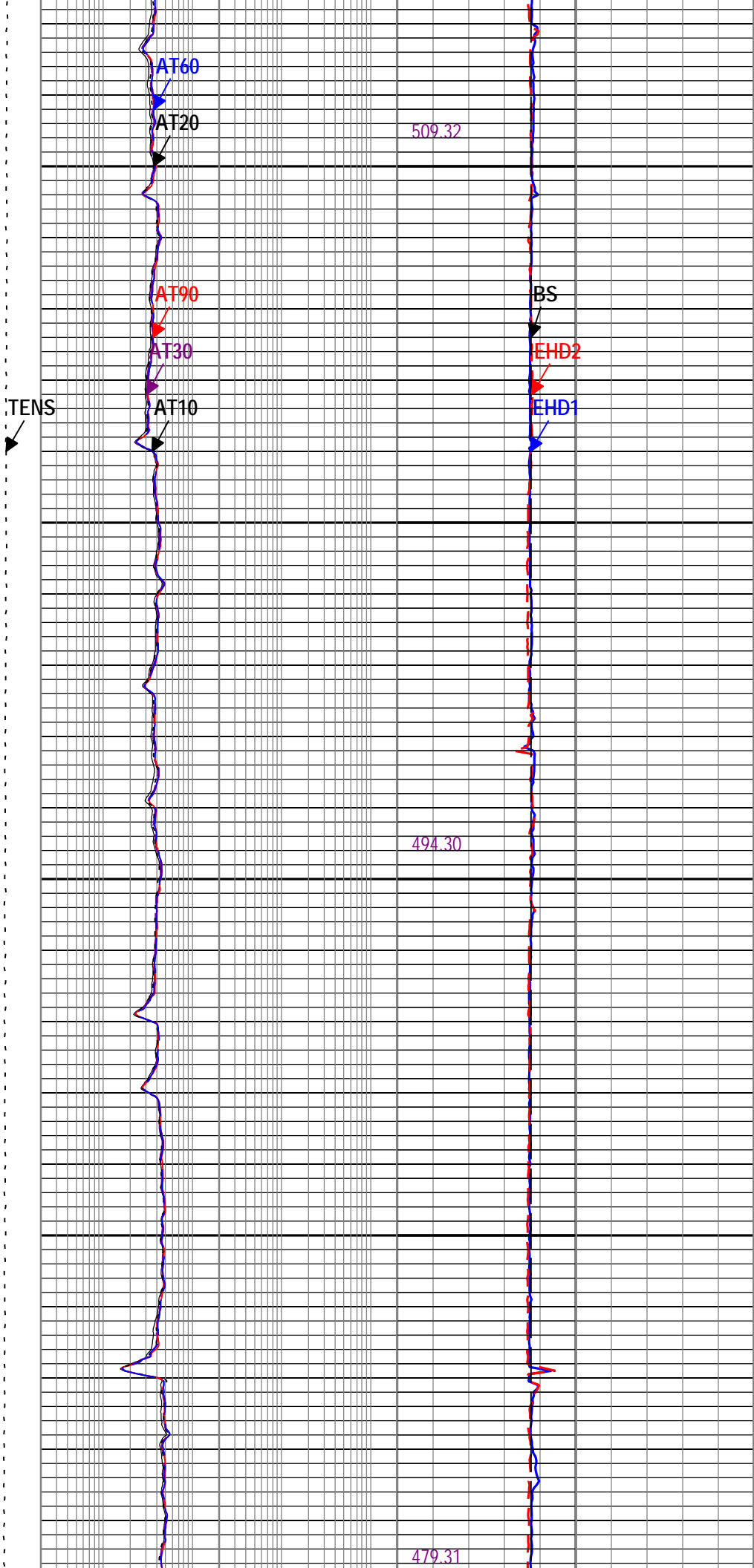
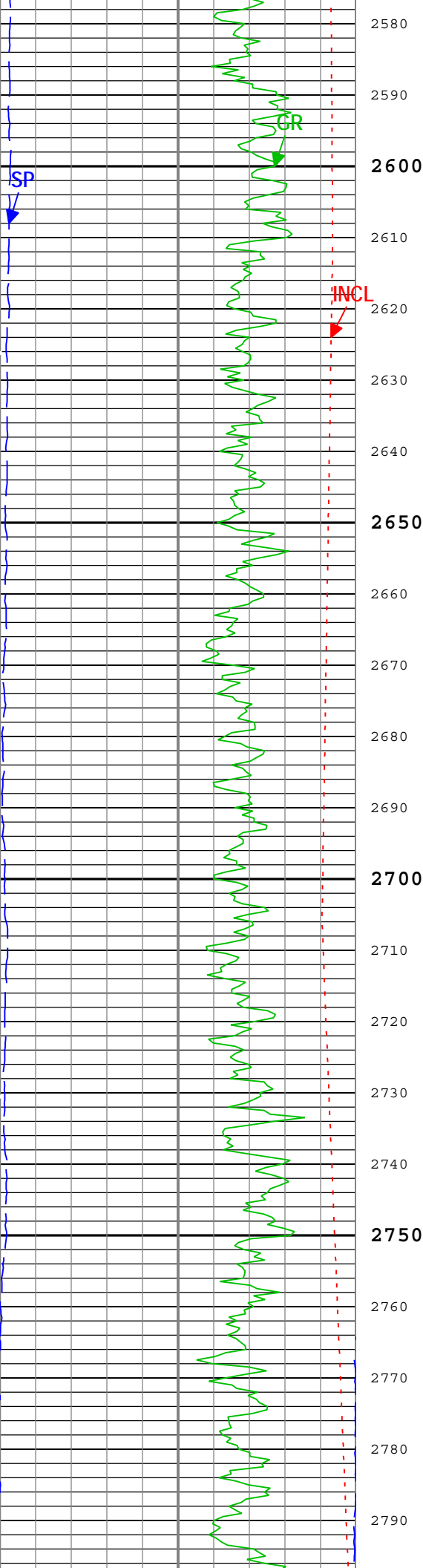


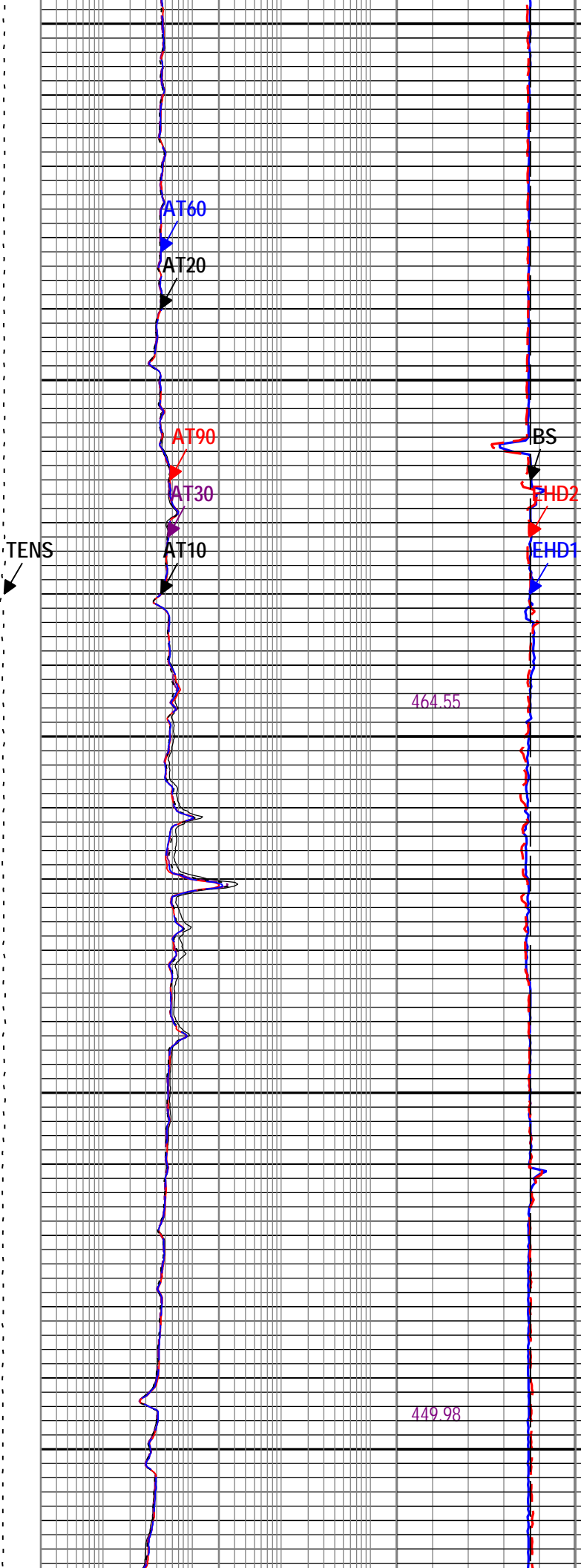
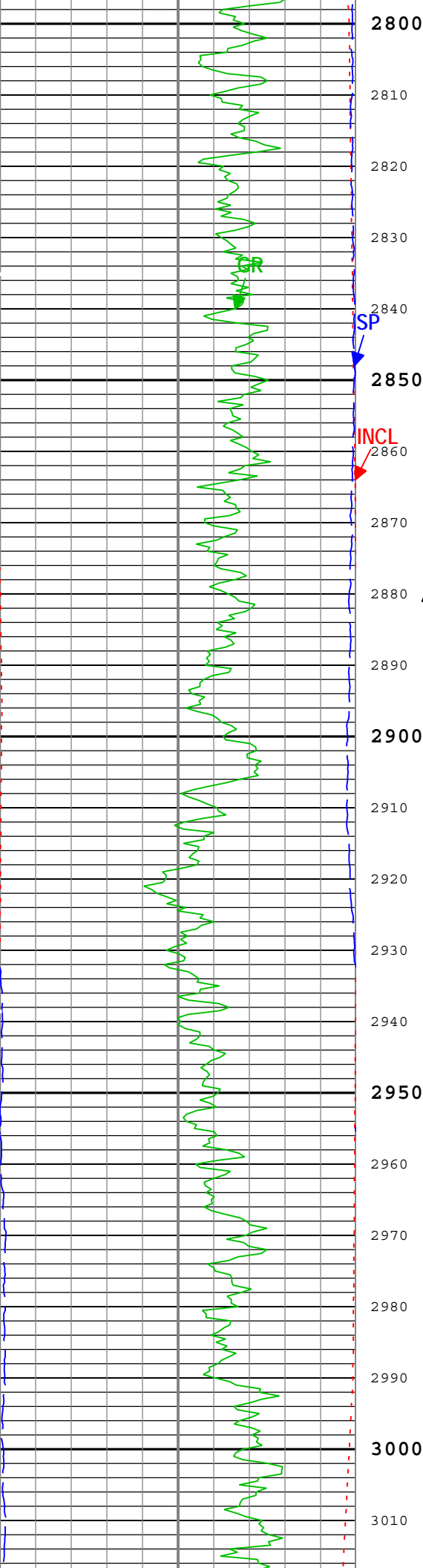


