

Company: Esso Australia Ltd.

Well: A – 18A

Field: Hallibut

STATE : Victoria

Country: Australia

Halibut A–18a RST–A Sigma Mode		LOCATION		
		Gippsland	Elev.: K.B.	
		Basin	G.L. –73 m	
		Bass Strait	D.F. 29.32 m	
STATE :	Victoria	Permanent Datum:	M.S.L.	Elev.: 0 m
Field:	Halibut	Log Measured From:	D.F.	29.3 m above Perm. Datum
Location:	Gippsland	Drilling Measured From:	D.F.	
Well:	A – 18A			
Company:	Esso Australia Ltd.			

LOGGING DATA	RIG: Crane / Prod 4	Max. Well Deviation 45 deg	Longitude 148 19' 8.826" E	Latitude 038 24' 20.4580" S
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Logging Date	23-Apr-2000			
Run Number	One			
Depth Driller	2788 m			
Schlumberger Depth	2792 m			
Bottom Log Interval	2792 m			
Top Log Interval	2750 m			
Casing Fluid Type	Production Fluid			
Salinity				
Density				
Fluid Level	0 m			
BIT/CASING/TUBING STRING				
Bit Size	6.000 in			
From	1796.5 m			
To	2946 m			
Casing/Tubing Size	5.000 in			
Weight	15 lbm/ft			
Grade	VAM Top L80			
From	1645.82 m			
To	2896 m			
Maximum Recorded Temperatures	108 degC			
Logger On Bottom	24-APR-2000	Time	1:30	
Unit Number	1	Location		
Recorded By	G Wright.			
Witnessed By	B Dingwall			

PVT DATA					Run 1	Run 2	R
Oil Density							
Water Salinity							
Gas Gravity							
Bo							
Bw							
1/Bg							
Bubble Point Pressure							
Bubble Point Temperature							
Solution GOR							
Maximum Deviation					45 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							

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 OS1:     None OS2: OS3: OS4: OS5:			OTHER SERVICES2 OS1: OS2: OS3: OS4: OS5:		
REMARKS: RUN NUMBER 1			REMARKS: RUN NUMBER 2		
Log correlated to Esso Solar log of 29-Mar-2000.			This log was revisited in 2006 and played back with correct		
Maximum well deviation = 45 degree's at 1800m MDKB.			parameters. Initial log acquired had Bit Size = 7" as opposed		
Schlumberger TD = 2792 m MDKB.			to the correct size (Bit Size = 6").		
First logging pass was with the well shut-in, 800 ft/hr,					
2792m MDKB to 2750m MDKB.			Due to the nature of the situation, it is not possible to		
Well was shut-in 24 hrs prior to logging.			display the original logging "Input" files in the header of		
SBHP = 3170 psia    SBHT = 226 degF			the logs. Below is a table depicting the input files used		
FBHP = 2899 psia    FBHT = 227.5 degF			to generate the playback files displayed in this log.		
Passes 2 thru 4 were with the well flowing at normal					
production rates.			PASS - STATUS - INPUT FILE '00 - PLAYBACK FILE '0		
Well rate's = Total fluid's 316 kl/d.			-----		
Water cut = 50%			Sigma1 - Shut In -    RSTA .008 -    RST_PSP_005		
			Sigma2 - Flowing -    RSTA .011 -    RST_PSP_007		
			Sigma3 - Flowing -    RSTA .012 -    RST_PSP_009		
			Sigma4 - Flowing -    RSTA .014 -    RST_PSP_010		
Crew : John Light & Ben Taylor.					
			All passes were logged at 800 ft/hr.		
RUN 1			RUN 2		
SERVICE ORDER #:			SERVICE ORDER #:		
PROGRAM VERSION:			PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
Prod4 200505			14C0-302		
14C0-302			0 m		
0 m			0 m		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

## EQUIPMENT DESCRIPTION

RUN 1

RUN 2

SURFACE EQUIPMENT	
DOWNHOLE EQUIPMENT	
MH-22 MH-22 1	13.50
EQF-43 EQF-43	13.09

EQF-43  
EQF-43  
11.26

PSPT-A  
PSPT 827  
PBMS-B 827  
9.43

RST-A  
RSCH-A 108  
RSC-A 45  
RSS-A 106  
RSXH-A 63  
RSX-CA 59  
7.02

RSSA Far  
RSSA PNG  
RSSA Near  
4.24  
4.09

Tension  
TOOL ZERO  
0.00

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



Pass # 4 Flowing 800 ft/hr

MAXIS Field Log

Company: Esso Australia Ltd.

Well: A – 18

Input DLIS Files

17-Feb-2006 15:55

Output DLIS Files

DEFAULT	RST_PSP_010PUP	FN:17	PRODUCER	17-Feb-2006 16:36	2792.0 M	2733.0 M
CUSTOMER	RST_PSP_010PUC	FN:18	CUSTOMER	17-Feb-2006 16:36	2792.0 M	2733.0 M

