Schlumberger

Company: **Esso Australia Pty Ltd.**

Well: **A−22ST1**

Field: **Bream A**

Rig : **Prod4 / Crane** Country: **Australia**

RST−C
Sigma
Survey

Rig : Prod4 / Crane
Field: Bream A
Location: Gippsland
Well: A−22ST1
Company: Esso Australia Pty Ltd.

LOCATION

Gippsland		Elev.: K.B.	32.82 m
Basin		G.L.	−59 m
Bass Strait		D.F.	32.82 m
Permanent Datum:	M.S.L	Elev.:	0 m
Log Measured From:	D.F	32.8 m	above Perm. Datum
Drilling Measured From:	D.F		

State :	Max. Well Deviation	Longitude	Latitude
Victoria	70 deg	147 46'15"E	038 30'04"S

				Run 1
PVT DATA	Oil Density			
	Water Salinity			
	Gas Gravity			
	Bo			
	Bw			
	1/Bg			
	Bubble Point Pressure			
	Bubble Point Temperature			
Solution GOR				
Maximum Deviation				70 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		3−May−2008		
Run Number		One		
Depth Driller		3251 m		
Schlumberger Depth		3254 m		
Bottom Log Interval		3250 m		
Top Log Interval		3160 m		
Casing Fluid Type		Production Fluids		
Salinity				
Density				
Fluid Level		1005 m		
BIT/CASING/TUBING STRING				
Bit Size		6.000 in		
From		2702 m		
To		3364 m		
Casing/Tubing Size		4.500 in		
Weight		11.6 lbm/ft		
Grade		L−80		
From		2571 m		
To		3334 m		
Maximum Recorded Temperatures		196 degF		
Logger On Bottom	Time	3−May−2008	15:10	
Unit Number	Location	889	Prod4 / Ausl	
Recorded By		G Wright & O Darby.		
Witnessed By		B White & J Dean.		

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: 30−APR−2008 11:17:19

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−EB	Type:	PSDS/OSDS	Type:	2−32ZT
Serial Number:	6373	Serial Number:	325357	Serial Number:	27244
Calibration Date:	04−Jan−2007	Calibration Date:	30−Apr−2008	Length:	6409.94 M
Calibrator Serial Number:	9	Calibrator Serial Number:	1174		
Calibration Cable Type:	2−23ZT	Calibration Gain:	0.95	Conveyance Method:	Wireline
Wheel Correction 1:	−2	Calibration Offset:	−494.00	Rig Type:	Rigless
Wheel Correction 2:	−4				

Depth Control Parameters

Log Sequence:	Subsequent Log In the Well
Reference Log Name:	ExxonMobil correlation log.
Reference Log Run Number:	
Reference Log Date:	.

Depth Control Remarks

1. IDW−EB 6373 used as primary depth control.
2. Z−Chart as secondary control.

OTHER SERVICES1

OS1: 2 1/8" Powerjet
OS2: Perforation
OS3: 4 1/2" Mpbt
OS4: Plug

REMARKS: RUN NUMBER 1

Log correlated to ExxonMobil composite supplied with logging program.

Maximum well deviation = 70 degrees at 3102m MDKB.

RST−C Sigma survey from HUD at 3254m to 3160m MDKB.

Two passes at 900 ft/hr,Gamma−Ray pass incorporated in the first

Sigma pass due to difficulty reaching HUD.

SBHP = 2679 psia.

SBHT = 196 degf.

Tool's had to be pumped downhole due to well conditions.

SBHP & SBHT may be misleading.

Crew : J Annear,J Light,P Lawrence,A McLellan.