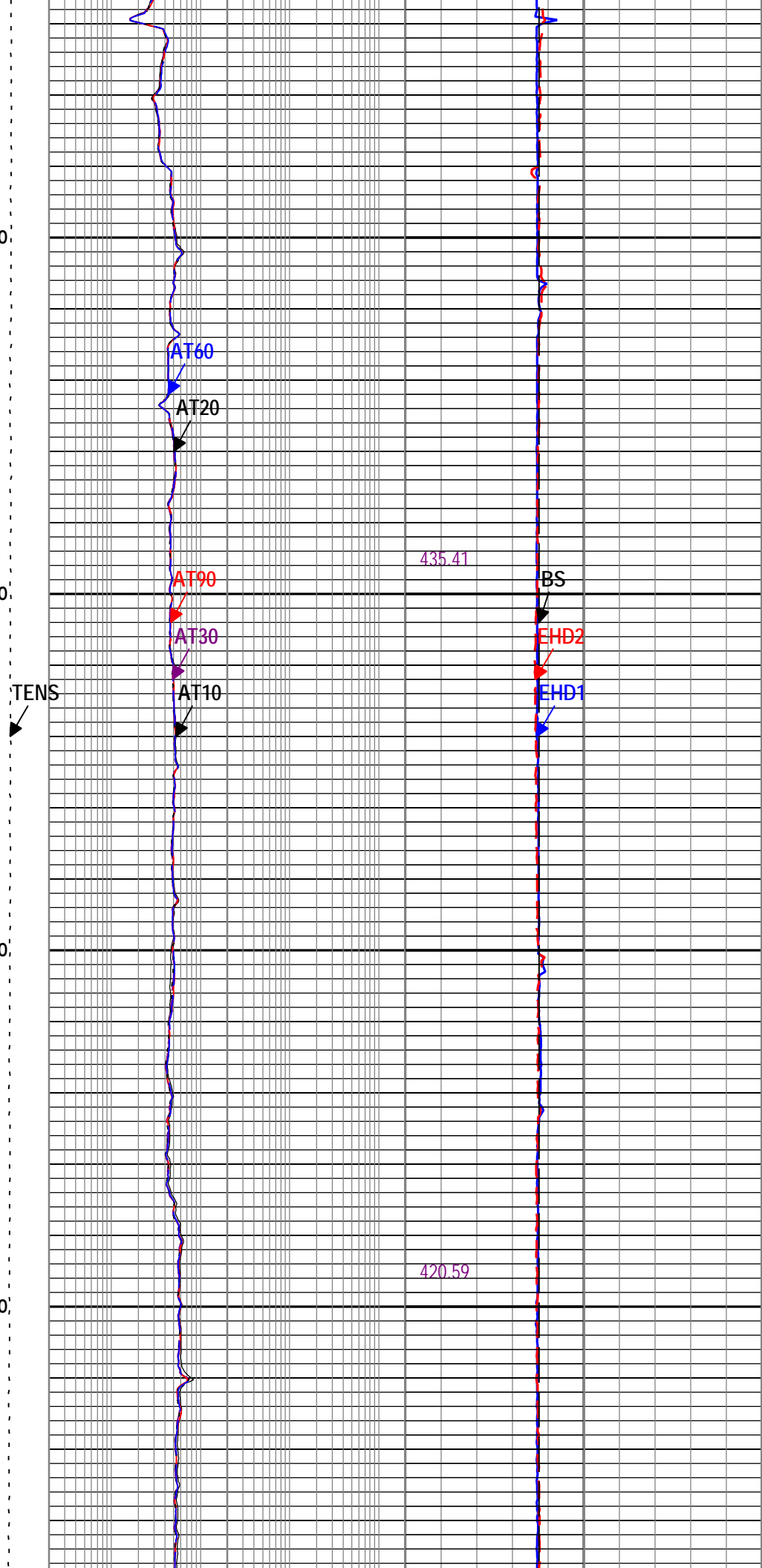
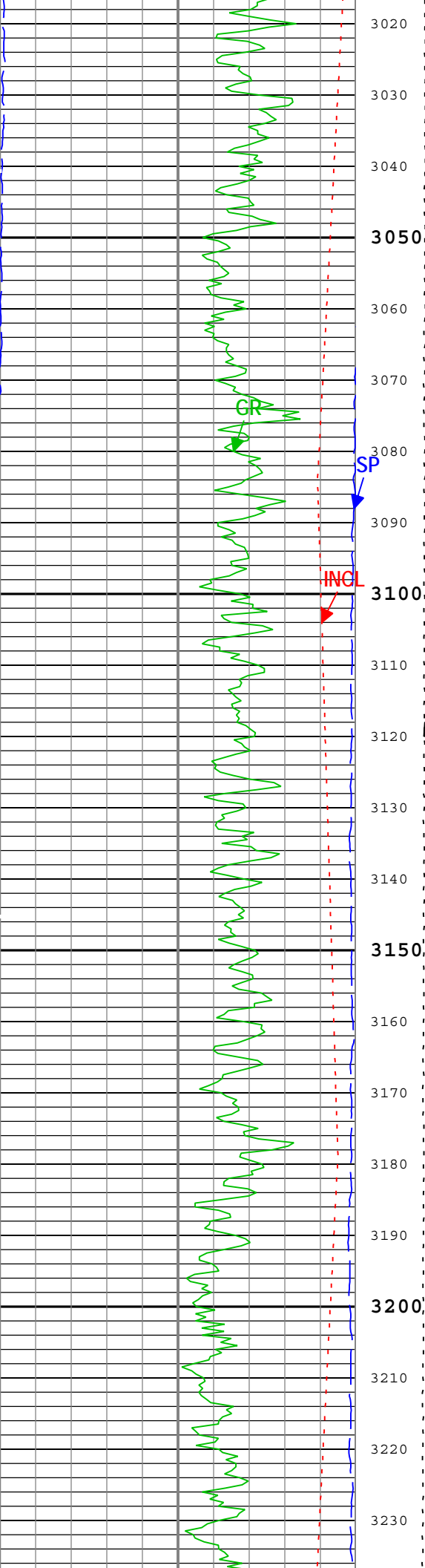


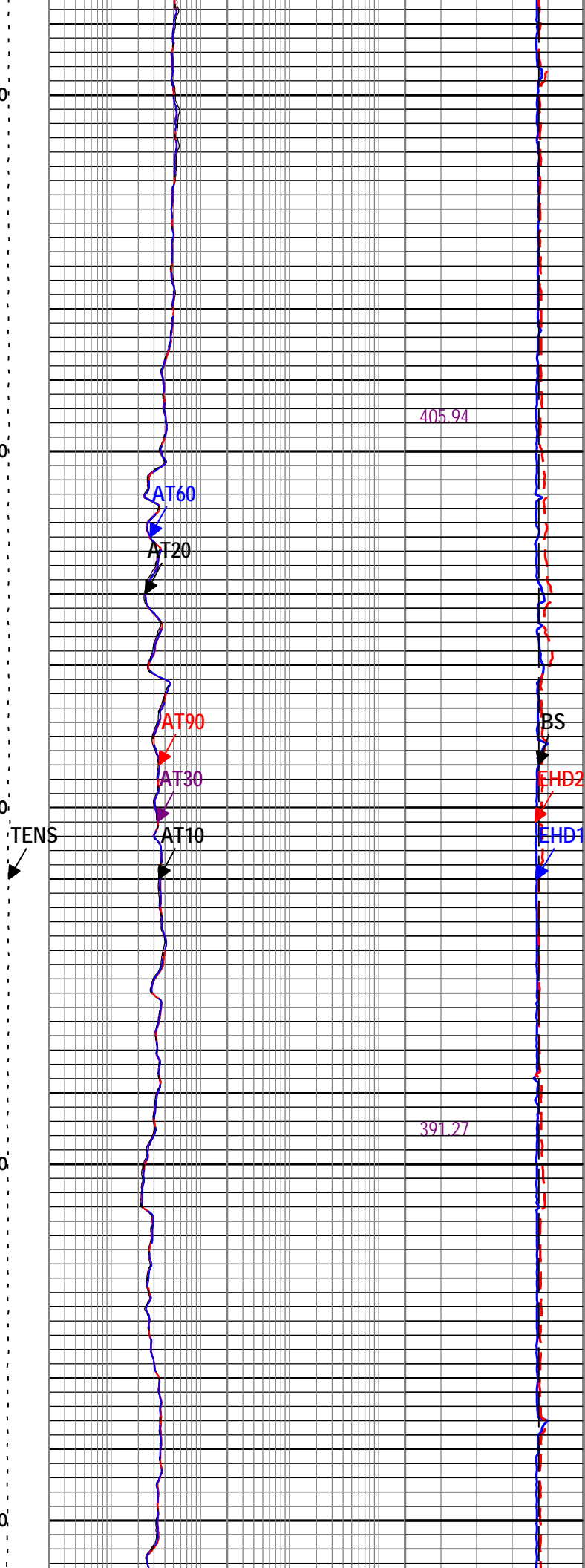
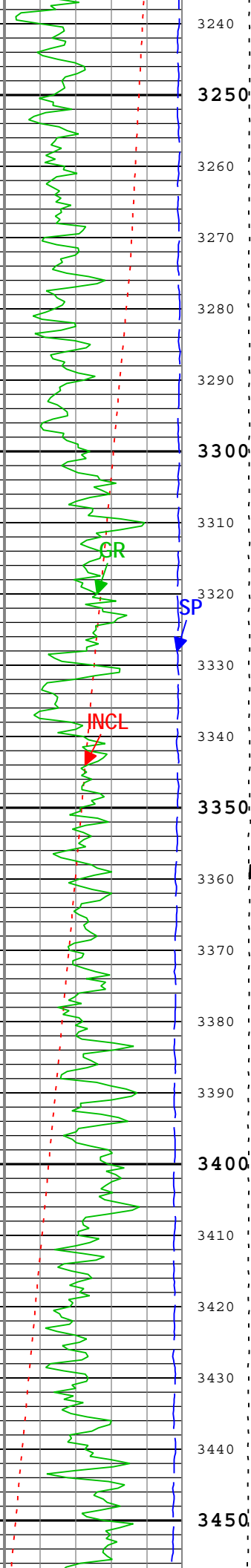


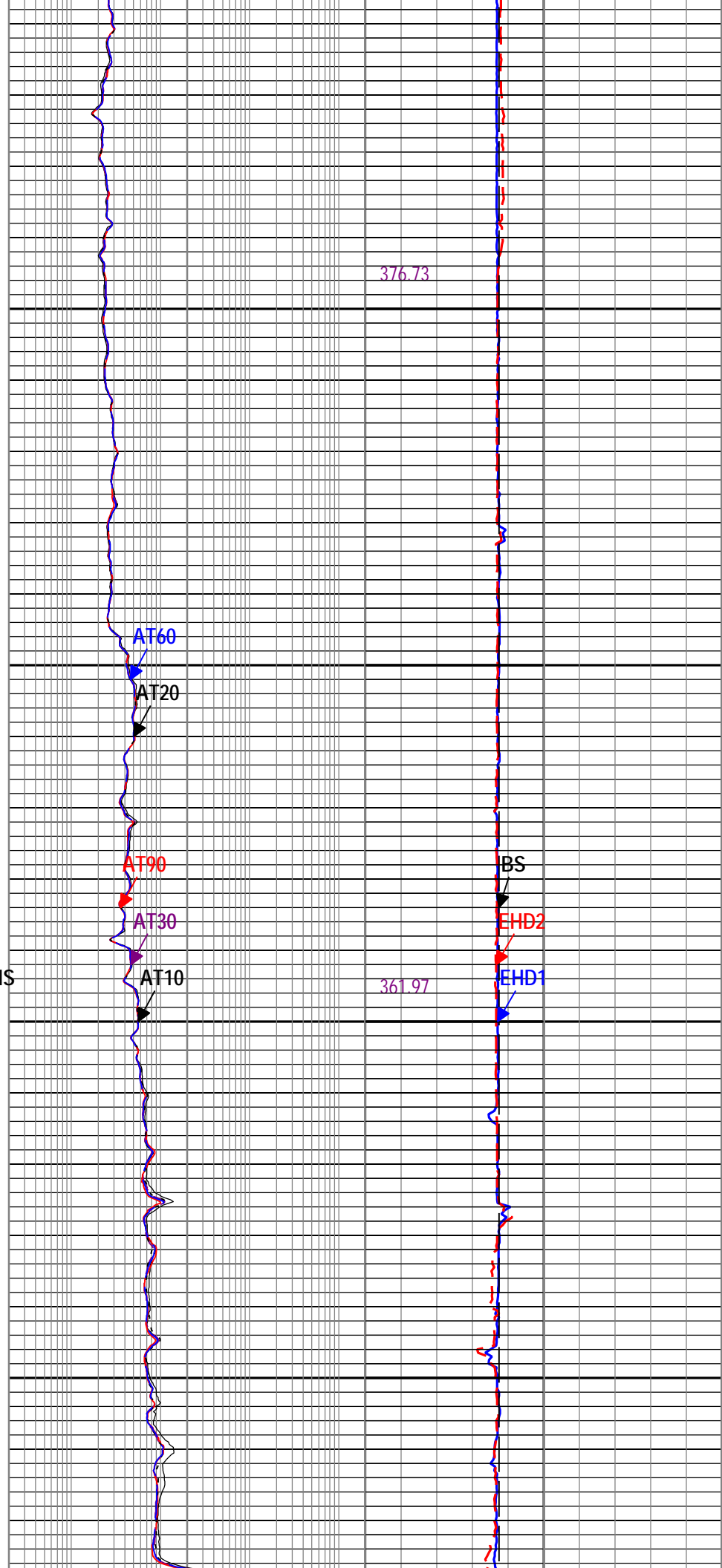
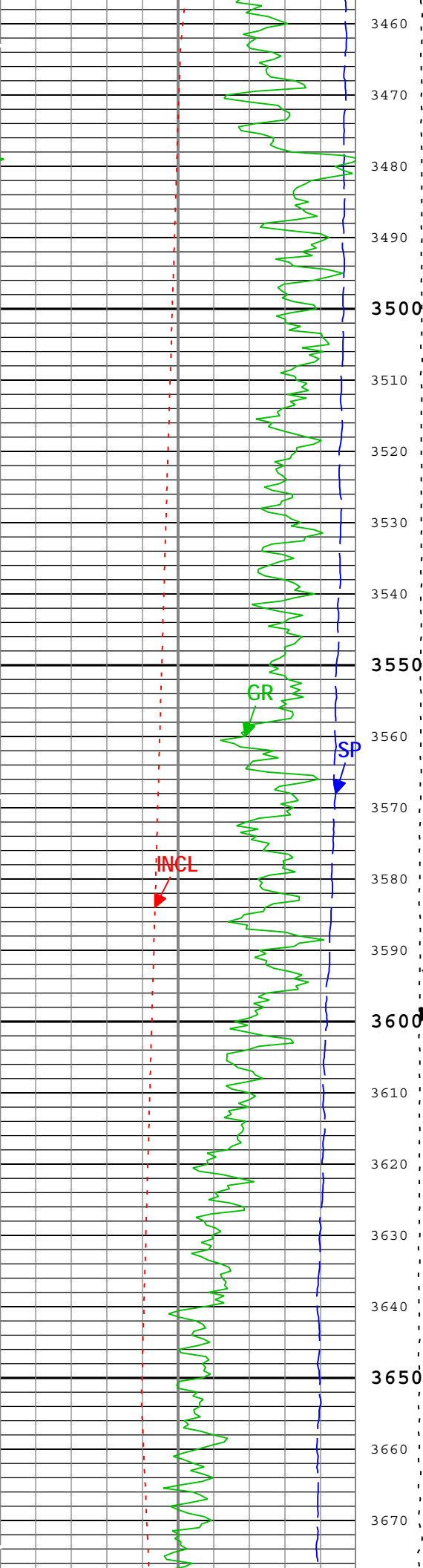


