

Company: Esso Australia Pty Ltd

Well: TNA A4a

Field: Tuna

Rig: Prod 4 / Crane

Country: Australia

RST-C Static
SIGMA survey
5-1-2010

Rig: Prod 4 / Crane	
Field: Tuna	
Location: Bass Strait	
Well: TNA A4a	
Company: Esso Australia Pty Ltd	
LOCATION	
Bass Strait	Elev.: K.B. 32.90 m
Gippsland Basin	G.L. -59.00 m
	D.F. 32.90 m
Permanent Datum:	Mean Sea Level
Log Measured From:	Drill Floor
Drilling Measured From:	Drill Floor
State: Victoria	Max. Well Deviation 26.6 deg
	Longitude 148°25' 05.29"E
	Latitude 38°10' 16.00"S

Logging Date	5-Jan-2010		
Run Number	1		
Depth Driller	2276 m		
Schlumberger Depth	2104 m		
Bottom Log Interval	2104 m		
Top Log Interval	1760 m		
Casing Fluid Type	Production fluid		
Salinity			
Density			
Fluid Level			
BIT/CASING/TUBING STRING			
Bit Size	8.500 in		
From	1617 m		
To	2276 m		
Casing/Tubing Size	7.000 in		
Weight	23 lbn/ft		
Grade	K-55		
From	1516 m		
To	2276 m		
Maximum Recorded Temperatures	207 degF		
Logger On Bottom	5-Jan-2010	Time	11:00
Unit Number	889	Location	AUSL
Recorded By	Owen Darby		
Witnessed By	Barrie White		

	Oil Density	Run 1	Run 2	R
	Water Salinity			
	Gas Gravity			
	Bo			
	Bw			
	1/Bg			
	Bubble Point Pressure			
	Bubble Point Temperature			
	Solution GOR			
	Maximum Deviation	26.6 deg		
	CEMENTING DATA			
	Primary/Squeeze	Primary		
	Casing String No			
	Lead Cement Type			
	Volume			
	Density			
	Water Loss			
	Additives			
	Tail Cement Type			
	Volume			
	Density			
	Water Loss			
	Additives			
	Expected Cement Top			
	Logging Date			
	Run Number			
	Depth Driller			
	Schlumberger Depth			
	Bottom Log Interval			
	Top Log Interval			
	Casing Fluid Type			
	Salinity			
	Density			
	Fluid Level			
	BIT/CASING/TUBING STRING			
	Bit Size			
	From			
	To			
	Casing/Tubing Size			
	Weight			
	Grade			
	From			
	To			
	Maximum Recorded Temperatures			
	Logger On Bottom	Time		
	Unit Number	Location		
	Recorded By			
	Witnessed By			

Date Created: 5-JAN-2010 15:09:16

Logging Cable

Type:	2-32ZT
Serial Number:	208558
Length:	6065 M
<hr/>	
Conveyance Method:	Wireline
Rig Type:	Offshore Fixed

Log Sequence:	Subsequent Trip To the Well
Reference Log Name:	Tuna A4a
Reference Log Run Number:	
Reference Log Date:	23-2-2002
Subsequent Trip Down Log Correction:	

1. Correlated to ExxonMobil log provided by client
2. Used IDW as primary depth control
3. Used Z-Chart as secondary depth control
- 4.
- 5.
- 6.

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OTHER SERVICES2
OS1:
OS2:
OS3:
OS4:
OS5:

REMARKS: RUN NUMBER 2









With the well shut-in, complete 1 pass over the interval HUD(2104m) to

Crew:

Gary M & Andrew M

RUN 1			RUN 2		
SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:			SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:		
B69I-00023	17C0-154				
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1			RUN 2		
SURFACE EQUIPMENT					
WITM-A PSC_16MHZ					
DOWNHOLE EQUIPMENT					
AH-SWBS-B 788 AH-SWBS-B 788			13.17		
AH-SWBS-B 787 AH-SWBS-B 787			12.52		
AH-SWBS-B 786 AH-SWBS-B 786			11.87		
AH-SWBS-B 785 AH-SWBS-B 785			11.23		
AH-SWBS-B 789 AH-SWBS-B 789			10.58		
MH-22 759 MH-22 759	Detail MT TelStatus CTEM		9.94		
PSPT-A/B 3918 PSC-A PSPT-B PSTC PBMS-B CQG_F_Mano RTD_Thermometer GR CCL PBMS			9.54		
		9.54	9.54		
	GR	8.41	8.41		
	Well_Temp CQG Manom CCL PBMS PSTC	7.48 7.37 7.25 7.02	7.48 7.37 7.25 7.02		
RST-C RSCH-A 111 RSC-C 132 RSS-A 106 RSXH-A 145 RSX-C 132			7.02		

RSC-A Far
RSC-A PNG
RSC-A Nea
RSX-A PNG

4.24

4.09

Tension HV 0.00
TOOL ZERO

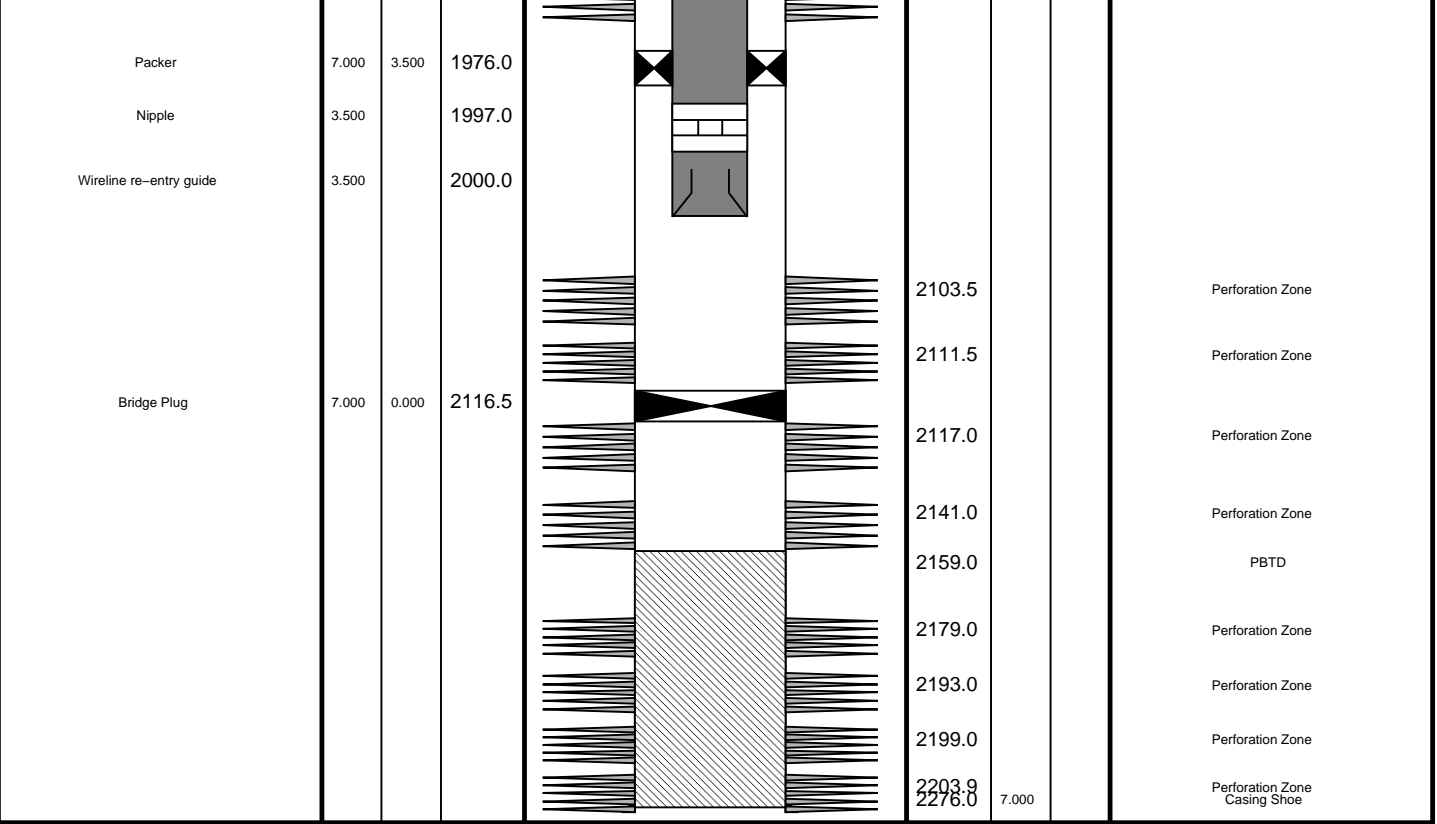
MAXIMUM STRING DIAMETER 1.72 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

Client: Esso Australia Pty Ltd
Well: TNA A4a
Field: Tuna
State: Victoria
Country: Australia

Drawing Date: 1/5/2010
API #:

Rig Name:
Reference Datum:
Elevation: 32.9 m

Production String	(in)		(m)	Well Schematic	(m)		(in)	Casing String
	OD	ID	MD		MD	OD	ID	
Tubing	3.500		13.8		14.2 14.2	13.375 13.375	9.625	Casing String Liner Hanger
SSSV	3.500		455.0					
Gas Lift Mandrel	3.500		995.0		664.0	13.375		Casing Shoe
Gas Lift Mandrel	3.500		1441.5		1516.0 1516.0	7.000 9.625	7.000	Casing String Liner Hanger
Nipple	3.500		1457.0					
Packer	7.000	3.500	1734.0					
Nipple	3.500		1751.0		1617.0	9.625		Casing Shoe
					1824.5			Perforation Zone



