Schlumberger

Company: **Esso Australia Pty Ltd.**

Well: **A−10**

Field: **Snapper**

Rig: **Prod 4** Country: **Australia**

RST−C
Sigma
Survey

Rig: Prod 4
Field: Snapper
Location: Gippsland
Well: A−10
Company: Esso Australia Pty Ltd.

LOCATION

Gippsland		Elev.: K.B.	34.7 m
Basin		G.L.	−55 m
Bass Strait		D.F.	34.7 m
Permanent Datum:	MSL	Elev.:	0 m
Log Measured From:	DF	34.7 m	above Perm. Datum
Drilling Measured From:	DF		

State:	Max. Well Deviation	Longitude	Latitude
Victoria	60 deg	148*01'26.72"E	038*11'43.23"S

	Run 1	Run 1
PVT DATA: Oil Density		
PVT DATA: Water Salinity		
PVT DATA: Gas Gravity		
PVT DATA: Bo		
PVT DATA: Bw		
PVT DATA: 1/Bg		
PVT DATA: Bubble Point Pressure		
PVT DATA: Bubble Point Temperature		
Solution GOR		
Maximum Deviation	60 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	1−Nov−2006	
Run Number	1	
Depth Driller	2185 m	
Schlumberger Depth	2075 m	
Bottom Log Interval	2075 m	
Top Log Interval	1980 m	
Casing Fluid Type	Production Fluids	
Salinity		
Density		
Fluid Level		
BIT/CASING/TUBING STRING		
Bit Size	9.875 in	
From		
To		
Casing/Tubing Size	7.625 in	
Weight	26.4 lbm/ft	
Grade	K−55	
From	15.4 m	
To	2297 m	
Maximum Recorded Temperatures	164 degF	
Logger On Bottom / Time	6−Nov−2006 / 23:30	
Unit Number / Location	889 / AUSL/Prod4	
Recorded By	S gilbert , G Wright	
Witnessed By	B White , G Rimmer	

	Run 1	Run 1
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		

DEPTH SUMMARY LISTING

Date Created: 05−Nov−2006 12:10:45

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−EB	Type:	CMTD−B/A	Type:	2−32ZT
Serial Number:	6373	Serial Number:	949	Serial Number:	24425
Calibration Date:	28−SEP−2006	Calibration Date:	02−NOV−2006	Length:	6600.00 M
Calibrator Serial Number:	1009	Calibrator Serial Number:	1174	Conveyance Method:	Wireline
Calibration Cable Type:	2−32ZT	Calibration Gain:	1.01	Rig Type:	Offshore_Mobile
Wheel Correction 1:	−2	Calibration Offset:	162.00		
Wheel Correction 2:	−2				

Depth Control Parameters

Log Sequence: Subsequent Log In the Well

Reference Log Name: Solar composite.
Reference Log Run Number: 1
Reference Log Date:

Depth Control Remarks

1. Correlated to Solar composite log supplied with program.
2. IDW−EB 6373 used as primary depth control.
3. Z−chart used as back−up.
4.
5.
6.

OTHER SERVICES1
OS1: None
OS2:
OS3:
OS4:
OS5:

REMARKS: RUN NUMBER 1
Log Correlated to Solar Composite Log Provided by Client
Maximum Well deviation: 60 deg at 1058.6m MDKB
Objectives: Log from HUD to 1980m MDKB for a base line Gamma Ray
Then carry out 2 passes from HUD to 1980m MDKB with RST−C
in Sigma Mode with the well shut in .
SBHT:164Degf SBHP:1830 psia
HUD: 2075m MDKB

Crew : John Light , Jake Annear (Days)
Kevin Kerr , Brendon Flinn (Nights)

RUN 1		RUN 2	
SERVICE ORDER #:	AUSL06328206	SERVICE ORDER #:	
PROGRAM VERSION:	14C0−302	PROGRAM VERSION:	
FLUID LEVEL:		FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

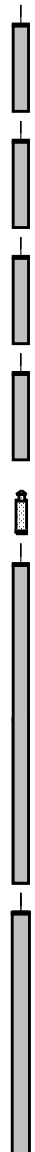
EQUIPMENT DESCRIPTION

RUN 1 RUN 2

SURFACE EQUIPMENT

WITM−A 827
PSC_16MHZ 827

DOWNHOLE EQUIPMENT



AH−SWBS 12.64
AH−SWBS 763

AH−SWBS 11.95
AH−SWBS 762

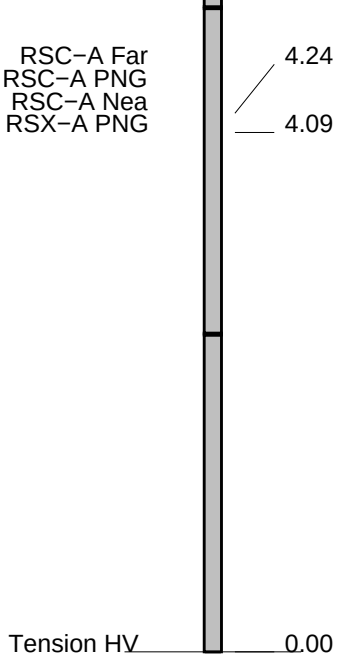
AH−SWBS 11.26
AH−SWBS 761

AH−SWBS 10.58
AH−SWBS 731

MH−SWHS 9.89
MH−SWHS 726

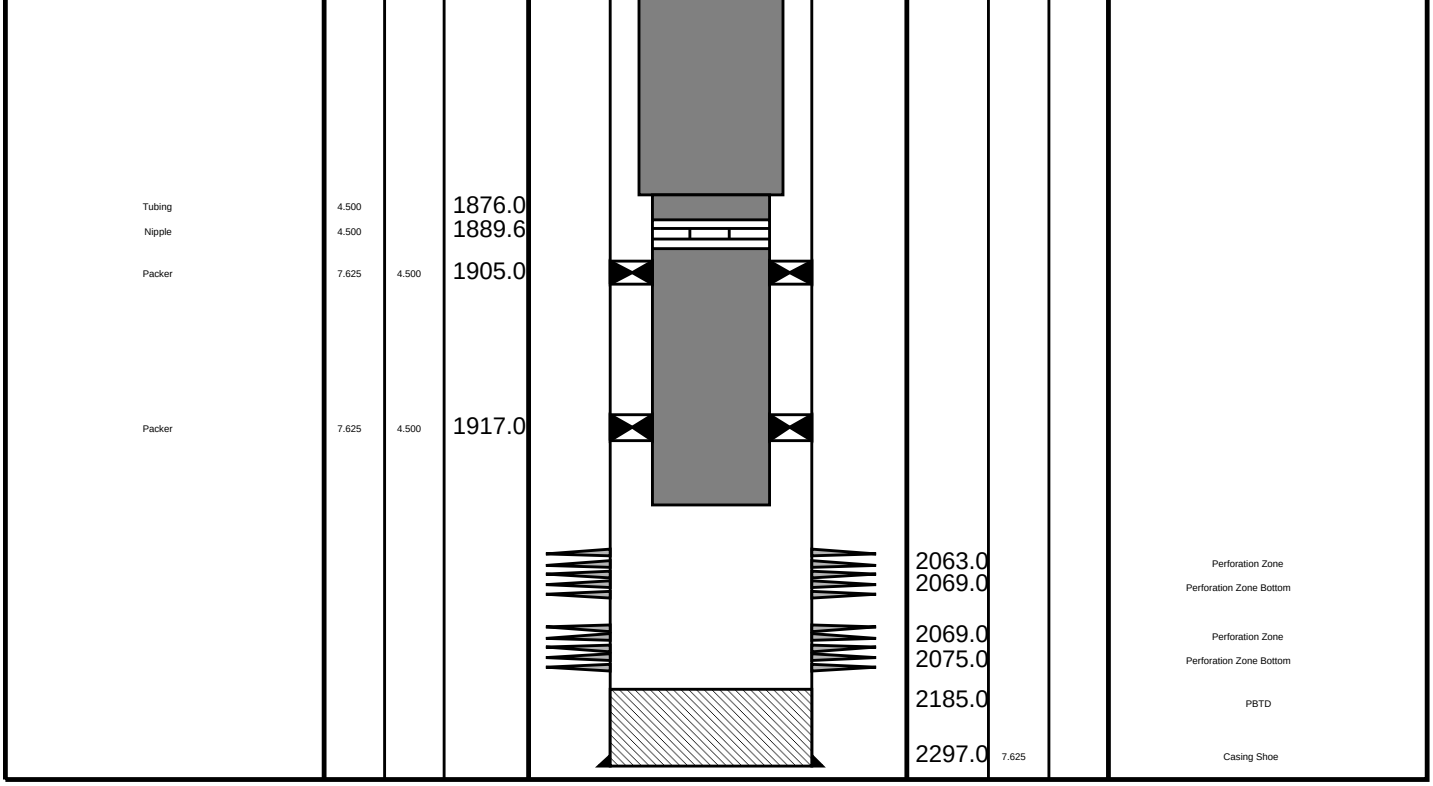
PSPT−B 9.54
PSC−A 806
PSPT−B 827
PSTC 806
PBMS−B 827
CQG_F_Mano 827
RTD_Thermometer 827
GR 827
CCL 827
PBMS 827