OP System Version: 13C0-300

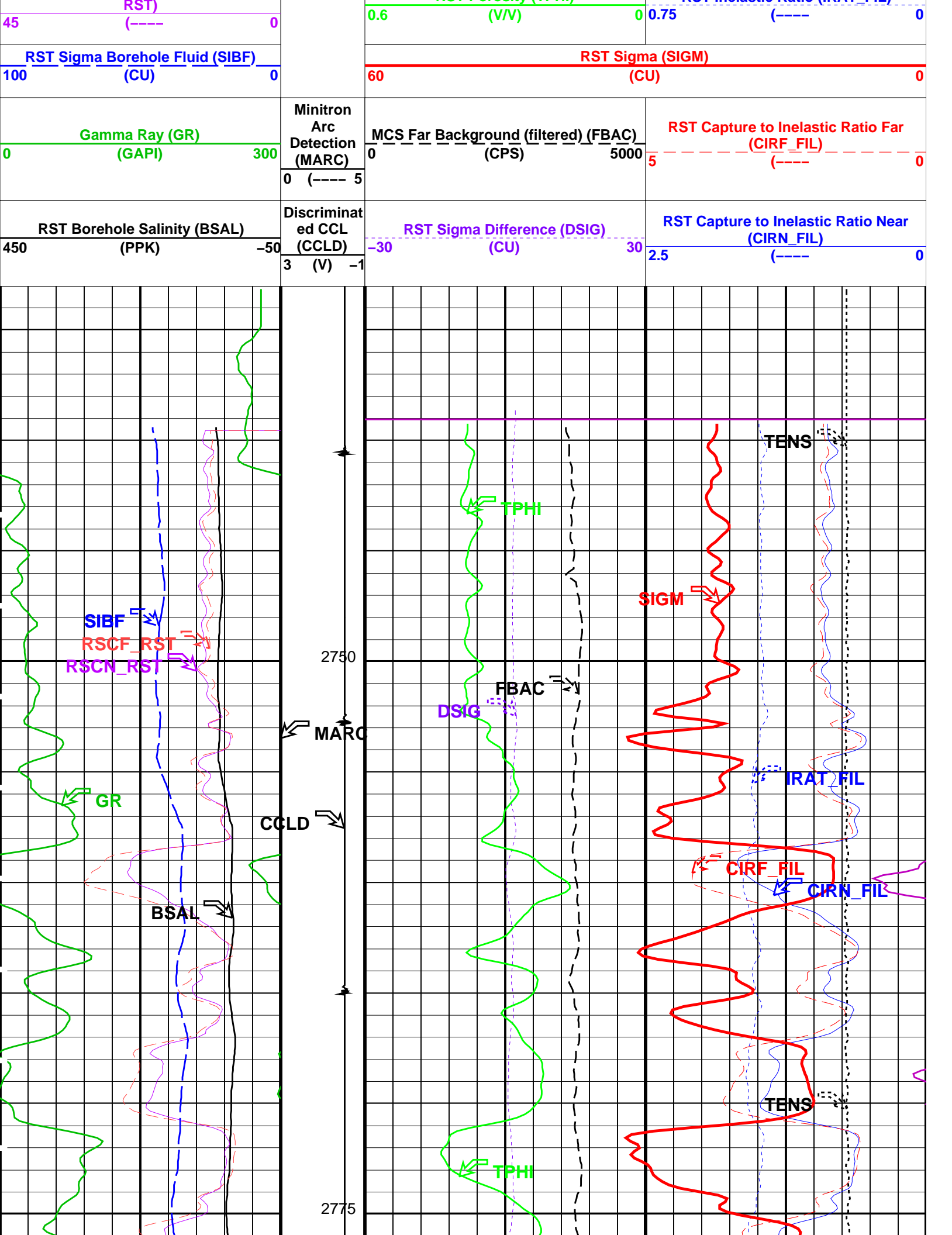
MCM

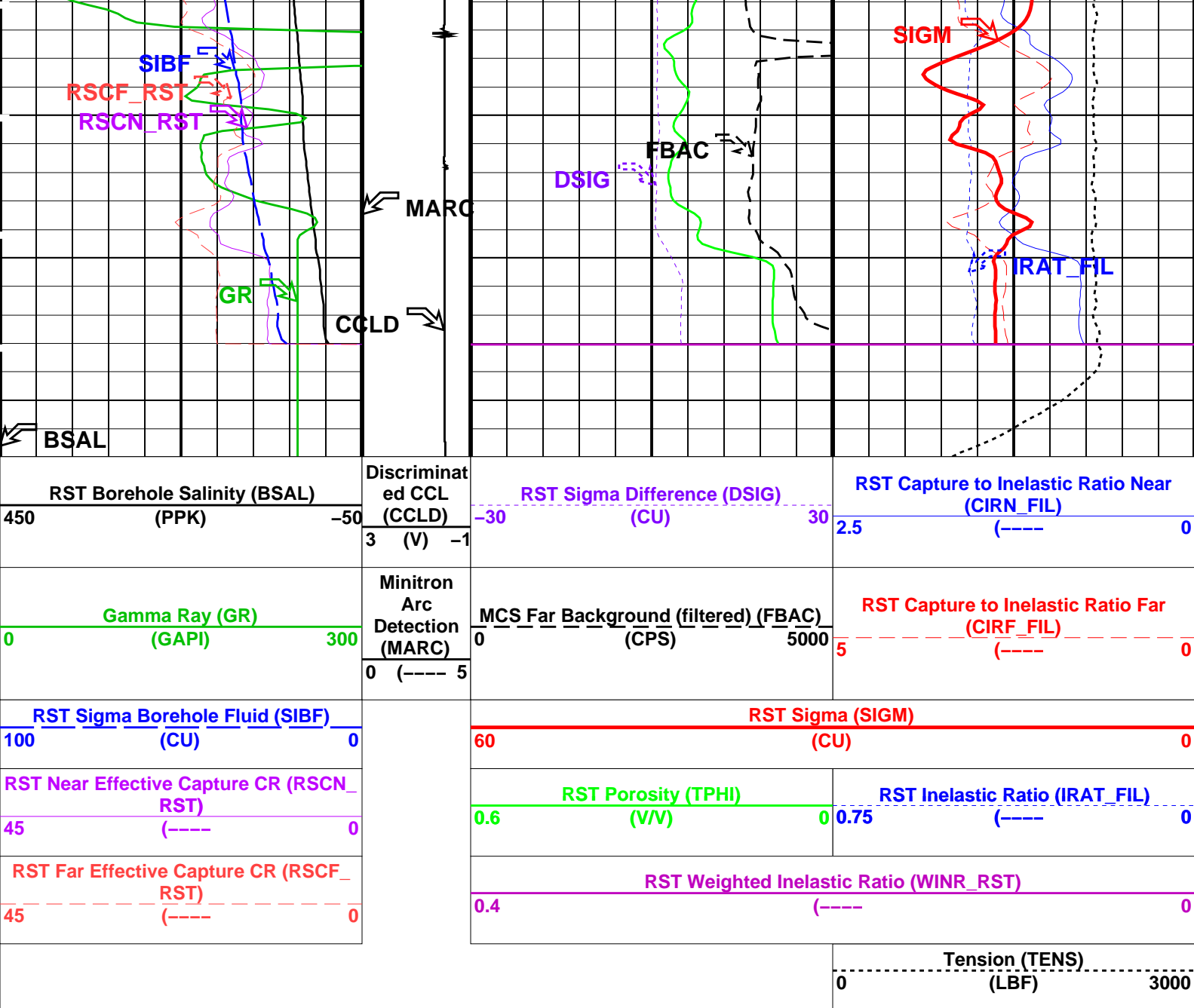
RST-A	13C0-300	PSPT-A	13C0-300
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PIP SUMMARY

 Time Mark Every 60 S

		Tension (TENS) (LBF)	
		0	3000
RST Far Effective Capture CR (RSCF_RST)		RST Weighted Inelastic Ratio (WINR_RST)	
45-----0		0.4-----0	
RST Near Effective Capture CR (RSCN_		RST Porosity (TPHI)	RST Inelastic Ratio (IRAT_FIL)





Time Mark Every 60 S

Parameters		
DLIS Name	Description	Value
RST-A: Reservoir Saturation Tool - A		
	RST Far Shaper Regulation Mode	AUTO
	RST Set Logging Mode	IC
	RST CR Regulation Mode	AUTO
	RST Far Gain Regulation Mode	AUTO
	RST Near Gain Regulation Mode	AUTO
	RST Near Shaper Regulation Mode	AUTO
AIRB	RST Air Borehole	NO
BHS	Borehole Status	CASED
BHT	Bottom Hole Temperature (used in calculations)	225 DEGF
CSID	Casing Size I.D.	4.408 IN
DFPC	Depth Filter Processing Constant	ONE
GCSE	Generalized Caliper Selection	BS
GDEV	Average Angular Deviation of Borehole from Normal	39 DEG
GGRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE
LMOD	RST Logging Mode	SIGM
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	RST Detector Gain Ratio	1