RUN 1

SERVICE ORDER #:	Ausl008509111
PROGRAM VERSION:	15C0−309
FLUID LEVEL:	1135 m

LOGGED INTERVAL	START	STOP

LOGGED INTERVAL	START	STOP

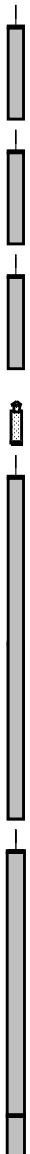
EQUIPMENT DESCRIPTION

RUN 1

SURFACE EQUIPMENT

WITM−A
PSC_16MHZ

DOWNHOLE EQUIPMENT



AH−SWBS−B 787 — 11.93

AH−SWBS−B 786 — 11.24

AH−SWBS−B 785 — 10.55

MH−SWHS−A 759 — 9.87

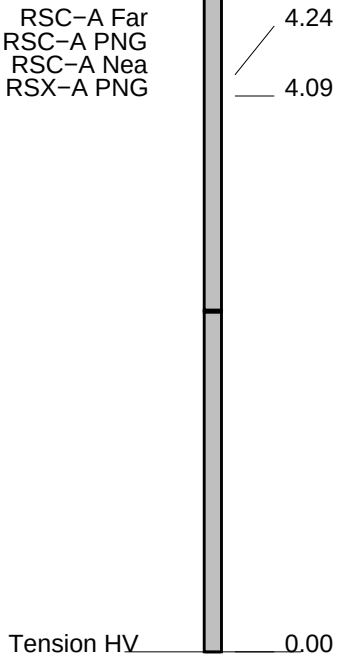
Detail MT
TelStatus
CTEM — 9.54 — 9.54

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

GR — 8.41

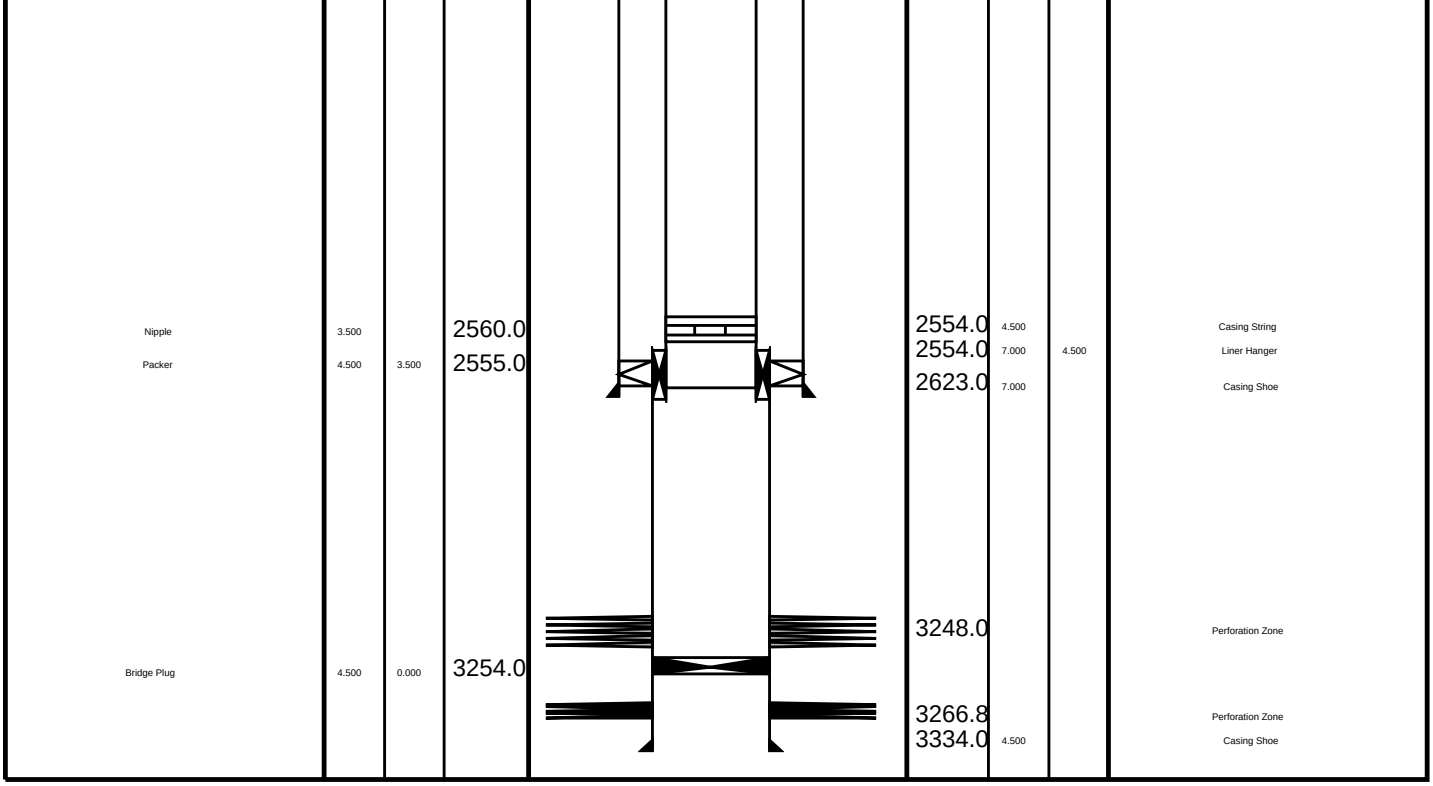
Well_Temp — 7.48
CQG Manom — 7.37
CCL — 7.25
PBMS PSTC — 7.02

RSCH−A 98 — 7.02
RSC−C 116
RSS−A 93
RSXH−A 179
RSX−C 101



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	3.500		11.0		12.8	7.000		
					12.8	10.750	7.000	Liner Hanger
Tubing Hanger	7.000	3.500	9.0					
Shutin Valve	3.500		446.0					
Gas Lift Mandrel	3.500		571.0					
Gas Lift Mandrel	3.500		1128.0					
Gas Lift Mandrel	3.500		1397.0		1346.0	10.750		Casing Shoe
Nipple	3.500		1413.0					



Schlumberger

Job Event Summary

MAXIS Field Log

Schlumberger Job Event Summary

	Time	Elapsed Time	Depth (M)		File
Simulated Log	3−May−2008 10:49	000:17			RST_PSP_003LUP
Log Pass (down)	3−May−2008 11:09	001:03	−12.3 −	2896.8	RST_PSP_004LDP
Log Pass (down)	3−May−2008 12:16	000:01	2850.3 −	2882.5	RST_PSP_005LDP
Log Pass (down)	3−May−2008 12:17	000:05	2779.5 −	2878.5	RST_PSP_006LDP
Log Pass (down)	3−May−2008 12:22	000:01	2822.4 −	2850.3	RST_PSP_007LDP
Log Pass (down)	3−May−2008 12:26	000:05	2666.5 −	2843.8	RST_PSP_008LDP
Log Pass (down)	3−May−2008 13:59	000:14	2817.0 −	3083.8	RST_PSP_010LDP
Log Pass (down)	3−May−2008 14:13	000:03	3058.7 −	3086.3	RST_PSP_011LDP
Log Pass (down)	3−May−2008 14:16	000:03	3024.8 −	3077.1	RST_PSP_012LDP
Log Pass (down)	3−May−2008 14:19	000:04	3032.5 −	3088.2	RST_PSP_013LDP
Log Pass (down)	3−May−2008 14:24	000:02	3038.9 −	3088.8	RST_PSP_014LDP
Log Pass (down)	3−May−2008 14:26	000:01	3057.1 −	3091.7	RST_PSP_015LDP
Log Pass (down)	3−May−2008 14:27	000:02	3055.3 −	3100.7	RST_PSP_016LDP
Log Pass (down)	3−May−2008 14:30	000:02	3035.7 −	3109.1	RST_PSP_017LDP
Log Pass (down)	3−May−2008 14:34	000:06	3042.8 −	3192.2	RST_PSP_018LDP
Log Pass (down)	3−May−2008 14:40	000:01	3148.3 −	3176.8	RST_PSP_019LDP

Log Pass (down)	3−May−2008 14:42	000:01	3127.1 −	3149.3	RST_PSP_020LDP
Log Pass (down)	3−May−2008 14:44	000:05	3101.3 −	3231.5	RST_PSP_021LDP
Log Pass (down)	3−May−2008 14:49	000:02	3172.2 −	3246.3	RST_PSP_022LDP
Log Pass (down)	3−May−2008 14:51	000:03	3189.9 −	3244.9	RST_PSP_023LDP
Log Pass (down)	3−May−2008 14:55	000:03	3196.4 −	3280.4	RST_PSP_024LDP
Log Pass (up)	3−May−2008 14:57	000:05	3246.1 −	3154.5	RST_PSP_025LUP
Log Pass (down)	3−May−2008 15:03	000:05	3175.6 −	3277.8	RST_PSP_026LDP
Log Pass (up)	3−May−2008 15:11	000:20	3281.9 −	3142.3	RST_PSP_027LUP
Log Pass (up)	3−May−2008 15:37	000:22	3258.2 −	3144.5	RST_PSP_029LUP

Schlumberger

RST−C Sigma
Pass # 2 900 ft/hr

MAXIS Field Log

Company: Esso Australia Pty Ltd. **Well: A−22ST1**

Input DLIS Files

DEFAULT	RST_PSP_029LUP	FN:28	PRODUCER	03−May−2008 15:37	3258.2 M	3144.5 M

Output DLIS Files

DEFAULT	RST_PSP_030PUP	FN:29	PRODUCER	03−May−2008 16:04	3262.9 M	3144.2 M

OP System Version: 15C0−309

MCM

RST−C	SRPC−3546−Q1_2008_OP15	PSPT−A/B	SRPC−3546−Q1_2008_OP15

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): 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

