

Company: Esso Australia Pty Ltd.

Well: A-6

Field: Flounder

Rig : Prod4

Country: Australia

RST-C  
Sigma Survey  
14-Sep-2009

Prod4  
Flounder  
Gippsland  
A-6  
Esso Australia Pty Ltd.

LOCATION	
Gippsland	Elev.: K.B. 34.20 m
Basin	G.L. -94.00 m
Bass Strait	D.F. 34.20 m
Permanent Datum:	M.S.L. _____
Log Measured From:	D.F. _____
Drilling Measured From:	D.F. _____
State: Victoria	Max. Well Deviation 64.5 deg
	Longitude 148 06'15.1" E
	Latitude 038 18'45.24" S

Logging Date	13-Sep-2009		
Run Number	One		
Depth Driller	4146 m		
Schlumberger Depth	4084 m		
Bottom Log Interval	4084 m		
Top Log Interval	4030.1 m		
Casing Fluid Type	Production Fluids		
Salinity			
Density			
Fluid Level	870 m		
BIT/CASING/TUBING STRING			
Bit Size	12.250 in		
From	13 m		
To	4040 m		
Casing/Tubing Size	7.000 in		
Weight	26 lbn/ft		
Grade	N-80		
From	360 m		
To	4146 m		
Maximum Recorded Temperatures	111 degC		
Logger On Bottom	14-Sep-2009	14:15	
Unit Number	889	Prod4	
Recorded By	O Darby		
Witnessed By	B Robinson		

PVT DATA			
Oil Density	Run 1	Run 2	Run 3
Water Salinity			
Gas Gravity			
Bo			
Bw			
1/Bg			
Bubble Point Pressure			
Bubble Point Temperature			
Solution GOR			
Maximum Deviation	64.5 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			
Unit Number			
Recorded By			
Witnessed By			

[illegible]

## DEPTH SUMMARY LISTING

Depth System Equipment				Date Created: 13-SEP-2009 16:19:56	
Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-EB	Type:	PSDS/OSDS	Type:	2-32ZT
Serial Number:	6373	Serial Number:	325357	Serial Number:	207505
Calibration Date:	2-Dec-2008	Calibration Date:	20-7-2009	Length:	6421 M
Calibrator Serial Number:	30	Calibrator Serial Number:	854	Conveyance Method: Wireline Rig Type: Offshore Fixed	
Calibration Cable Type:	2-32ZT	Number of Calibration Points:	10		
Wheel Correction 1:	-1	Calibration RMS:	281		
Wheel Correction 2:	-2	Calibration Peak Error:	454		

## Depth Control Parameters

Log Sequence:	Subsequent Trip To the Well
Reference Log Name:	ExxonMobil Petrophysical Analysis
Reference Log Run Number:	
Reference Log Date:	8-sep-2008
Subsequent Trip Down Log Correction:	

### Depth Control Remarks

1. IDW used as primary depth control
2. Z-Chart used as back-up
- 3.
- 4.
5. All depths are drillers depths
- 6.

## 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 OF 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.

OTHER SERVICES1	OTHER SERVICES2
OS1: 4 1/2" MpbT Plug	OS1:
OS2: 2 1/8" Powerjet	OS2:
OS3: MWPT Perforation	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Log correlated to Flounder A-6 composite supplied with logging program.	
Maximum well deviation = 64.5 degrees at 750m MDKB.	
Objective:	
Make up RST-A GR/CCL toolstring, RIH and position tools @ HUD, Correlate on depth. Start minrun and allow tool to stabilise for 15mins. With well shut-in, complete two passes over the interval 4030.1m to 4086.5m MDKB in sigma mode @	

Crew : Andrew Hall & Chris Shiells.

RUN 1 SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:			RUN 2 SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:		
B69I-0000 17C0-154 870 m					
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT	DESCRIPTION

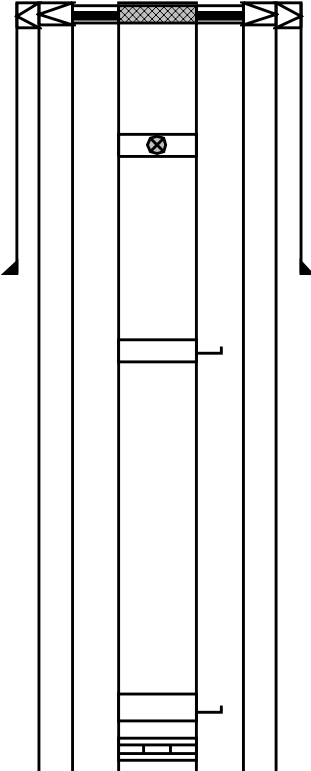
RUN 1		RUN 2	
SURFACE EQUIPMENT			
WITM-A 806 PSC_16MHZ 806			
DOWNHOLE EQUIPMENT			
AH-SWBS-B 789 AH-SWBS-B 789			13.30
AH-SWBS-B 788 AH-SWBS-B 788			12.61
AH-SWBS-B 787 AH-SWBS-B 787			11.93
AH-SWBS-B 786 AH-SWBS-B 786			11.24
AH-SWBS-B 785 AH-SWBS-B 785			10.55
MH-SWHS-A 759 MH-SWHS-A 759	Detail MT TelStatus CTEM		9.87
PSPT-A/B 827 PSC-A 806 PSPT-B 827 PSTC 806 PBMS-B 827 CQG_F_Mano 827 RTD_Thermometer 827 GR 827 CCL 827 PBMS 827	GR		9.54
			9.54
			8.41
			7.48
			7.37
			7.25
			7.02
RST-C 0 RSCH-A 471 RSC-C 471 RSS-A 463 RSXH-A 500 RSX-C 500	Well_Temp CQG Manom CCL PBMS PSTC		7.02

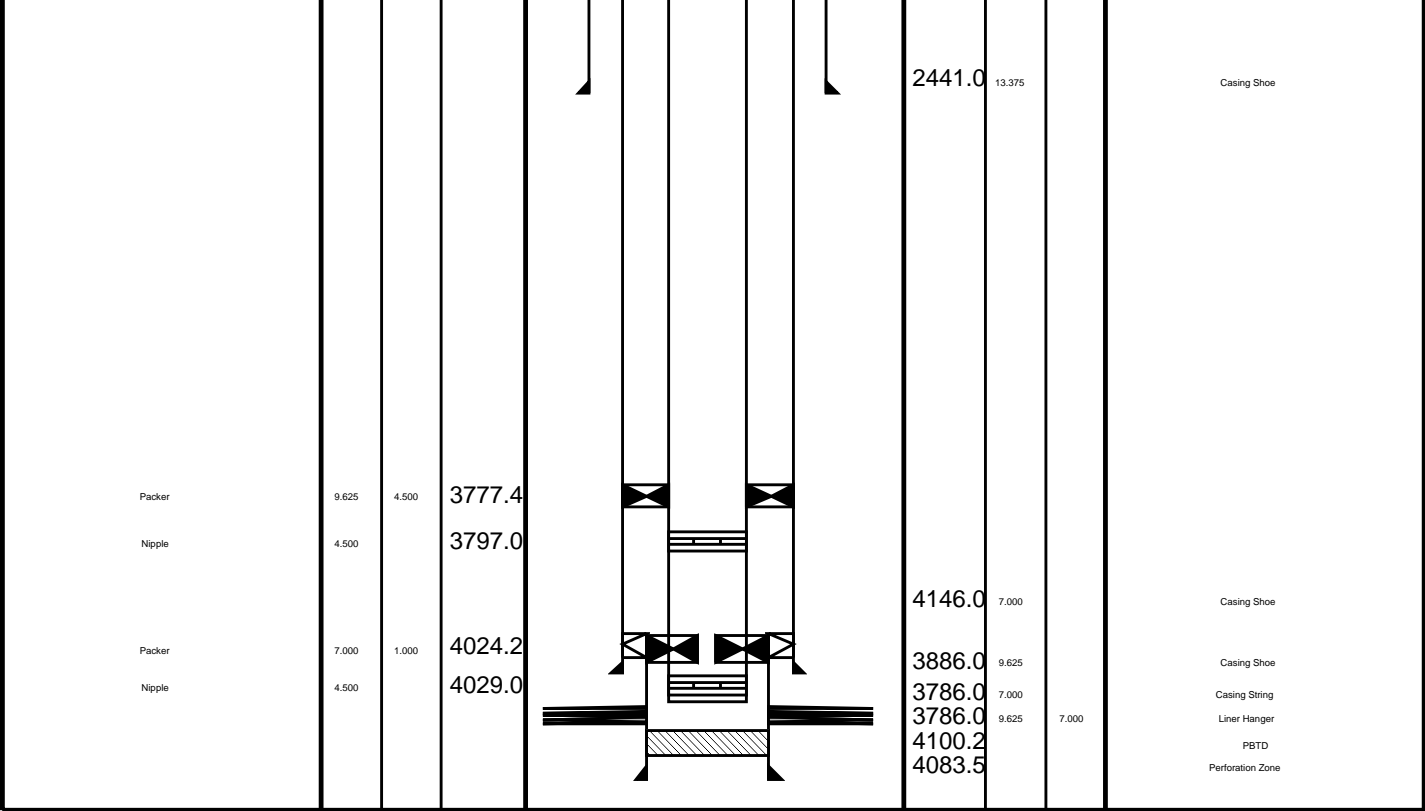
RSC-A Far  
RSC-A PNG  
RSC-A Nea  
RSX-A PNG