RNON	RST Neutrons	ON	
RSSS	RST Sonde Type	RSSA	
SHT	Surface Hole Temperature	79	DEGF
	PSPT-A: Production Services Logging Platform		
BHS	Borehole Status	CASED	
BHT	Bottom Hole Temperature (used in calculations)	225	DEGF
CSID	Casing Size I.D.	4.408	IN
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	39	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
PBPO	PBMS Tool position on CAN	2	
PCCG	PBMS CCL Gain	DB12	
PSTP	PSTC Tool Position on CAN Bus	1	
SHT	Surface Hole Temperature	79	DEGF
	System and Miscellaneous		
ALTDPC	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	6.000	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	5.000	IN
CWEI	Casing Weight	15.00	LB/F
DFD	Drilling Fluid Density	0.90	G/C3
DO	Depth Offset for Playback	-0.2	M
DORL	Depth Offset for Repeat Analysis	0.0	M
MST	Mud Sample Temperature	-50000.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	2788	M
TDD	Total Depth - Driller	2788.00	M
TDL	Total Depth - Logger	2855.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: RST\_SIG\_ANSW    Vertical Scale: 1:200    Graphics File Created: 17-Feb-2006 16:36

## OP System Version: 13C0-300

MCM

RST-A    13C0-300    PSPT-A    13C0-300

### Input DLIS Files

17-Feb-2006 15:55

### Output DLIS Files

DEFAULT	RST_PSP_010PUP	FN:17	PRODUCER	17-Feb-2006 16:36
CUSTOMER	RST_PSP_010PUC	FN:18	CUSTOMER	17-Feb-2006 16:36

**Schlumberger**

Pass # 3 Flowing 800 ft/hr

MAXIS Field Log

Company: Esso Australia Ltd.    Well: A - 18

### Input DLIS Files

17-Feb-2006 15:55

### Output DLIS Files

DEFAULT	RST_PSP_009PUP	FN:15	PRODUCER	17-Feb-2006 16:35	2787.1 M	2735.9 M
CUSTOMER	RST_PSP_009PUC	FN:16	CUSTOMER	17-Feb-2006 16:35	2787.1 M	2735.9 M