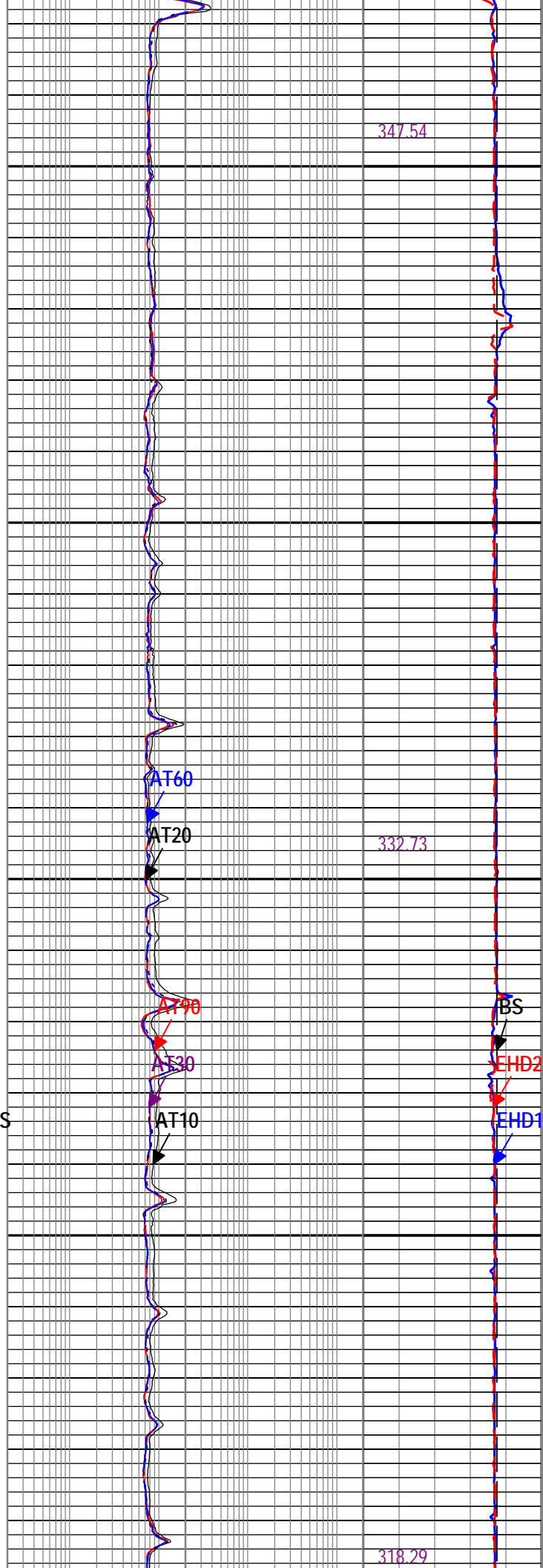
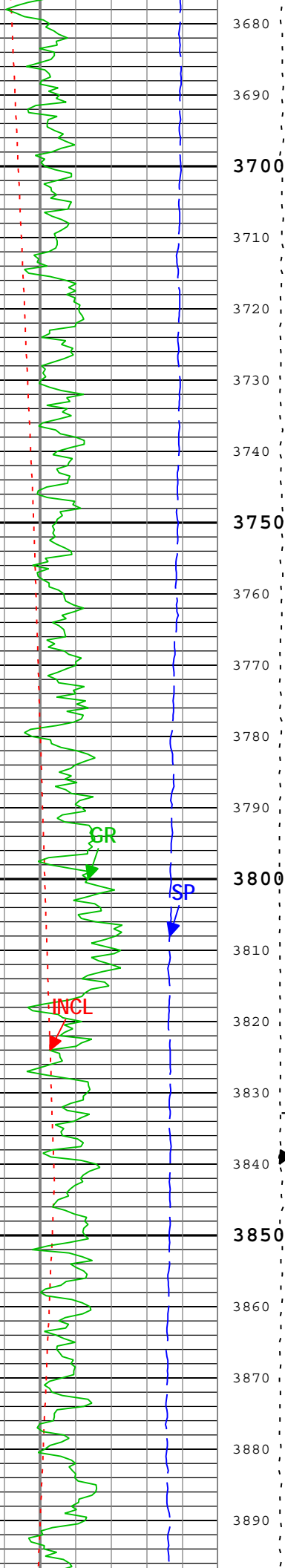


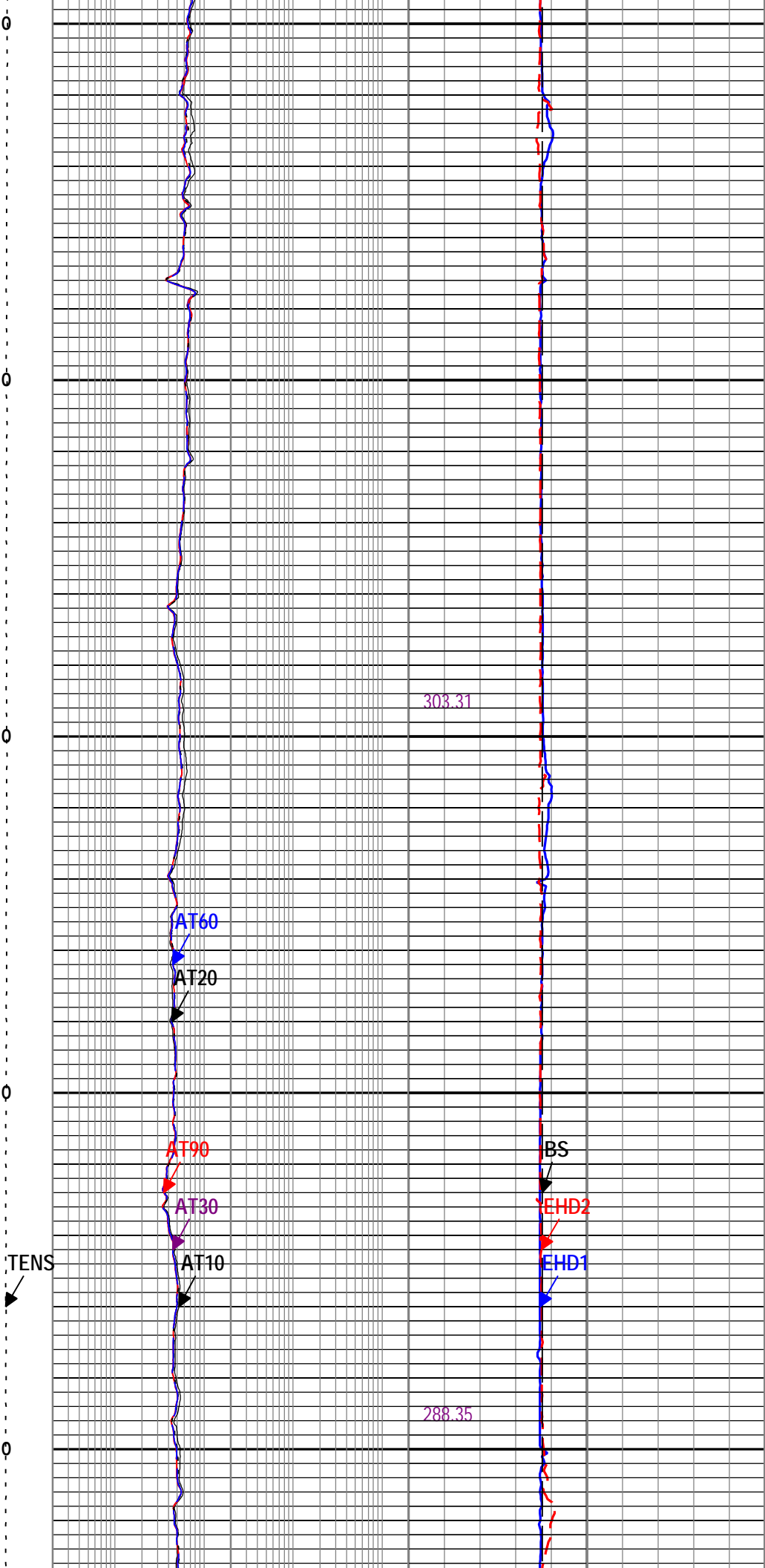
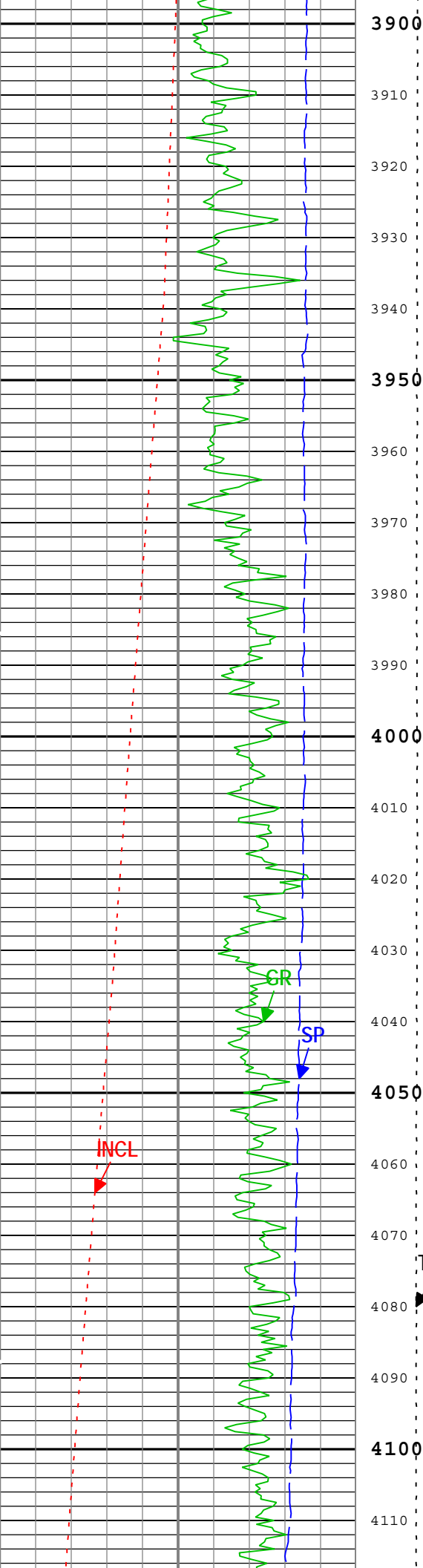