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

Production String	(m)		(m)	Well Schematic	(m)		(m)	Casing String
	OD	ID			MD	OD	ID	
Tubing	4.500		12.8		16.0	16.000	16.000	Casing String
Tubing Hanger	9.625	4.500	11.0		16.0	16.000	16.025	Liner Hanger
Shut-in Valve	4.500		457.0					
Gas Lift Mandrel	4.500		969.0		687.0	16.000		Casing Shoe
Gas Lift Mandrel	4.500		1874.3					
Nipple	4.500		1890.0					



## Job Events Summary

MAXIS Field Log

### Schlumberger Job Event Summary

	Time	Elapsed Time	Depth (M)	File
Simulated Log	14-Sep-2009 8:14	000:01		RST_PSP_014LUP
OP checked toolstring				
Log Pass (up)	14-Sep-2009 9:15	000:08	4086.1 - 4012.8	RST_PSP_016LUP
RST Correlation pass				
Log Pass (up)	14-Sep-2009 9:46	000:15	4087.8 - 4015.9	RST_PSP_018LUP
RST Sigma pass # 1				
Log Pass (up)	14-Sep-2009 10:08	000:15	4088.0 - 4015.0	RST_PSP_020LUP
RST Sigma pass # 2				

RST-C Sigma Survey  
Repeat selection

MAXIS Field Log

Company: Esso Australia Pty Ltd.

Well: A-6

## Input DLIS Files

DEFAULT	RST_PSP_032PUP	FN:30	PRODUCER	14-Sep-2009 15:38	4088.0 M	4024.4 M
DEFAULT	RST_PSP_031PUP	FN:29	PRODUCER	14-Sep-2009 15:36	4087.8 M	4024.4 M

## Output DLIS Files

DEFAULT	RST_PSP_033PUP	FN:31	PRODUCER	14-Sep-2009 15:39	4088.0 M	4024.4 M
---------	----------------	-------	----------	-------------------	----------	----------

## OP System Version: 17C0-154

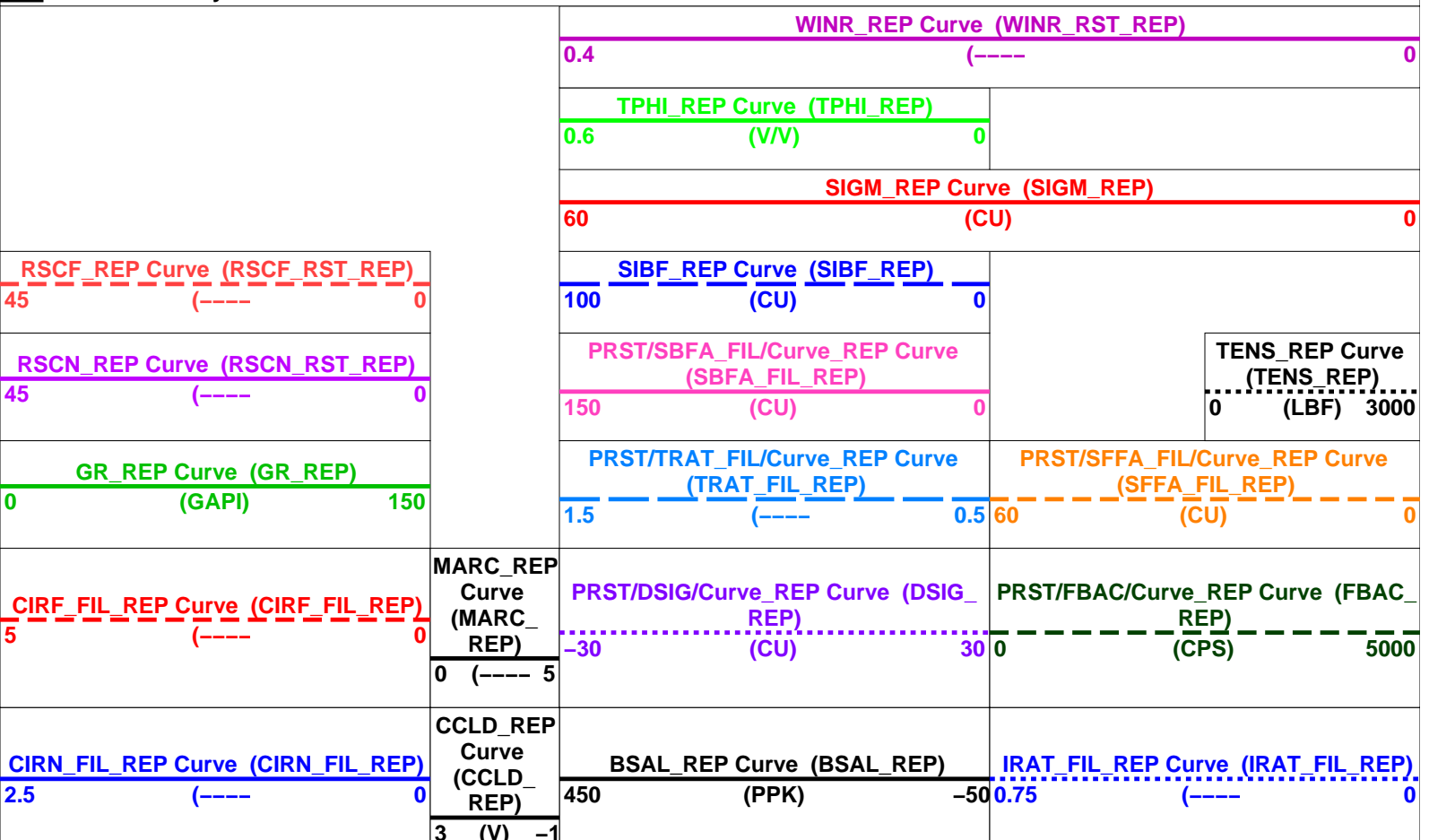
RST-C	17C0-154	PSPT-A/B	17C0-154
-------	----------	----------	----------

## Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
BS	8.500 IN	12.250 IN	4088.0 15:39:47
	12.250 IN	8.500 IN	4040.0 15:39:51