Job Events Summary

MAXIS Field Log

Schlumberger Job Event Summary

	Time	Elapsed Time	Depth (M)	File
Simulated Log	5-Jan-2010 9:57	000:01		RST_PSP_014LUP
OP checked RST toolstring				
Log Pass (up)	5-Jan-2010 13:07	000:18	2106.5 - 1750.0	RST_PSP_016LUP
RST - GR baseline pass				
Log Pass (up)	5-Jan-2010 13:35	000:06	2101.0 - 2065.5	RST_PSP_018LUP
RST - Repeat analysis pass				
Log Pass (up)	5-Jan-2010 13:55	001:16	2106.6 - 1744.8	RST_PSP_019LUP
RST - SIGMA mode main logging pass				

Company: Esso Australia Pty Ltd

Well: TNA A4a

Input DLIS Files

RST_PSP_019LUP

FN:17

05-Jan-2010 15:15

2106.6 M

1744.8 M

Output DLIS Files

DEFAULT

RST_PSP_005PUP

FN:4

PRODUCER

05-Jan-2010 15:26

2106.6 M

1759.9 M

OP System Version: 17C0-154

RST-C

17C0-154

PSPT-A/B

17C0-154

Changed Parameter Summary

DLIS Name

New Value

Previous Value

Depth & Time

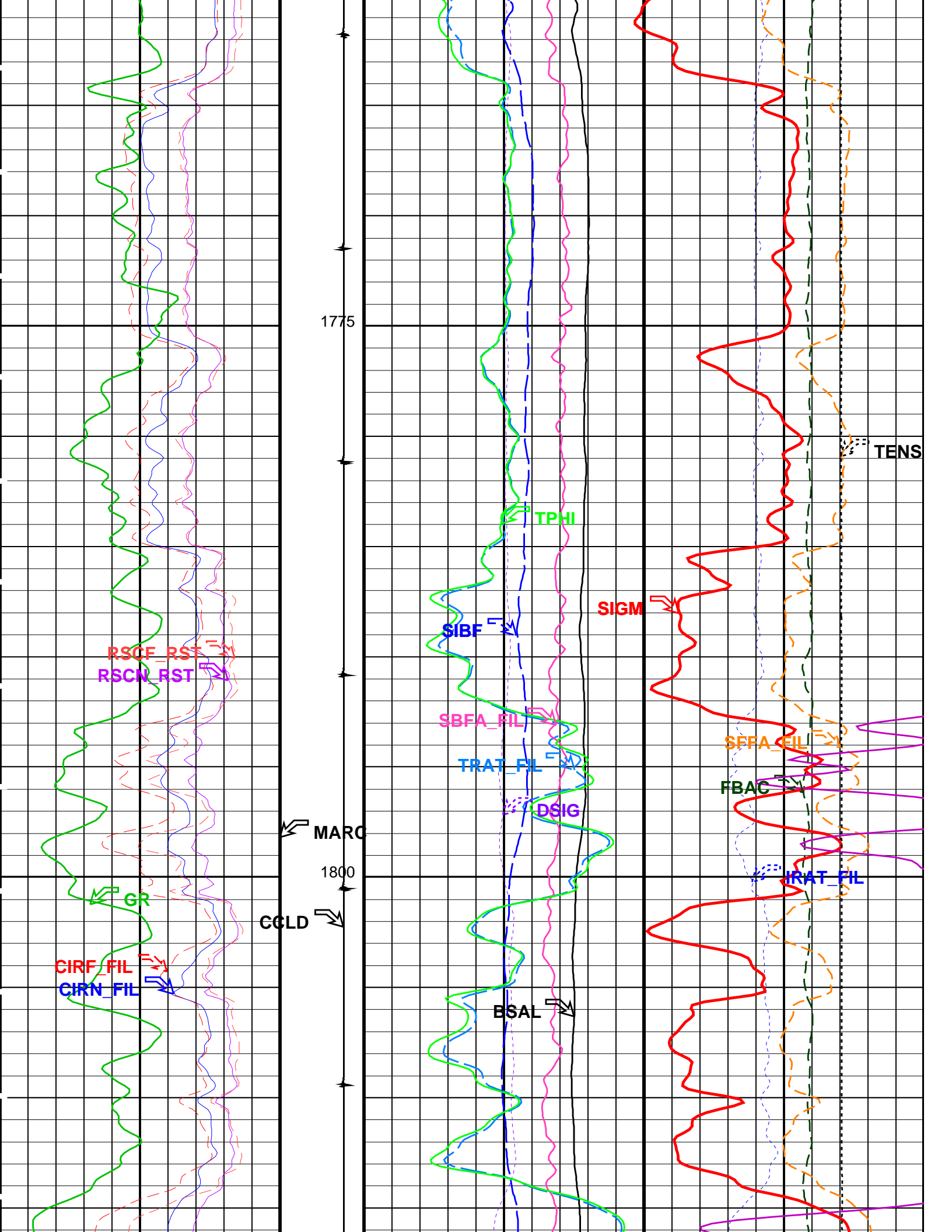
CWEI

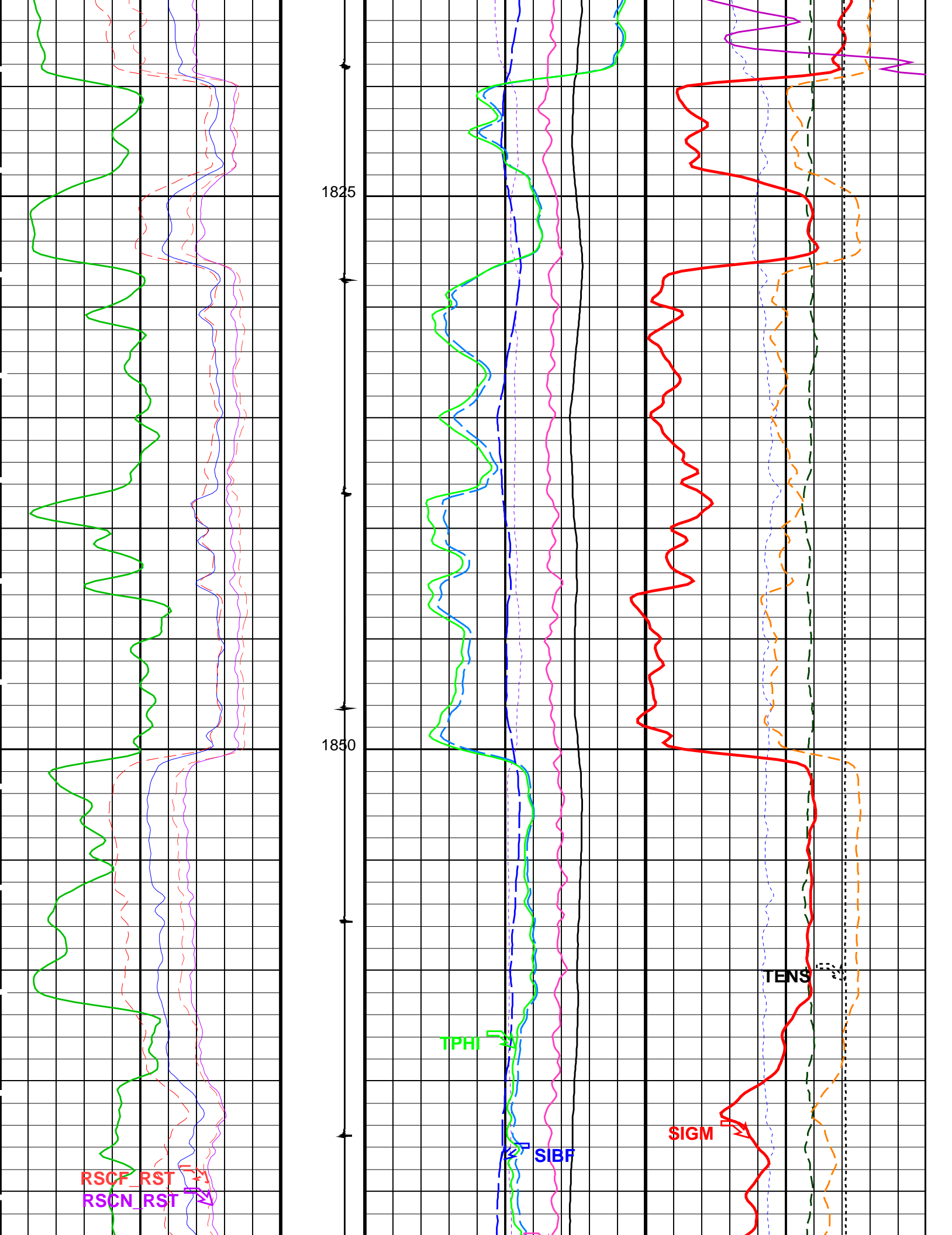
32.20 LB/F
32.20 LB/F23.00 LB/F
32.20 LB/F2106.6 15:26:17
1999.9 15:26:28