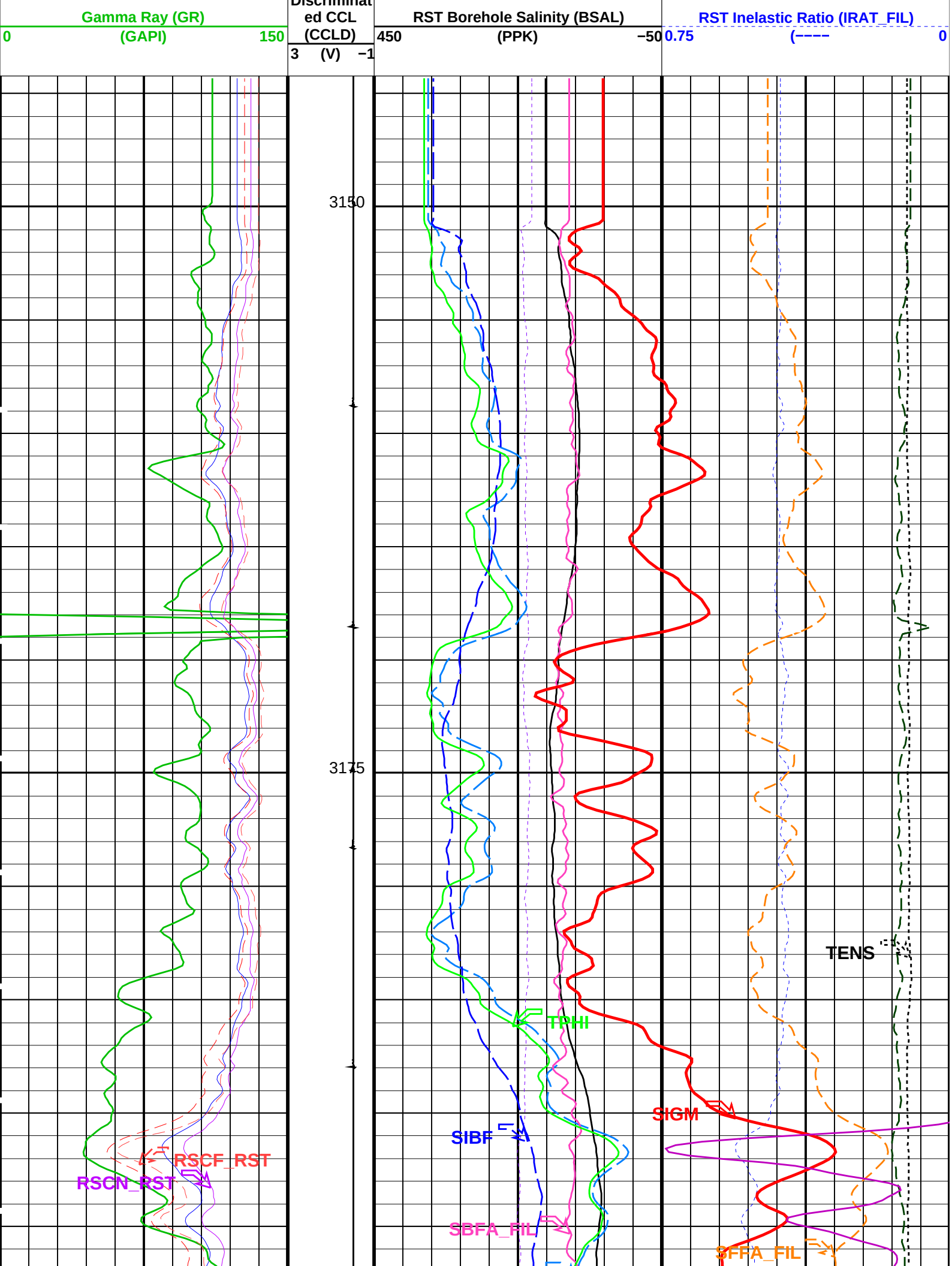
RST Capture to Inelastic Ratio Near (CIRN_FIL): 2.5 (−−−− 0

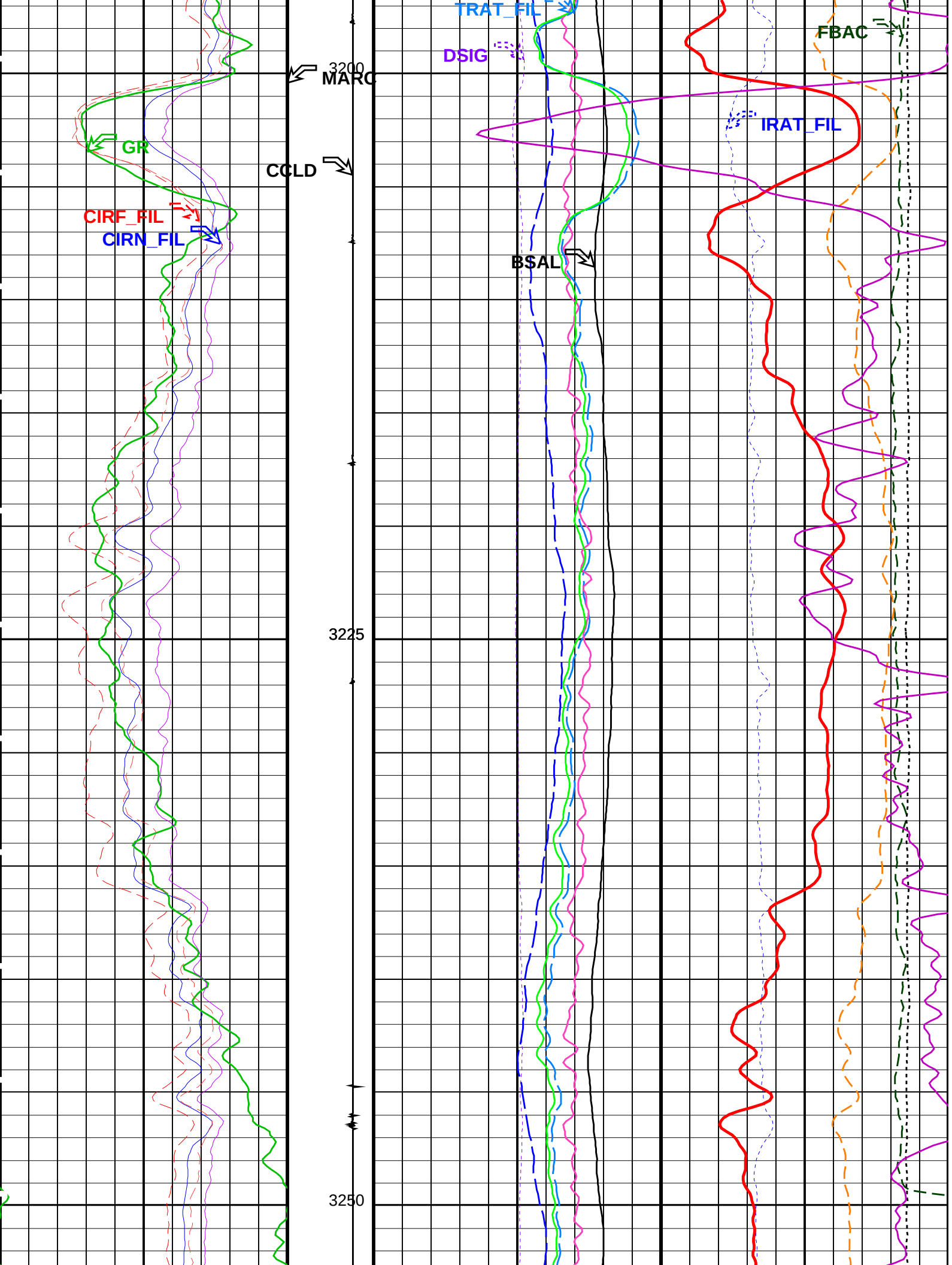
Minitron Arc Detection (MARC): 0 (−−−− 5