## PIP SUMMARY

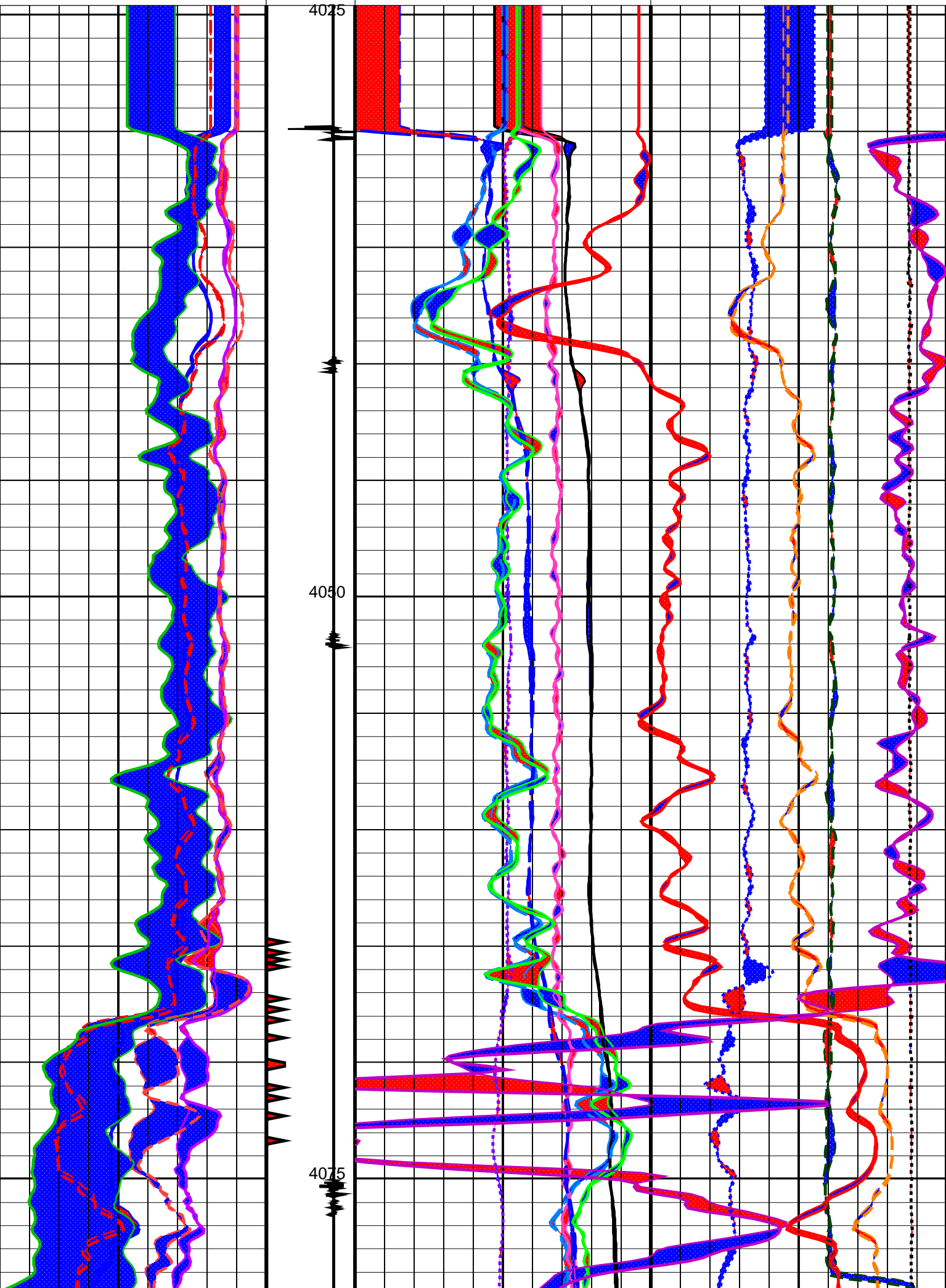
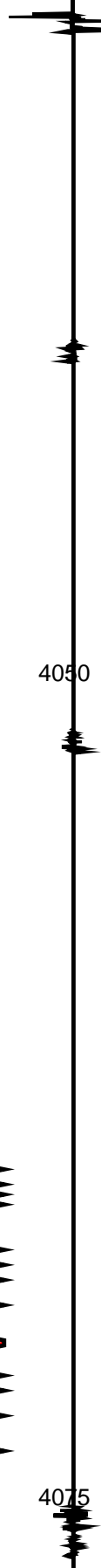
Time Mark Every 60 S

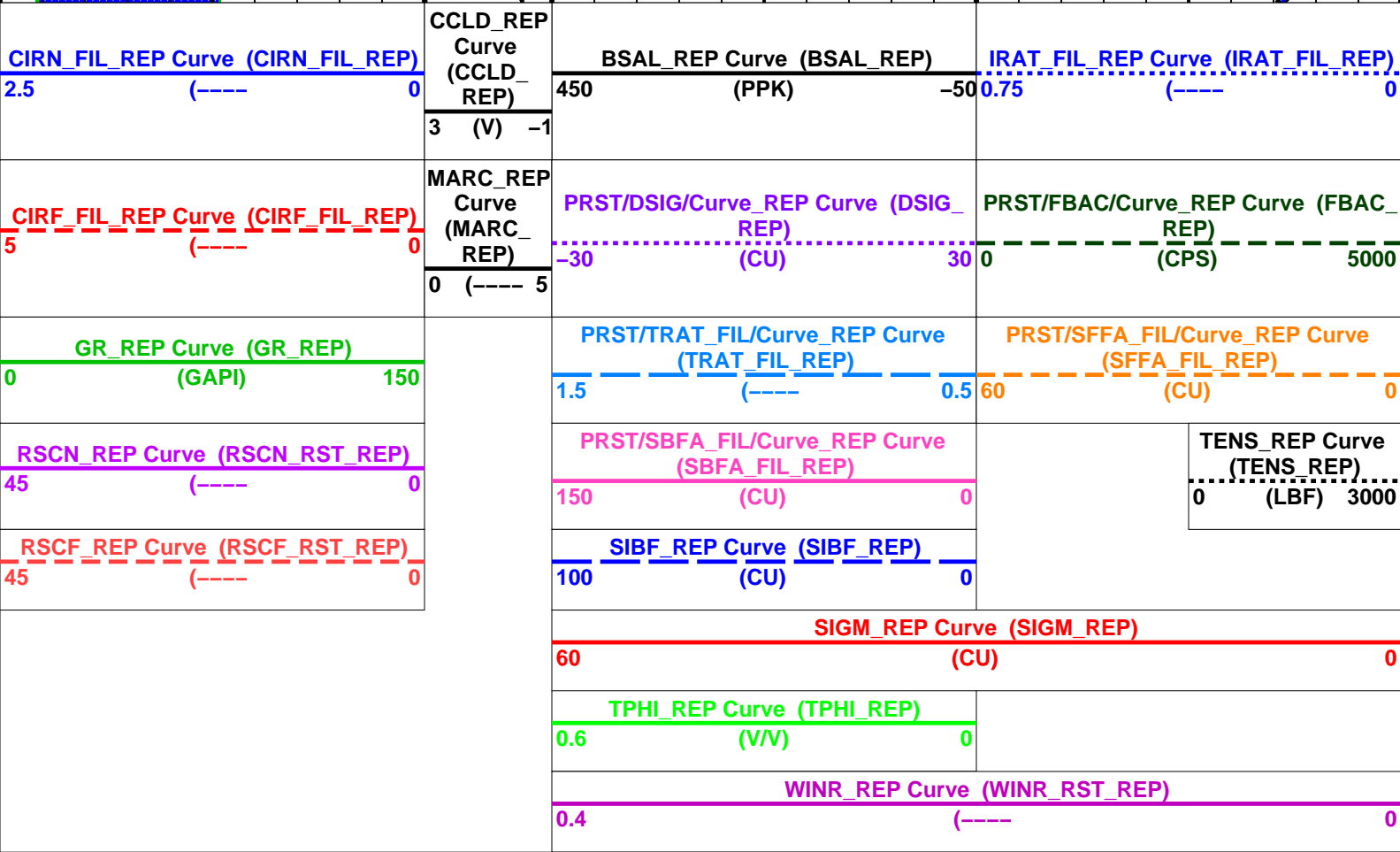
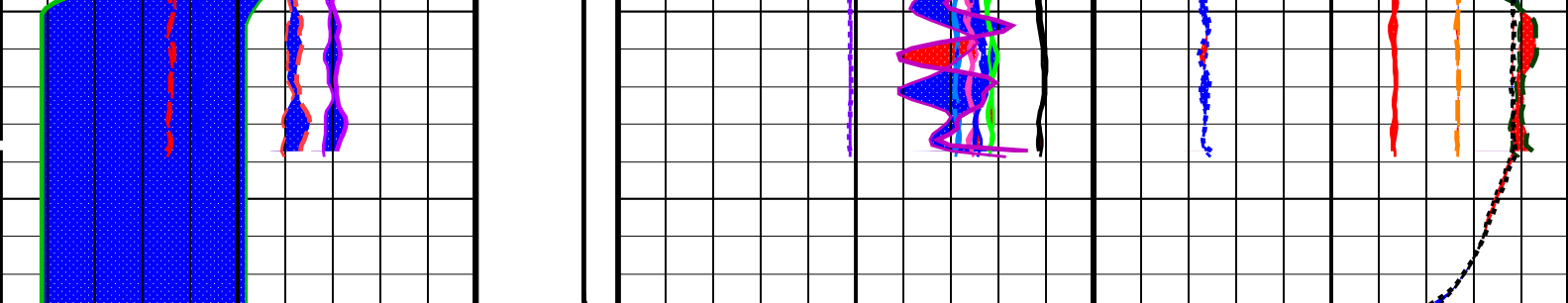