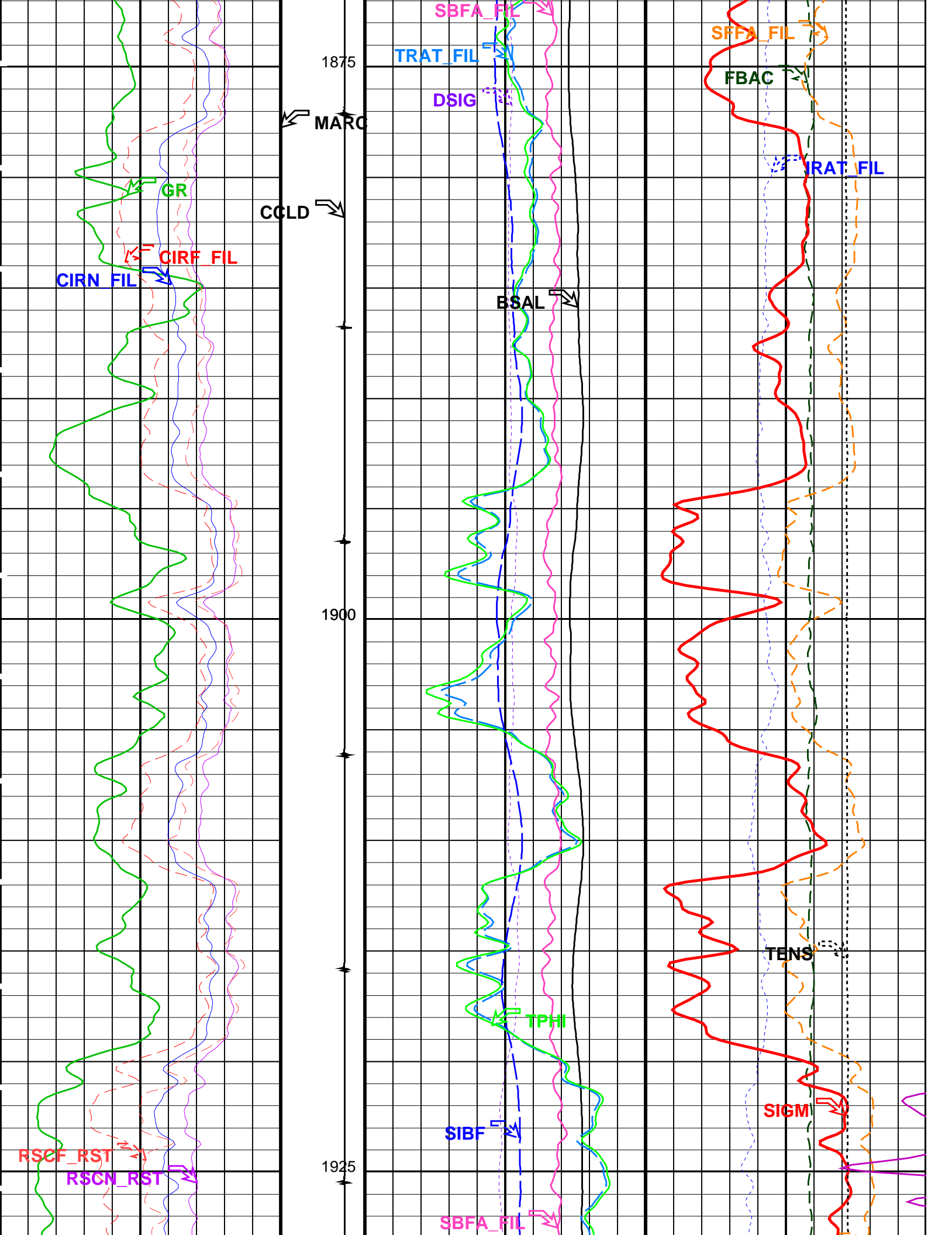
PIP SUMMARY

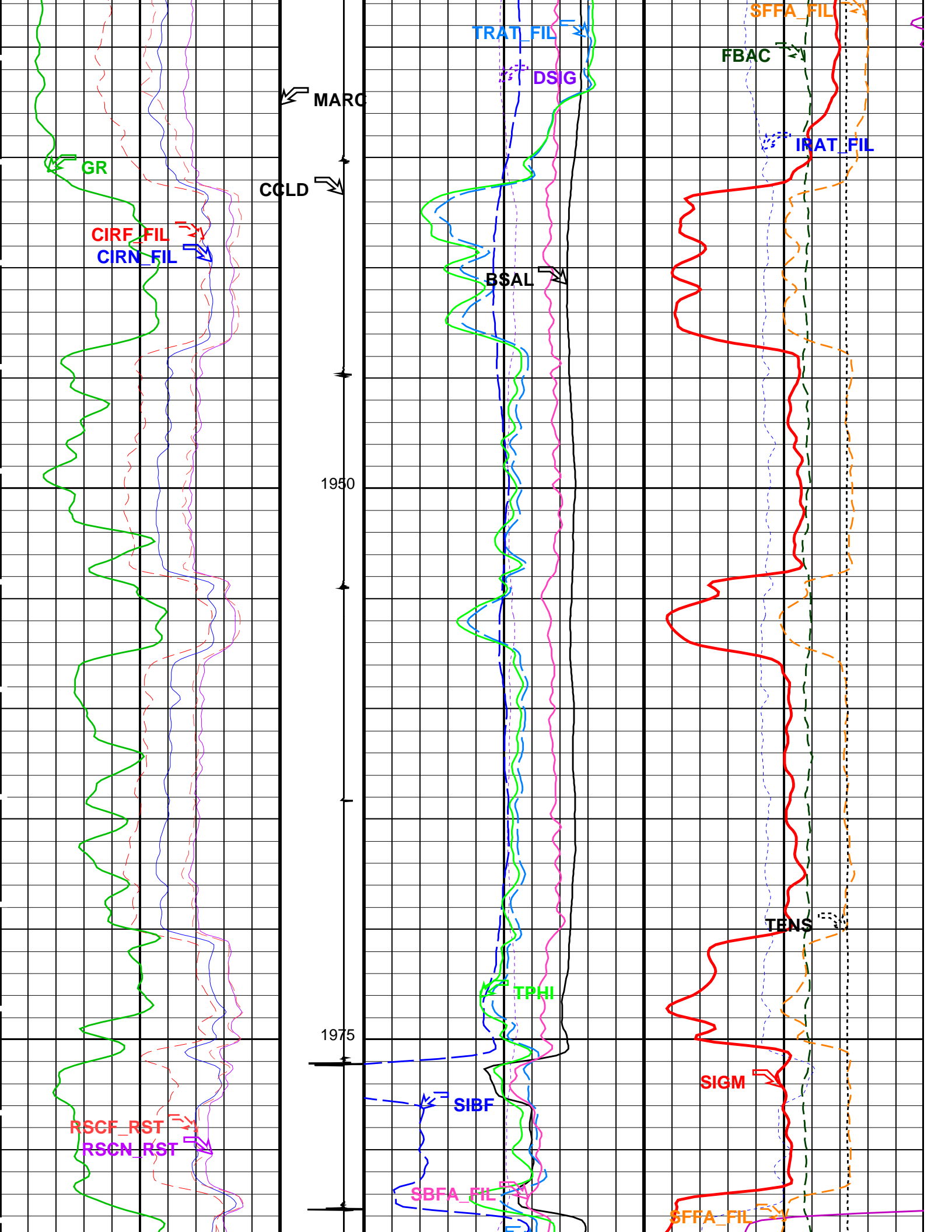
Time Mark Every 60 S

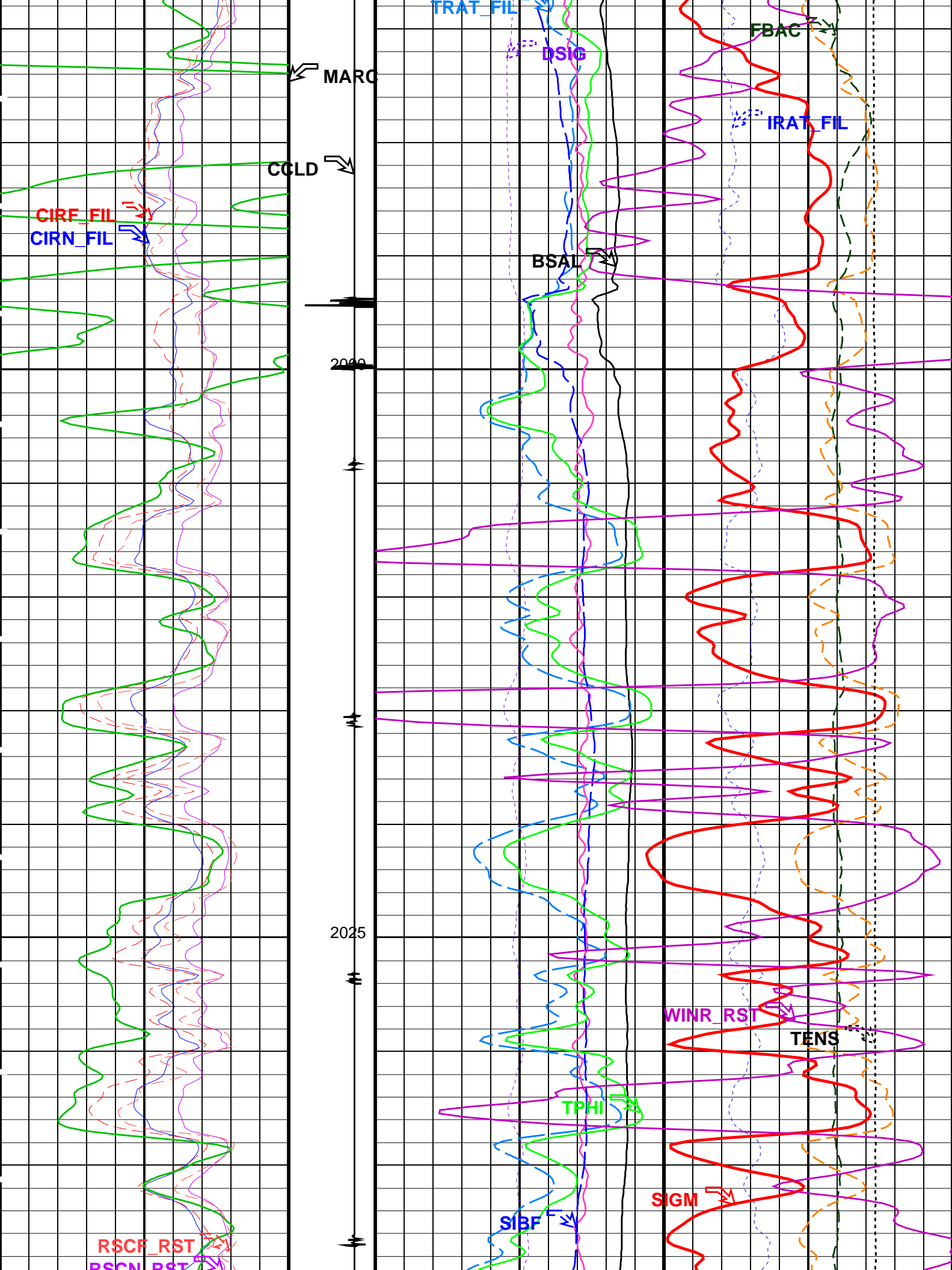
		RST Sigma (SIGM)	
		60	(CU) 0
		RST Weighted Inelastic Ratio (WINR_RST)	
		0.4	(----) 0
		RST Porosity (TPHI)	
		0.6 (V/V)	0
RST Far Effective Capture CR (RSCF_RST)		RST Sigma Borehole Fluid (SIBF)	
45	(----) 0	100 (CU)	0
RST Near Effective Capture CR (RSCN_RST)		Sigma Borehole Far Apparent (SBFA_FIL)	
45	(----) 0	150 (CU)	0
			Tension (TENS) 0 (LBF) 3000
RST Capture to Inelastic Ratio Far (CIRF_FIL)		RST Capture Ratio (TRAT_FIL)	Sigma Formation Far Apparent (SFFA_FIL)
5	(----) 0	1.5 (----) 0.5	60 (CU) 0
RST Capture to Inelastic Ratio Near (CIRN_FIL)		RST Sigma Difference (DSIG)	MCS Far Background (filtered) (FBAC)
2.5	(----) 0	-30 (CU) 30	0 (CPS) 5000
Gamma Ray (GR)		RST Borehole Salinity (BSAL)	RST Inelastic Ratio (IRAT_FIL)
0	(GAPI) 150	450 (PPK) -50	0.75 (----) 0