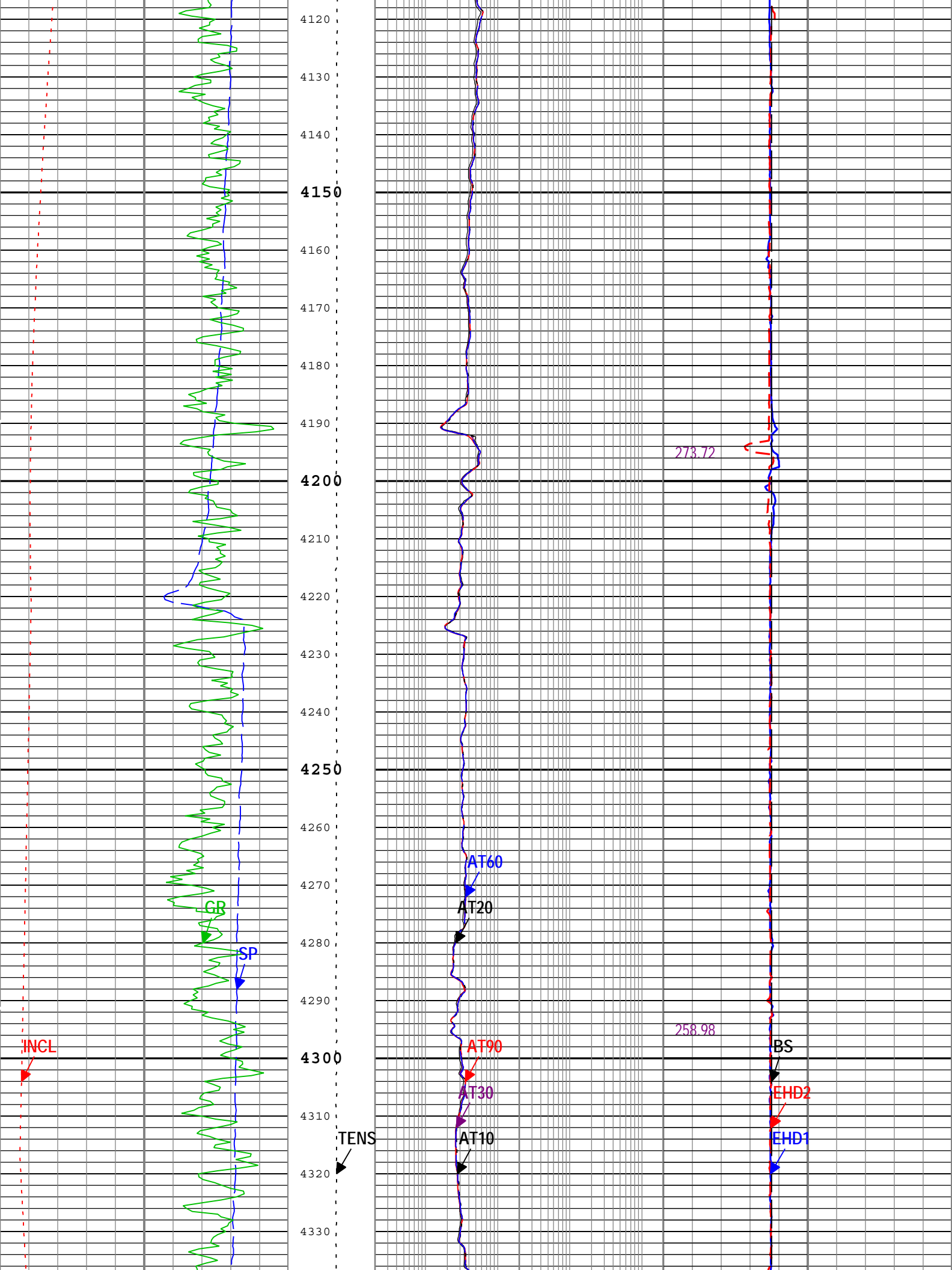




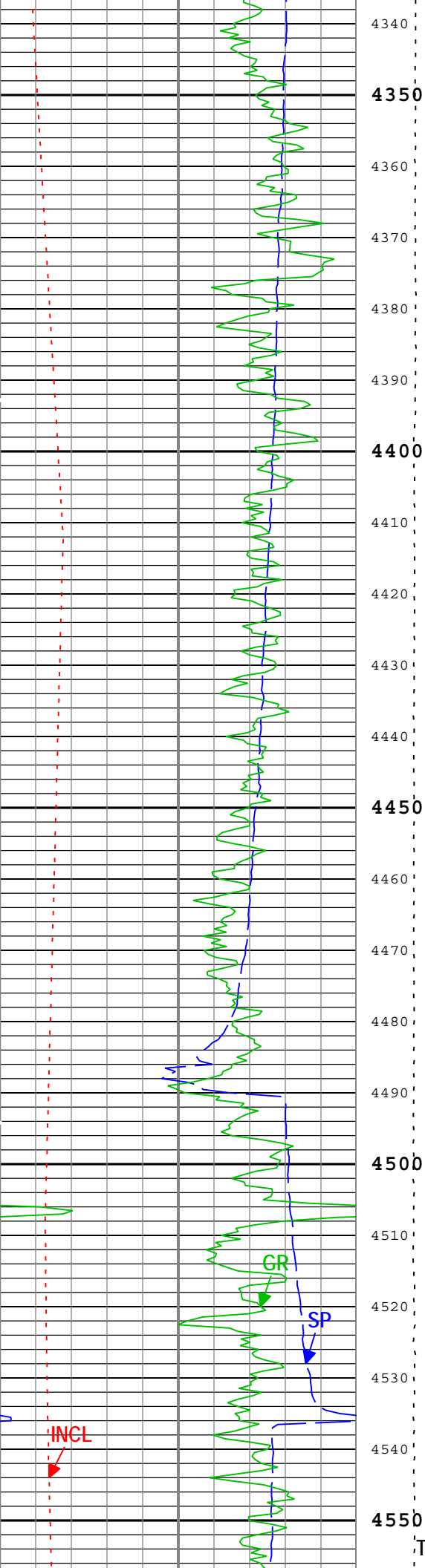






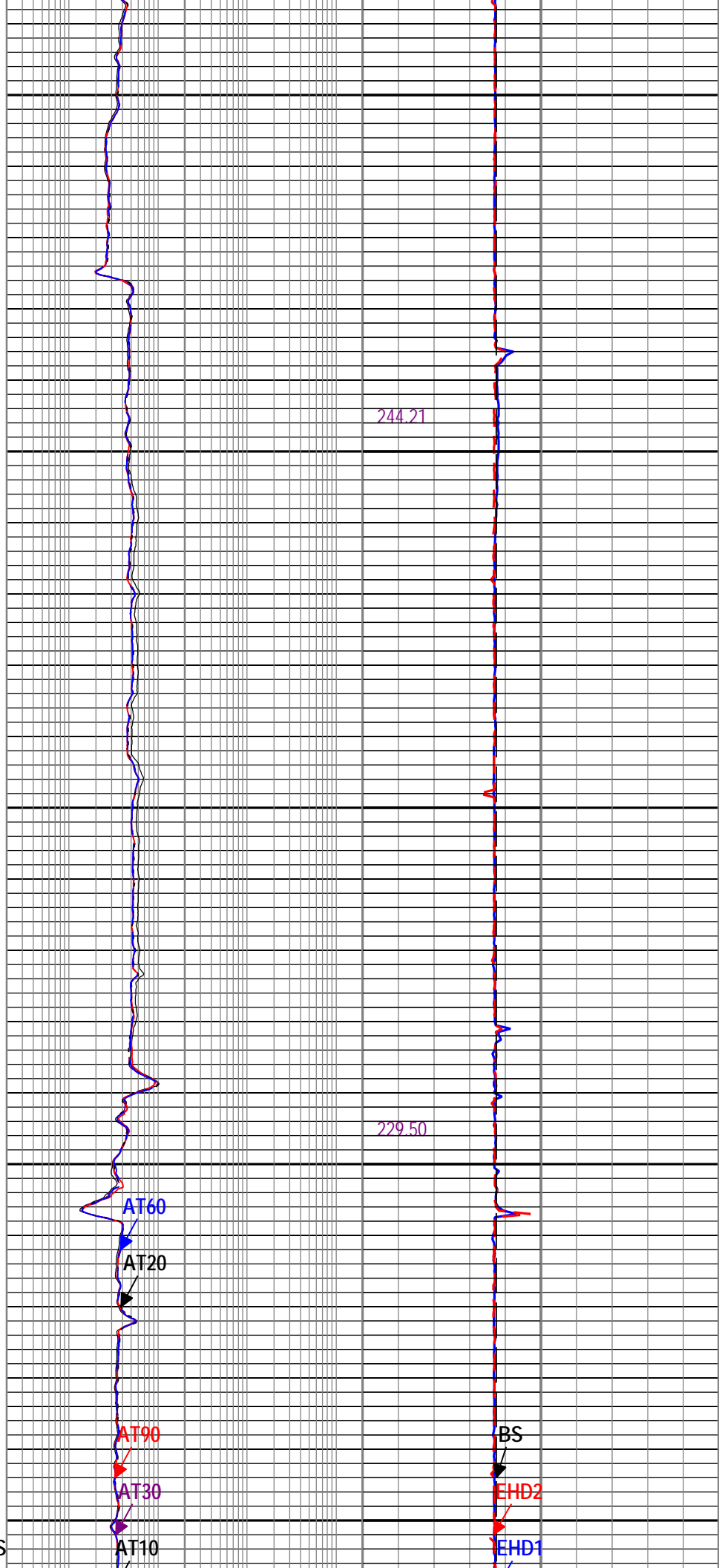






4340  
4350  
4360  
4370  
4380  
4390  
4400  
4410  
4420  
4430  
4440  
4450  
4460  
4470  
4480  
4490  
4500  
4510  
4520  
4530  
4540  
4550

TENS



244.21

229.50

AT60

AT20

AT90

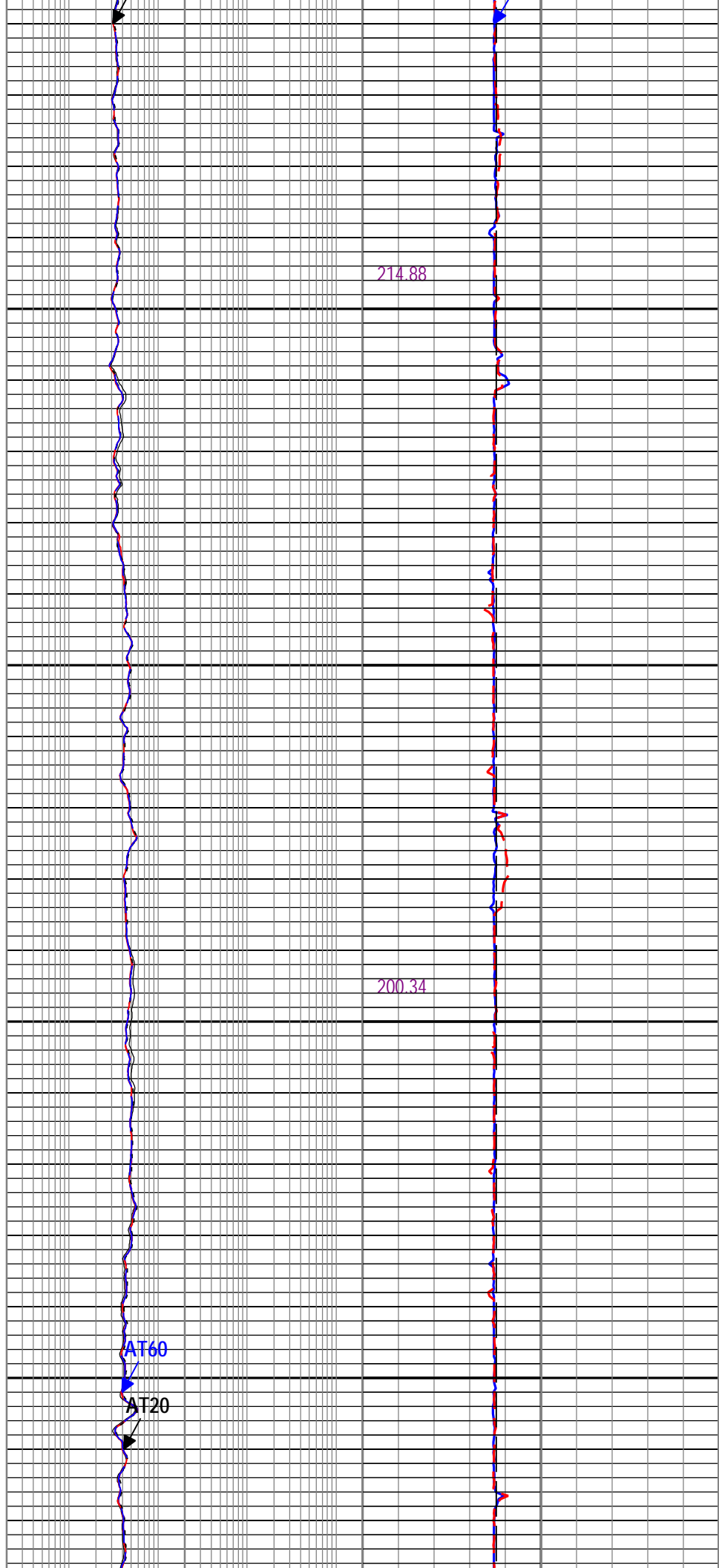
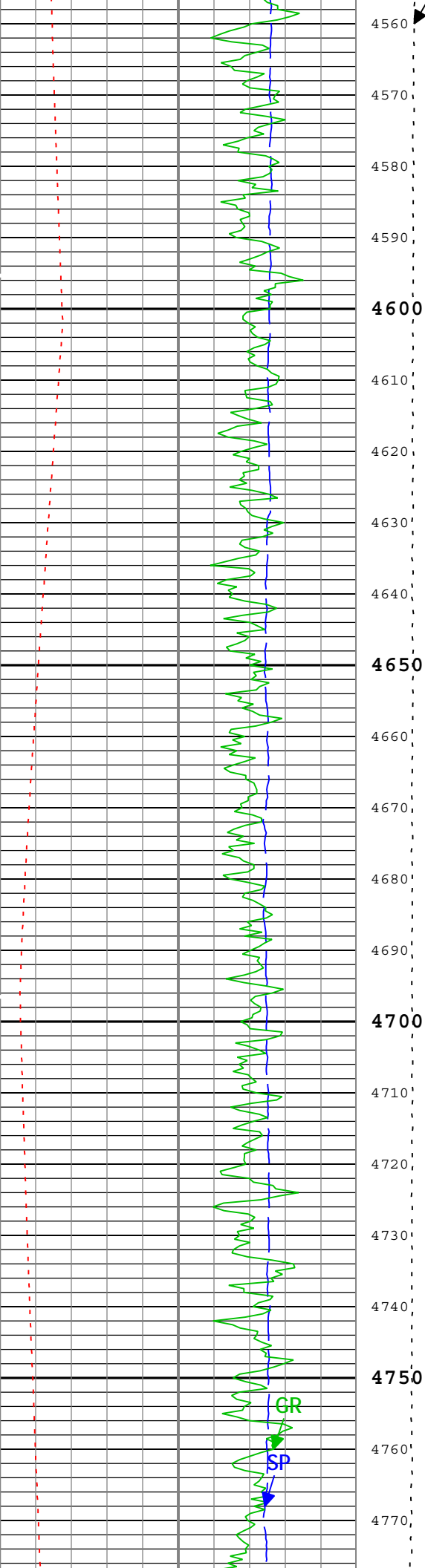
AT30