4025

4050

4075





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	12.250 IN
BSAL	Borehole Salinity	-50000.00 PPM
CSIZ	Current Casing Size	7.000 IN
CWEI	Casing Weight	26.00 LB/F
DO	Depth Offset for Playback	0.0 M
DORL	Depth Offset for Repeat Analysis	0.0 M
PP	Playback Processing	NORMAL



OP System Version: 17C0-154

RST-C	17C0-154	PSPT-A/B	17C0-154
Input DLIS Files			
DEFAULT	RST_PSP_032PUP	FN:30 PRODUCER	14-Sep-2009 15:38 4088.0 M 4024.4 M
DEFAULT	RST_PSP_031PUP	FN:29 PRODUCER	14-Sep-2009 15:36 4087.8 M 4024.4 M
Output DLIS Files			
DEFAULT	RST_PSP_033PUP	FN:31 PRODUCER	14-Sep-2009 15:39



RST-C Sigma Pass # 2

4030m – 4084m MDKB

MAXIS Field Log

Company: Esso Australia Pty Ltd.

Well: A-6

Input DLIS Files			
DEFAULT	RST_PSP_022PUP	FN:21 PRODUCER	14-Sep-2009 10:28 4088.0 M 4024.4 M
Output DLIS Files			
DEFAULT	RST_PSP_032PUP	FN:30 PRODUCER	14-Sep-2009 15:38 4088.0 M 4024.4 M