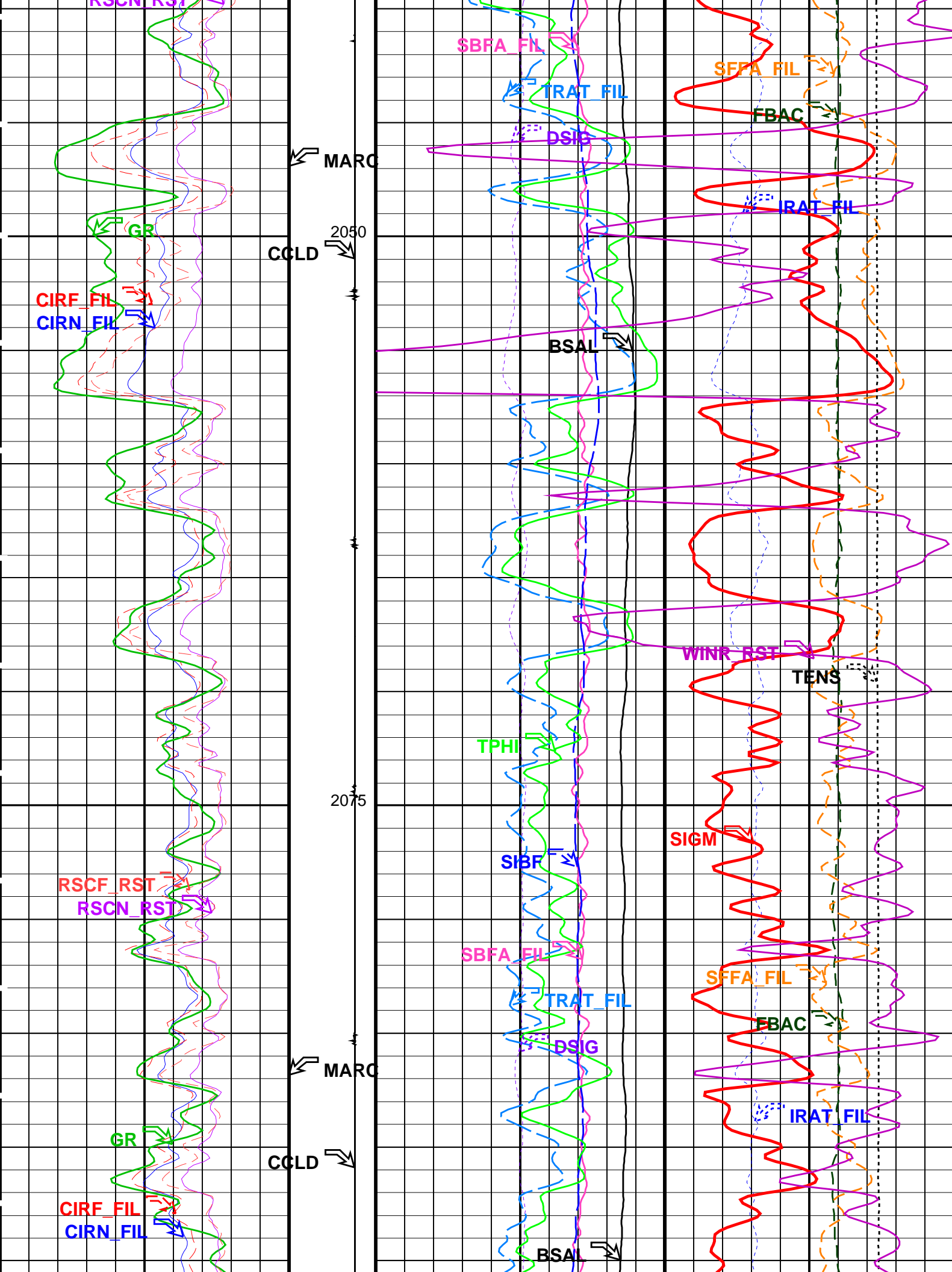


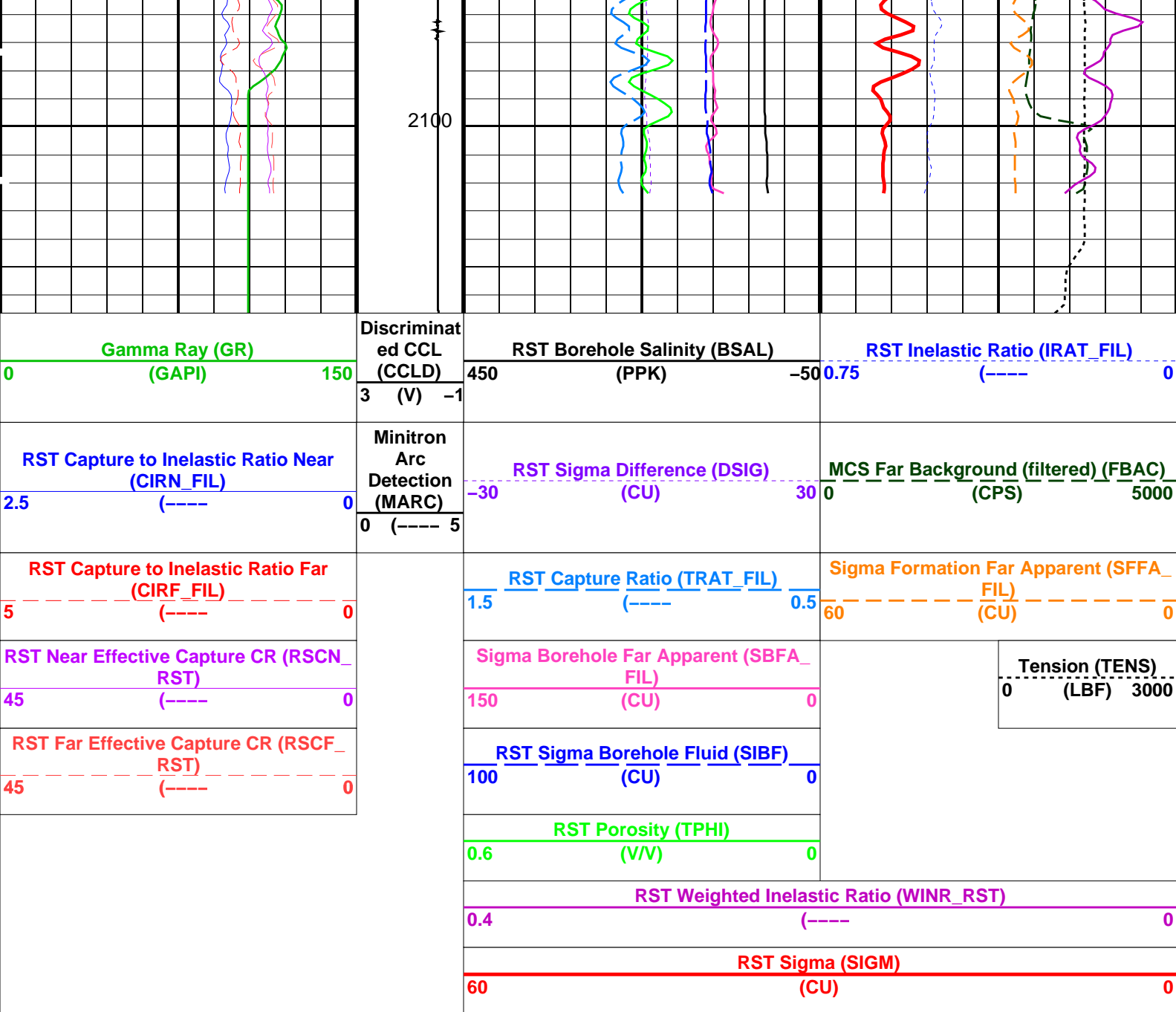













PIP SUMMARY

Time Mark Every 60 S

Parameters		
DLIS Name	Description	Value
RST-C: Reservoir Saturation Pro Tool C		
AIRB	RST Air Borehole	No
BHS	Borehole Status	CASED
BSALOPT	RST Borehole Salinity Option	Unknown
BSFL	RST Borehole Salinity Filter Length	51
DFPC	RST Depth Filter Processing Constant	One
DFPC_TDTL	RST Depth Filter Processing Constant (TDT-like)	Two
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE
NORM_IRAT_RST	RST Normalized Inelastic Ratio	0.48
NORM_SIGM_RST	RST Normalized Sigma	30
RGAI	Near/Far Gain Calibration Ratio	1
TIER_SIGM	RST Sigma Acquisition Mode	0_RST_Sigma
PSPT-A/B: Production Services Logging Platform		
BHS	Borehole Status	CASED
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE
System and Miscellaneous		
BS	Bit Size	8.500 IN
BSAL	Borehole Salinity	-50000.00 PPM
CSIZ	Current Casing Size	7.000 IN
CWEI	Casing Weight	23.00 LB/F
DO	Depth Offset for Playback	0.0 M