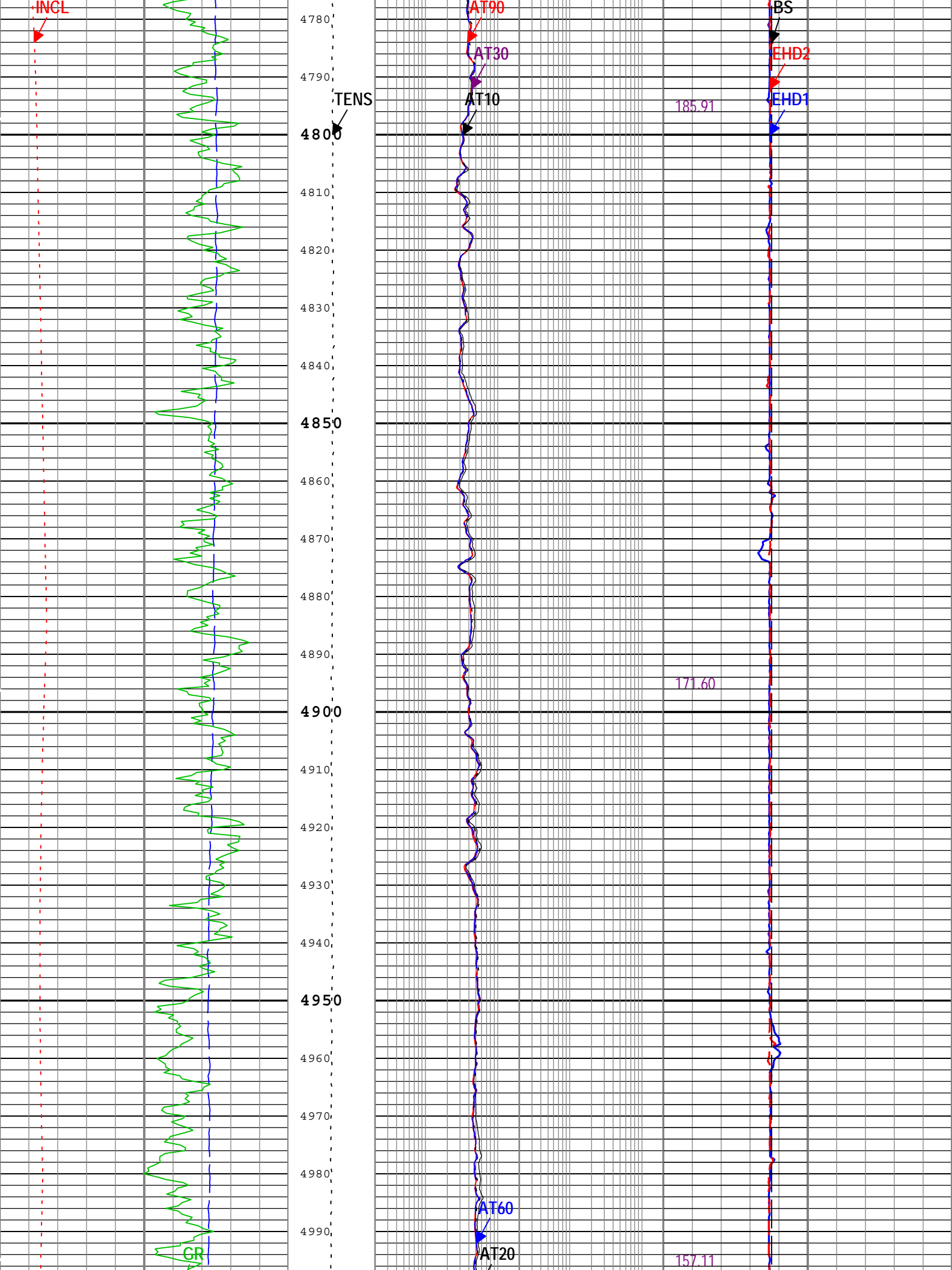
AT10

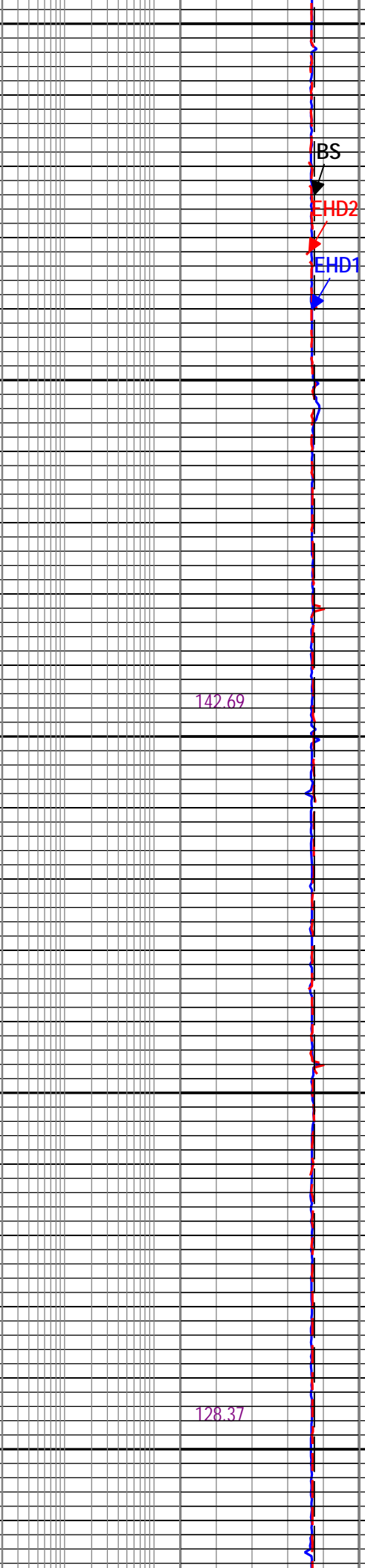
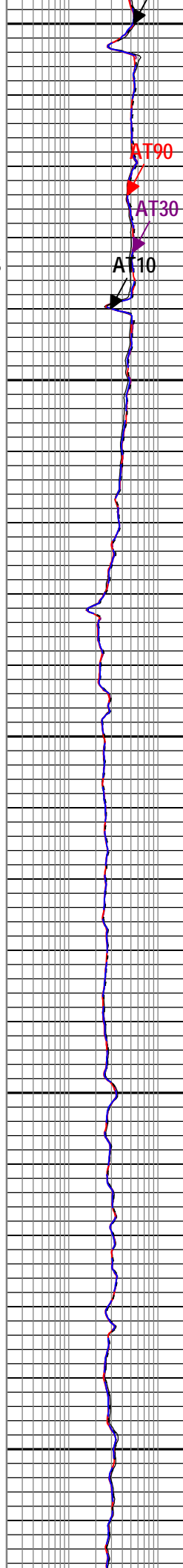
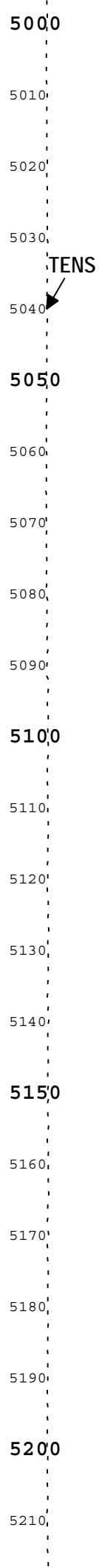
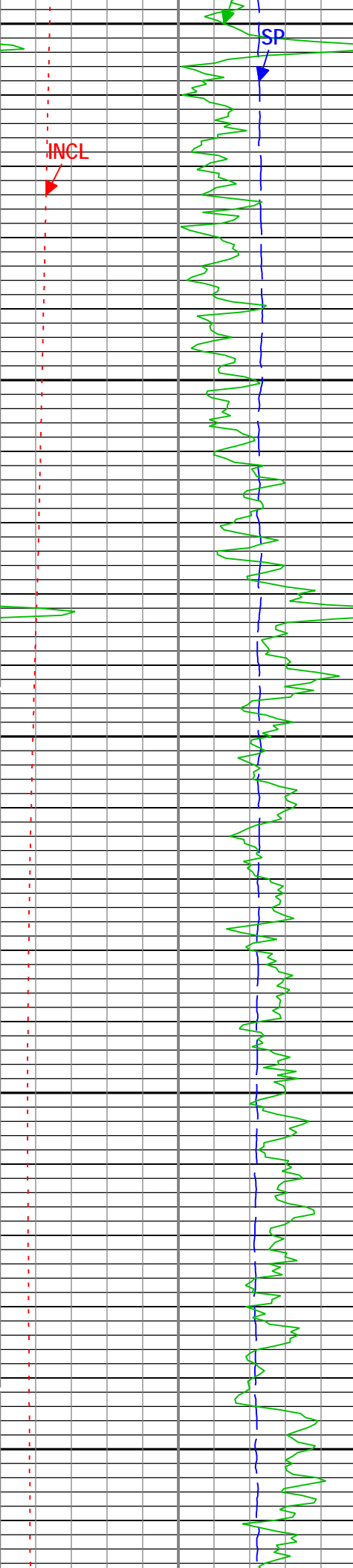
BS

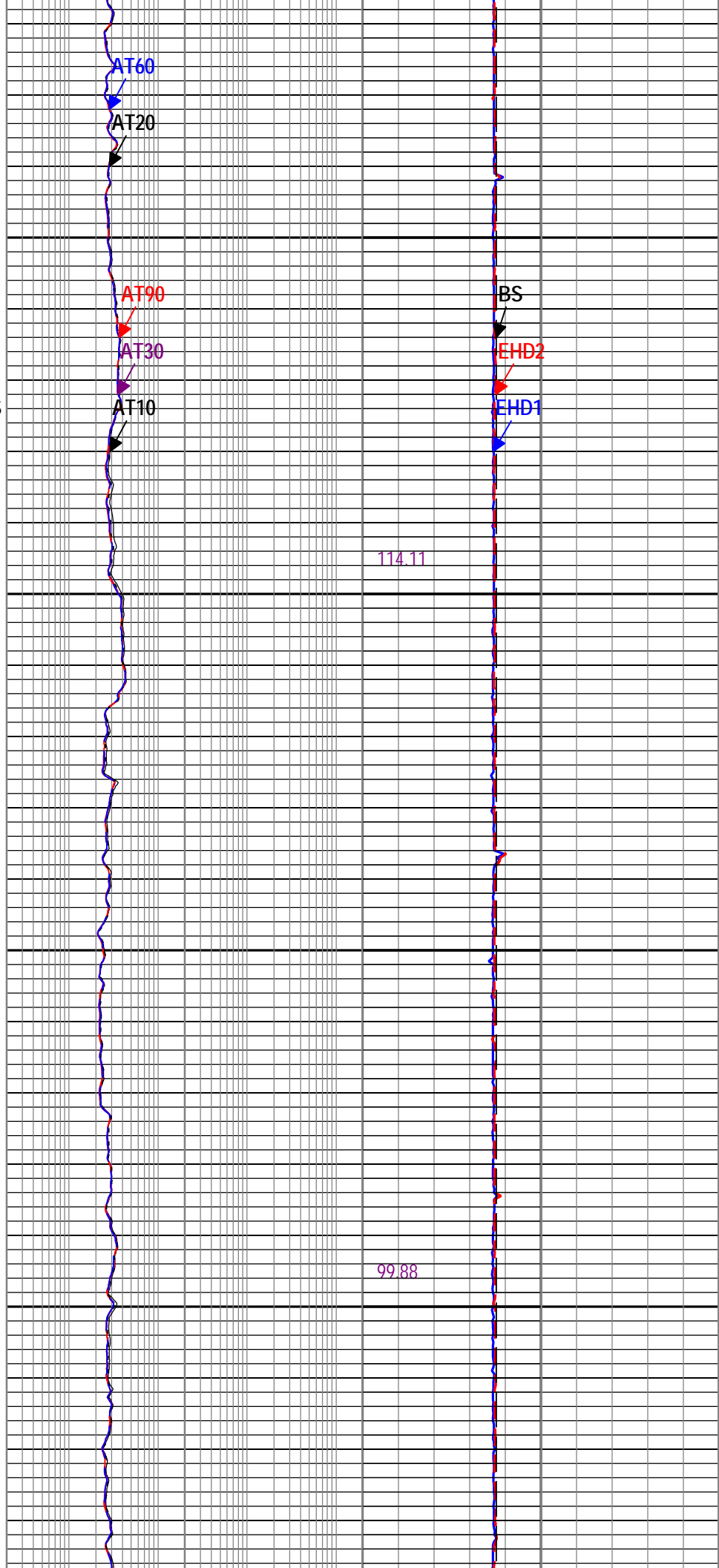
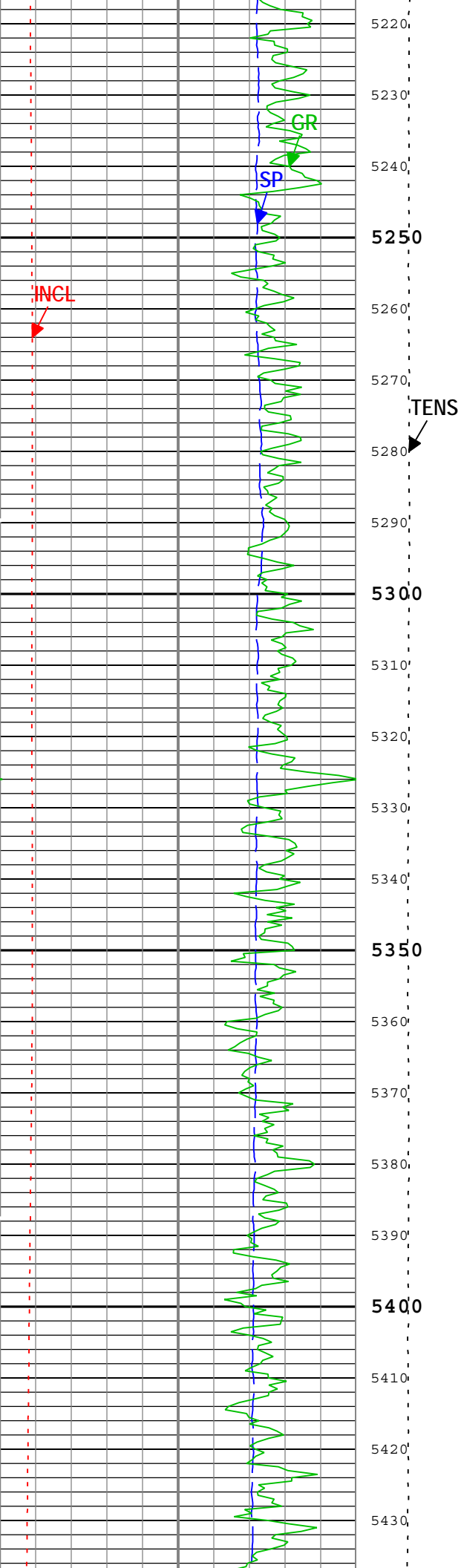
EHD2