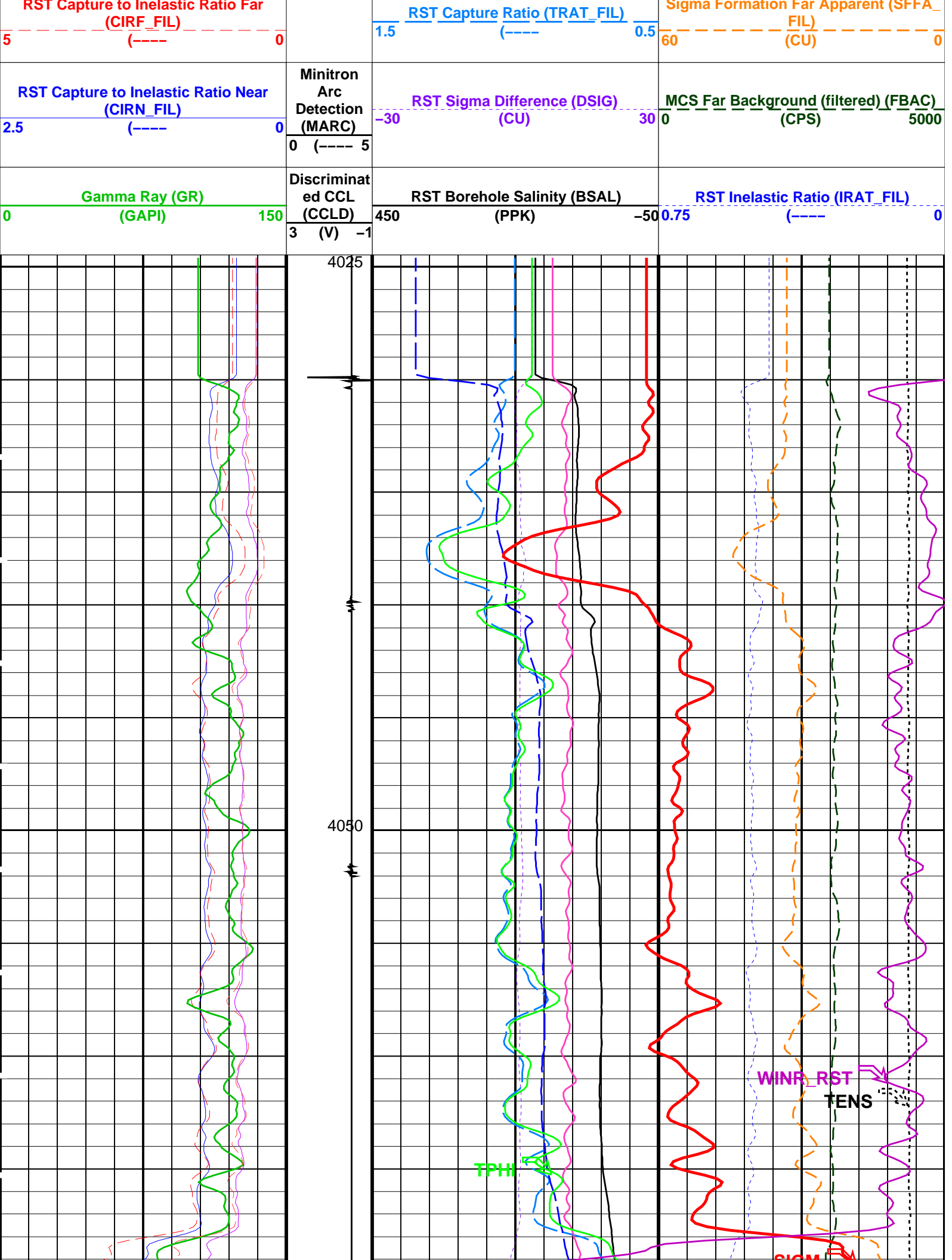
OP System Version: 17C0-154

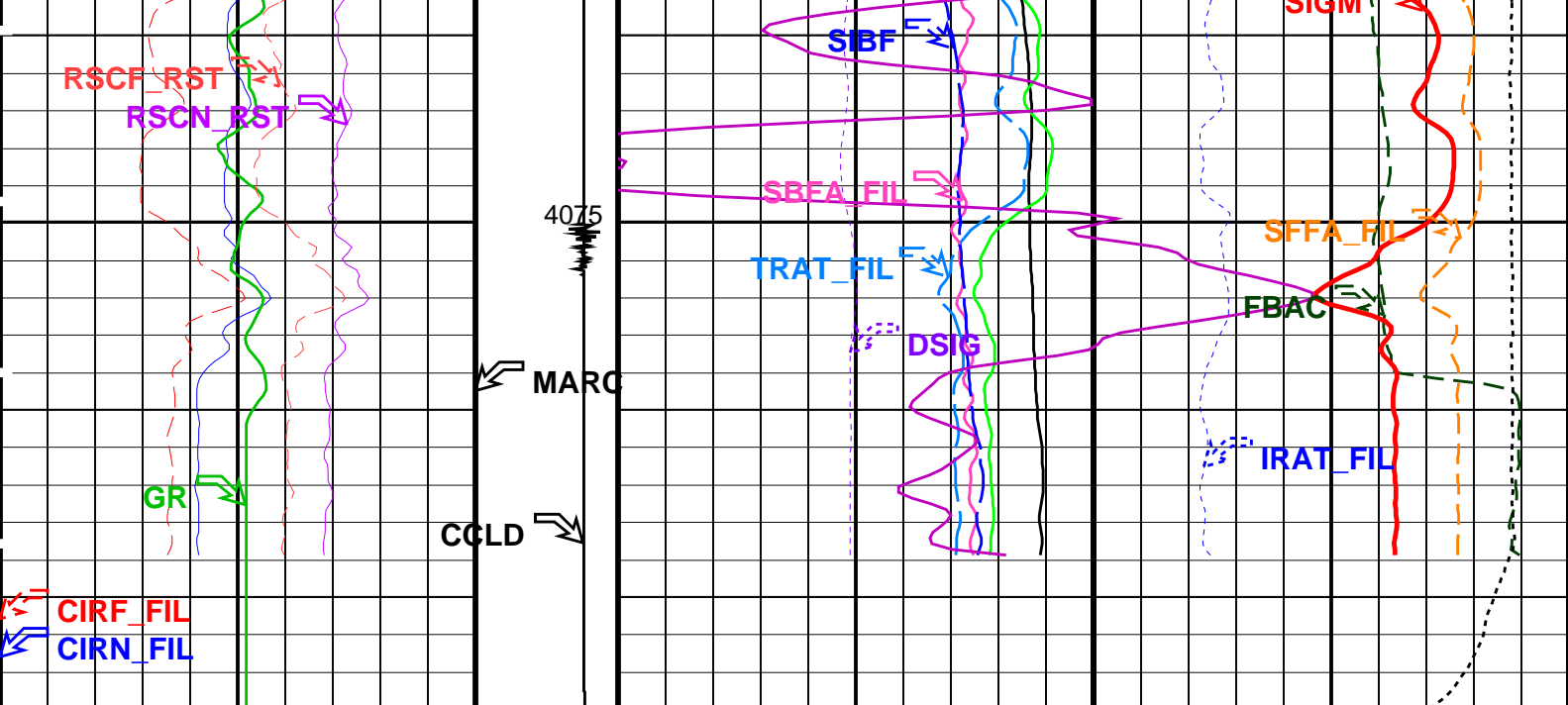
RST-C	17C0-154	PSPT-A/B	17C0-154
Changed Parameter Summary			
DLIS Name	New Value	Previous Value	Depth & Time
BS	8.500 IN 12.250 IN	12.250 IN 8.500 IN	4088.0 15:38:13 4040.0 15:38:18

PIP SUMMARY

 Time Mark Every 60 S

<div>RST Far Effective Capture CR (RSCF_RST)</div> <div>45-----0</div> <div>RST Near Effective Capture CR (RSCN_RST)</div> <div>45-----0</div>	RST Sigma (SIGM)		60(CU)0
	RST Weighted Inelastic Ratio (WINR_RST)		0.4(----)0
	RST Porosity (TPHI)		0.6(V/V)0
	RST Sigma Borehole Fluid (SIBF)		100(CU)0
	Sigma Borehole Far Apparent (SBFA_FIL)		150(CU)0
	Tension (TENS)		0(LBF) 3000





Gamma Ray (GR) (GAPI)	Discriminated CCL (CCLD) (V)	RST Borehole Salinity (BSAL) (PPK)		RST Inelastic Ratio (IRAT_FIL) (----	
		450	-50	0.75	0
RST Capture to Inelastic Ratio Near (CIRN_FIL) (----	3	RST Sigma Difference (DSIG) (CU)		MCS Far Background (filtered) (FBAC) (CPS)	
2.5	-1	-30	30	0	5000
RST Capture to Inelastic Ratio Far (CIRF_FIL) (----	0	RST Capture Ratio (TRAT_FIL) (----		Sigma Formation Far Apparent (SFFA_FIL) (CU)	
5	0	1.5	0.5	60	0
RST Near Effective Capture CR (RSCN_RST) (----	0	Sigma Borehole Far Apparent (SBFA_FIL) (CU)		Tension (TENS) (LBF)	
45	0	150	0		
RST Far Effective Capture CR (RSCF_RST) (----	0	RST Sigma Borehole Fluid (SIBF) (CU)		RST Weighted Inelastic Ratio (WINR_RST) (----	
45	0	100	0		
RST Porosity (TPHI) (V/V)		RST Sigma (SIGM) (CU)		0	
		0.6	0		
RST Weighted Inelastic Ratio (WINR_RST) (----		RST Sigma (SIGM) (CU)		0	
		0.4	0		
RST Sigma (SIGM) (CU)		RST Sigma (SIGM) (CU)		0	
		60	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	0.38


NORM_SIGM_RST	RST Normalized Sigma	30	CU
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	12.250	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	7.000	IN
CWEI	Casing Weight	26.00	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: 14-Sep-2009 15:38

OP System Version: 17C0-154						
RST-C	17C0-154	PSPT-A/B		17C0-154		
Input DLIS Files						
DEFAULT	RST_PSP_022PUP	FN:21	PRODUCER	14-Sep-2009 10:28	4088.0 M	4024.4 M
Output DLIS Files						
DEFAULT	RST_PSP_032PUP	FN:30	PRODUCER	14-Sep-2009 15:38		



RST-C Sigma Pass # 1

4030m – 4084m MDKB

MAXIS Field Log

Company: Esso Australia Pty Ltd.

Well: A-6

Input DLIS Files					
DEFAULT	RST_PSP_021PUP	FN:20	PRODUCER	14-Sep-2009 10:27	4087.8 M 4024.4 M
Output DLIS Files					
DEFAULT	RST_PSP_031PUP	FN:29	PRODUCER	14-Sep-2009 15:36	4087.8 M 4024.4 M