RST−C 7.02
RSCH−A 45
RSC−C 57
RSS−A 45
RSXH−A 63
RSX−C 59



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

Production String	(in) OD	(in) ID	(m) MD	Well Schematic	(m) MD	(in) OD	(in) ID	Casing String
Tubing	5.500		10.3		15.9	10.750		Casing String
Tubing Hanger	7.625	5.500	10.3		15.4	7.625		Casing String
					15.4	10.750	7.625	Liner Hanger
					736.0	10.750		Casing Shoe
Sliding Sleeve	5.500		1201.0					



Schlumberger

Job Events Summary

MAXIS Field Log

Schlumberger Job Event Summary

	Time	Elapsed Time	Depth (M)	File
Log Pass (up)	5−Nov−2006 23:29	000:11	2084.2 − 1966.6	RST_PSP_013LUP
Log Pass (up)	5−Nov−2006 23:52	000:25	2076.1 − 1963.1	RST_PSP_015LUP
Log Pass (up)	6−Nov−2006 0:21	000:22	2078.3 − 1966.7	RST_PSP_016LUP

Schlumberger

RST−C Sigma

Schlumberger

Pass # 2

MAXIS Field Log

Company: Esso Australia Pty Ltd. **Well: A−10**

Input DLIS Files

DEFAULT	RST_PSP_016LUP	FN:15	PRODUCER	06−Nov−2006 00:21	2078.3 M	1966.7 M

Output DLIS Files

DEFAULT	RST_PSP_026PUP	FN:25	PRODUCER	06−Nov−2006 04:32	2079.0 M	1962.5 M

OP System Version: 14C0−302

MCM

RST−C	14C0−302	PSPT−B	14C0−302

PIP SUMMARY

Time Mark Every 60 S

RST Sigma (SIGM) 60 (CU) 0

RST Weighted Inelastic Ratio (WINR_RST) 4 (−−−− 0

RST Porosity (TPHI) 0.6 (V/V) 0

RST Far Effective Capture CR (RSCF_RST) 45 (−−−− 0

RST Sigma Borehole Fluid (SIBF) 100 (CU) 0

RST Near Effective Capture CR (RSCN_RST) 45 (−−−− 0

Sigma Borehole Far Apparent (SBFA_FIL) 150 (CU) 0

Tension (TENS) 0 (LBF) 3000

RST Capture to Inelastic Ratio Far (CIRF_FIL) 5 (−−−− 0

RST Capture Ratio (TRAT_FIL) 1.5 (−−−− 0.5

Sigma Formation Far Apparent (SFFA_FIL) 60 (CU) 0

RST Capture to Inelastic Ratio Near (CIRN_FIL) 2.5 (−−−− 0

Minitron Arc Detection (MARC) 0 (−−−− 5

RST Sigma Difference (DSIG) −30 (CU) 30

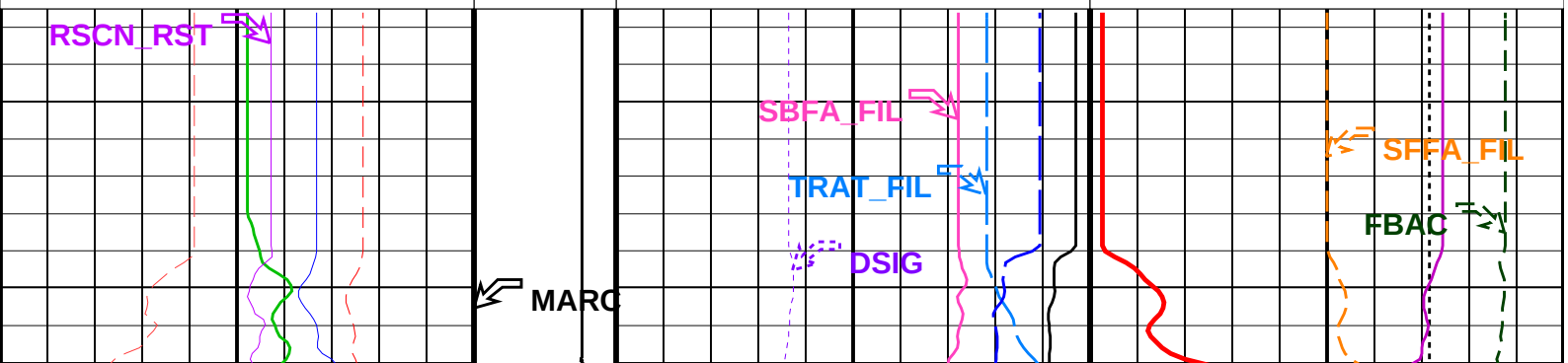
MCS Far Background (filtered) (FBAC) 0 (CPS) 5000