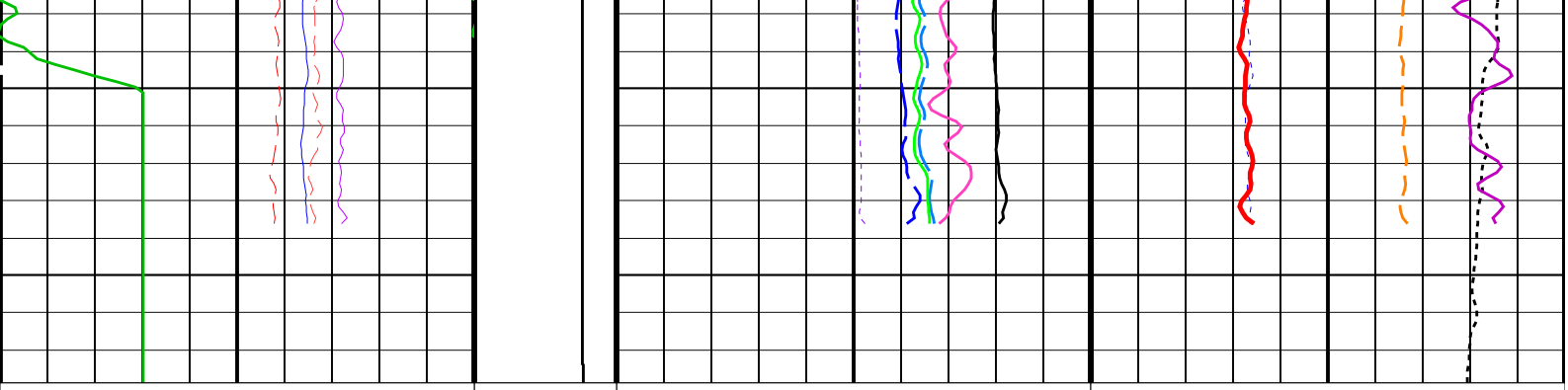
RST Sigma Difference (DSIG): −30 (CU) 30

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

Discriminat


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
3150
3175
TENS
TPHI
SIGM
SIBF
SBFA_FIL
SFFA_FIL
RSCF_RST
RSCN_RST


TRAT_FIL
DSIG
FBAC
IRAT_FIL
3200
MARC
GR
CCLD
CIRF_FIL
CIRN_FIL
BSAL
3225
3250



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

RST Capture to Inelastic Ratio Near (CIRN_FIL)	Minitron Arc Detection (MARC)	RST Sigma Difference (DSIG)	MCS Far Background (filtered) (FBAC)
2.5 (---- 0	0 (---- 5	−30 (CU) 30	0 (CPS) 5000

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 Near Effective Capture CR (RSCN_RST)	Sigma Borehole Far Apparent (SBFA_FIL)	Tension (TENS)
45 (---- 0	150 (CU) 0	0 (LBF) 3000

RST Far Effective Capture CR (RSCF_RST)	RST Sigma Borehole Fluid (SIBF)
45 (---- 0	100 (CU) 0

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

RST Weighted Inelastic Ratio (WINR_RST)
0.4 (---- 0

RST Sigma (SIGM)
60 (CU) 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	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	6.000	IN
BSAL	Borehole Salinity	−50000.00	PPM
CSIZ	Current Casing Size	4.500	IN
CWEI	Casing Weight	11.60	LB/F
DO	Depth Offset for Playback	4.7	M
PP	Playback Processing	NORMAL	

Format: RST_SIG_ANSW Vertical Scale: 1:200 Graphics File Created: 03−May−2008 16:04

OP System Version: 15C0−309

MCM

RST−C	SRPC−3546−Q1_2008_OP15	PSPT−A/B	SRPC−3546−Q1_2008_OP15

Input DLIS Files

DEFAULT	RST_PSP_029LUP	FN:28	PRODUCER	03−May−2008 15:37	3258.2 M	3144.5 M

Output DLIS Files

DEFAULT	RST_PSP_030PUP	FN:29	PRODUCER	03−May−2008 16:04

Schlumberger

RST−C Sigma
Pass # 1 900 ft/hr

MAXIS Field Log

Company: Esso Australia Pty Ltd. Well: A−22ST1

Input DLIS Files

DEFAULT	RST_PSP_027LUP	FN:26	PRODUCER	03−May−2008 15:11	3281.9 M	3142.3 M

Output DLIS Files

DEFAULT	RST_PSP_028PUP	FN:27	PRODUCER	03−May−2008 15:33	3286.4 M	3141.7 M

OP System Version: 15C0−309

MCM

RST−C	SRPC−3546−Q1_2008_OP15	PSPT−A/B	SRPC−3546−Q1_2008_OP15

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): 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