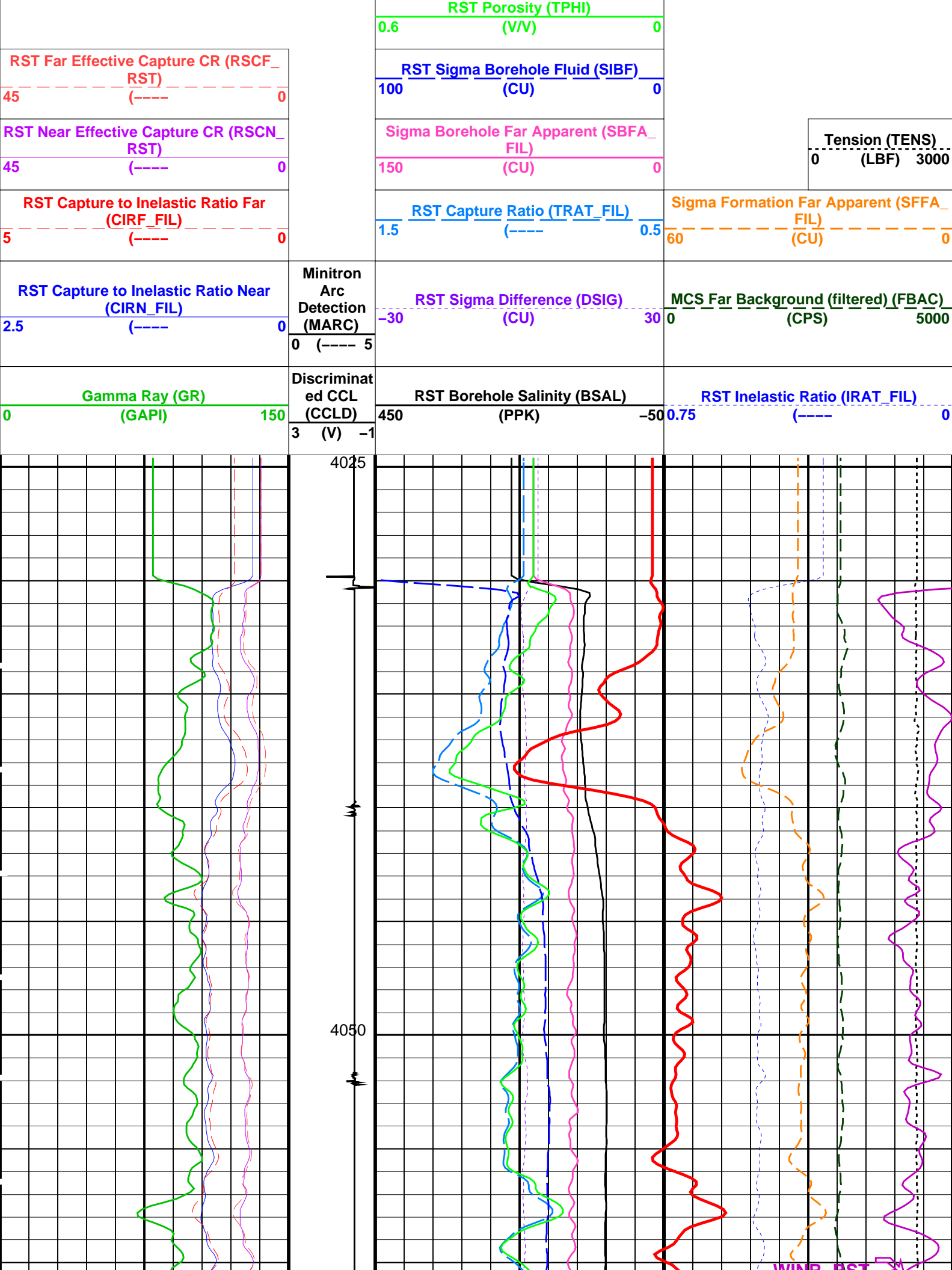
OP System Version: 17C0-154					
RST-C	17C0-154	PSPT-A/B	17C0-154		

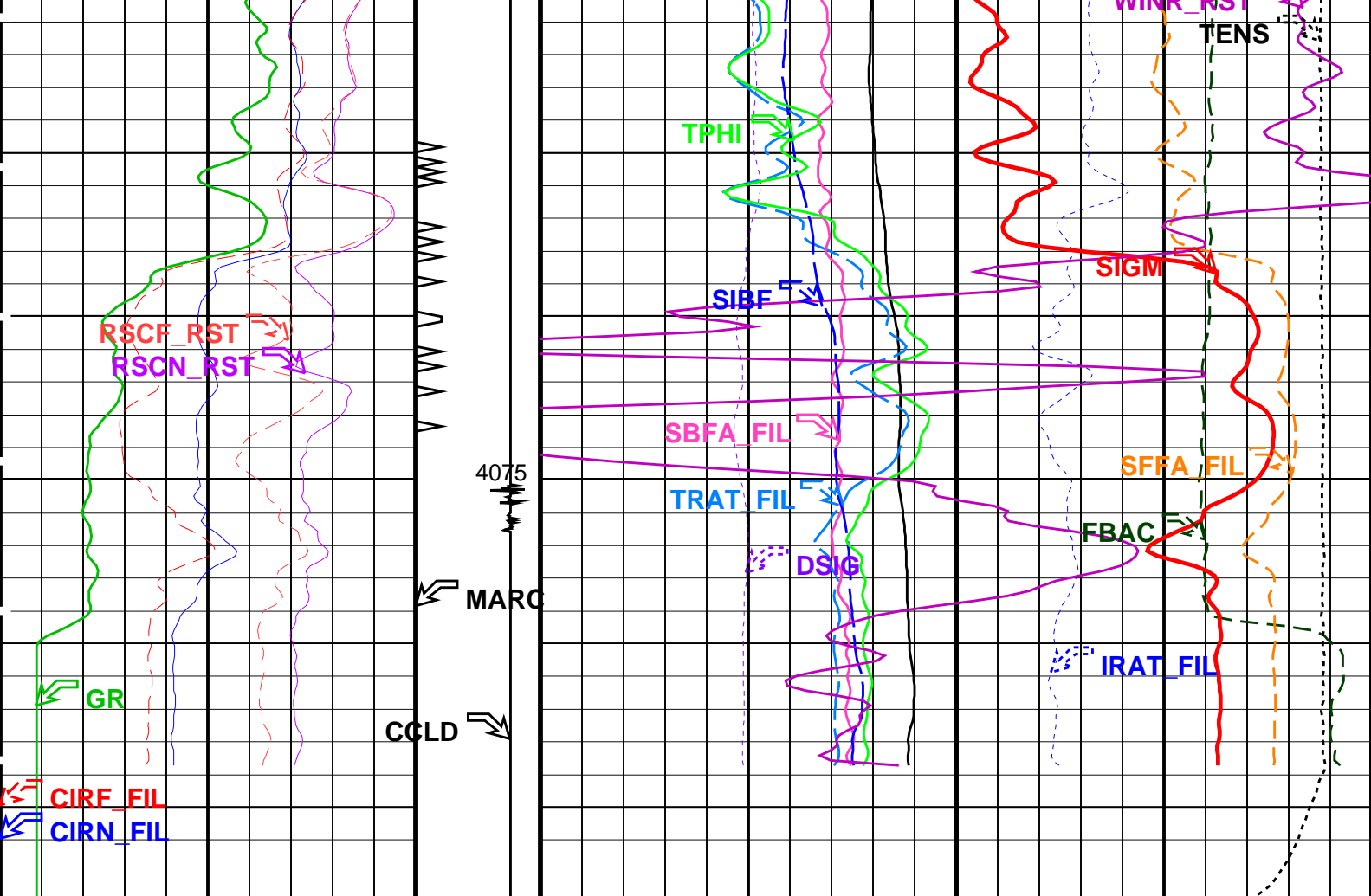
Changed Parameter Summary					
DLIS Name	New Value	Previous Value	Depth & Time		
BS	8.500 IN	12.250 IN	4087.8 15:36:07		
	12.250 IN	8.500 IN	4040.0 15:36:12		

PIP SUMMARY

Time Mark Every 60 S

RST Sigma (SIGM)		
60	(CU)	0
RST Weighted Inelastic Ratio (WINR_RST)		
0.4	(----	0