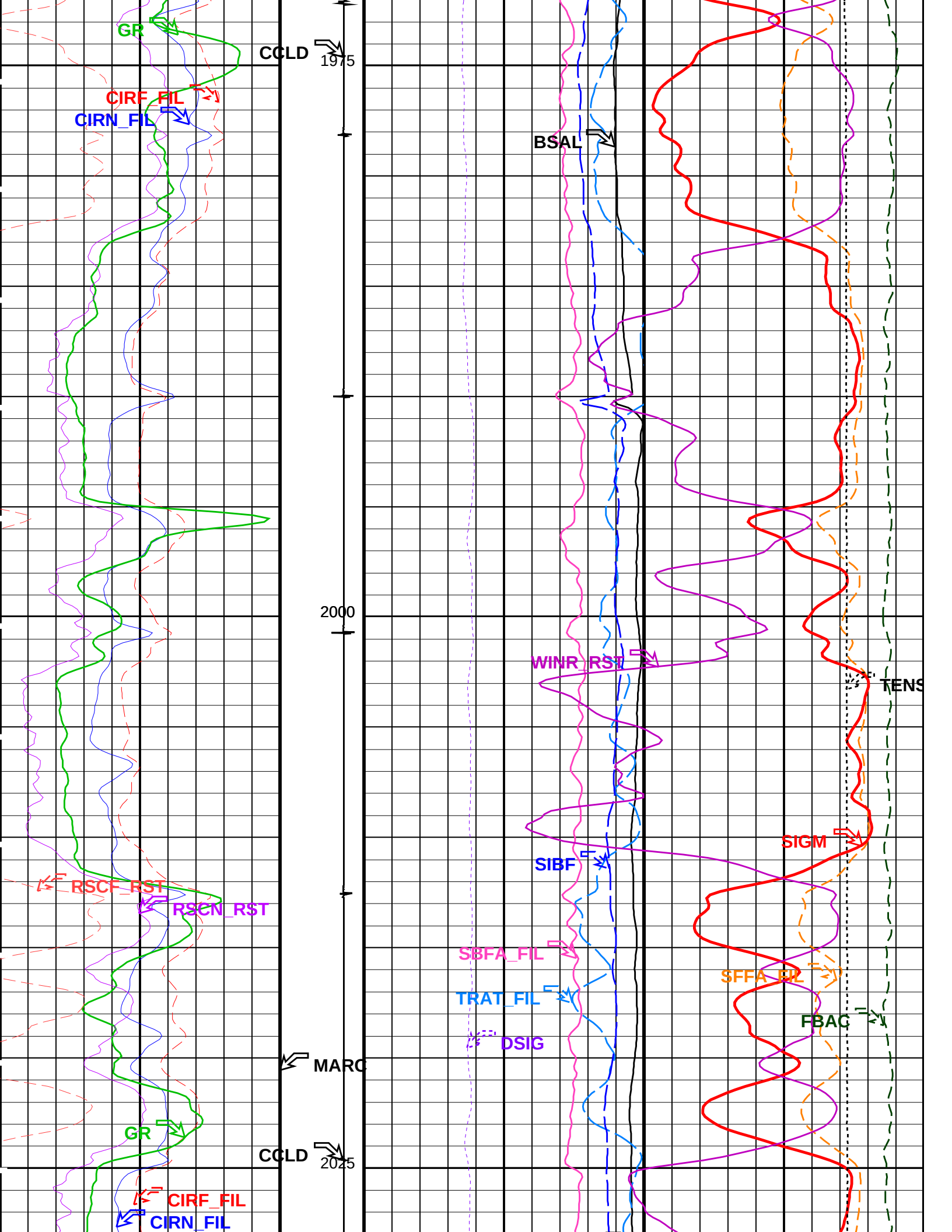
Gamma Ray (GR) 0 (GAPI) 150

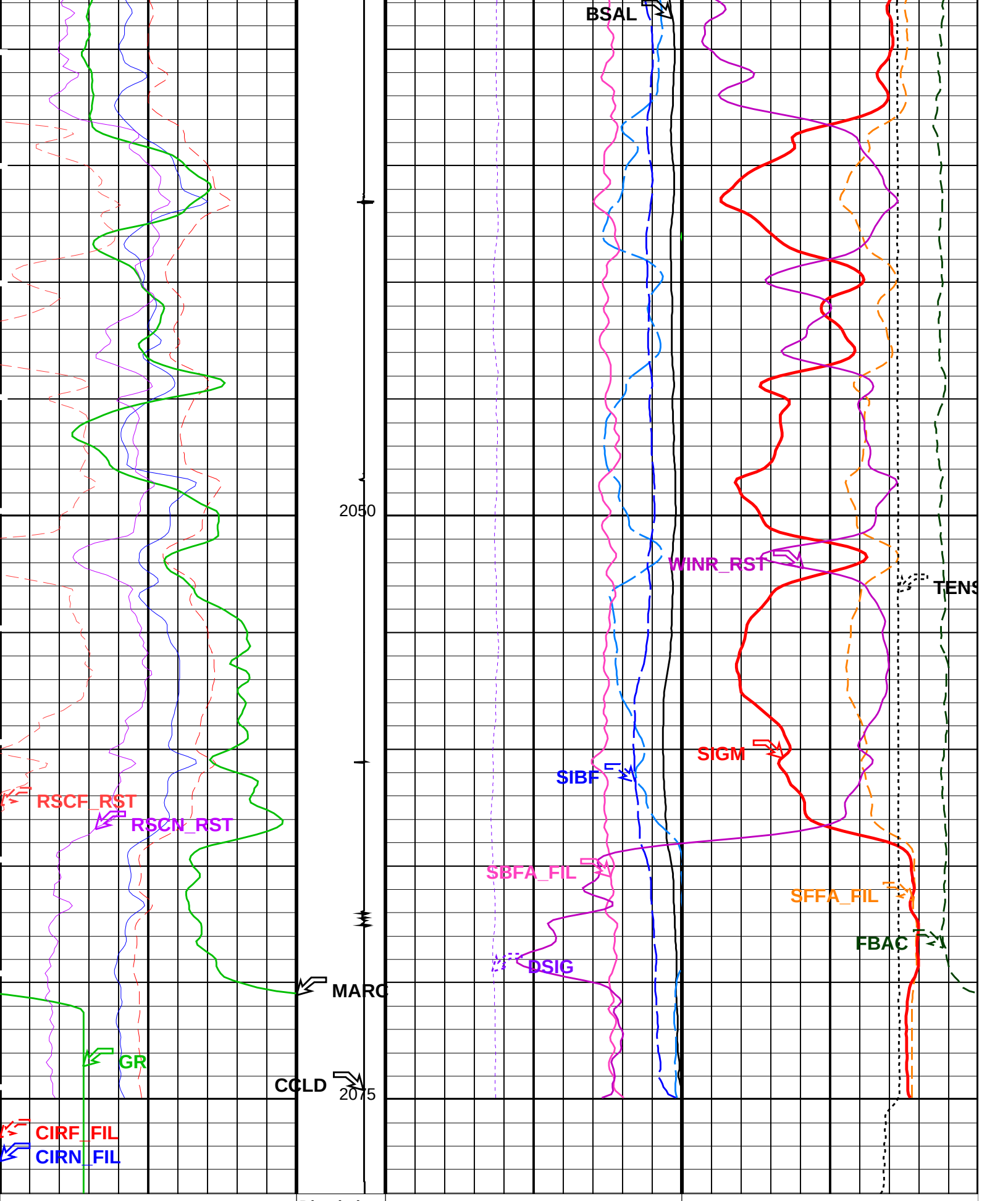
Discriminated CCL (CCLD) 3 (V) −1

RST Borehole Salinity (BSAL) 450 (PPK) −50

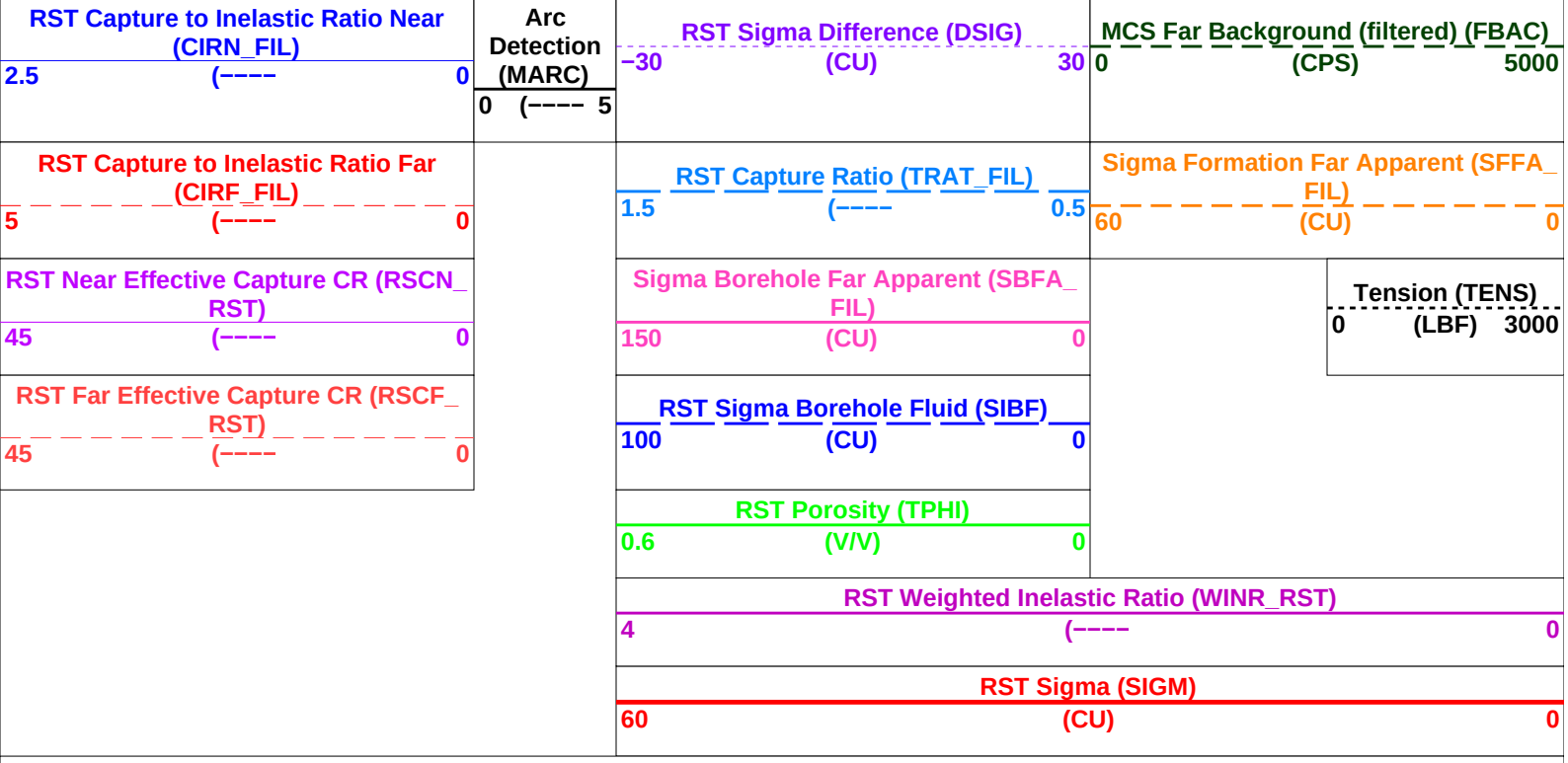
RST Inelastic Ratio (IRAT_FIL) 0.75 (−−−− 0




GR
CCLD
1975
CIRF_FIL
CIRN_FIL
BSAL
2000
WINR_RST
TENS
SIGM
SIBF
RSCF_RST
RSCN_RST
SBFA_FIL
SFFA_FIL
TRAT_FIL
FBAC
DSIG
MARC
GR
CCLD
2025
CIRF_FIL
CIRN_FIL



Gamma Ray (GR)	Discriminated CCL (CCLD)	RST Borehole Salinity (BSAL)	RST Inelastic Ratio (IRAT_FIL)
0 (GAPI) 150	3 (V) −1	450 (PPK) −50	0.75 (----- 0
	Minitron		



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	CU
RGAI	Near/Far Gain Calibration Ratio	1	
SMBMO	RST Sigma Mode Background Minitron Off	No	
TIER_SIGM	RST Sigma Acquisition Mode	0_RST_Sigma	
	PSPT-B: Production Services Logging Platform		
BHS	Borehole Status	CASED	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
	System and Miscellaneous		
BS	Bit Size	9.875	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	7.625	IN
CWEI	Casing Weight	26.40	LB/F
DO	Depth Offset for Playback	0.7	M
PP	Playback Processing	NORMAL	

Format: RST_SIG_ANSW_1 Vertical Scale: 1:200 Graphics File Created: 06-Nov-2006 04:32

OP System Version: 14C0-302

MCM

RST-C	14C0-302	PSPT-B	14C0-302