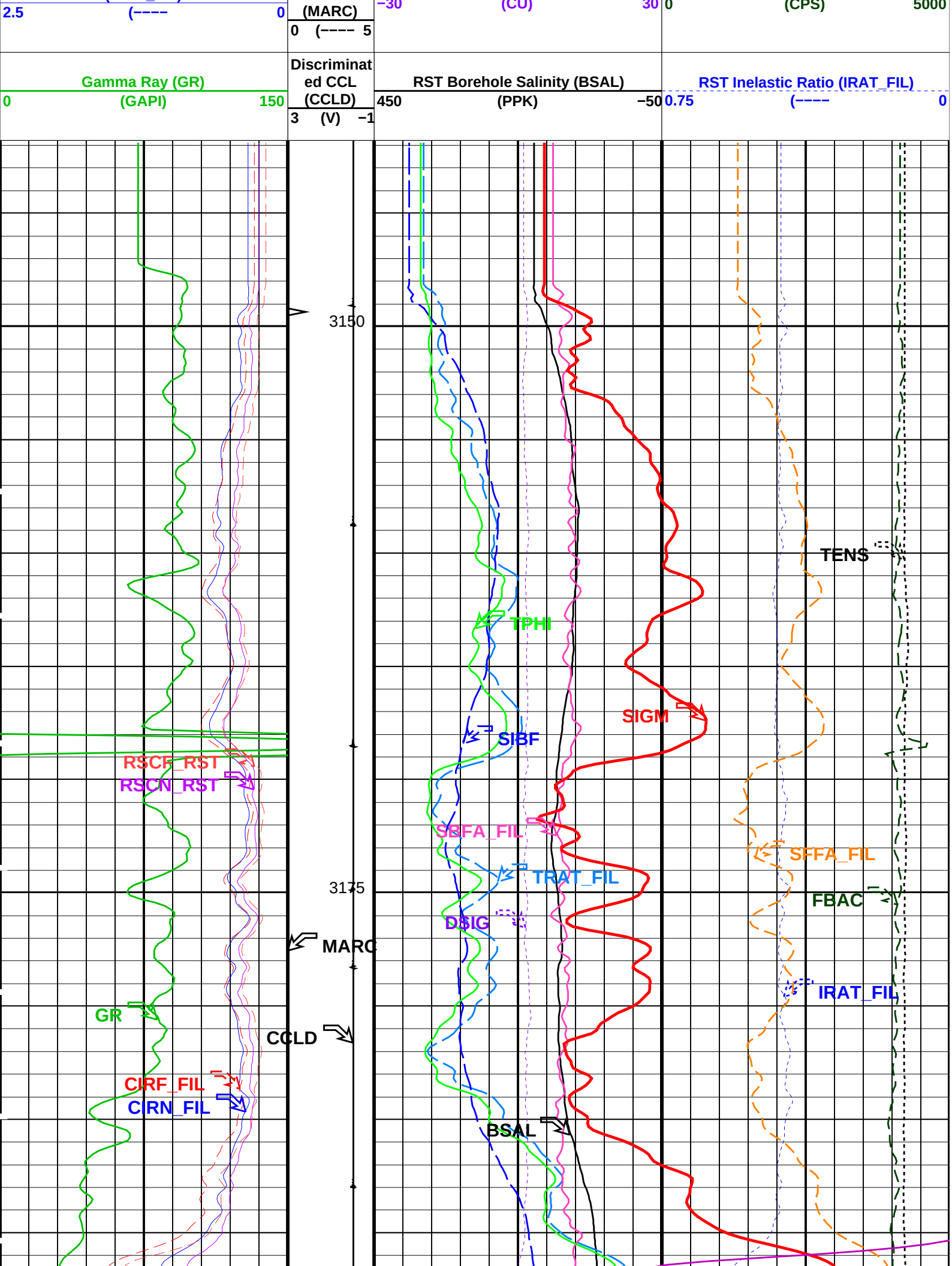
Sigma Formation Far Apparent (SFFA_FIL): 60 (CU) 0

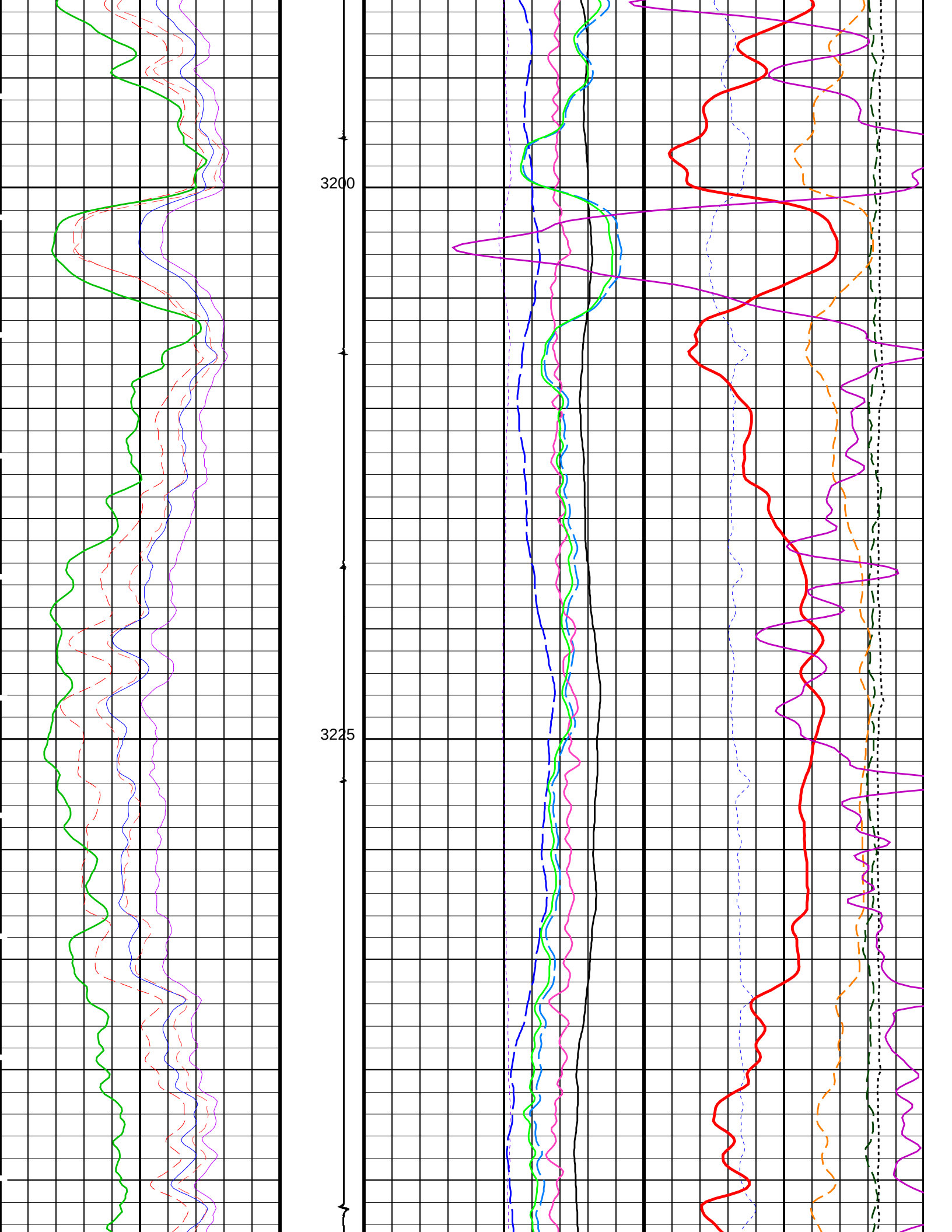
RST Capture to Inelastic Ratio Near (CIRN_FIL)