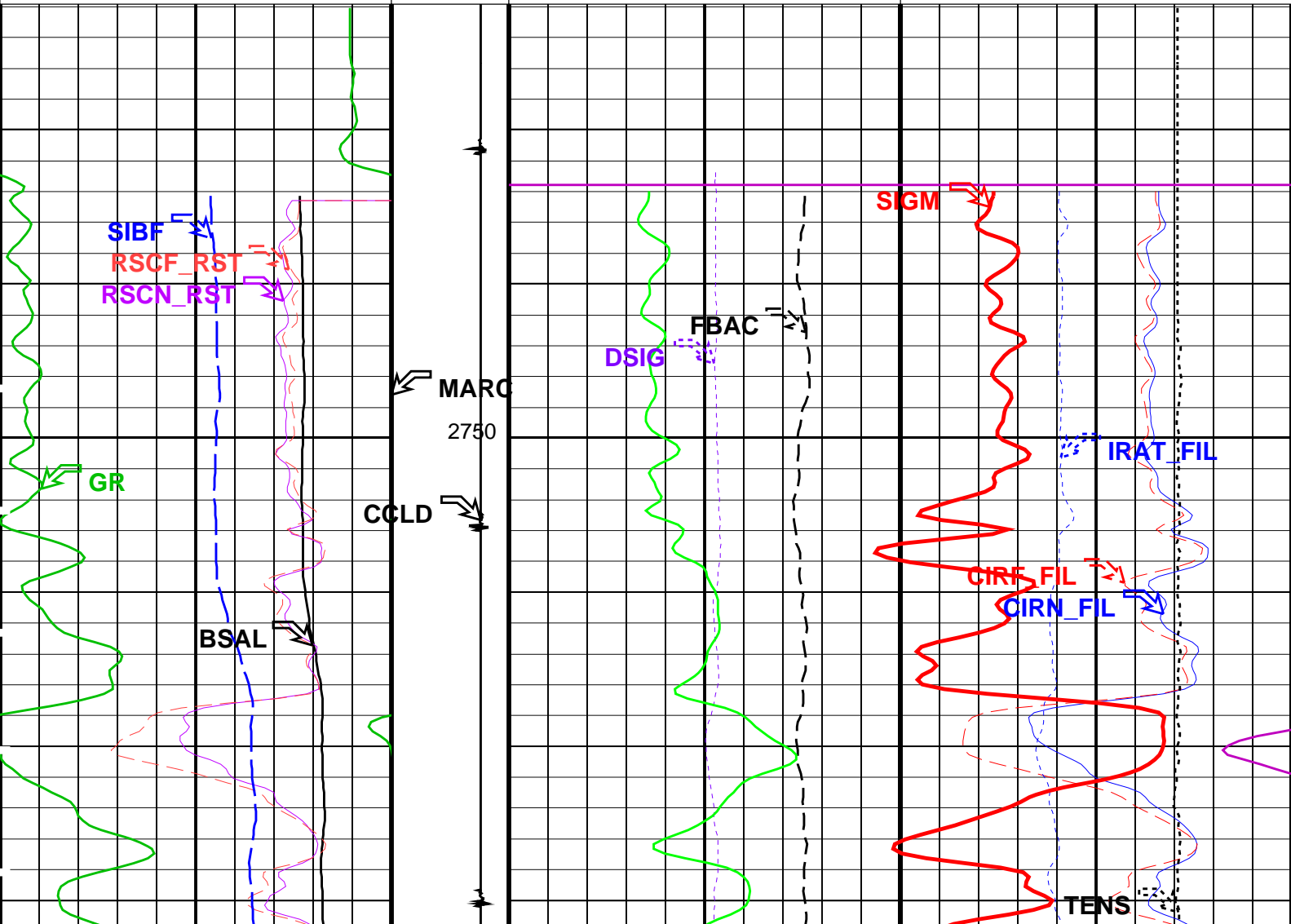
OP System Version: 13C0-300  
MCM

RST-A                      13C0-300                      PSPT-A                      13C0-300

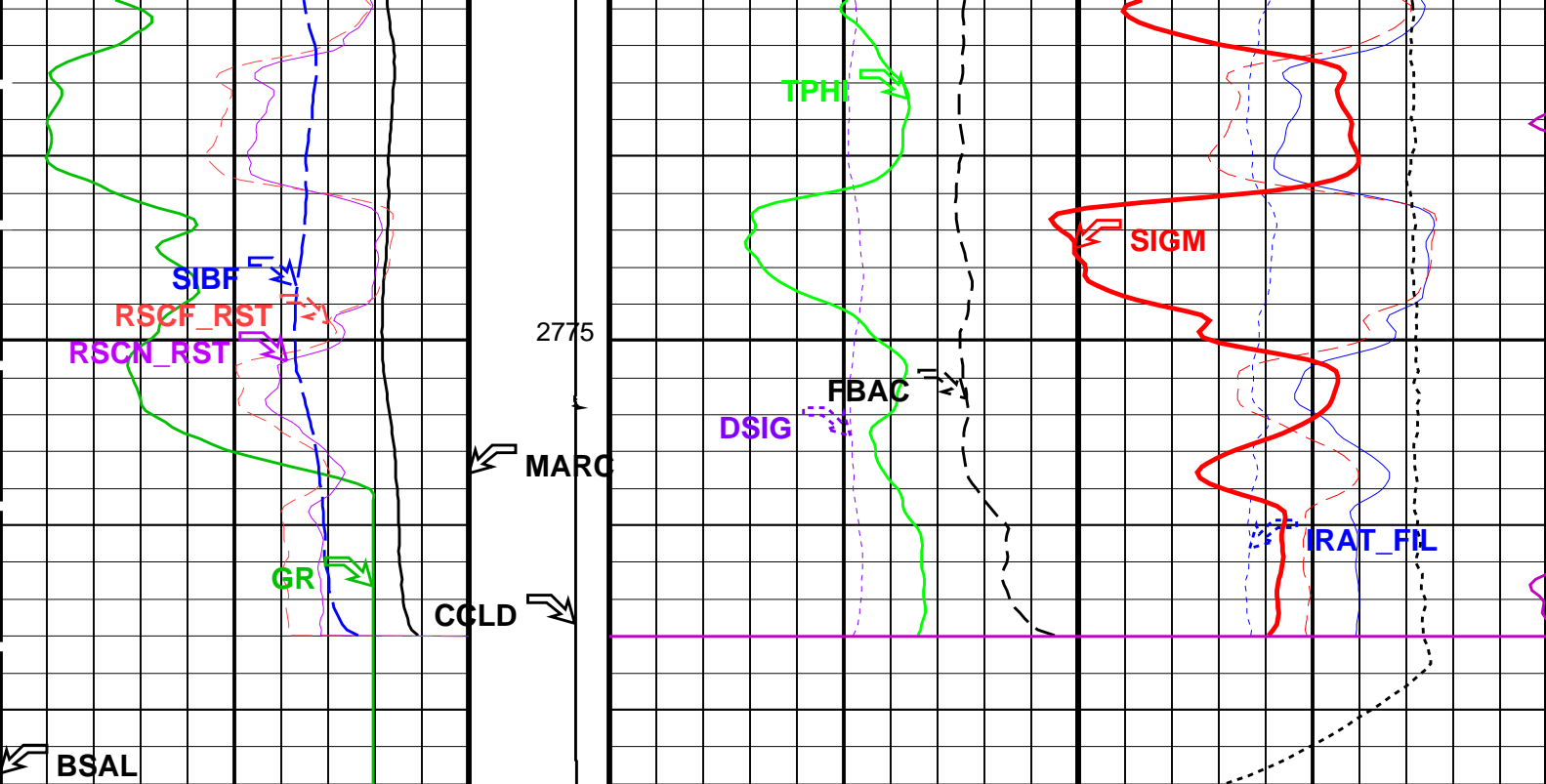
PIP SUMMARY

Time Mark Every 60 S

		Tension (TENS) (LBF)	
		0	3000
RST Far Effective Capture CR (RSCF_RST) 45 (----) 0		RST Weighted Inelastic Ratio (WINR_RST) 0.4 (----) 0	
RST Near Effective Capture CR (RSCN_RST) 45 (----) 0		RST Porosity (TPHI) 0.6 (V/V)	RST Inelastic Ratio (IRAT_FIL) 0.75 (----) 0
RST Sigma Borehole Fluid (SIBF) 100 (CU) 0		RST Sigma (SIGM) 60 (CU) 0	
Gamma Ray (GR) 0 (GAPI) 300		Minitron Arc Detection (MARC) 0 (----) 5	RST Capture to Inelastic Ratio Far (CIRF_FIL) 5 (----) 0
RST Borehole Salinity (BSAL) 450 (PPK) -50		MCS Far Background (filtered) (FBAC) 0 (CPS) 5000	RST Capture to Inelastic Ratio Near (CIRN_FIL) 2.5 (----) 0
Discriminat ed CCL (CCLD) 3 (V) -1		RST Sigma Difference (DSIG) -30 (CU) 30	







RST Borehole Salinity (BSAL) (PPK)	Discriminat ed CCL (CCLD)	RST Sigma Difference (DSIG) (CU)	RST Capture to Inelastic Ratio Near (CIRN_FIL)
450 -50	3 (V) -1	-30 30	2.5 (----) 0
Gamma Ray (GR) (GAPI)	Minitron Arc Detection (MARC)	MCS Far Background (filtered) (FBAC) (CPS)	RST Capture to Inelastic Ratio Far (CIRF_FIL)
0 300	0 (----) 5	0 5000	5 (----) 0
RST Sigma Borehole Fluid (SIBF) (CU)		RST Sigma (SIGM) (CU)	
100 0		60 0	
RST Near Effective Capture CR (RSCN_ RST)		RST Porosity (TPHI) (V/V)	RST Inelastic Ratio (IRAT_FIL)
45 (----) 0		0.6 0	0.75 (----) 0
RST Far Effective Capture CR (RSCF_ RST)		RST Weighted Inelastic Ratio (WINR_RST)	
45 (----) 0		0.4 (----) 0	
			Tension (TENS) (LBF)
			0 3000

#### PIP SUMMARY

Time Mark Every 60 S

### Parameters

#### DLIS Name

#### Description

#### Value

RST-A: Reservoir Saturation Tool - A

RST Far Shaper Regulation Mode

AUTO

RST Set Logging Mode

IC

RST CR Regulation Mode

AUTO

RST Far Gain Regulation Mode

AUTO

RST Near Gain Regulation Mode

AUTO

RST Near Shaper Regulation Mode

AUTO

RST Air Borehole

NO

Borehole Status

CASED

Bottom Hole Temperature (used in calculations)

225

DEGF

Casing Size I.D.