Input DLIS Files

DEFAULT	RST_PSP_016LUP	FN:15	PRODUCER	06-Nov-2006 00:21	2078.3 M	1966.7 M

Output DLIS Files

DEFAULT	RST_PSP_026PUP	FN:25	PRODUCER	06-Nov-2006 04:32

Schlumberger

RST−C Sigma
Pass # 1

MAXIS Field Log

Company: Esso Australia Pty Ltd. **Well: A−10**

Input DLIS Files

DEFAULT	RST_PSP_015LUP	FN:14	PRODUCER	05−Nov−2006 23:52	2076.1 M	1963.1 M

Output DLIS Files

DEFAULT	RST_PSP_025PUP	FN:24	PRODUCER	06−Nov−2006 04:28	2076.9 M	1958.8 M

OP System Version: 14C0−302

MCM

RST−C	14C0−302	PSPT−B	14C0−302

PIP SUMMARY

Time Mark Every 60 S

RST Sigma (SIGM) 60 (CU) 0

RST Weighted Inelastic Ratio (WINR_RST) 4 (−−−− 0

RST Porosity (TPHI) 0.6 (V/V) 0

RST Far Effective Capture CR (RSCF_RST) 45 (−−−− 0

RST Sigma Borehole Fluid (SIBF) 100 (CU) 0

RST Near Effective Capture CR (RSCN_RST) 45 (−−−− 0

Sigma Borehole Far Apparent (SBFA_FIL) 150 (CU) 0

Tension (TENS) 0 (LBF) 3000

RST Capture to Inelastic Ratio Far (CIRF_FIL) 5 (−−−− 0

RST Capture Ratio (TRAT_FIL) 1.5 (−−−− 0.5

Sigma Formation Far Apparent (SFFA_FIL) 60 (CU) 0

RST Capture to Inelastic Ratio Near (CIRN_FIL) 2.5 (−−−− 0

Minitron Arc Detection (MARC) 0 (−−−− 5

RST Sigma Difference (DSIG) −30 (CU) 30

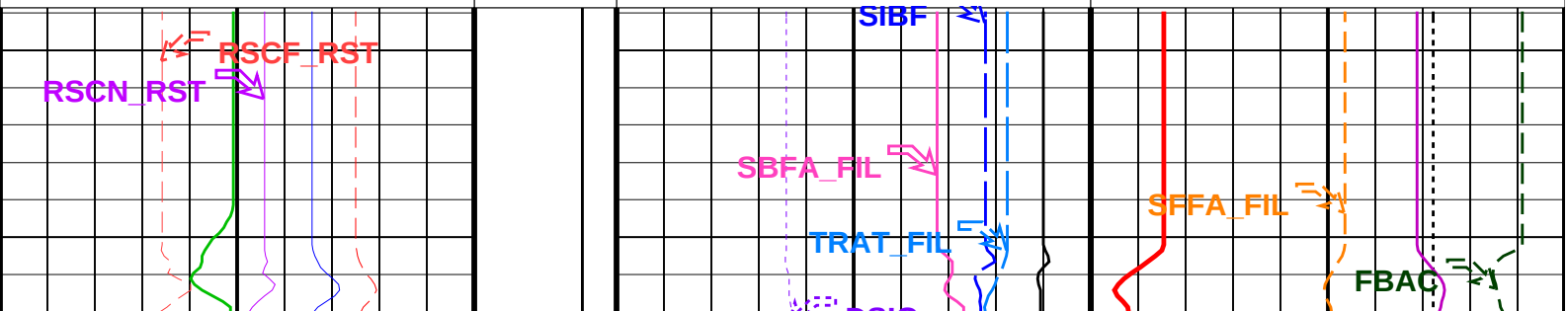
MCS Far Background (filtered) (FBAC) 0 (CPS) 5000