PP	Playback Processing	NORMAL
Format: RST_SIG_ANSW	Vertical Scale: 1:200	Graphics File Created: 05-Jan-2010 15:26
OP System Version: 17C0-154		
RST-C	17C0-154	PSPT-A/B 17C0-154
Input DLIS Files		
RST_PSP_019LUP	FN:17	05-Jan-2010 15:15 2106.6 M 1744.8 M
Output DLIS Files		
DEFAULT	RST_PSP_005PUP	FN:4 PRODUCER 05-Jan-2010 15:26

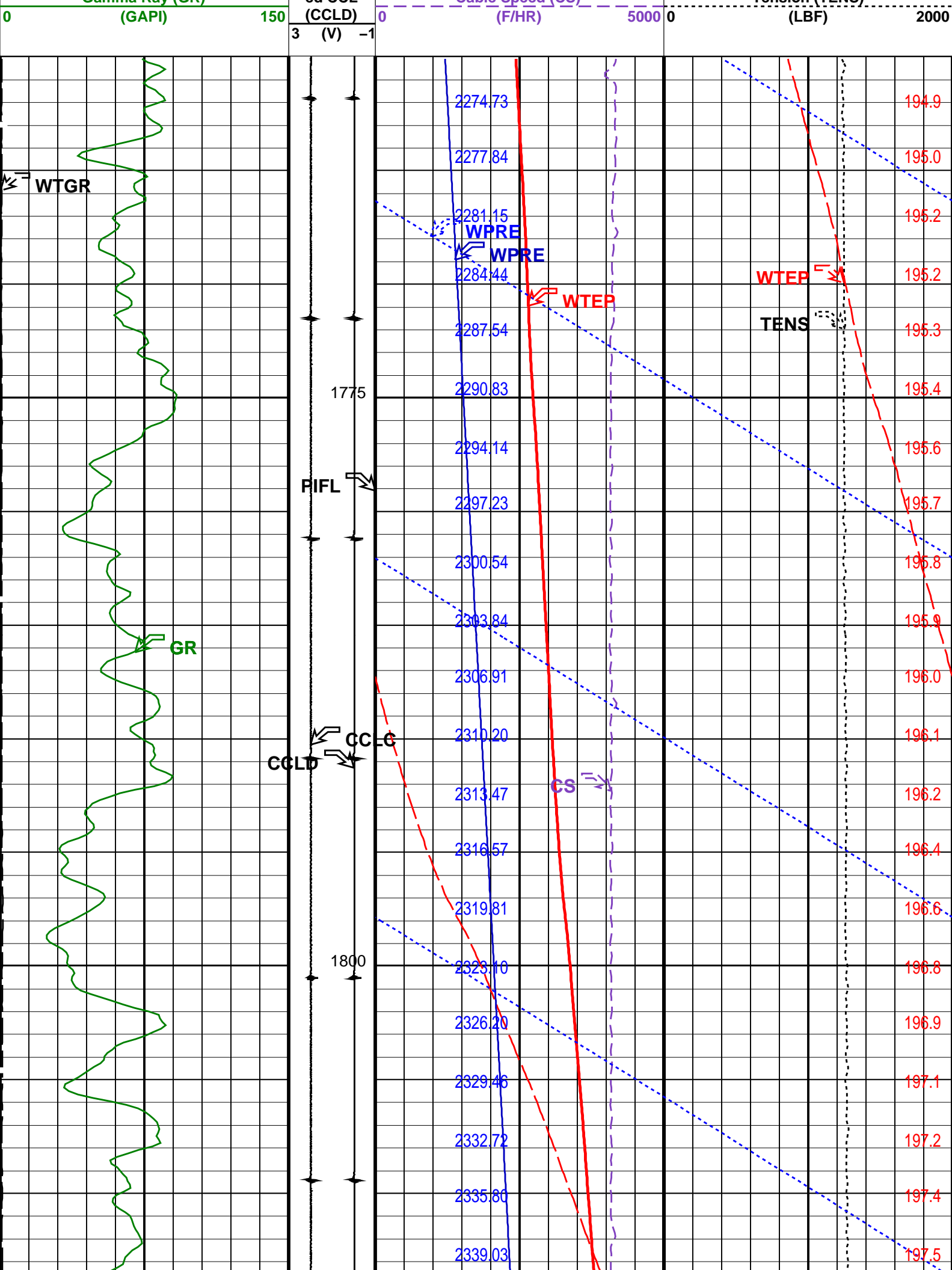


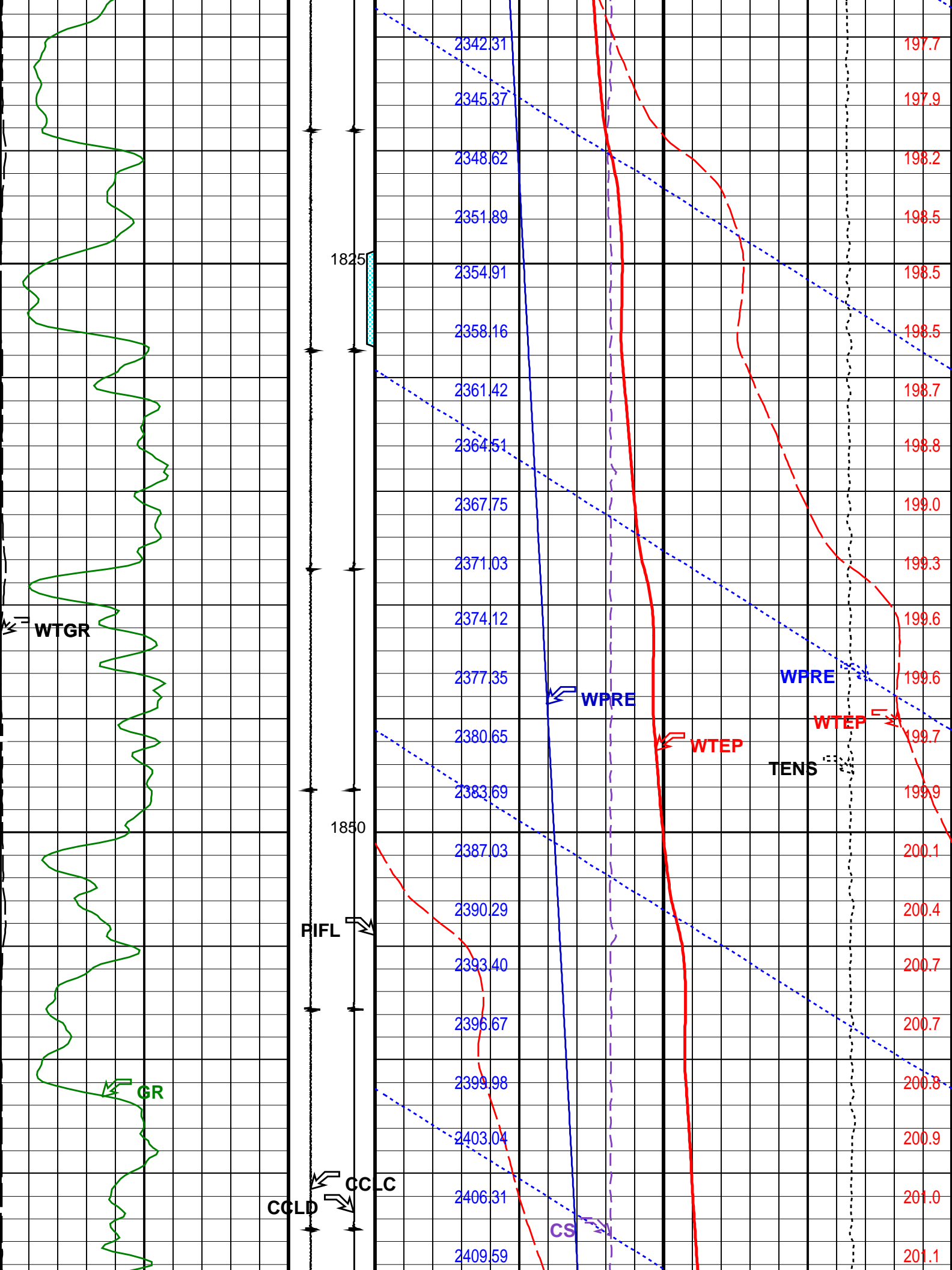
RST- C / GR Baseline

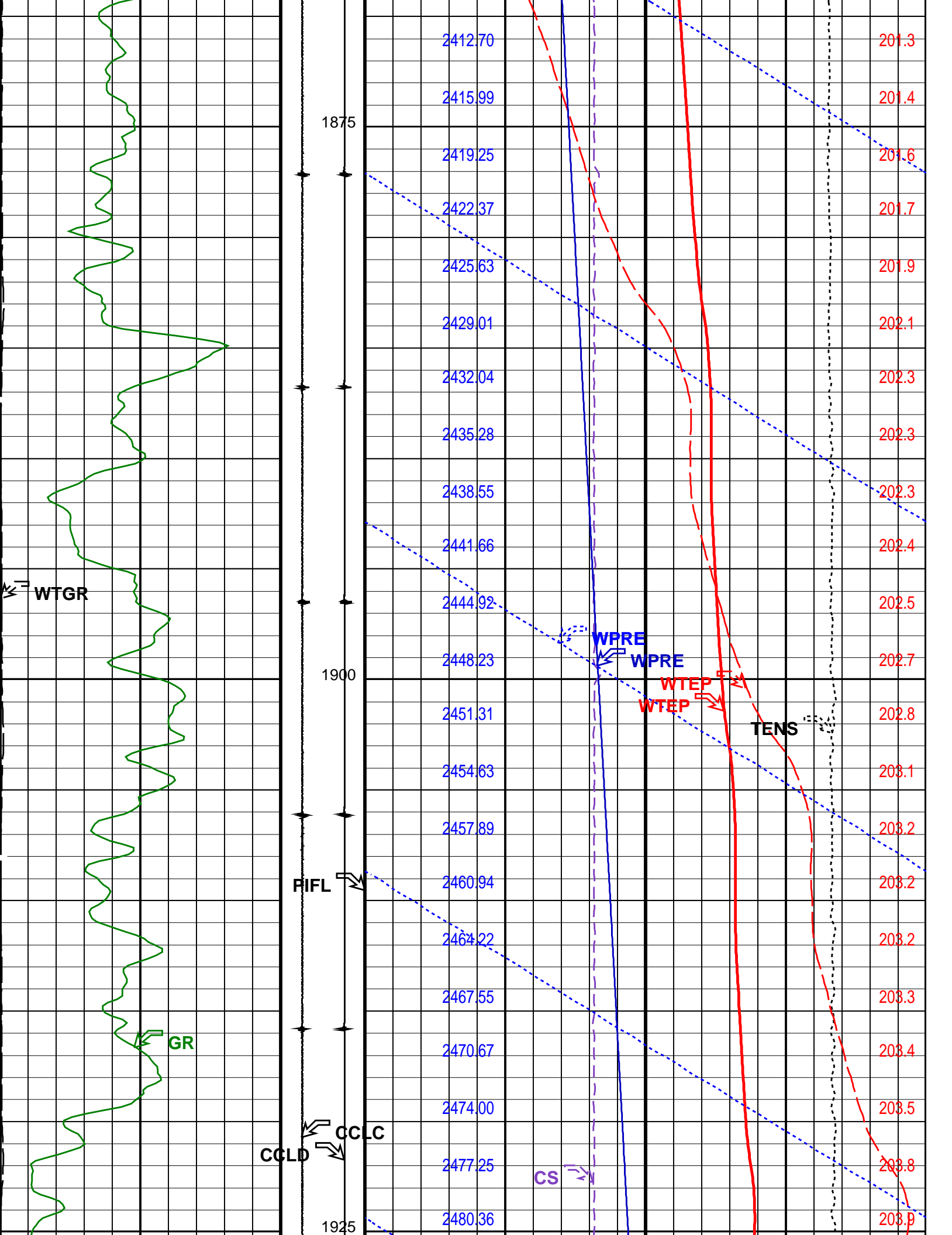
2104 – 1760m MDKB

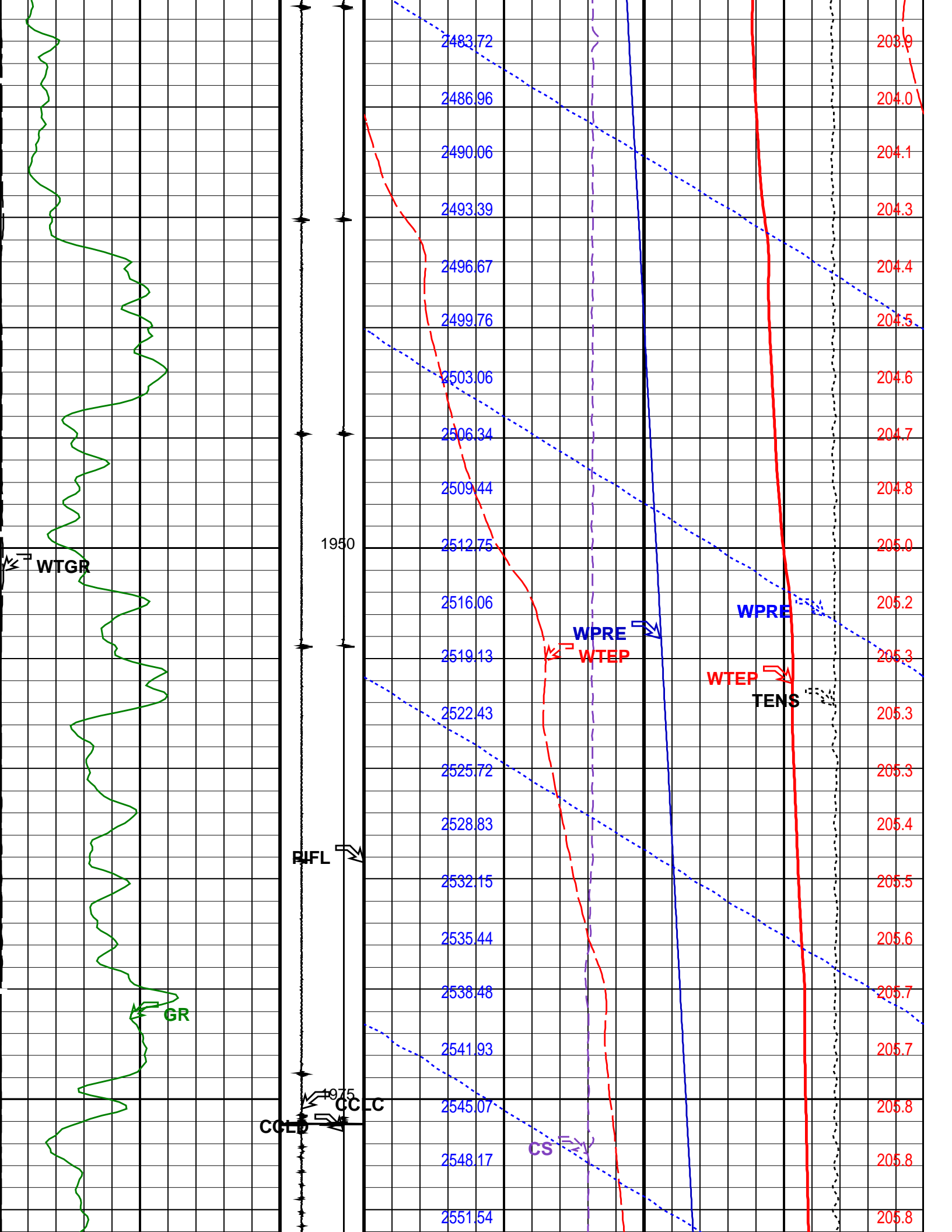
MAXIS Field Log

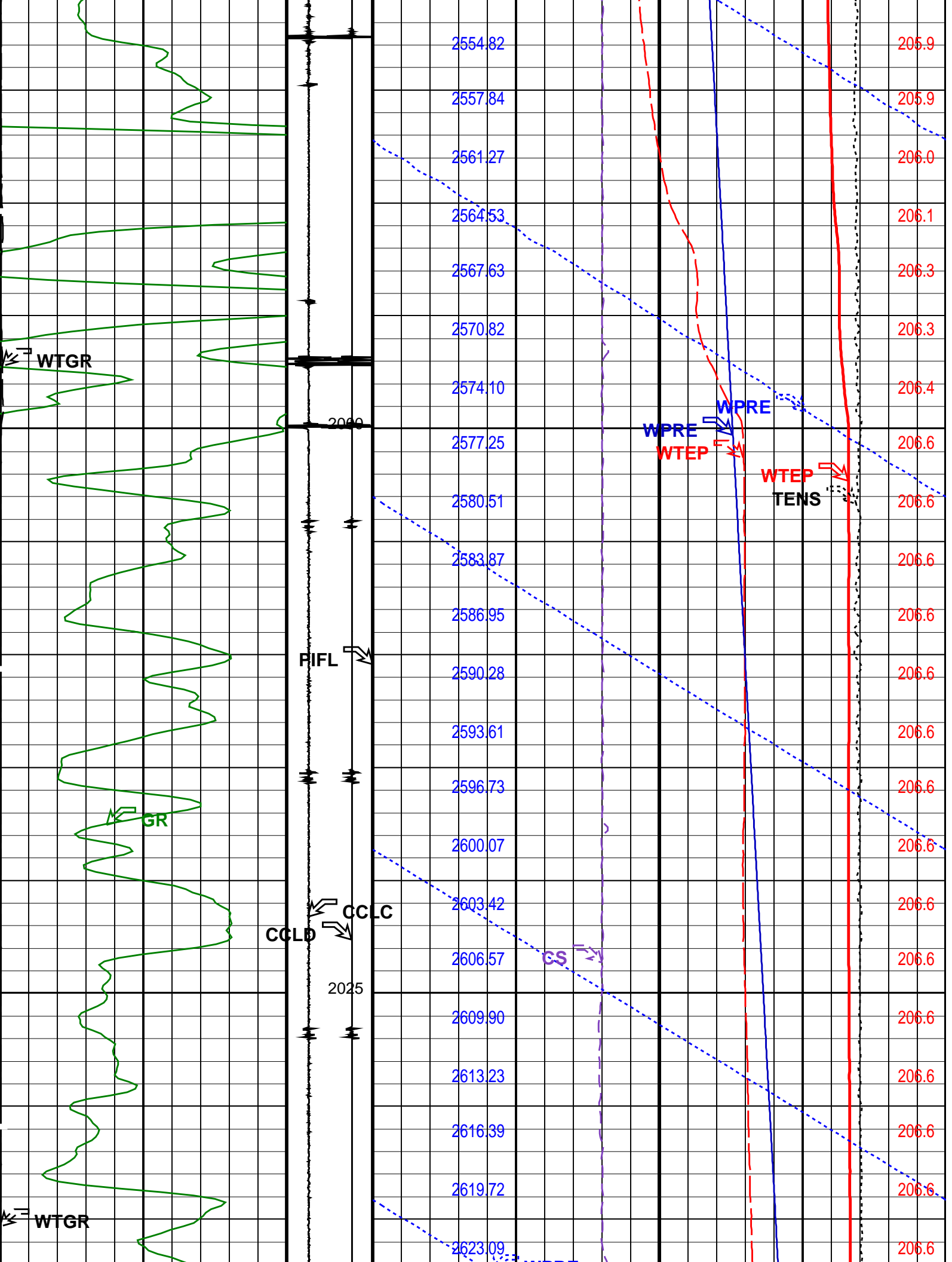