4.408

IN

Depth Filter Processing Constant

ONE

Generalized Caliper Selection

BS

Average Angular Deviation of Borehole from Normal

39

DEG

AIRB

BHS

BHT

CSID

DFPC

GCSE

GDEV

GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
LMOD	RST Logging Mode	SIGM	
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	RST Detector Gain Ratio	1	
RNON	RST Neutrons	ON	
RSSS	RST Sonde Type	RSSA	
SHT	Surface Hole Temperature	79	DEGF
PSPT-A: Production Services Logging Platform			
BHS	Borehole Status	CASED	
BHT	Bottom Hole Temperature (used in calculations)	225	DEGF
CSID	Casing Size I.D.	4.408	IN
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	39	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
PBPO	PBMS Tool position on CAN	2	
PCCG	PBMS CCL Gain	DB12	
PSTP	PSTC Tool Position on CAN Bus	1	
SHT	Surface Hole Temperature	79	DEGF
System and Miscellaneous			
ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	6.000	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	5.000	IN
CWEI	Casing Weight	15.00	LB/F
DFD	Drilling Fluid Density	0.90	G/C3
DO	Depth Offset for Playback	-0.2	M
DORL	Depth Offset for Repeat Analysis	0.0	M
MST	Mud Sample Temperature	-50000.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	2788	M
TDD	Total Depth - Driller	2788.00	M
TDL	Total Depth - Logger	2855.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: RST\_SIG\_ANSW    Vertical Scale: 1:200    Graphics File Created: 17-Feb-2006 16:35

## OP System Version: 13C0-300

MCM

RST-A      13C0-300      PSPT-A      13C0-300

### Input DLIS Files

17-Feb-2006 15:55

### Output DLIS Files

DEFAULT	RST_PSP_009PUP	FN:15	PRODUCER	17-Feb-2006 16:35
CUSTOMER	RST_PSP_009PUC	FN:16	CUSTOMER	17-Feb-2006 16:35

**Schlumberger**

Pass # 2 Flowing 800 ft/hr

MAXIS Field Log

### Input DLIS Files

## Output DLIS Files

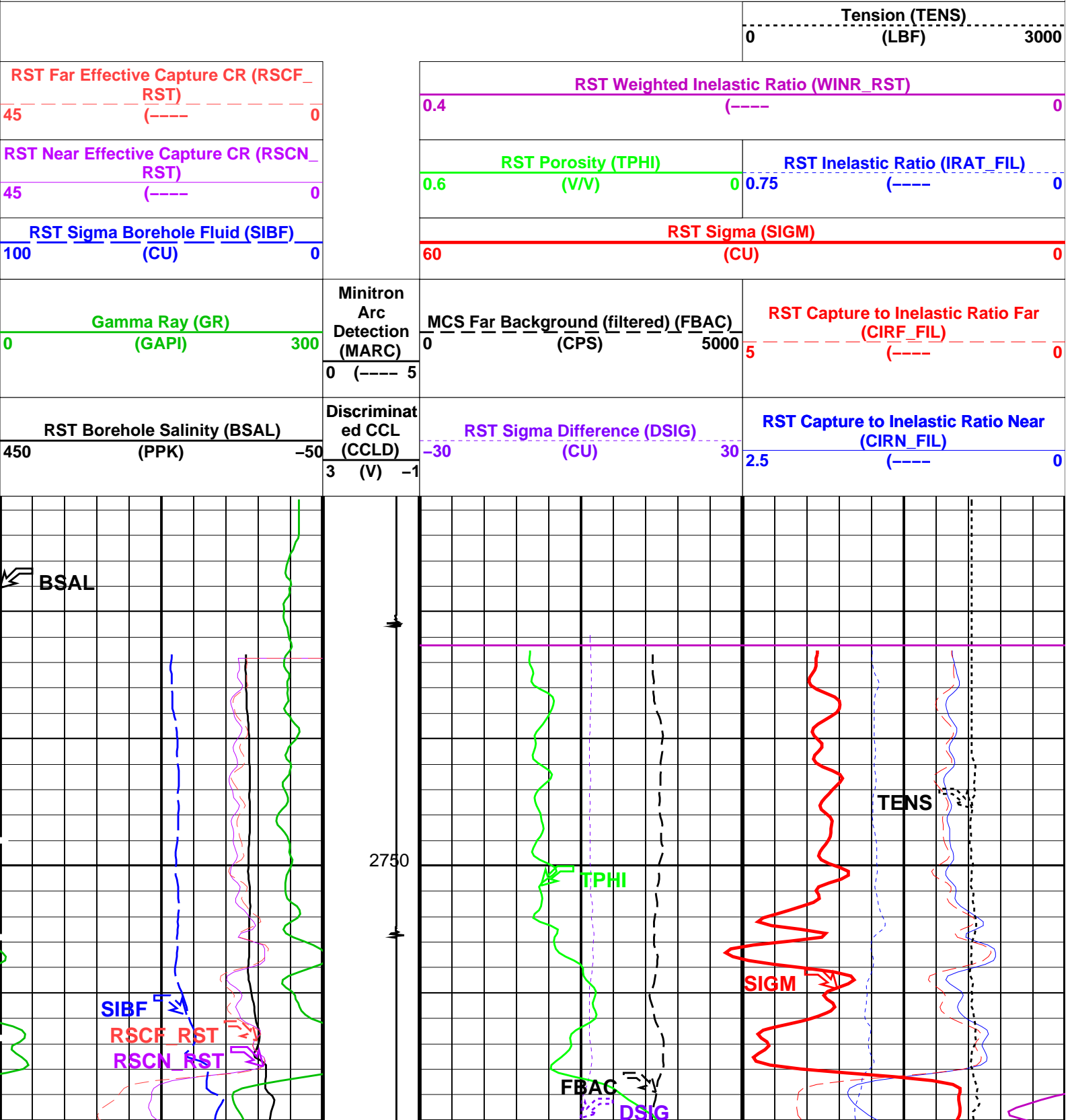
DEFAULT	RST_PSP_007PUP	FN:11	PRODUCER	17-Feb-2006 16:30	2799.4 M	2735.4 M
CUSTOMER	RST_PSP_007PUC	FN:12	CUSTOMER	17-Feb-2006 16:30	2799.4 M	2735.4 M