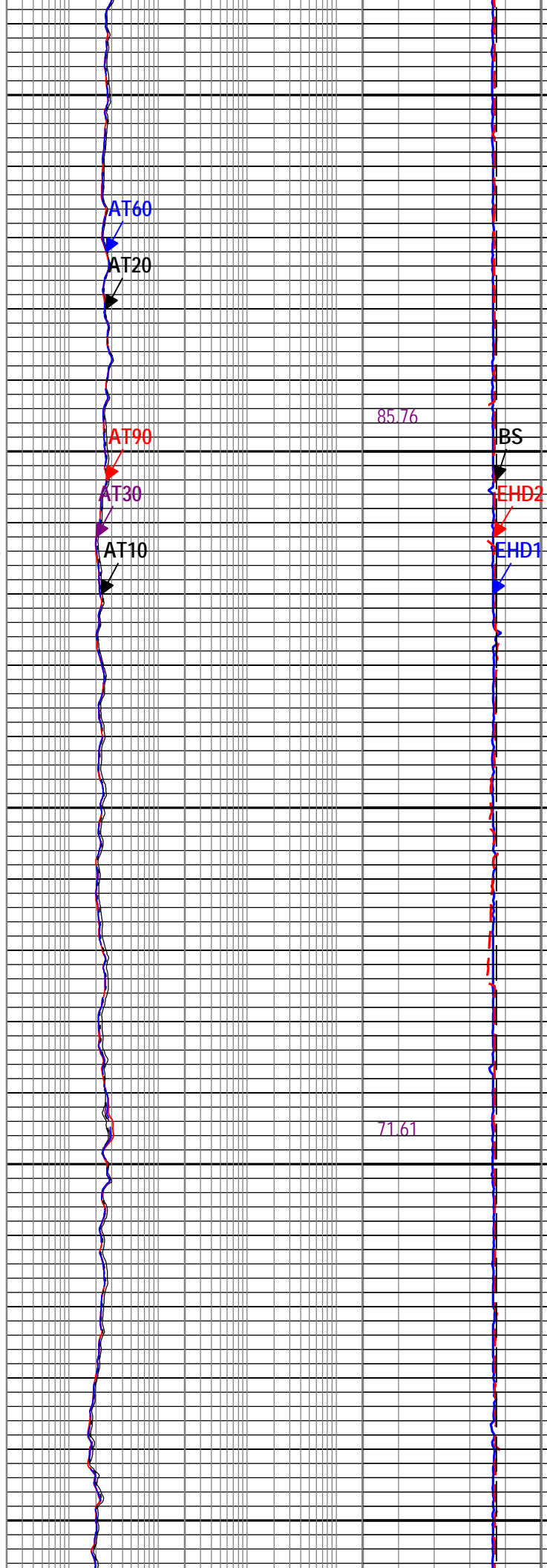
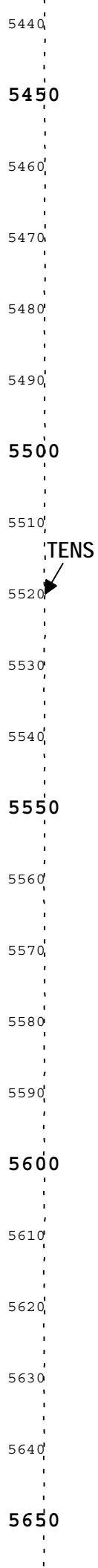
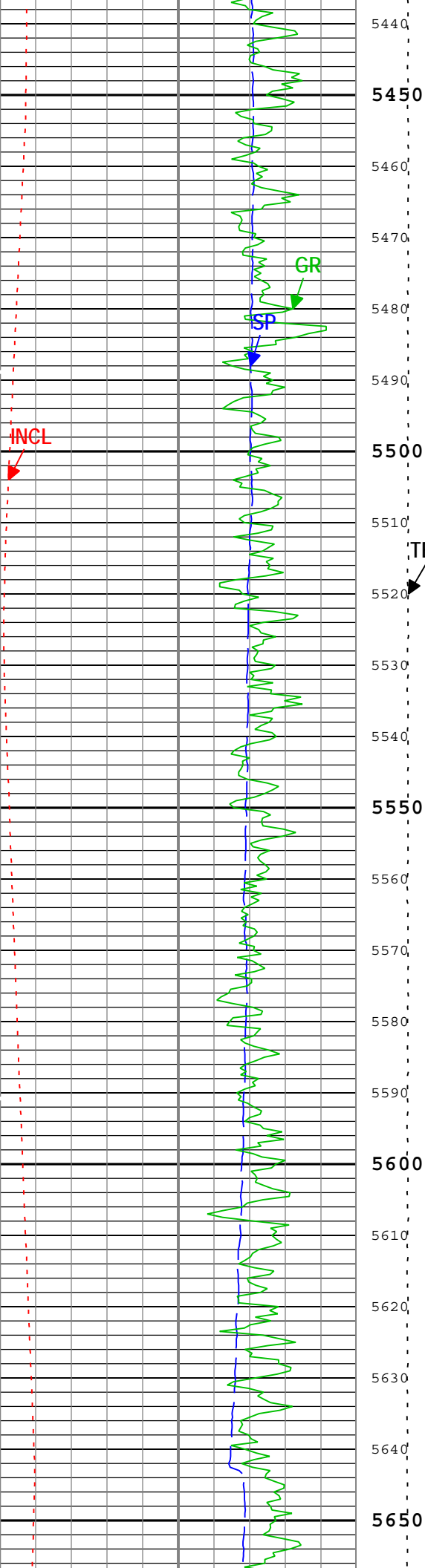
EHD1

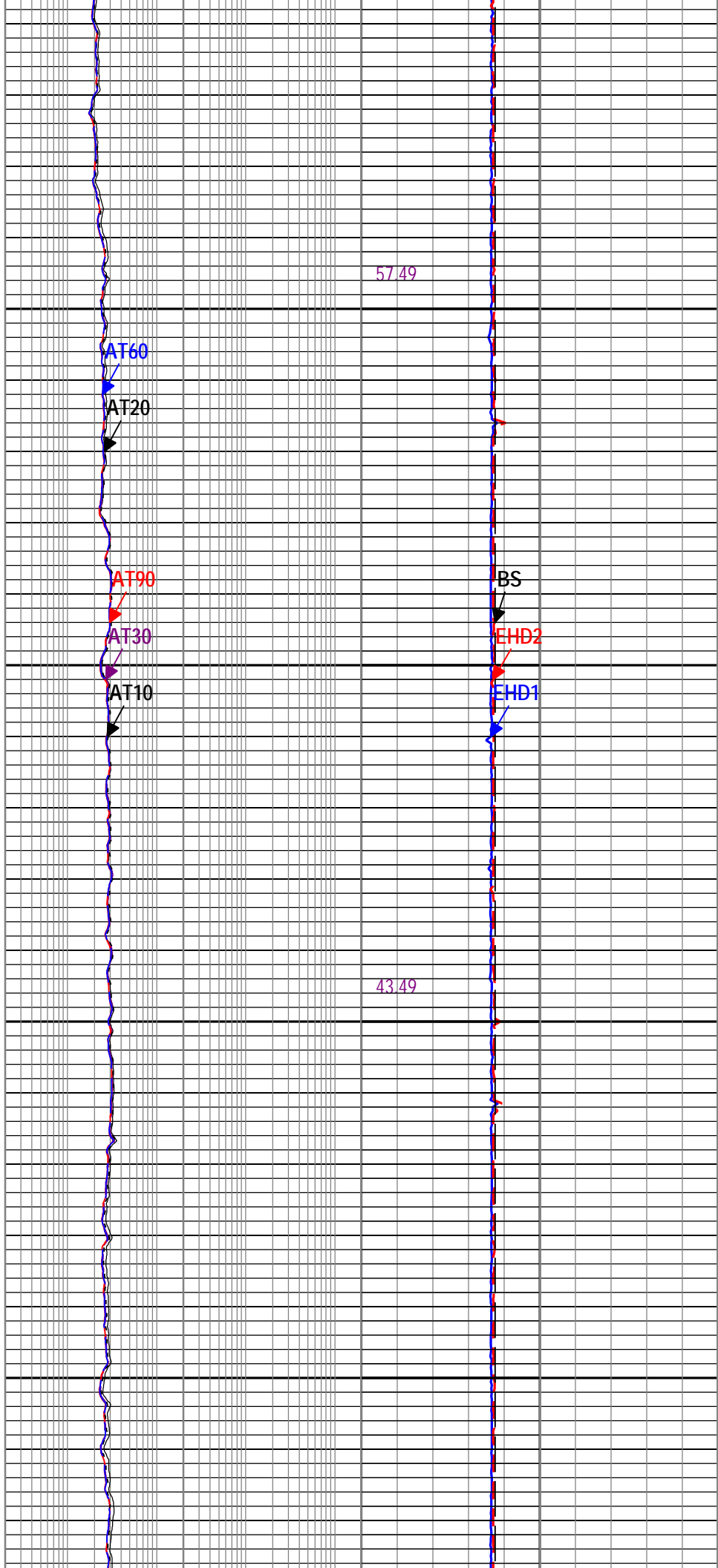
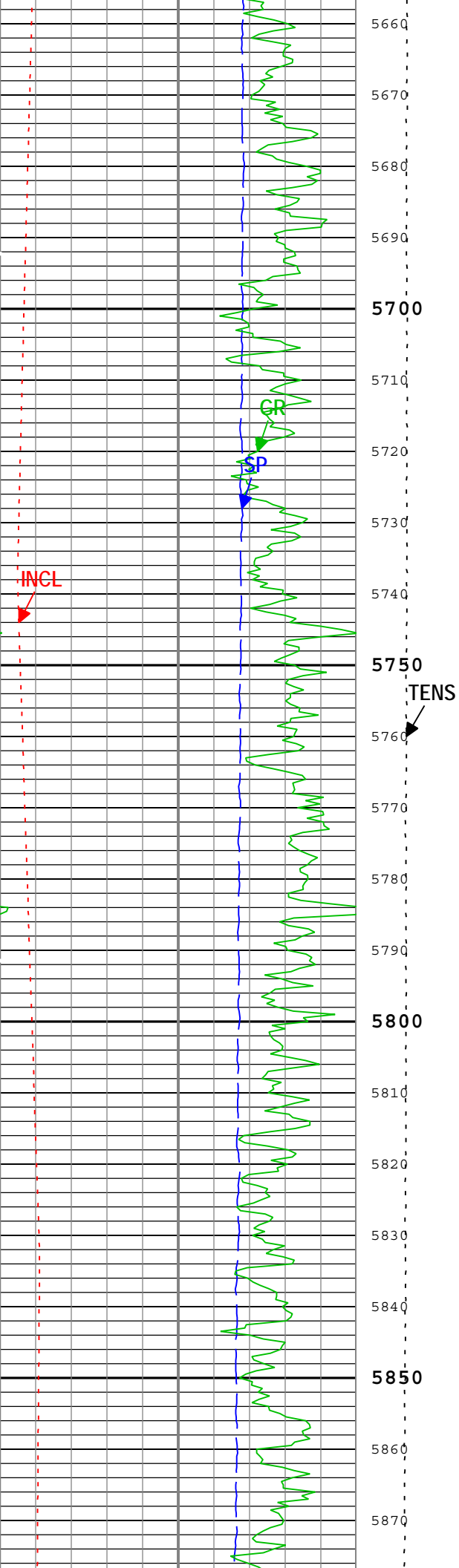
















Hole inclination (INCL)			Cable Tension (TENS)	Array Induction Two Foot Resistivity A10 (AT10) AIT-M			Enhanced Hole Diameter 1 (ellipse-based algorithm) (EHD1) PPC-B		
0	deg	10		0.2	ohm.m	2000	5	in	15
Spontaneous Potential (SP) AIT-M				Array Induction Two Foot Resistivity A30 (AT30) AIT-M			Enhanced Hole Diameter 2 (ellipse-based algorithm) (EHD2) PPC-B		
-80	mV	20		0.2	ohm.m	2000	5	in	15
Gamma Ray (GR) SGT-N			5000 lbf 0	Array Induction Two Foot Resistivity A90 (AT90) AIT-M			Bit Size (BS)		
0	gAPI	150		0.2	ohm.m	2000	5	in	15
				Array Induction Two Foot Resistivity A20 (AT20) AIT-M			Integrated Cement Volume (ICV) ft3		
				0.2	ohm.m	2000			
				Array Induction Two Foot Resistivity A60 (AT60) AIT-M					
				0.2	ohm.m	2000			

TIME\_1900 - Time Marked every 60.00 (s)

Description: HGNS standard resolution porosities for Platform Express    Format: Log ( Import of KM 5in Triple Combo )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 04-Jul-2014 13:13:55

Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
ABHM	Array Induction Borehole Correction Mode	AIT-M	Compute Standoff	
ACDE	Array Induction Casing Detection Enable	AIT-M	No	
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	8.75	in
CBLO	Casing Bottom (Logger)	WLSESSION	848	ft
CDEN	Cement Density	SGT-N	2	g/cm3
CSODDRL	Casing Outer Diameter - Zoned along driller depths	WLSESSION	9.625	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	9.8	lbm/gal
ETIP	Elevation of the TIP above MSL	WLSESSION	4733	ft
FCD	Future Casing (Outer) Diameter	WLSESSION	7	in
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	HD1	
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	AMF	
SPDR	SP Drift Per Foot	AIT-M	0	mV/ft
TPOS	Tool Position: Centered or Eccentered	SGT-N	Centered	

Tool Control Parameters				
Parameter	Description	Tool	Value	Unit
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h

Run 1									
5" Triple Combo									

Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
Run 1	Repeat[2]:Up	Up	5440.26 ft	6099.99 ft	04-Jul-2014 11:04:06 AM	04-Jul-2014 11:12:27 AM	ON	7.96 ft	Yes