Company: Esso Australia Pty Ltd				Well: TNA A4a	
Input DLIS Files					
RST_PSP_016LUP		FN:14	05-Jan-2010 14:23	2106.5 M	1750.0 M
Output DLIS Files					
DEFAULT	RST_PSP_003PUP	FN:2	PRODUCER	05-Jan-2010 14:23	2105.4 M 1759.9 M
OP System Version: 17C0-154					
RST-C	17C0-154	PSPT-A/B		17C0-154	
PIP SUMMARY					
Time Mark Every 60 S					
		Amplified Well Pressure (WPRE)			
		0 (PSIA) 20			
		Well Pressure (WPRE)			
		2200 (PSIA)		2800	
		Well Pressure (WPRE) (PSIA)		Temperature (WTEP) (DEGF)	
Perfo Zone From PERFO_CURVE to D3T		Well Temperature (WTEP)			
		0 (DEGF) 4			
Well Temperature Gradient (WTGR)		Well Temperature (WTEP)			
0 (DC/M)	10	190 (DEGF) 210			
Computed CCL (CCLC)					
1 (V) -3					
Discriminat ed CCL		Cable Speed (CS)		Tension (TENS)	
Gamma Ray (GR)					

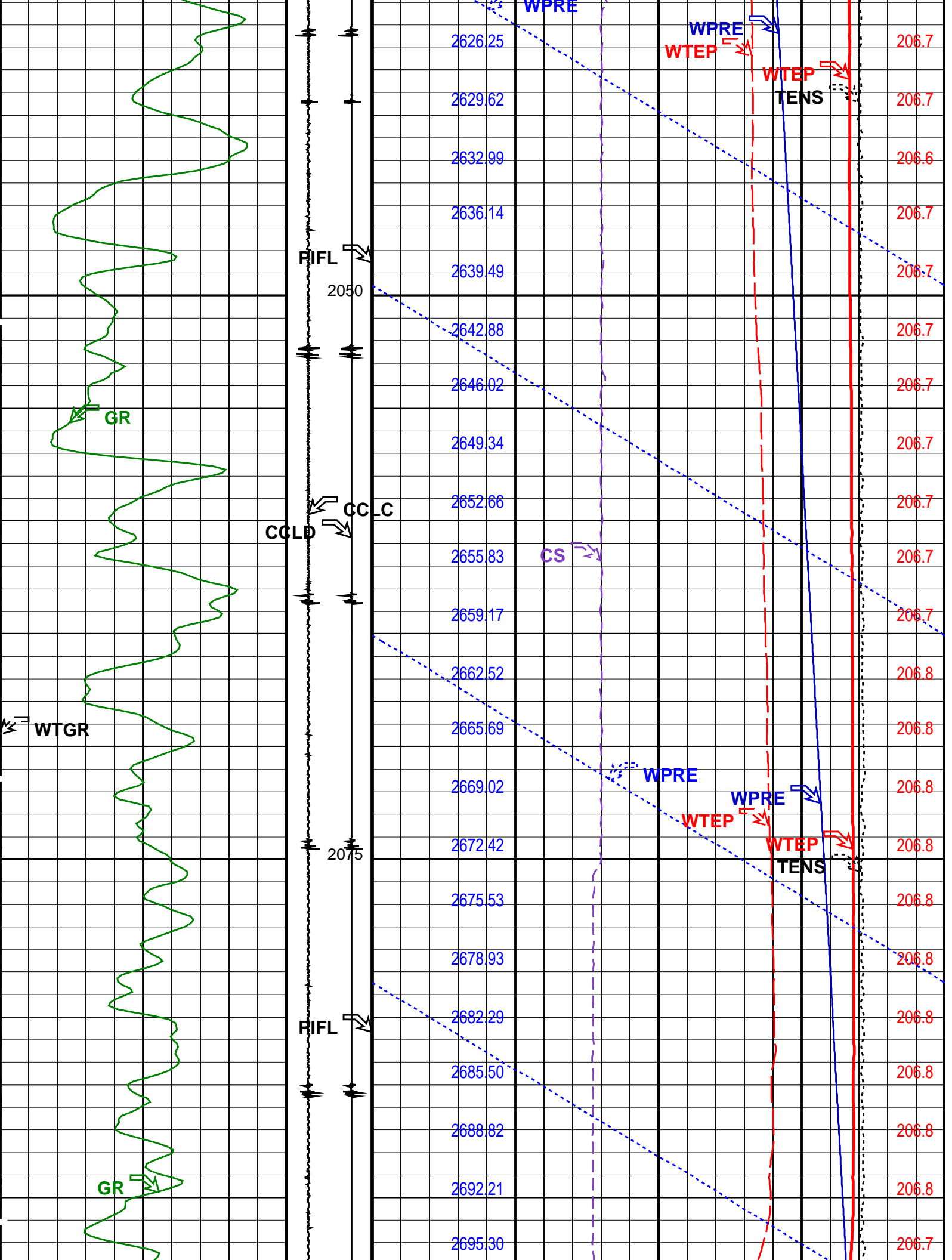


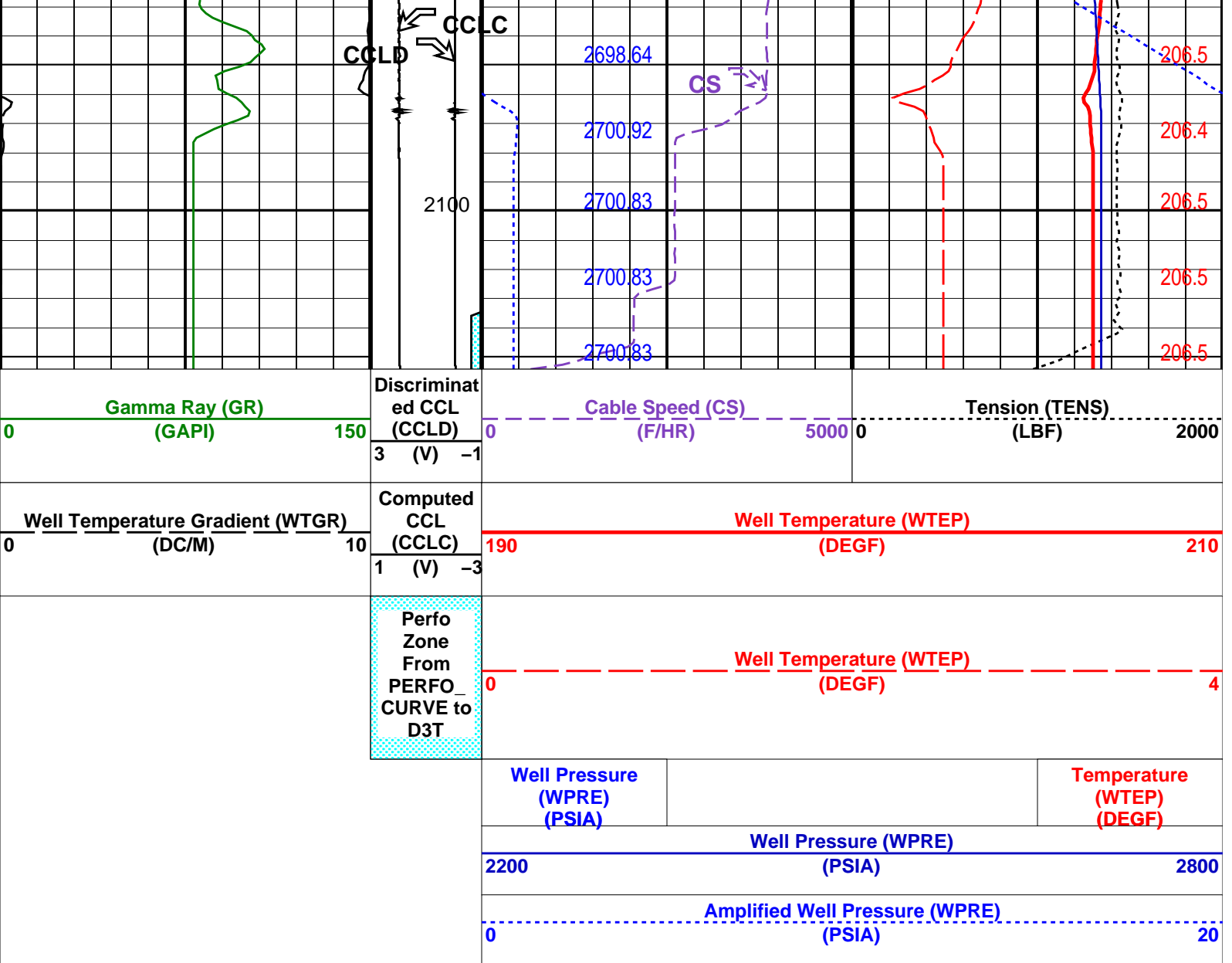












PIP SUMMARY

Time Mark Every 60 S

Format: PSP_1 Vertical Scale: 1:200

Graphics File Created: 05-Jan-2010 14:23

OP System Version: 17C0-154

RST-C 17C0-154 PSPT-A/B 17C0-154

Parameters

DLIS Name	Description	Value
DO PP	System and Miscellaneous Depth Offset for Playback Playback Processing	-1.1 M NORMAL