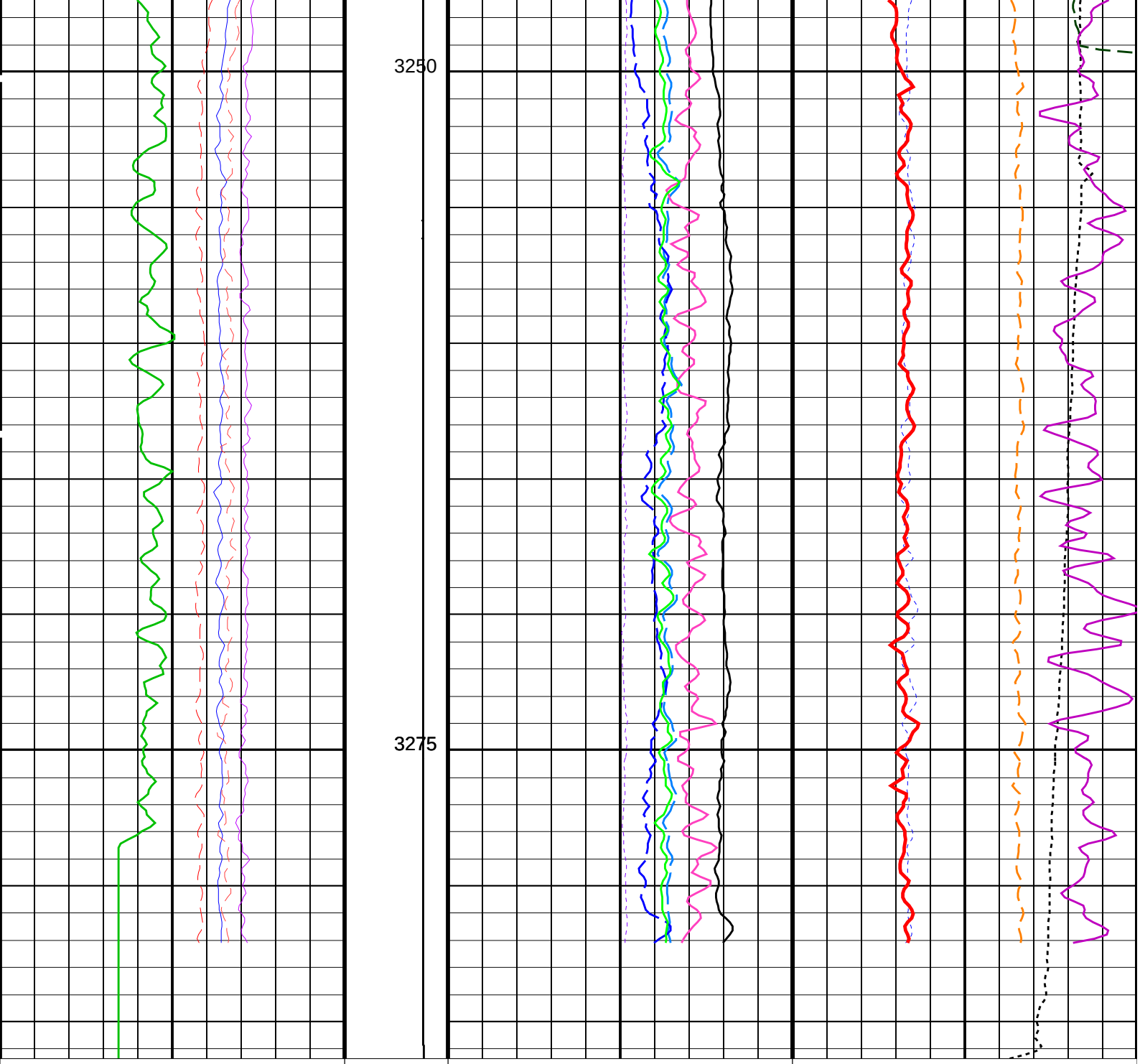
Minitron Arc Detection

RST Sigma Difference (DSIG)

MCS Far Background (filtered) (FBAC)


2.5
(----
0
(MARC)
0 (---- 5
−30
(CU)
30
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
3150
3175
TENS
TPHI
SIGM
SIBF
RSCF_RST
RSCN_RST
SBFA_FIL
SFFA_FIL
TRAT_FIL
FBAC
DSIG
MARC
IRAT_FIL
GR
CCLD
CIRF_FIL
CIRN_FIL
BSAL


3200
3225



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
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
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 Near Effective Capture CR (RSCN_RST) 45 (---- 0		Sigma Borehole Far Apparent (SBFA_FIL) 150 (CU) 0	Tension (TENS) 0 (LBF) 3000
RST Far Effective Capture CR (RSCF_RST) 45 (---- 0		RST Sigma Borehole Fluid (SIBF) 100 (CU) 0	

45	(----	0

RST Porosity (TPHI)		
0.6	(V/V)	0
RST Weighted Inelastic Ratio (WINR_RST)		
0.4	(----	0
RST Sigma (SIGM)		
60	(CU)	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	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	6.000	IN
BSAL	Borehole Salinity	−50000.00	PPM
CSIZ	Current Casing Size	4.500	IN
CWEI	Casing Weight	11.60	LB/F
DO	Depth Offset for Playback	4.4	M
PP	Playback Processing	NORMAL	

Format: RST_SIG_ANSW Vertical Scale: 1:200 Graphics File Created: 03−May−2008 15:33