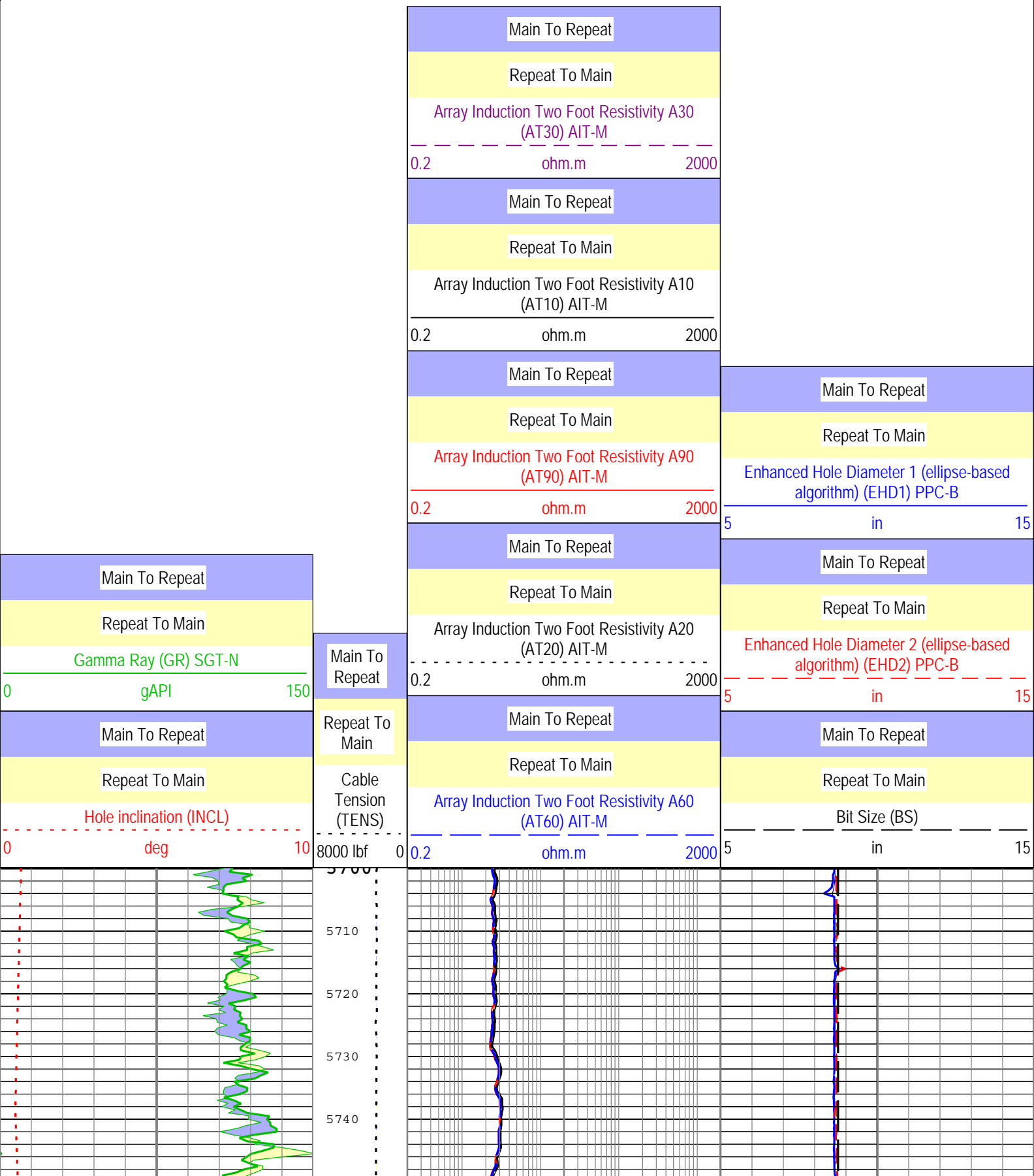
Run 1	Main[3]:Up	Up	64.12 ft	6095.03 ft	04-Jul-2014 11:04:06 AM	04-Jul-2014 11:12:27 AM	ON	-3.42 ft	Yes
-------	------------	----	----------	------------	-------------------------	-------------------------	----	----------	-----

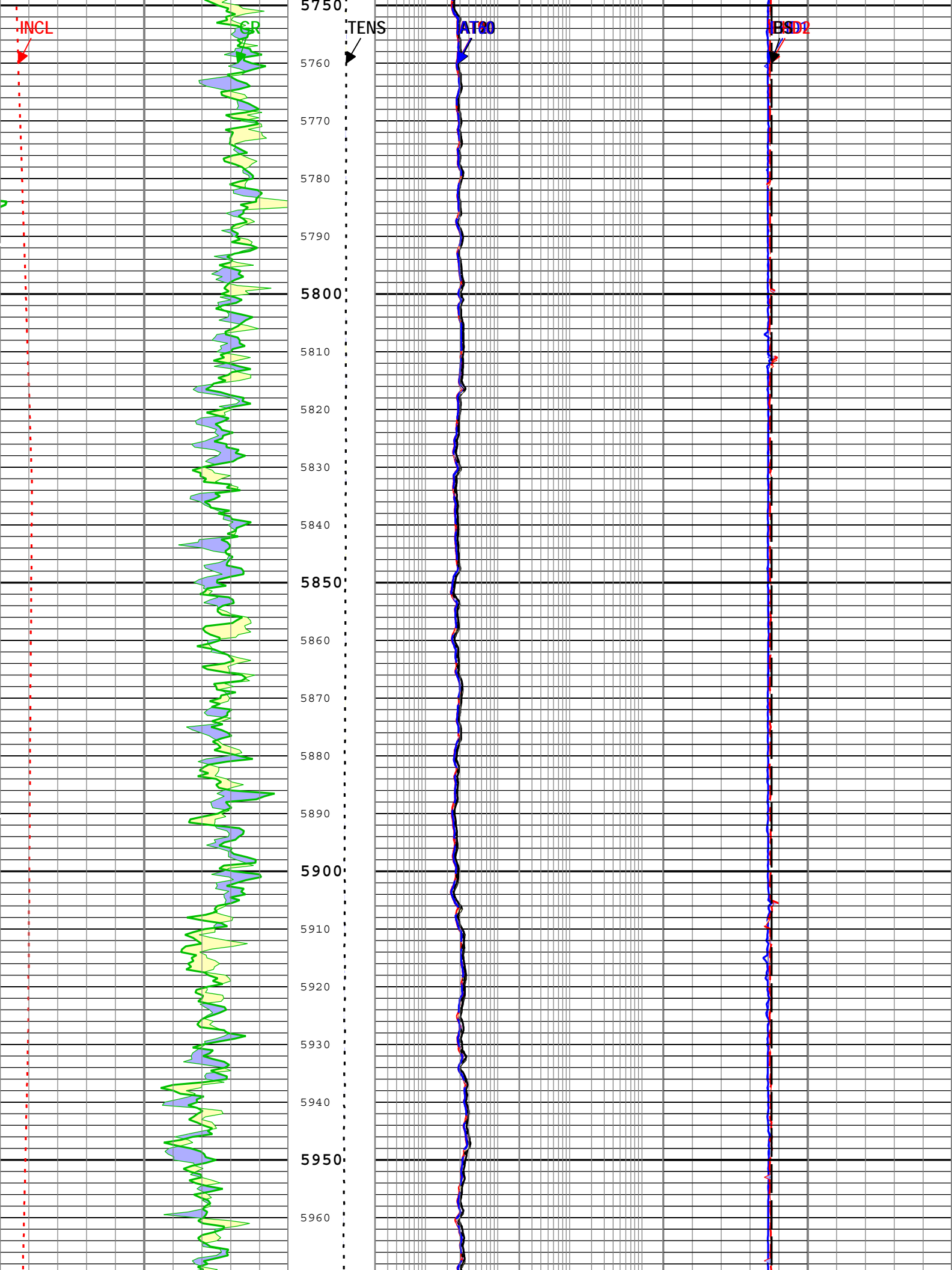
All depths are referenced to toolstring zero

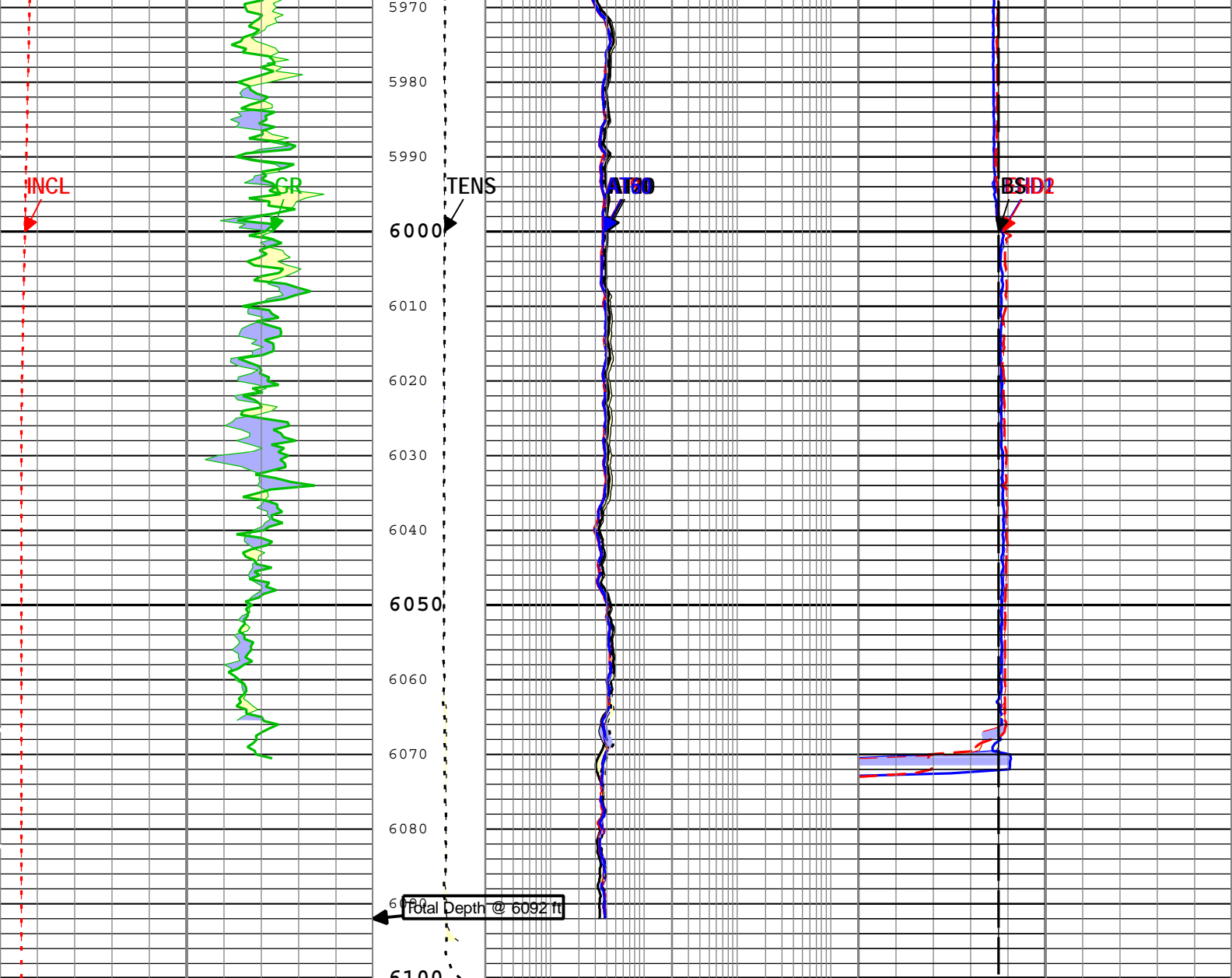
Log	Company:Noble Energy Inc	Well:NCLP AA06-62-1AHNC
		Run 1: Main[3]:Up:S011

Description: HGNS standard resolution porosities for Platform Express    Format: Log ( Import of KM 5in Triple Combo RA )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 04-Jul-2014 13:13:57

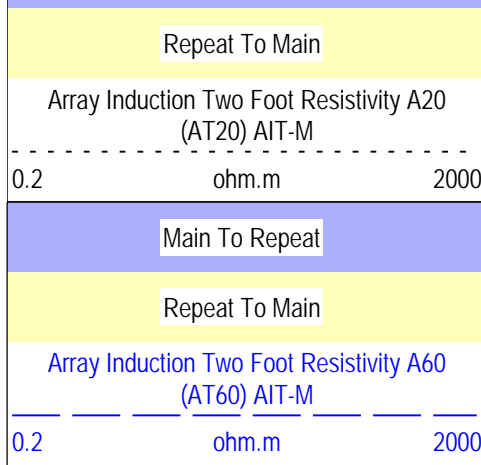
TIME\_1900 - Time Marked every 60.00 (s)







Main To Repeat		Main To Repeat		Main To Repeat		Main To Repeat	
Repeat To Main		Repeat To Main		Repeat To Main		Repeat To Main	
Gamma Ray (GR) SGT-N		Array Induction Two Foot Resistivity A30 (AT30) AIT-M		Enhanced Hole Diameter 1 (ellipse-based algorithm) (EHD1) PPC-B			
0 gAPI 150		0.2 ohm.m 2000		5 in 15			
Main To Repeat		Main To Repeat		Main To Repeat		Main To Repeat	
Repeat To Main		Repeat To Main		Repeat To Main		Repeat To Main	
Hole inclination (INCL)		Array Induction Two Foot Resistivity A10 (AT10) AIT-M		Enhanced Hole Diameter 2 (ellipse-based algorithm) (EHD2) PPC-B			
0 deg 10		0.2 ohm.m 2000		5 in 15			
		Main To Repeat		Main To Repeat		Main To Repeat	
		Repeat To Main		Repeat To Main		Repeat To Main	
		Array Induction Two Foot Resistivity A90 (AT90) AIT-M		Bit Size (BS)			
		0.2 ohm.m 2000		5 in 15			
		Main To Repeat					