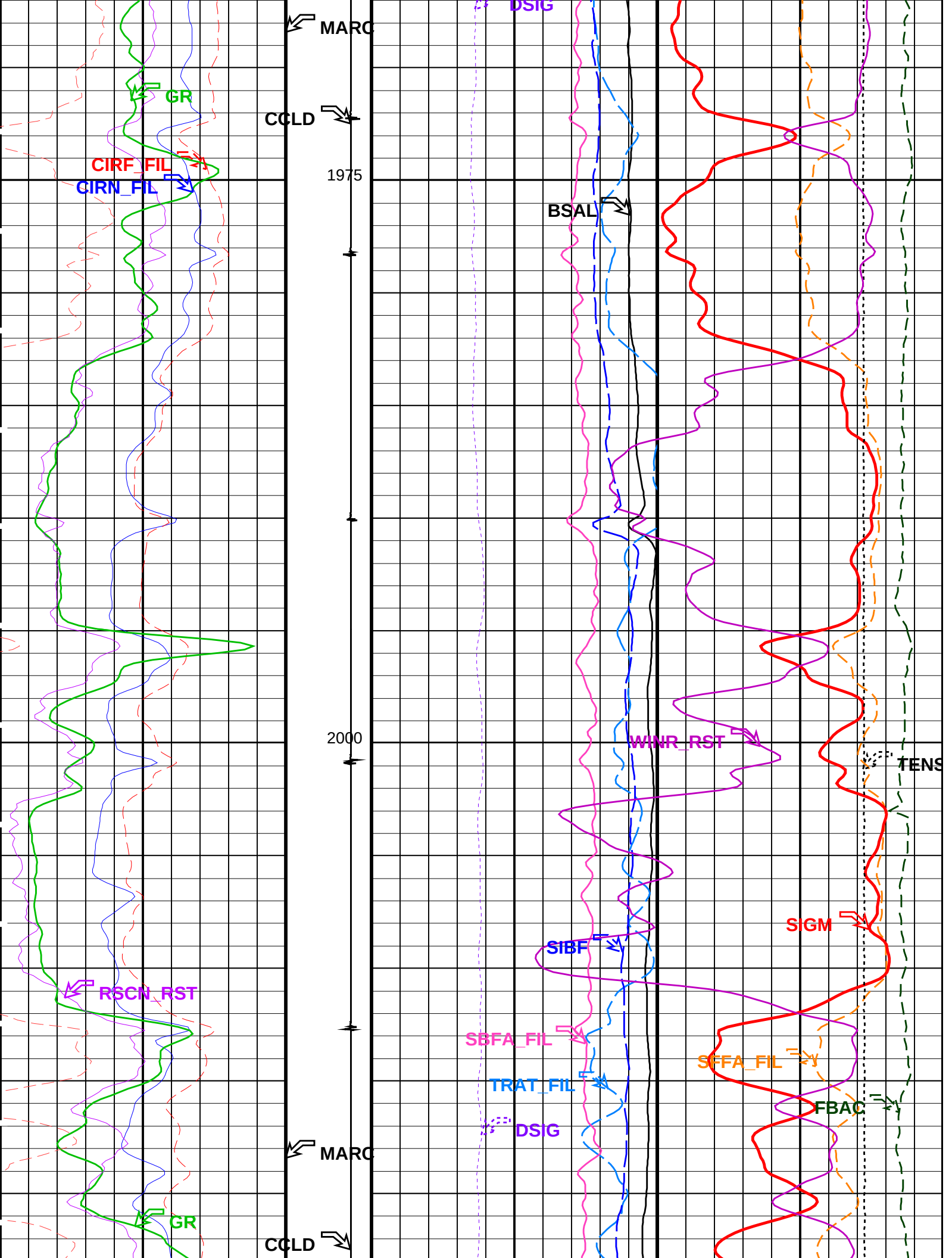
Gamma Ray (GR) 0 (GAPI) 150

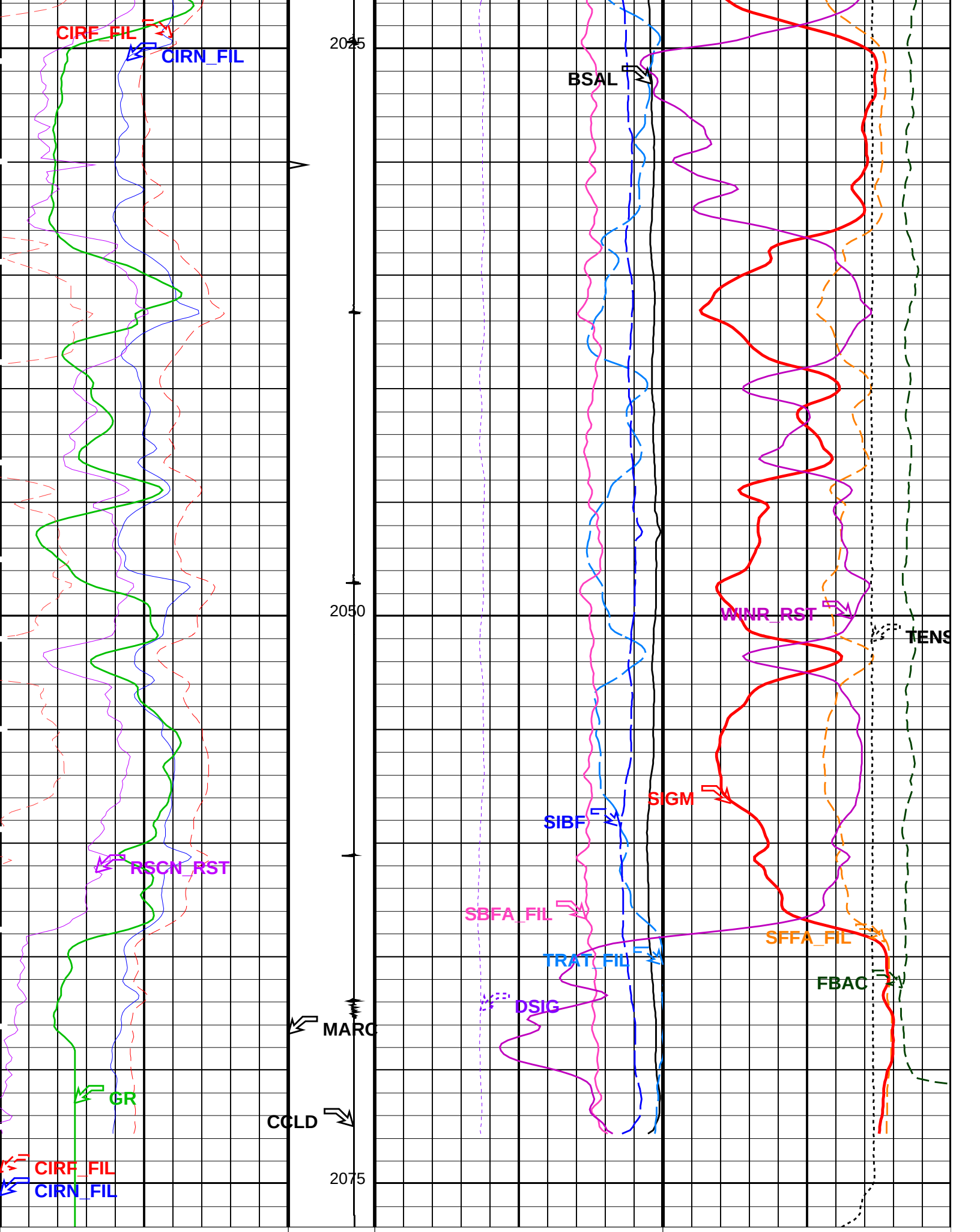
Discriminated CCL (CCLD) 3 (V) −1

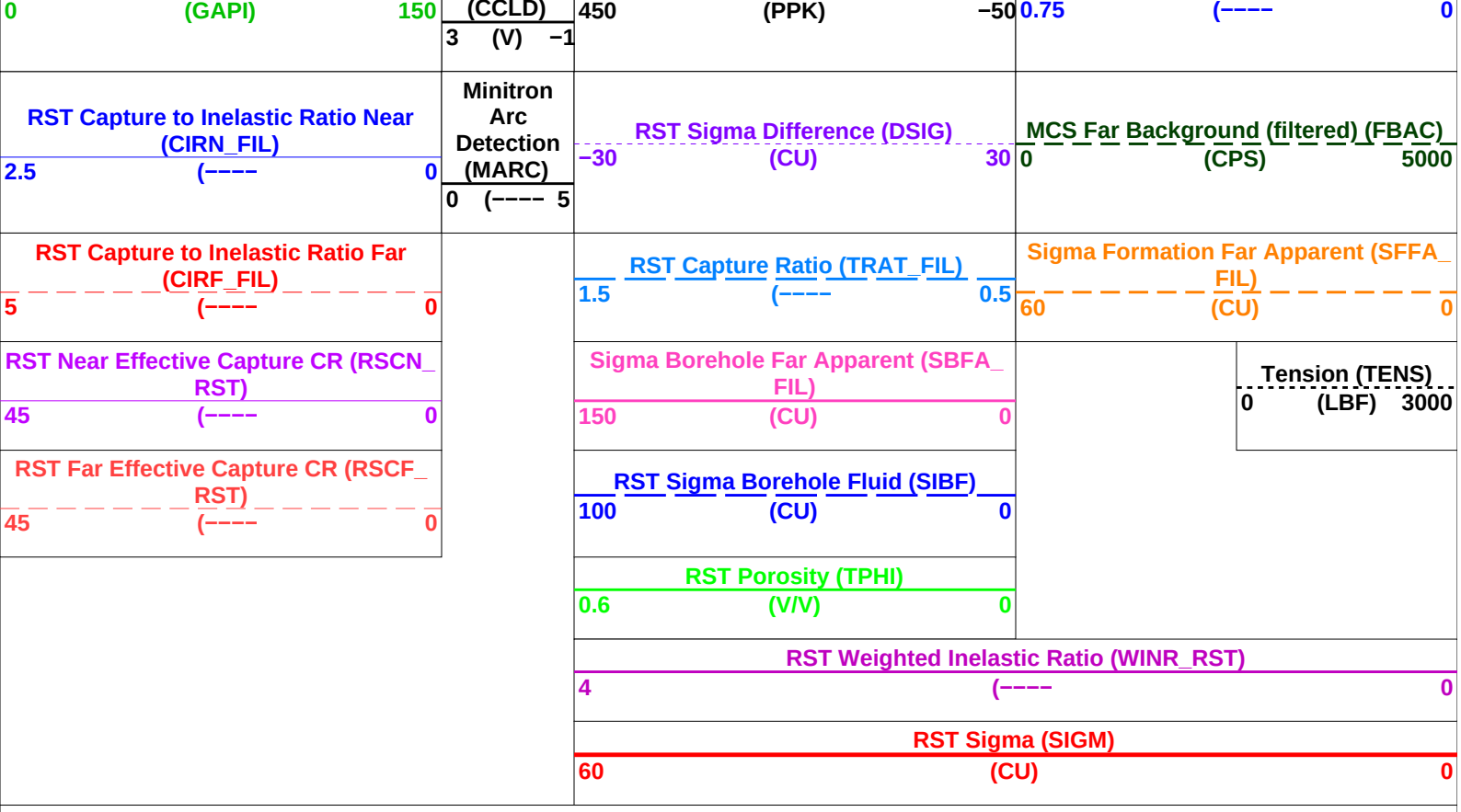
RST Borehole Salinity (BSAL) 450 (PPK) −50

RST Inelastic Ratio (IRAT_FIL) 0.75 (−−−− 0




MARC
GR
CCLD
CIRF_FIL
CIRN_FIL
1975
DSIG
BSAL
2000
WINR_RST
TENS
SIGM
SIBF
RSCN_RST
SBFA_FIL
SFFA_FIL
TRAT_FIL
FBAC
DSIG
MARC
GR
CCLD


CIRF_FIL
CIRN_FIL
2025
BSAL
2050
WINR_RST
TENS
SIGM
SIBF
RSCN_RST
SBFA_FIL
SFFA_FIL
TRAT_FIL
FBAC
DSIG
MARC
GR
CCLD
2075
CIRF_FIL
CIRN_FIL
Gamma Ray (GR)
Discriminated CCL
RST Borehole Salinity (BSAL)
RST Inelastic Ratio (IRAT_FIL)



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	CU
RGAI	Near/Far Gain Calibration Ratio	1	
SMBMO	RST Sigma Mode Background Minitron Off	No	
TIER_SIGM	RST Sigma Acquisition Mode	0_RST_Sigma	
	PSPT−B: Production Services Logging Platform		
BHS	Borehole Status	CASED	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
	System and Miscellaneous		
BS	Bit Size	9.875	IN
BSAL	Borehole Salinity	−50000.00	PPM
CSIZ	Current Casing Size	7.625	IN
CWEI	Casing Weight	26.40	LB/F
DO	Depth Offset for Playback	0.7	M
PP	Playback Processing	NORMAL	

Format: RST_SIG_ANSW_1 Vertical Scale: 1:200 Graphics File Created: 06−Nov−2006 04:28