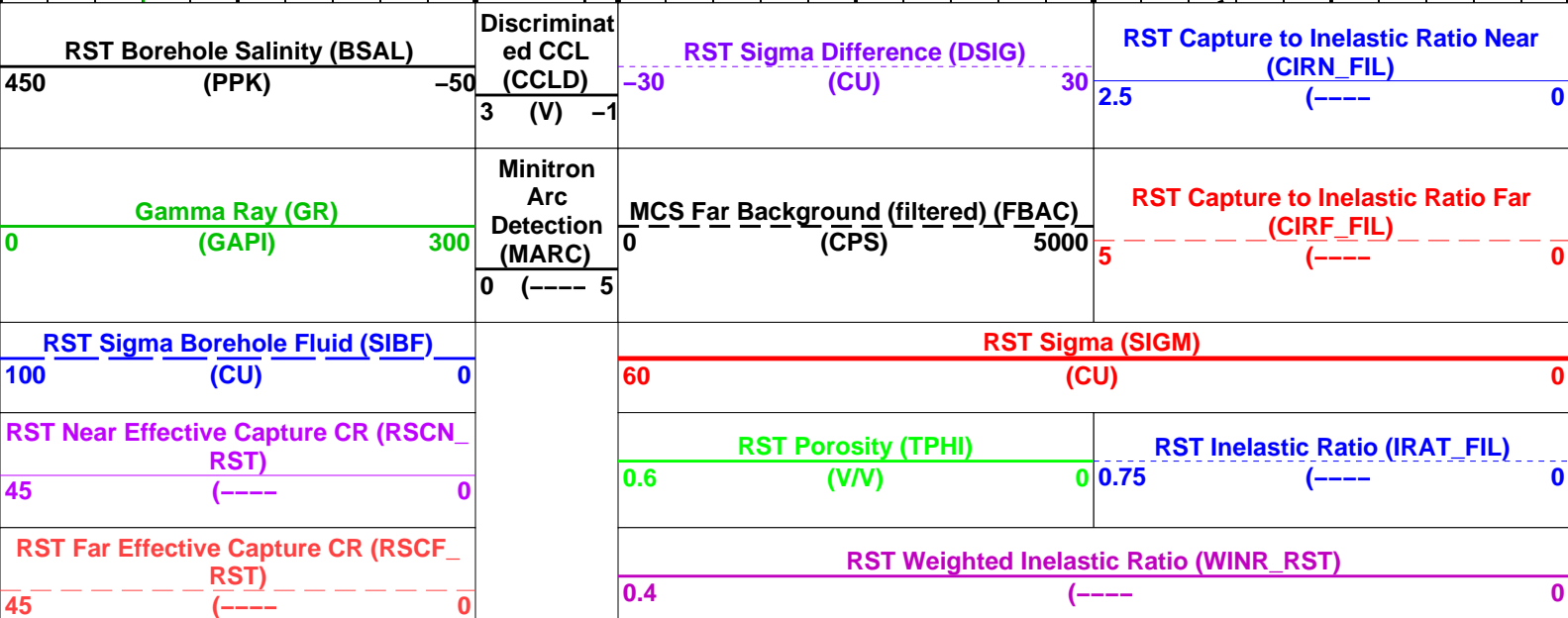
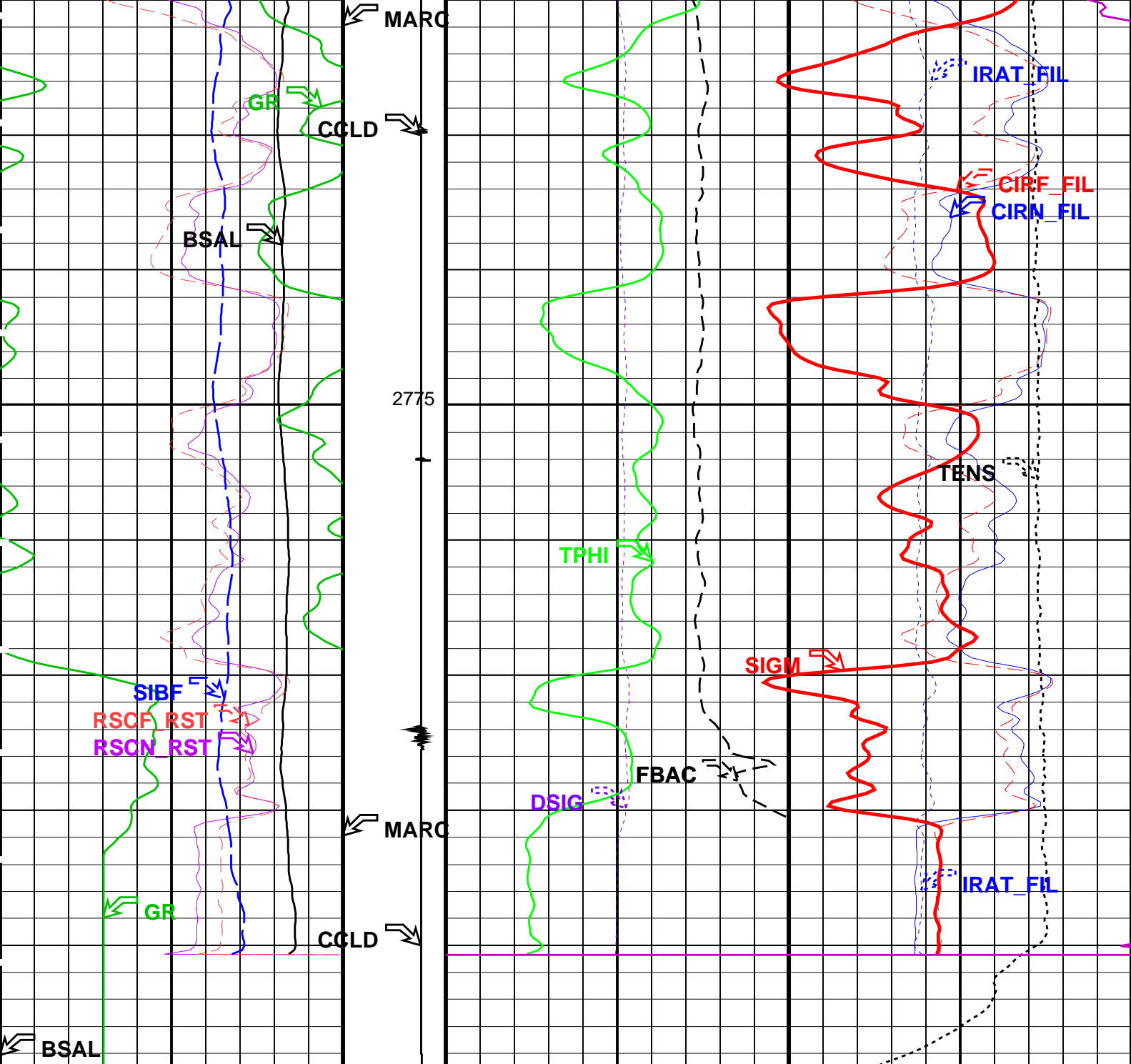
OP System Version: 13C0-300  
MCM

RST-A	13C0-300	PSPT-A	13C0-300
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## PIP SUMMARY

Time Mark Every 60 S





		Tension (TENS)	
		0	3000
		(LBF)	

# PIP SUMMARY

Time Mark Every 60 S

Parameters			
DLIS Name	Description	Value	
RST-A: Reservoir Saturation Tool – A			
	RST Near Gain Regulation Mode	AUTO	
	RST Set Logging Mode	IC	
	RST CR Regulation Mode	AUTO	
	RST Far Gain Regulation Mode	AUTO	
	RST Far Shaper Regulation Mode	AUTO	
	RST Near Shaper Regulation Mode	AUTO	
AIRB	RST Air Borehole	NO	
BHS	Borehole Status	CASED	
BHT	Bottom Hole Temperature (used in calculations)	225	DEGF
CSID	Casing Size I.D.	4.408	IN
DFPC	Depth Filter Processing Constant	ONE	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	39	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
LMOD	RST Logging Mode	SIGM	
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	RST Detector Gain Ratio	1	
RNON	RST Neutrons	ON	
RSSS	RST Sonde Type	RSSA	
SHT	Surface Hole Temperature	79	DEGF
PSPT-A: Production Services Logging Platform			
BHS	Borehole Status	CASED	
BHT	Bottom Hole Temperature (used in calculations)	225	DEGF
CSID	Casing Size I.D.	4.408	IN
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	39	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
PBPO	PBMS Tool position on CAN	2	
PCCG	PBMS CCL Gain	DB12	
PSTP	PSTC Tool Position on CAN Bus	1	
SHT	Surface Hole Temperature	79	DEGF
System and Miscellaneous			
ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	6.000	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	5.000	IN
CWEI	Casing Weight	15.00	LB/F
DFD	Drilling Fluid Density	0.90	G/C3
DO	Depth Offset for Playback	-0.4	M
MST	Mud Sample Temperature	-50000.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	2788	M
TDD	Total Depth – Driller	2788.00	M
TDL	Total Depth – Logger	2855.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: RST\_SIG\_ANSW Vertical Scale: 1:200 Graphics File Created: 17-Feb-2006 16:31