TIME\_1900 - Time Marked every 60.00 (s)

Description: HGNS standard resolution porosities for Platform Express    Format: Log ( Import of KM 5in Triple Combo RA )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 04-Jul-2014 13:13:57

## Calibration Report

### AIT-M (Array Induction Tool - M) Calibration - Run 1

Primary Equipment :		
File code for AIT-MA Sonde Tool Element	AMIS	208
Auxiliary Equipment :		
AITM Rm/SP Bottom Nose	AMRM	208

### AIT Sonde Calibration - Test Loop Gain

Master (EEPROM):		11:17:21 06-Jun-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Test Loop Gain - 0		Master	1.000	0.950	1.014	1.050	
Test Loop Phase - 0	deg	Master	0	-3.000	0.552	3.000	
Test Loop Gain - 1		Master	1.000	0.950	1.016	1.050	
Test Loop Phase - 1	deg	Master	0	-3.000	0.570	3.000	
Test Loop Gain - 2		Master	1.000	0.950	1.014	1.050	
Test Loop Phase - 2	deg	Master	0	-3.000	0.112	3.000	
Test Loop Gain - 3		Master	1.000	0.950	1.018	1.050	
Test Loop Phase - 3	deg	Master	0	-3.000	0.147	3.000	
Test Loop Gain - 4		Master	1.000	0.950	0.997	1.050	
Test Loop Phase - 4	deg	Master	0	-3.000	0.104	3.000	
Test Loop Gain - 5		Master	1.000	0.950	0.990	1.050	
Test Loop Phase - 5	deg	Master	0	-3.000	-0.192	3.000	
Test Loop Gain - 6		Master	1.000	0.950	0.996	1.050	
Test Loop Phase - 6	deg	Master	0	-3.000	0.106	3.000	
Test Loop Gain - 7		Master	1.000	0.950	1.006	1.050	
Test Loop Phase - 7	deg	Master	0	-3.000	-0.176	3.000	

### AIT Sonde Calibration - Sonde Error Correction

Master (EEPROM):		11:17:21 06-Jun-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Sonde Error Correction Real - 0	mS/m	Master	-----	-231.000	-60.321	119.000	
Sonde Error Correction Quad - 0		Master	-----	-2250.000	-152.099	2250.000	
Sonde Error Correction Real - 1	mS/m	Master	-----	114.000	157.631	204.000	
Sonde Error Correction Quad - 1		Master	-----	-625.000	-188.161	625.000	
Sonde Error Correction Real - 2	mS/m	Master	-----	66.000	120.726	156.000	
Sonde Error Correction Quad - 2		Master	-----	-350.000	-120.538	350.000	
Sonde Error Correction Real - 3	mS/m	Master	-----	39.000	53.704	89.000	
Sonde Error Correction Quad - 3		Master	-----	-250.000	-29.010	250.000	
Sonde Error Correction Real - 4	mS/m	Master	-----	15.000	27.120	35.000	
Sonde Error Correction Quad - 4		Master	-----	-63.000	-3.589	63.000	
Sonde Error Correction Real - 5	mS/m	Master	-----	4.000	12.843	24.000	
Sonde Error Correction Quad - 5		Master	-----	-50.000	-11.841	50.000	
Sonde Error Correction Real - 6	mS/m	Master	-----	5.000	10.355	15.000	
Sonde Error Correction Quad - 6		Master	-----	-30.000	7.536	30.000	
Sonde Error Correction Real - 7	mS/m	Master	-----	-5.000	-2.018	5.000	
Sonde Error Correction Quad - 7		Master	-----	-30.000	1.586	30.000	

## AIT Mud Calibration - Mud Calibration Gain

Master (EEPROM):	11:17:21 06-Jun-2014
------------------	----------------------

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div></div>
Coarse Gain		Master	1.000	0.800	0.801	1.200	<div><div></div></div>
Fine Gain		Master	1.000	0.800	0.802	1.200	<div><div></div></div>

## AIT Electronics Check - Thru Calibration Check

Master (EEPROM): 11:17:21 06-Jun-2014

Before (Measured):

10:32:05 04-Jul-2014

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Thru Cal Mag - 0	V	Master Before Before-Master	----- ----- -----	0.366 0.366 -----	0.564 0.564 0.000	0.854 0.854 -----	
Thru Cal Phase - 0	deg	Master Before Before-Master	----- ----- -----	137.000 137.000 -----	-177.633 -177.751 -0.118	-103.000 -103.000 -----	
Thru Cal Mag - 1	V	Master Before Before-Master	----- ----- -----	0.762 0.762 -----	1.156 1.156 0.000	1.778 1.778 -----	
Thru Cal Phase - 1	deg	Master Before Before-Master	----- ----- -----	136.000 136.000 -----	-176.509 -176.631 -0.122	-104.000 -104.000 -----	
Thru Cal Mag - 2	V	Master Before Before-Master	----- ----- -----	0.372 0.372 -----	0.613 0.613 0.000	0.868 0.868 -----	
Thru Cal Phase - 2	deg	Master Before Before-Master	----- ----- -----	132.000 132.000 -----	-170.937 -171.081 -0.144	-108.000 -108.000 -----	
Thru Cal Mag - 3	V	Master Before Before-Master	----- ----- -----	0.420 0.420 -----	0.693 0.693 0.000	0.980 0.980 -----	
Thru Cal Phase - 3	deg	Master Before Before-Master	----- ----- -----	131.000 131.000 -----	-170.959 -171.104 -0.145	-109.000 -109.000 -----	
Thru Cal Mag - 4	V	Master Before Before-Master	----- ----- -----	0.804 0.804 -----	1.318 1.317 -0.001	1.876 1.876 -----	
Thru Cal Phase - 4	deg	Master Before Before-Master	----- ----- -----	125.000 125.000 -----	-171.311 -171.453 -0.142	-115.000 -115.000 -----	
Thru Cal Mag - 5	V	Master Before Before-Master	----- ----- -----	1.176 1.176 -----	1.931 1.929 -0.002	2.744 2.744 -----	
Thru Cal Phase - 5	deg	Master Before Before-Master	----- ----- -----	122.000 122.000 -----	-171.794 -171.936 -0.142	-118.000 -118.000 -----	
Thru Cal Mag - 6	V	Master Before Before-Master	----- ----- -----	1.176 1.176 -----	1.933 1.932 -0.001	2.744 2.744 -----	
Thru Cal Phase - 6	deg	Master Before Before-Master	----- ----- -----	121.000 121.000 -----	-171.786 -171.926 -0.140	-119.000 -119.000 -----	
Thru Cal Mag - 7	V	Master Before Before-Master	----- ----- -----	0.846 0.846 -----	1.379 1.378 -0.001	1.974 1.974 -----	
Thru Cal Phase - 7	deg	Master Before Before-Master	----- ----- -----	115.000 115.000 -----	-173.888 -174.025 -0.137	-125.000 -125.000 -----	
SPA Zero	mV	Master Before Before-Master	----- ----- -----	-50.000 -50.000 -----	-0.044 -0.038 0.006	50.000 50.000 -----	
SPA Plus	mV	Master Before Before-Master	----- ----- -----	941.000 941.000 -----	992.523 992.514 -0.009	1040.000 1040.000 -----	
Temperature Zero	V	Master Before Before-Master	----- ----- -----	-0.050 -0.050 -----	0.000 0.000 0.000	0.050 0.050 -----	
Temperature Plus	V	Master	-----	0.870	0.810	0.960	

Temperature Plus	V	Master	0.870	0.919	0.960	
		Before	0.870	0.919	0.960	
		Before-Master	-----	0.000	-----	

## PPC-B (Powered Positioning device and Caliper.) Calibration - Run 1

Primary Equipment :			
PPC-B Element is used for usual logging at wellsite and check/diagnostics.	PPC-B	8437	
Auxiliary Equipment :			
PPC-B Element is used for usual logging at wellsite and check/diagnostics.	PPC-B	8437	
Calibration Parameter :			
ZERO_REF			
PLUS_REF			
Equipment Properties :			
Caliper Arm Equipment Type for PPC	PPC_CAL_STD		

## PPC Check - Downhole Electronics Test

Before (Measured):		10:29:33 04-Jul-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Positive Analog Voltage	V	Before		7	8.67861	9	
Minus Analog Voltage	V	Before		-9	-8.69121	-7	
Digital Voltage	V	Before		3.15	3.37646	3.45	
Digital Voltage for Analog Digital Converter	V	Before		4.5	5.00889	5.5	
Status Word of Analog Digital Converter Offset		Before		-8	1	8	

## PPC Check - Cartridge Temperature Test

Before (Measured):		10:29:33 04-Jul-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Cartridge Temperature	degF	Before		-58	79.0995	482	

## PPC Check - Power Control LVDT Test

Before (Measured):		10:29:33 04-Jul-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
LVDT5 Caliper Open Position	in	Before			-1.31335		
LVDT5 Full Power Position	in	Before			1.375		

## PPC Diagnostics - Arm Close Position Test

Master:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Caliper-arm 1, radius raw - 0	in	Master	-----	-----	-----	-----	
Caliper-arm 2, radius raw - 0	in	Master	-----	-----	-----	-----	
Caliper-arm 3, radius raw - 0	in	Master	-----	-----	-----	-----	
Caliper-arm 4, radius raw - 0	in	Master	-----	-----	-----	-----	
Power Control LVDT - 0	in	Master	-----	-----	-----	-----	
LVDT excitation - 0	V	Master	-----	-----	-----	-----	

## PPC Diagnostics - Downhole Electronics Test

Master:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Positive Analog Voltage - 0	V	Master	-----	-----	-----	-----	
Minus Analog Voltage - 0	V	Master	-----	-----	-----	-----	
Digital Voltage - 0	V	Master	-----	-----	-----	-----	
Digital Voltage for Analog Digital Converter - 0	V	Master	-----	-----	-----	-----	
Status Word of Analog Digital Converter Offset - 0		Master	-----	-----	-----	-----	

## PPC Diagnostics - RBS Test

Master:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Relative Bearing - 0	deg	Master	-----	-----	-----	-----	
Potentiometer Excitation - 0	V	Master	-----	-----	-----	-----	

## PPC Diagnostics - Cartridge Temperature Test

Master:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Cartridge Temperature - 0	degF	Master	-----	-----	-----	-----	

# PCD Diagnostics - Power Control LVDT Test

Master:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
LVDT5 Caliper Open Position - 0	in	Master	----	----	----	----	
LVDT5 Full Power Position - 0	in	Master	----	----	----	----	

## PPC LVDT5 Master Calibration - PPC CaliCoefficients

Master (EEPROM):		21:48:00 02-Jul-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
CCS	in	Master	-1.51		-1.48828		
COP	in	Master	-1.31		-1.31335		
CPW	in	Master	1.41		1.375		

## PPC Caliper Calibration - PPC CaliCoefficients

Before (Manual Entry):		12:47:11 04-Jul-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RD1_GAIN		Before	1	0.85	0.988536	1.15	
RD2_GAIN		Before	1	0.85	0.967502	1.15	
RD3_GAIN		Before	1	0.85	1.03506	1.15	
RD4_GAIN		Before	1	0.85	1.01275	1.15	
RD1_OFFSET	in	Before	0	-2.2	-0.800695	2.6	
RD2_OFFSET	in	Before	0	-2.2	0.042464	2.6	
RD3_OFFSET	in	Before	0	-2.2	-1.06325	2.6	
RD4_OFFSET	in	Before	0	-2.2	-0.319442	2.6	

## PPC Caliper Calibration - PPC Accumulations

Before (Manual Entry):		12:47:11 04-Jul-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Caliper 1 Zero Radius - 0	in	Before	----	----	----	----	
Caliper 2 Zero Radius - 0	in	Before	----	----	----	----	
Caliper 3 Zero Radius - 0	in	Before	----	----	----	----	
Caliper 4 Zero Radius - 0	in	Before	----	----	----	----	
Caliper 1 Plus Radius - 0	in	Before	----	----	----	----	
Caliper 2 Plus Radius - 0	in	Before	----	----	----	----	
Caliper 3 Plus Radius - 0	in	Before	----	----	----	----	
Caliper 4 Plus Radius - 0	in	Before	----	----	----	----	

## SGT-N (Scintillation Gamma-Ray Tool) Calibration - Run 1

Primary Equipment :			
Scintillation Gamma Cartridge	SGC-TB	10386	
Calibration Parameter :			
Plus Reference (Jig minus background reference)	165		

## SGT-N Gamma-Ray Calibration - Gamma Ray Coefficients

Before (Measured):		21:48:04 02-Jul-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Gamma Ray Gain		Before			1.101		

## SGT-N Gamma-Ray Calibration - Gamma Ray Accumulations

Before (Measured):		21:48:04 02-Jul-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RGR Zero Measurement	gAPI	Before		0	68.936	120.000	
RGR Plus Measurement	gAPI	Before	149.896	136.269	149.896	163.523	

## SGT-N Gamma-Ray Plateau Check - Gamma Ray Plateau Check

Before (Measured):		21:50:39 02-Jul-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RGR Plus Plateau Measurement	gAPI	Before			221.139		
RGR Minus Plateau Measurement	gAPI	Before			218.911		



Company:	Noble Energy Inc	Schlumberger
Well:	NCLP AA06-62-1AHNC	
Field:	Wattenberg	
County:	Weld	
State:	Colorado	
Array Induction		
4 Arm Caliper		
Gamma Ray		