OP System Version: 14C0−302

MCM

RST−C	14C0−302	PSPT−B	14C0−302

Input DLIS Files

DEFAULT	RST_PSP_015LUP	FN:14	PRODUCER	05−Nov−2006 23:52	2076.1 M	1963.1 M

Output DLIS Files

DEFAULT	RST_PSP_025PUP	FN:24	PRODUCER	06−Nov−2006 04:28

Schlumberger

RST−C
Correlation Pass

MAXIS Field Log

Company: Esso Australia Pty Ltd. **Well: A−10**

Input DLIS Files

DEFAULT	RST_PSP_013LUP	FN:12	PRODUCER	05−Nov−2006 23:29	2084.2 M	1966.6 M

Output DLIS Files

DEFAULT	RST_PSP_024PUP	FN:23	PRODUCER	06−Nov−2006 04:21	2084.8 M	1962.2 M

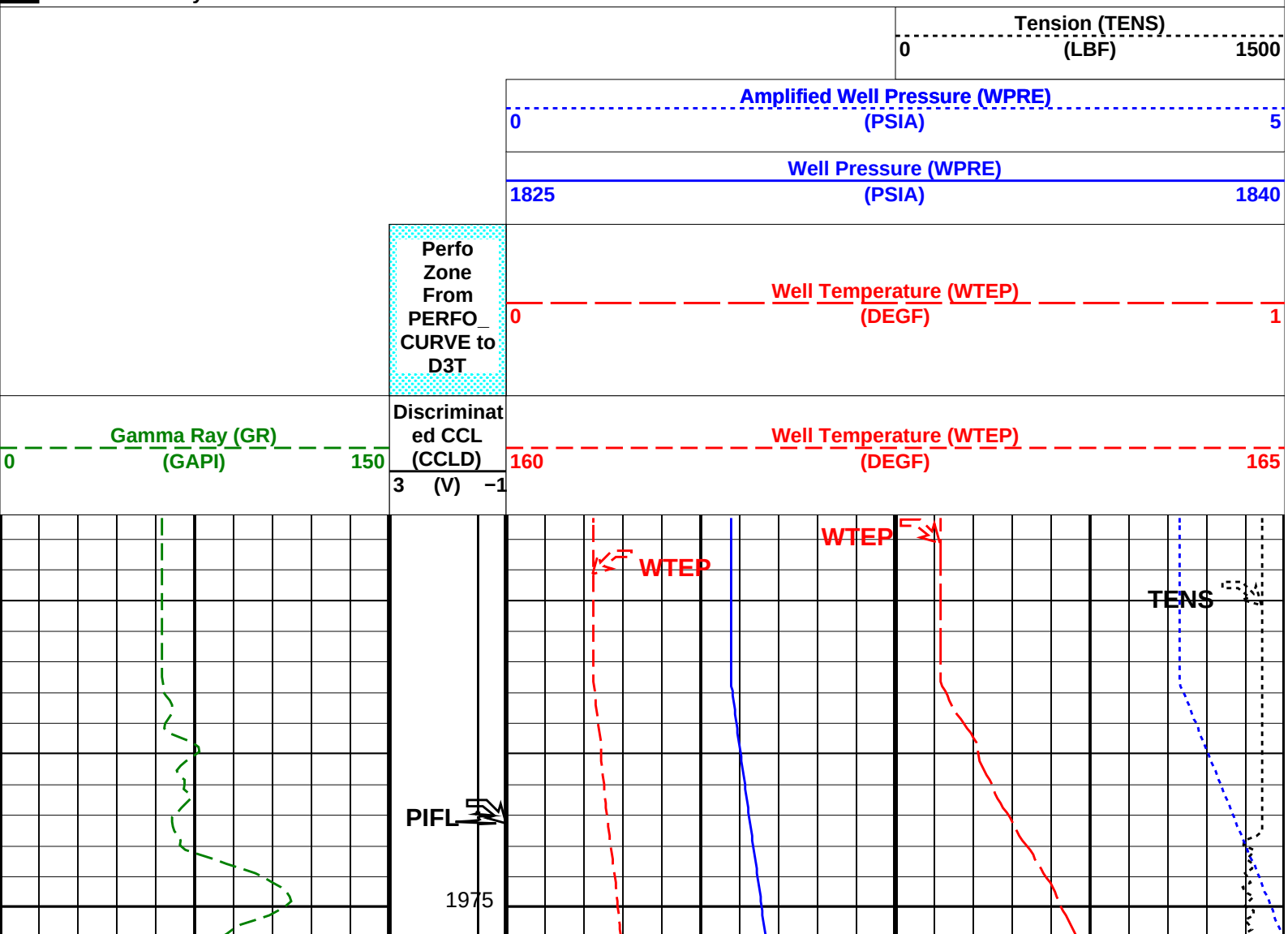
OP System Version: 14C0−302

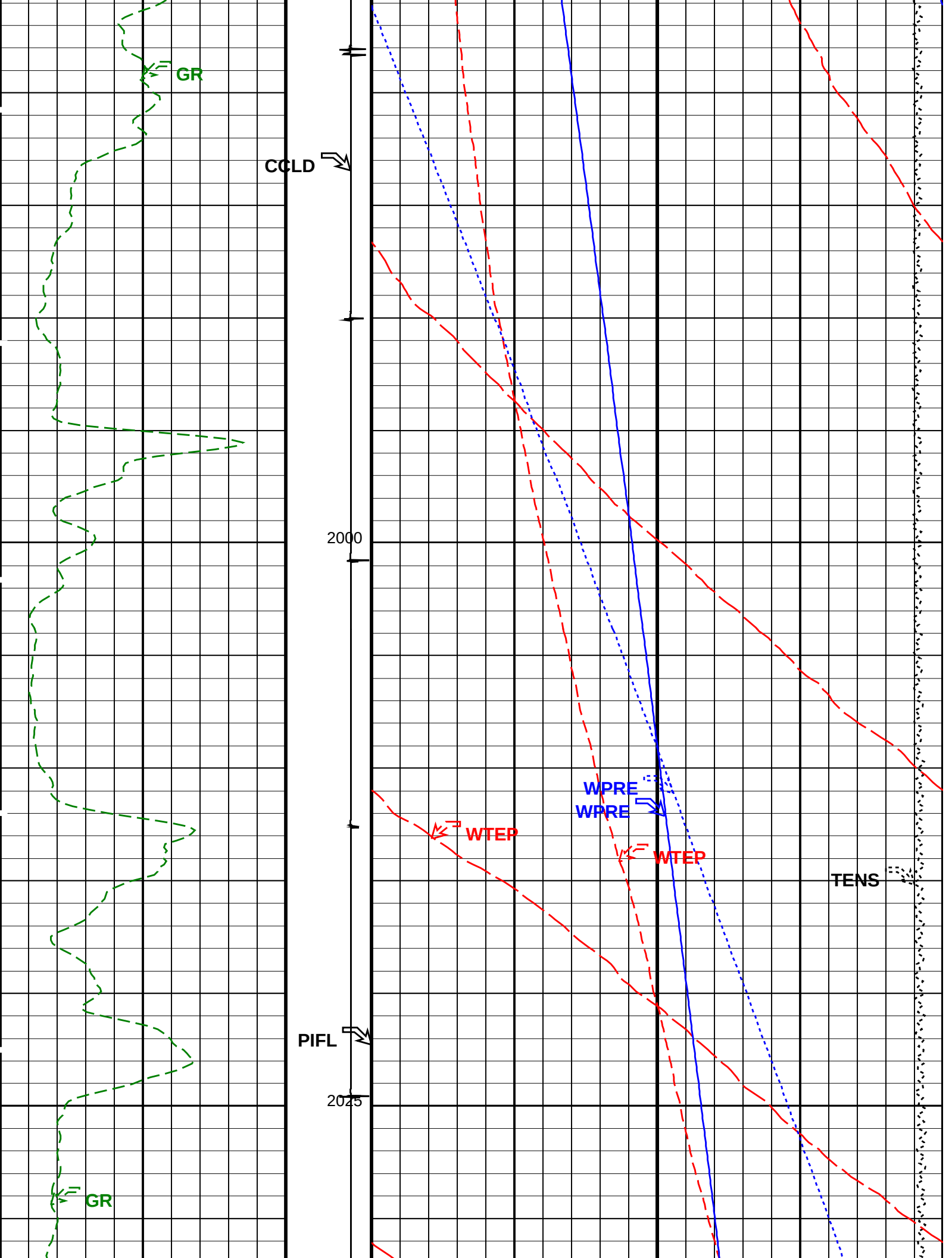
MCM

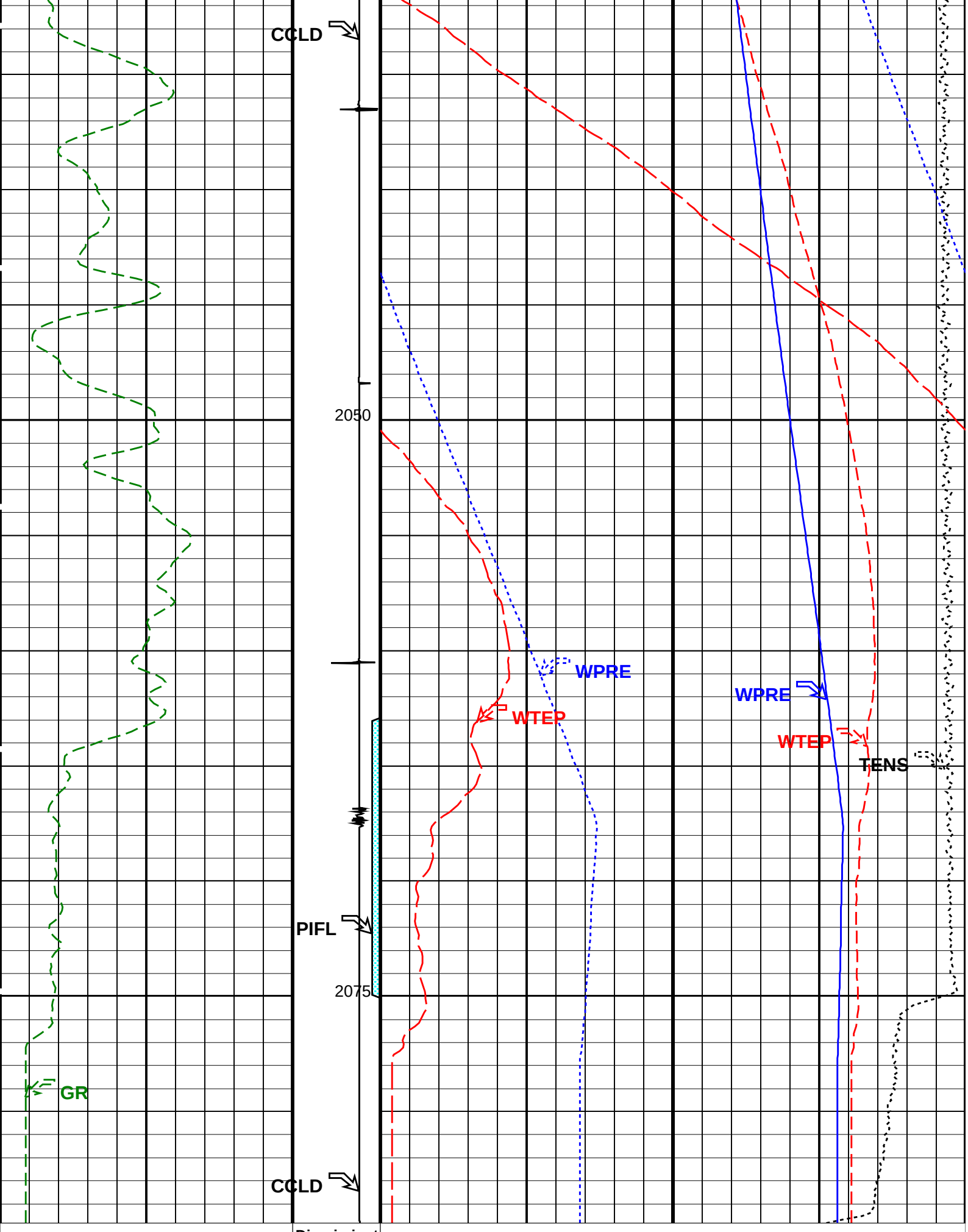
RST−C	14C0−302	PSPT−B	14C0−302

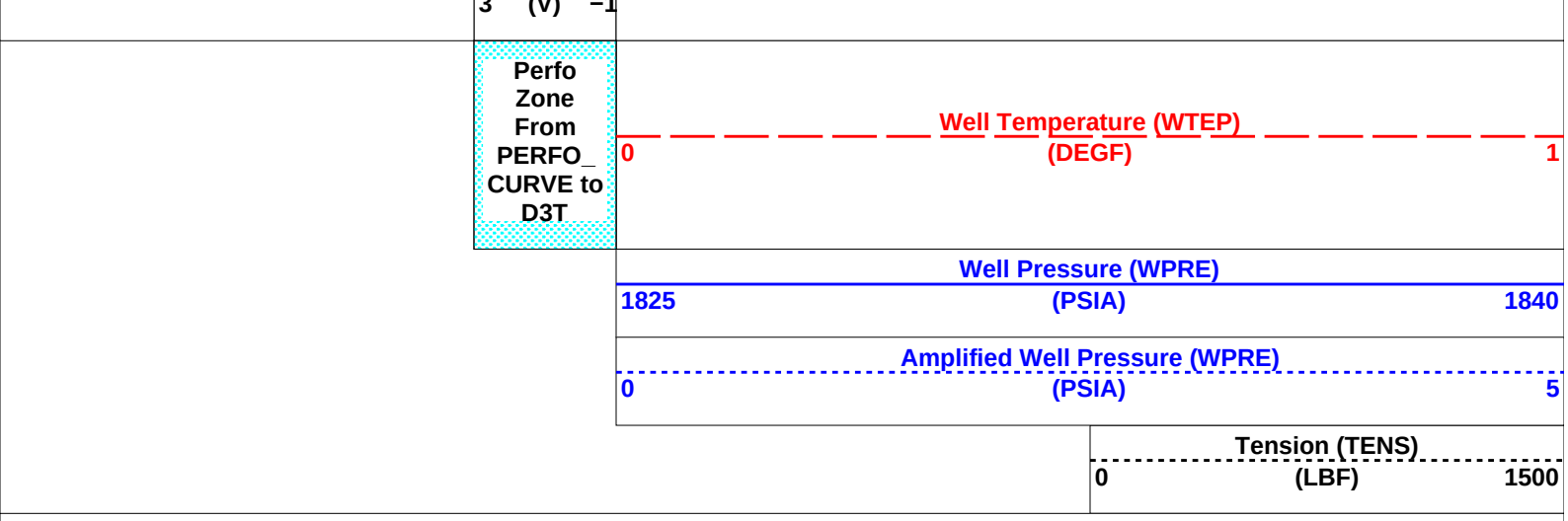
PIP SUMMARY

Time Mark Every 60 S




GR
CCLD
2000
WPRE