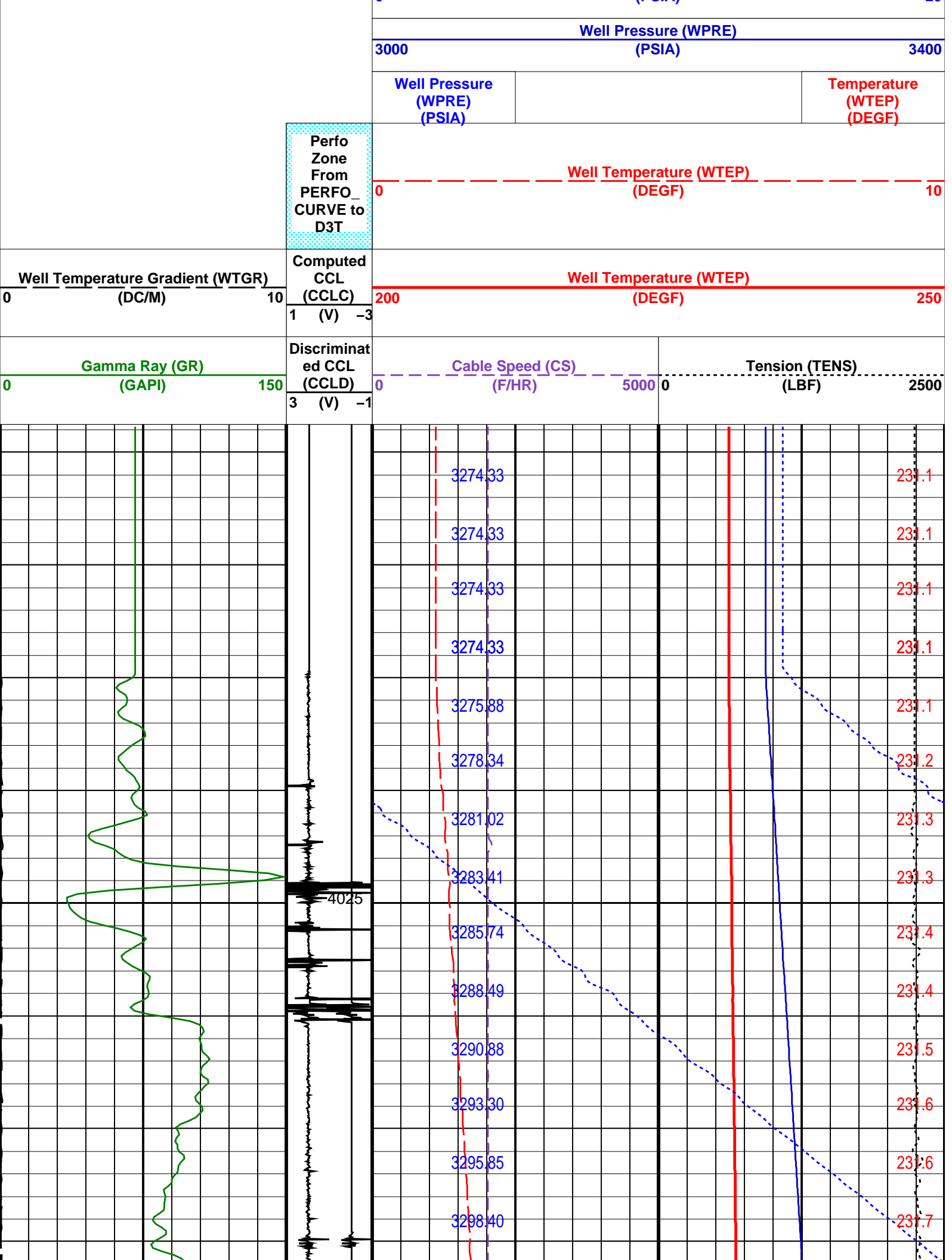
<div>Gamma Ray (GR) (GAPI)</div> <div>0150</div>	<div>Discriminat ed CCL (CCLD)</div> <div>3 (V) -1</div>	<div>RST Borehole Salinity (BSAL)</div> <div>450 (PPK) -50</div>	<div>RST Inelastic Ratio (IRAT_FIL)</div> <div>0.75 (----) 0</div>
<div>RST Capture to Inelastic Ratio Near (CIRN_FIL)</div> <div>2.5 (----) 0</div>	<div>Minitron Arc Detection (MARC)</div> <div>0 (----) 5</div>	<div>RST Sigma Difference (DSIG)</div> <div>-30 (CU) 30</div>	<div>MCS Far Background (filtered) (FBAC)</div> <div>0 (CPS) 5000</div>
<div>RST Capture to Inelastic Ratio Far (CIRF_FIL)</div> <div>5 (----) 0</div>		<div>RST Capture Ratio (TRAT_FIL)</div> <div>1.5 (----) 0.5</div>	<div>Sigma Formation Far Apparent (SFFA_FIL)</div> <div>60 (CU) 0</div>
<div>RST Near Effective Capture CR (RSCN_RST)</div> <div>45 (----) 0</div>		<div>Sigma Borehole Far Apparent (SBFA_FIL)</div> <div>150 (CU) 0</div>	<div>Tension (TENS)</div> <div>0 (LBF) 3000</div>
<div>RST Far Effective Capture CR (RSCF_RST)</div> <div>45 (----) 0</div>		<div>RST Sigma Borehole Fluid (SIBF)</div> <div>100 (CU) 0</div>	
		<div>RST Porosity (TPHI)</div> <div>0.6 (V/V) 0</div>	
		<div>RST Weighted Inelastic Ratio (WINR_RST)</div> <div>0.4 (----) 0</div>	
		<div>RST Sigma (SIGM)</div> <div>60 (CU) 0</div>	