OP System Version: 13C0-300

MCM

RST-A 13C0-300 PSPT-A 13C0-300

Input DLIS Files

17-Feb-2006 15:55

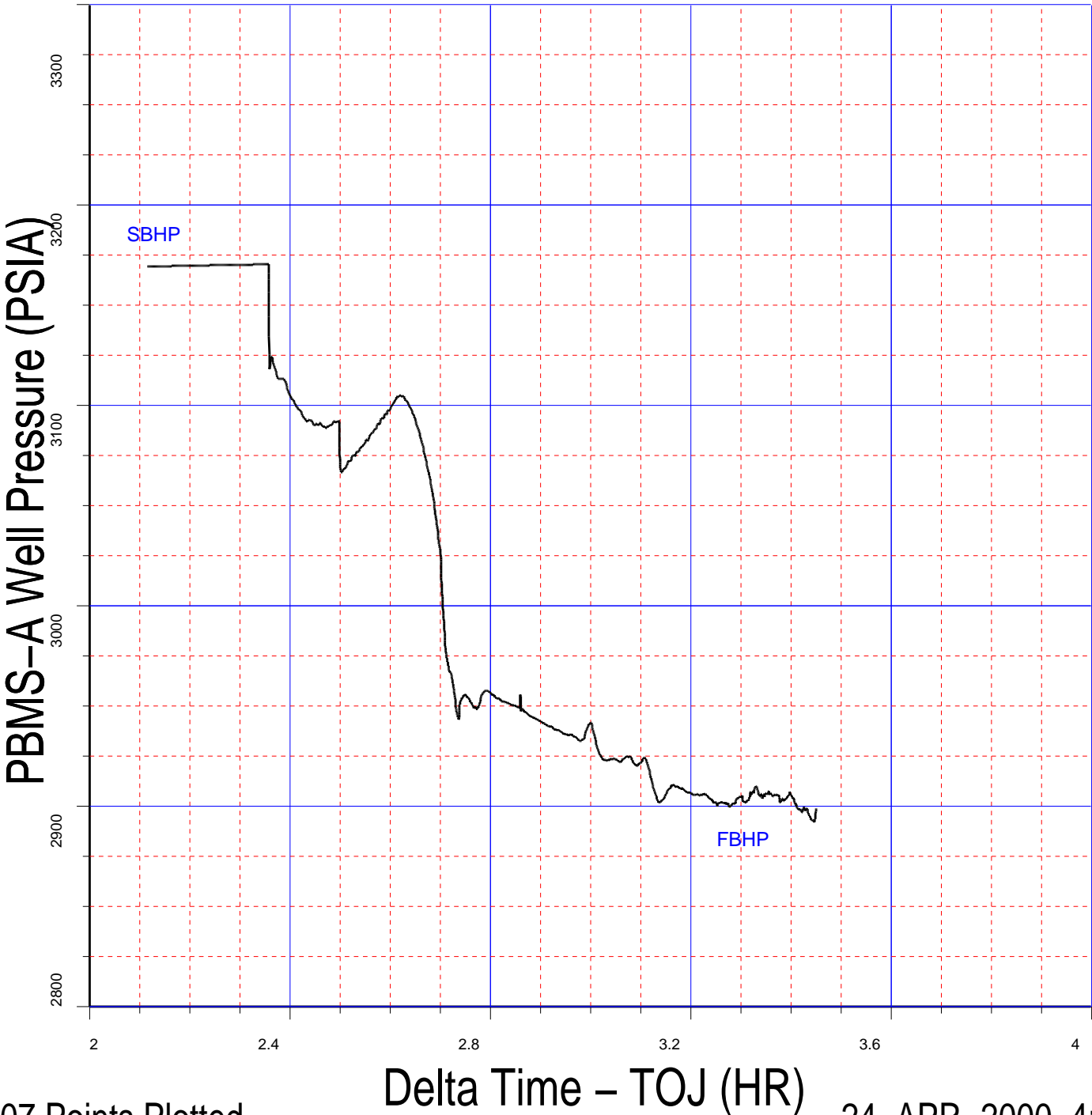
Output DI IS Files



Well Drawdown for Flowing Survey

MAXIS Field Log

Index: 21661.1 – 46075.6 M



Company: Esso Australia Ltd.

Well: A - 18

## Input DLIS Files

17-Feb-2006 15:55

## Output DLIS Files

DEFAULT	RST_PSP_005PUP	FN:7	PRODUCER	17-Feb-2006 16:27	2797.6 M	2732.7 M
CUSTOMER	RST_PSP_005PUC	FN:8	CUSTOMER	17-Feb-2006 16:27	2797.6 M	2732.7 M