OP System Version: 15C0−309

MCM

RST−C	SRPC−3546−Q1_2008_OP15	PSPT−A/B	SRPC−3546−Q1_2008_OP15

Input DLIS Files

DEFAULT	RST_PSP_027LUP	FN:26	PRODUCER	03−May−2008 15:11	3281.9 M	3142.3 M

Output DLIS Files

DEFAULT	RST_PSP_028PUP	FN:27	PRODUCER	03−May−2008 15:33

Schlumberger

RST−C Sigma GR Pass

MAXIS Field Log

Company: Esso Australia Pty Ltd. Well: A−22ST1

Input DLIS Files

DEFAULT	RST_PSP_027LUP	FN:26	PRODUCER	03−May−2008 15:11	3281.9 M	3142.3 M

Output DLIS Files

DEFAULT RST_PSP_028PUP FN:27 PRODUCER 03−May−2008 15:33 3286.4 M 3141.7 M

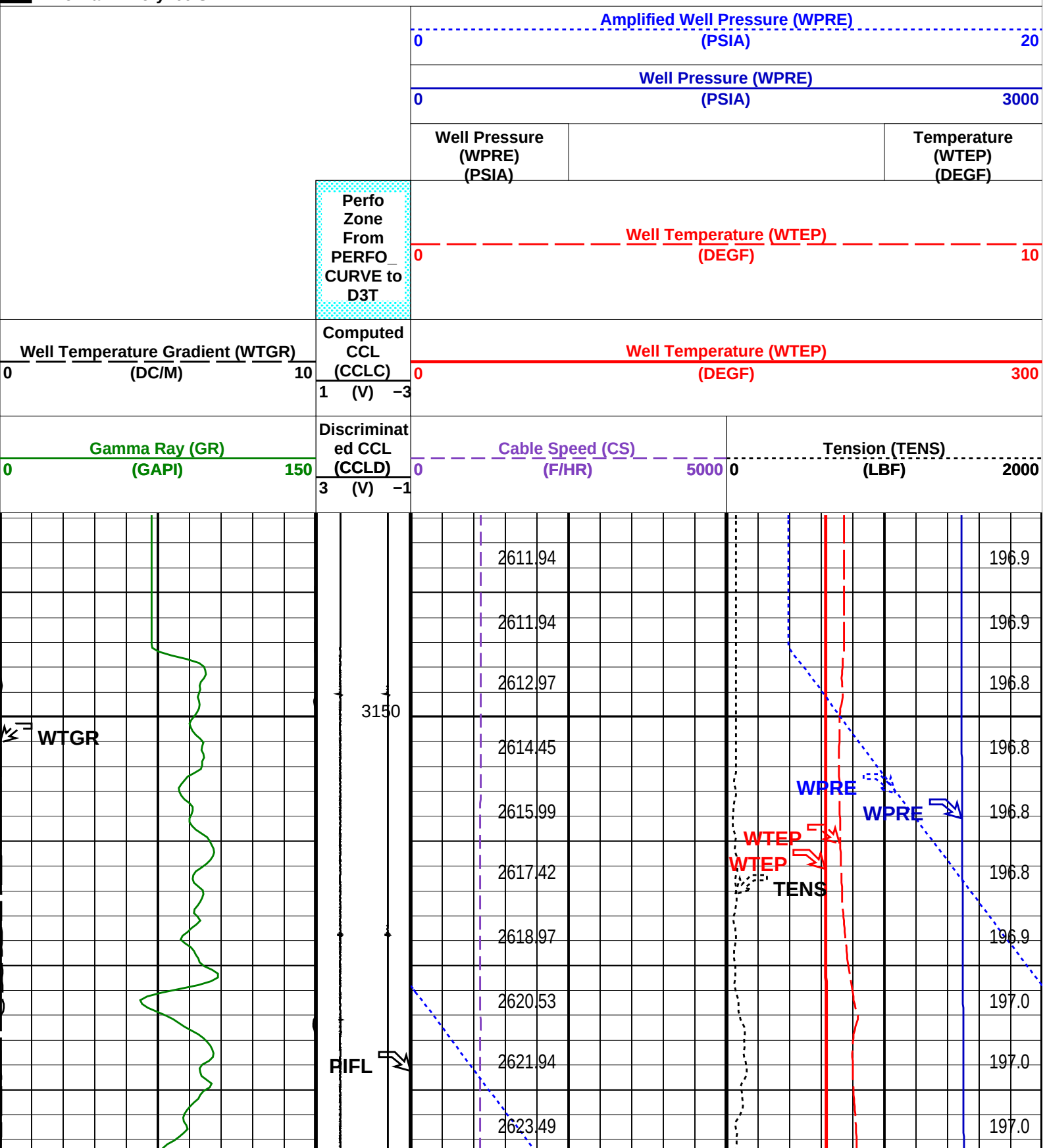
OP System Version: 15C0−309

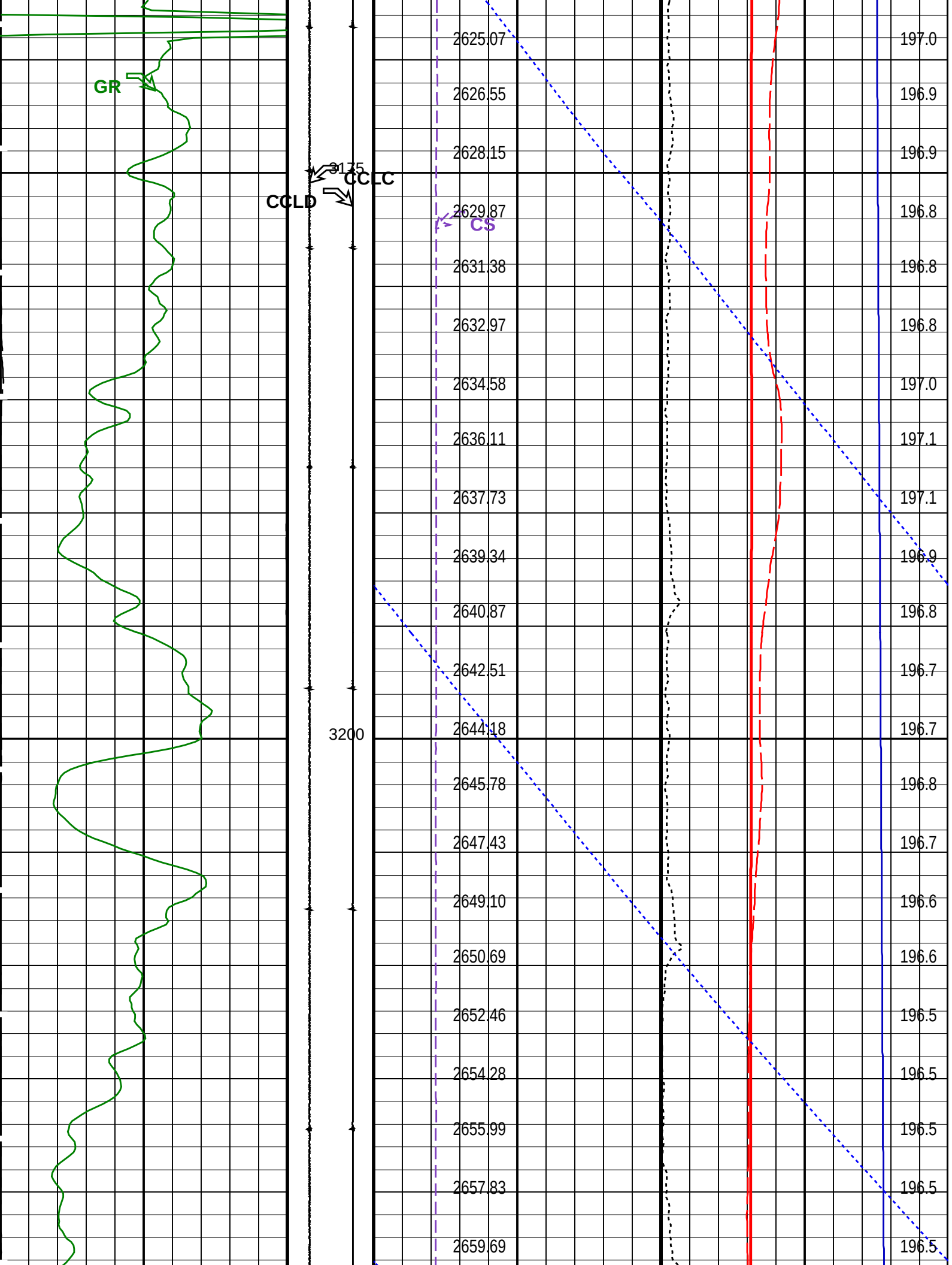
MCM

RST−C SRPC−3546−Q1_2008_OP15 PSPT−A/B SRPC−3546−Q1_2008_OP15

PIP SUMMARY

Time Mark Every 60 S




GR
3175
CCLC
CCLD
CS
3200
2625.07
2626.55
2628.15
2629.87
2631.38
2632.97
2634.58
2636.11
2637.73
2639.34
2640.87
2642.51
2644.18
2645.78
2647.43
2649.10
2650.69
2652.46
2654.28
2655.99
2657.83
2659.69
197.0
196.9
196.9
196.8
196.8
196.8
197.0
197.1
197.1
196.9
196.8
196.7
196.7
196.8
196.7
196.6
196.6
196.5
196.5
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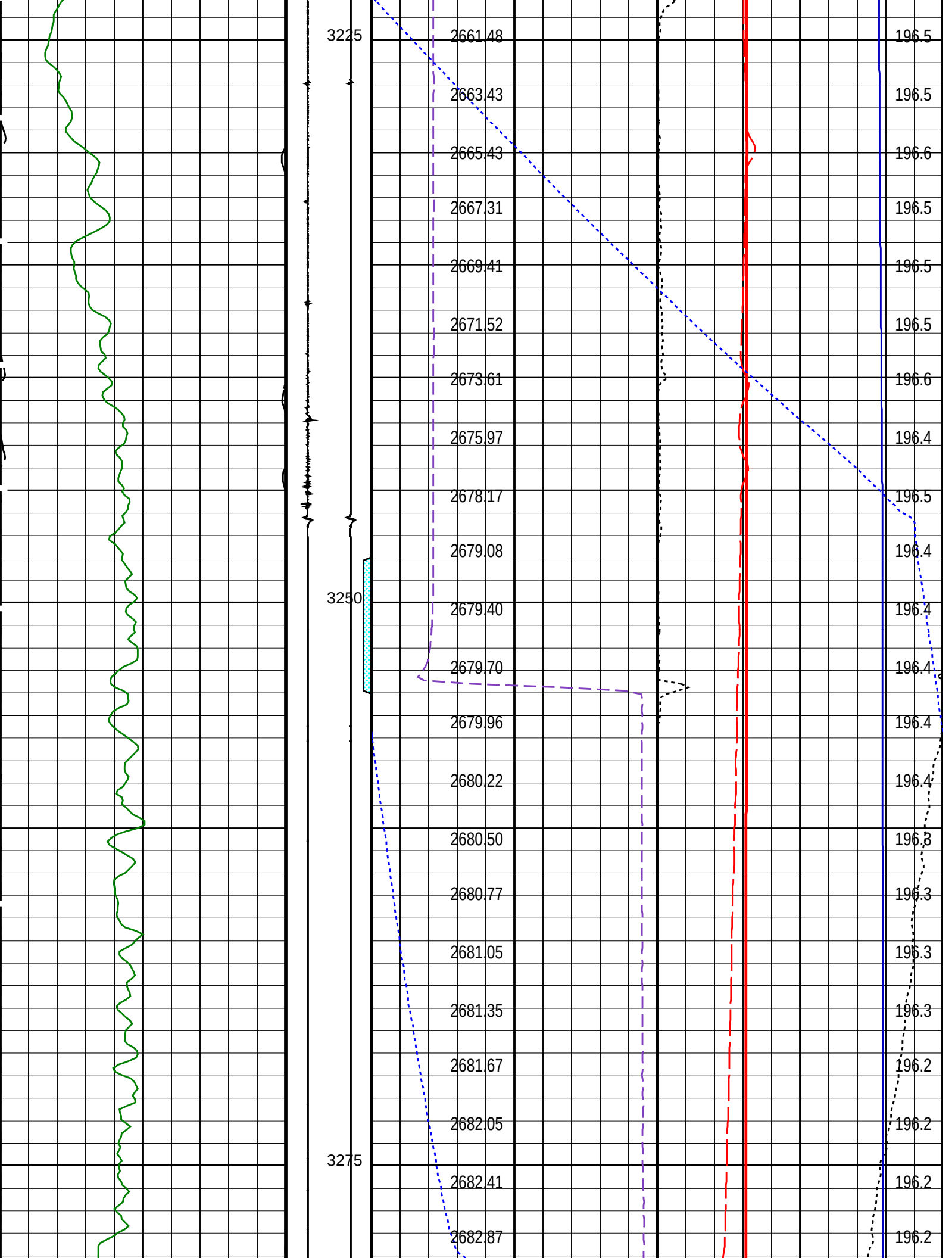
196.5
196.5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2667.31
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2673.61
2675.97
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2679.08