WPRE
WTEP
WTEP
TENS
PIFL
2025
GR


CCLD
2050
WPRE
WTEP
WPRE
WTEP
TENS
PIFL
2075
GR
CCLD
Gamma Ray (GR)
0
(GAPI)
150
Discriminated CCL (CCLD)
160
Well Temperature (WTEP)
(DEGF)
165



PIP SUMMARY

Time Mark Every 60 S

Format: PSP_1 Vertical Scale: 1:200 Graphics File Created: 06−Nov−2006 04:21

OP System Version: 14C0−302

MCM

RST−C	14C0−302	PSPT−B	14C0−302

Parameters

DLIS Name	Description	Value	
	System and Miscellaneous		
DO	Depth Offset for Playback	0.6	M
PP	Playback Processing	NORMAL	

Input DLIS Files

DEFAULT	RST_PSP_013LUP	FN:12	PRODUCER	05−Nov−2006 23:29	2084.2 M	1966.6 M

Output DLIS Files

DEFAULT	RST_PSP_024PUP	FN:23	PRODUCER	06−Nov−2006 04:21

Company: **Esso Australia Pty Ltd.**

Schlumberger

Well: **A−10**
Field: **Snapper**
Rig: **Prod 4**
Country: **Australia**

RST−C
Sigma
Survey