Input DLIS Files

RST_PSP_016LUP FN:14 05-Jan-2010 14:23 2106.5 M 1750.0 M

Output DLIS Files

DEFAULT RST_PSP_003PUP FN:2 PRODUCER 05-Jan-2010 14:23

Company: Esso Australia Pty Ltd

Well: TNA A4a

Input DLIS Files

DEFAULT	RST_PSP_018LUP	FN:16	PRODUCER	05-Jan-2010 13:35	2101.0 M	2065.5 M
DEFAULT	RST_PSP_019LUP	FN:17	PRODUCER	05-Jan-2010 13:55	2106.6 M	1744.8 M

Output DLIS Files

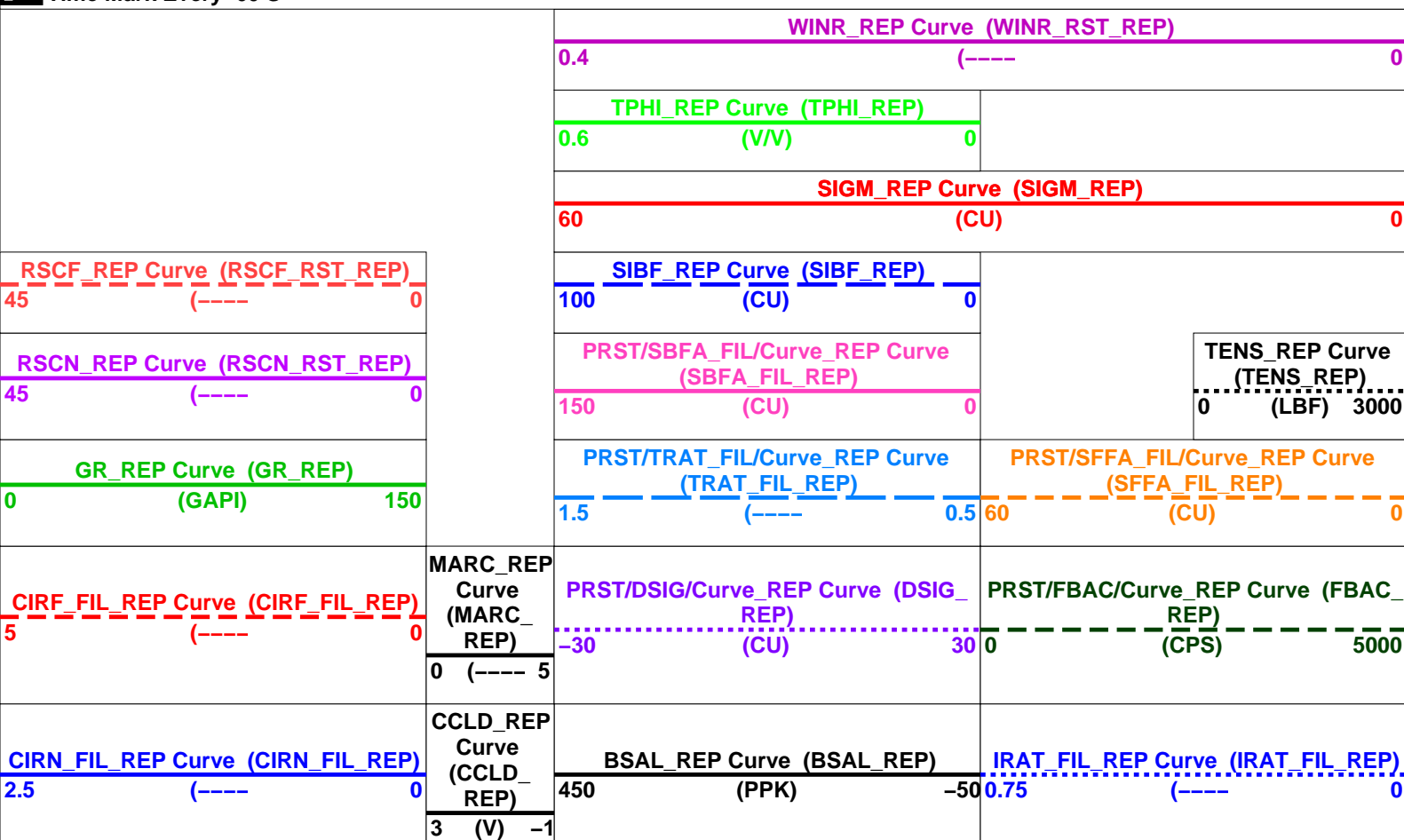
DEFAULT	RST_PSP_021PUP	FN:19	PRODUCER	05-Jan-2010 16:31	2101.0 M	2060.0 M
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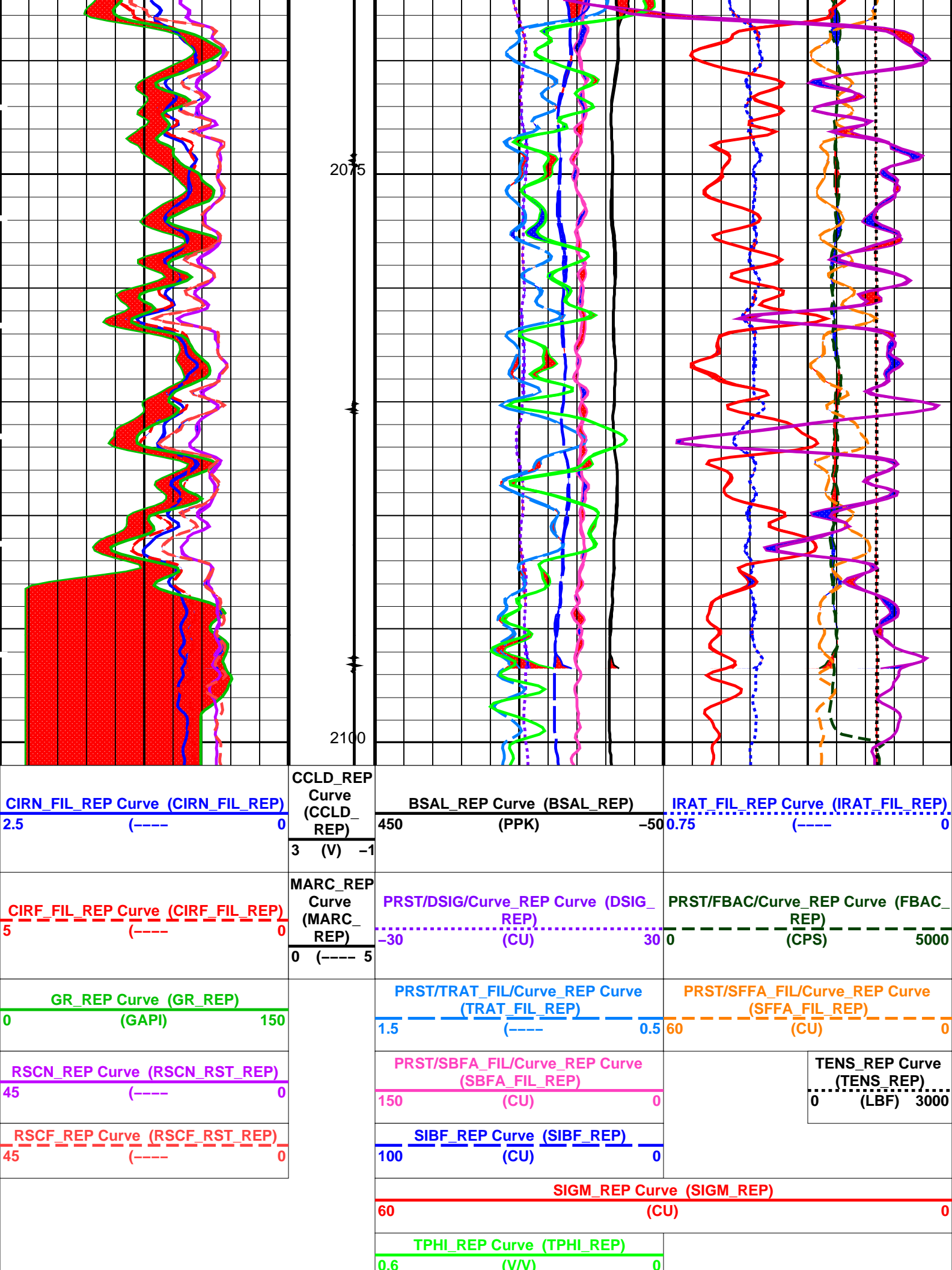
OP System Version: 17C0-154

RST-C	17C0-154	PSPT-A/B	17C0-154
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PIP SUMMARY

Time Mark Every 60 S





RST-C Static
SIGMA survey
5-1-2010