PIP SUMMARY

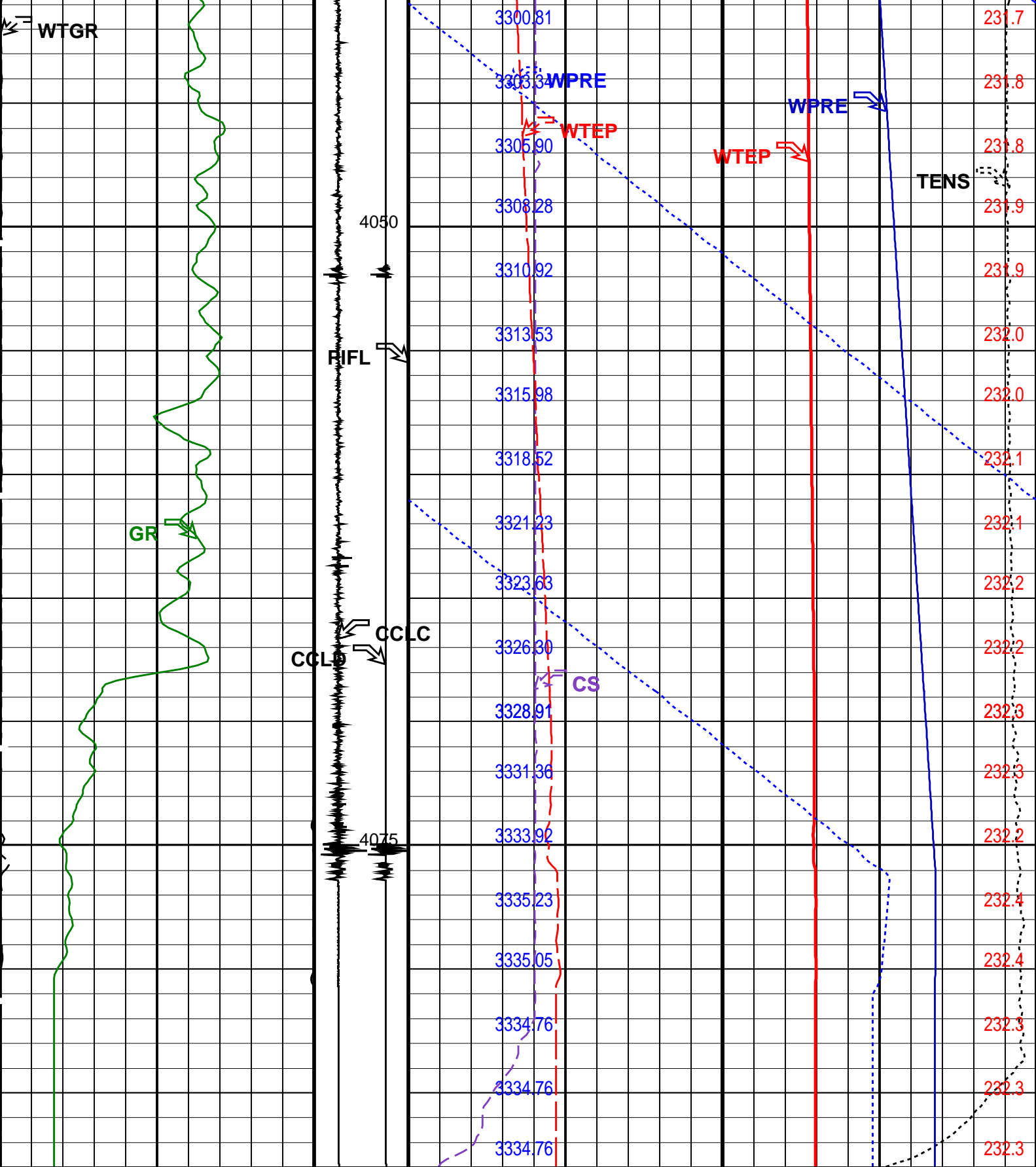
Time Mark Every 60 S

Parameters

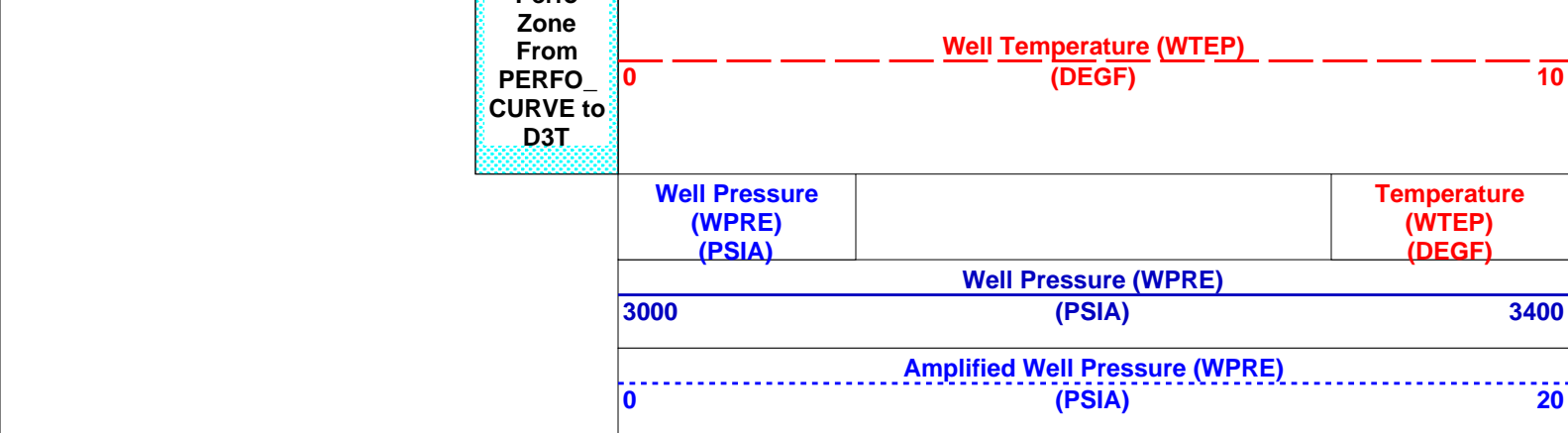
DLIS Name		Description	Value	
RST-C: Reservoir Saturation Pro Tool C				
AIRB		RST Air Borehole	No	
BHS		Borehole Status	CASED	
BSALOPT		RST Borehole Salinity Option	Unknown	
BSFL		RST Borehole Salinity Filter Length	51	
DFPC		RST Depth Filter Processing Constant	One	
DFPC_TDTL		RST Depth Filter Processing 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	
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	12.250	IN
BSAL		Borehole Salinity	-50000.00	PPM
CSIZ		Current Casing Size	7.000	IN
CWEI		Casing Weight	26.00	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: 14-Sep-2009 15:36	
OP System Version: 17C0-154				
RST-C	17C0-154	PSPT-A/B	17C0-154	
Input DLIS Files				
DEFAULT	RST_PSP_021PUP	FN:20	PRODUCER	14-Sep-2009 10:27 4087.8 M 4024.4 M
Output DLIS Files				
DEFAULT	RST_PSP_031PUP	FN:29	PRODUCER	14-Sep-2009 15:36
<div><div><div>Schlumberger</div><div>RST-C Sigma Survey Correlation Pass</div></div><div>MAXIS Field Log</div></div>				
Company: Esso Australia Pty Ltd.		Well: A-6		
Input DLIS Files				
DEFAULT	RST_PSP_017PUP	FN:16	PRODUCER	14-Sep-2009 09:24 4088.1 M 4009.3 M
Output DLIS Files				
DEFAULT	RST_PSP_019PUP	FN:18	PRODUCER	14-Sep-2009 10:05 4088.0 M 4003.7 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 (WPRES) 0 (PSIA) 20		







Gamma Ray (GR) (GAPI)		0	150
Discriminat ed CCL (CCLD)		3 (V) -1	
Well Temperature Gradient (WTGR) (DC/M)		0	10
Computed CCL (CCLC)		1 (V) -3	
Well Temperature (WTEP) (DEGF)		200	250
Perfo			



PIP SUMMARY

Time Mark Every 60 S

Format: PSP\_1    Vertical Scale: 1:200    Graphics File Created: 14-Sep-2009 10:05

OP System Version: 17C0-154


RST-C

17C0-154

PSPT-A/B

17C0-154

Parameters						
DLIS Name		Description			Value	
System and Miscellaneous						
DO		Depth Offset for Playback			-0.2	M
PP		Playback Processing			NORMAL	
Input DLIS Files						
DEFAULT	RST_PSP_017PUP	FN:16	PRODUCER	14-Sep-2009 09:24	4088.1 M	4009.3 M
Output DLIS Files						
DEFAULT	RST_PSP_019PUP	FN:18	PRODUCER	14-Sep-2009 10:05		



PBMS – GR Calibration

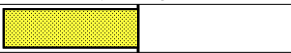
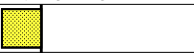


MAXIS Field Log

Calibration and Check Summary							
Measurement	Nominal	Master	Before	After	Change	Limit	Units
Production Services Logging Platform Wellsite Calibration – Detector Calibration							
Before: 13-Sep-2009 10:04    After: 13-Sep-2009 10:08							
Gamma-Ray Jig-Bkg	110.0	N/A	106.2	108.7	2.486	N/A	GAPI

Production Logging Platform (CQG-F)  
PSP Basic Measurement Sonde (CQG\_F)  
PSP Basic measurement module  
PSP CCL  
PSP GR  
PSP RTD Well Temperature  
PSP Crystal Quartz Gauge Type F  
PSP Telemetry and bus master cartridge

PSP1 - B 827 827  
PBMS - B 827 827  
CCL - 827 827  
GR - 827 827  
RTD\_ - 827 827  
CQG\_ - 827 827  
PSTC - 806 806

Auxiliary Equipment:

Production Services Logging Platform Wellsite Calibration							
Detector Calibration							
Phase	Gamma-Ray Background	GAPI	Value	Phase	Gamma-Ray Jig-Bkg	GAPI	Value
Before			4.327	Before			106.2
After			4.023	After			108.7
0 30.00 120.0 (Minimum) (Nominal) (Maximum)			95.00 110.0 125.0 (Minimum) (Nominal) (Maximum)				
Before: 13-Sep-2009 10:04				After: 13-Sep-2009 10:08			

Company: **Esso Australia Pty Ltd.**

**Schlumberger**

Well: **A-6**  
Field: **Flounder**  
Rig : **Prod4**  
Country: **Australia**

RST-C  
Sigma Survey  
14-Sep-2009