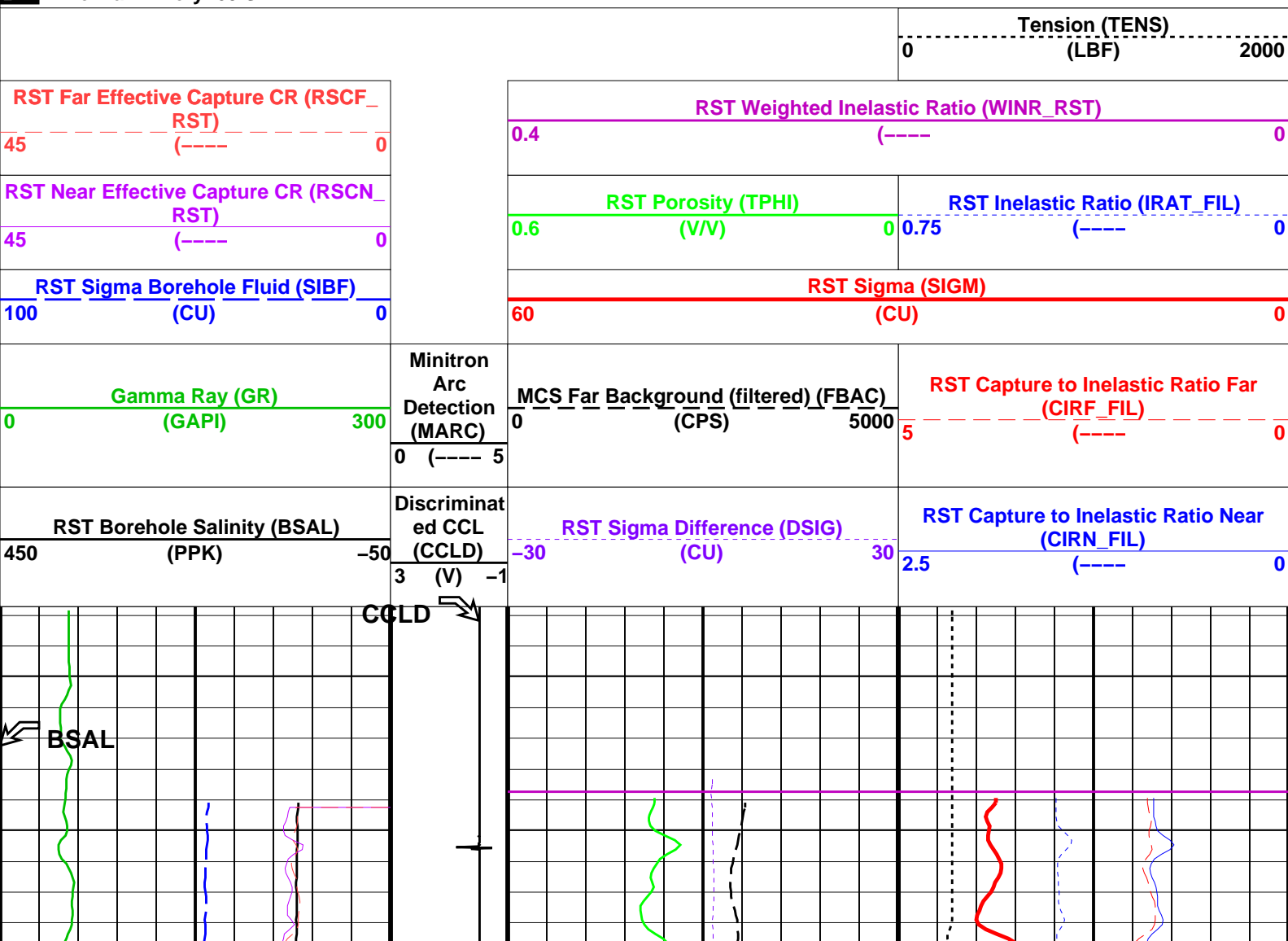
## OP System Version: 13C0-300

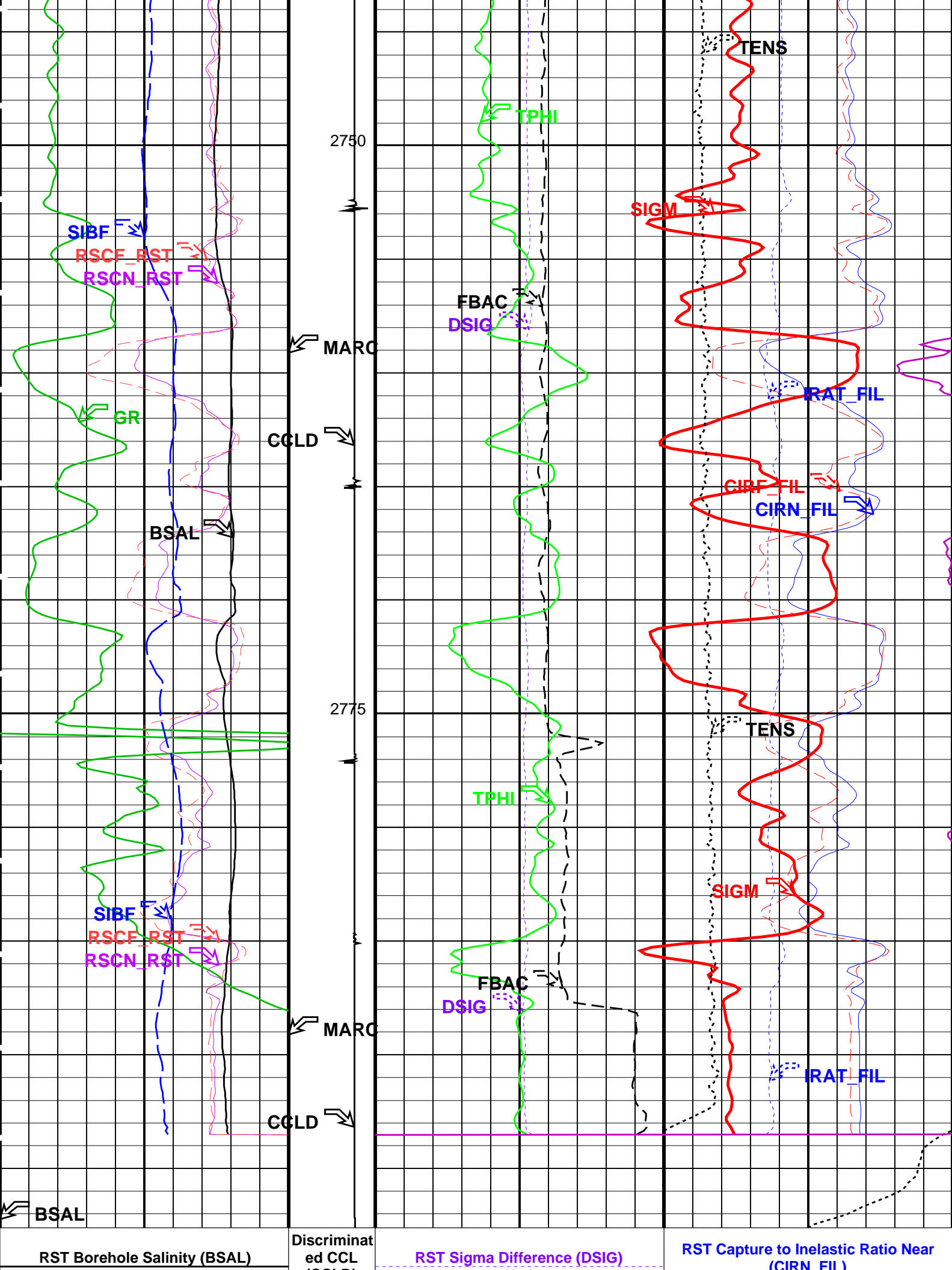
MCM

RST-A	13C0-300	PSPT-A	13C0-300
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## PIP SUMMARY

Time Mark Every 60 S









PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	2788	M
TDD	Total Depth – Driller	2788.00	M
TDL	Total Depth – Logger	2855.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: RST\_SIG\_ANSW    Vertical Scale: 1:200    Graphics File Created: 17-Feb-2006 16:27

## OP System Version: 13C0-300

MCM

RST-A                      13C0-300                      PSPT-A                      13C0-300

### Input DLIS Files

17-Feb-2006 15:55

### Output DLIS Files

DEFAULT	RST_PSP_005PUP	FN:7	PRODUCER	17-Feb-2006 16:27
CUSTOMER	RST_PSP_005PUC	FN:8	CUSTOMER	17-Feb-2006 16:27

Company: **Esso Australia Ltd.**

**Schlumberger**

Well: **A – 18A**  
Field: **Halibut**  
STATE : **Victoria**  
Country: **Australia**

Halibut A-18a  
RST-A  
Sigma Mode