2679.40
2679.70
2679.96
2680.22
2680.50
2680.77
2681.05
2681.35
2681.67
2682.05
2682.41
2682.87
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196.6
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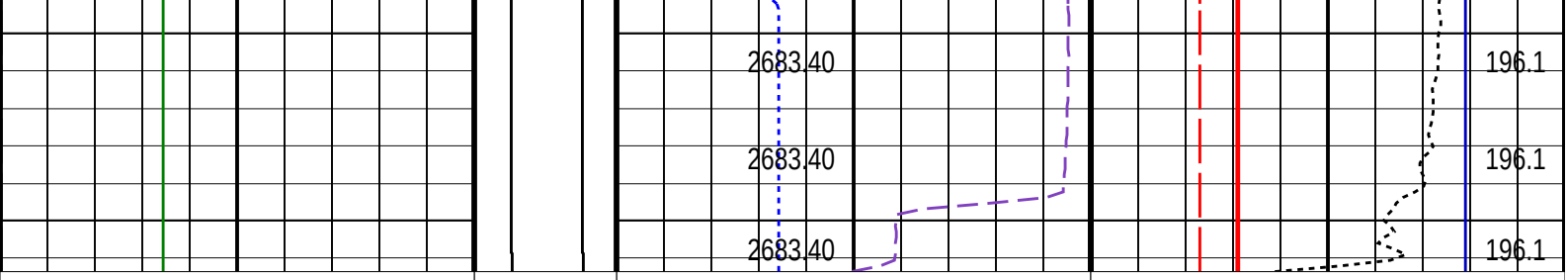

Gamma Ray (GR)
0 (GAPI) 150

Discriminated CCL (CCLD)
3 (V) −1

Cable Speed (CS)
0 (F/HR) 5000

Tension (TENS)
0 (LBF) 2000

Well Temperature Gradient (WTGR)
0 (DC/M) 10

Computed CCL (CCLC)
1 (V) −3

Well Temperature (WTEP)
0 (DEGF) 300

Perfo Zone From PERFO_CURVE to D3T

Well Temperature (WTEP)
0 (DEGF) 10

Well Pressure (WPRE) (PSIA)

Temperature (WTEP) (DEGF)

Well Pressure (WPRE)
0 (PSIA) 3000

Amplified Well Pressure (WPRE)
0 (PSIA) 20

PIP SUMMARY

Time Mark Every 60 S

Format: PSP_1 Vertical Scale: 1:200 Graphics File Created: 03−May−2008 15:33

OP System Version: 15C0−309

MCM

RST−C	SRPC−3546−Q1_2008_OP15	PSPT−A/B	SRPC−3546−Q1_2008_OP15

Parameters

DLIS Name	Description	Value	
	System and Miscellaneous		
DO	Depth Offset for Playback	4.4	M
PP	Playback Processing	NORMAL	

Input DLIS Files

DEFAULT	RST_PSP_027LUP	FN:26	PRODUCER	03−May−2008 15:11	3281.9 M	3142.3 M

Output DLIS Files

DEFAULT	RST_PSP_028PUP	FN:27	PRODUCER	03−May−2008 15:33

Company: **Esso Australia Pty Ltd.**

Schlumberger

Well: **A−22ST1**
Field: **Bream A**
Rig : **Prod4 / Crane**
Country: **Australia**

RST−C
Sigma
Survey