

Company: Esso Australia Pty Ltd

Well: CBA A-20

Field: Cobia

Rig: Rig 22

Country: Australia

2 1/8" Power Enerjet
Perforation Record
01-Nov-2007

Rig: Rig 22
Field: Cobia
Location: Gippsland
Well: CBA A-20
Company: Esso Australia Pty Ltd

LOCATION	
Gippsland	Elev.: K.B. 32.4 m
Basin	G.L. -79 m
Bass Strait	D.F. 32.4 m
Permanent Datum:	MSL
Log Measured From:	DF
Drilling Measured From:	DF
Elev.: 0 m	32.4 m above Perm. Datum

State: Victoria	Max. Well Deviation 29 deg	Longitude 148° 18' 28.5" E	Latitude 038° 27' 03.1" S
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Logging Date	1-Nov-2007
Run Number	1
Depth Driller	2638 m
Schlumberger Depth	2589.6 m
Bottom Log Interval	2563.5 m
Top Log Interval	2559.5 m
Casing Fluid Type	Produced Water
Salinity	
Density	1.01 lbm/gal
Fluid Level	298 m
BIT/CASING/TUBING STRING	
Bit Size	9.875 in
From	602 m
To	2638 m
Casing/Tubing Size	7.625 in
Weight	26.4 lbm/ft
Grade	N-80
From	12.7 m
To	2638 m
Maximum Recorded Temperatures	196 degF
Logger On Bottom	1-Nov-2007
Unit Number	3827
Recorded By	C.Rowand, M.Pratt
Witnessed By	Mr B. Robinson, Mr A. Smyth

PVT DATA				Run 1	Run 2	Run 3
Oil Density						
Water Salinity						
Gas Gravity						
Bo						
Bw						
1/Bg						
Bubble Point Pressure						
Bubble Point Temperature						
Solution GOR						
Maximum Deviation				29 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						

DEPTH SUMMARY LISTING

Date Created: 1-NOV-2007 7:39:26

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-E	Type:	CMTD-B/A	Type:	2-32ZT
Serial Number:	727	Serial Number:	1711	Serial Number:	24187
Calibration Date:	20-Sep-2007	Calibration Date:	25-Oct-2007	Length:	6299.91 M
Calibrator Serial Number:	727	Calibrator Serial Number:	1173	Conveyance Method:	Wireline
Calibration Cable Type:	2-32ZT	Calibration Gain:	0.97	Rig Type:	Offshore_Fixed
Wheel Correction 1:	-4	Calibration Offset:	-437.00		
Wheel Correction 2:	-3				

Depth Control Parameters

Log Sequence:	Subsequent Log In the Well
Reference Log Name:	Esso Solar Composite
Reference Log Run Number:	
Reference Log Date:	10-May-2007

Depth Control Remarks

1. IDW used as primary depth control
2. Z Chart used as a secondary depth control
3. Log correlated to Esso Solar Composite Log of 10–May–2007, provided by client.
- 4.
- 5.
- 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: MWPT	OS1:
OS2: GR-CCL	OS2:
OS3: 2 1/8" HPI Plug	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
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Log correlated to Solar Composite Log dated: 10-May-2007, provided by client.

Objective: Perforate the interval 2559.5m to 2562.5m MDKB using a

2 1/8" 6spf, 45 degree phased powerjet perforating gun incorporating GR/CCL.

Safe Initiated

Set a 2 1/8" HPI Long Life Plug for 7 5/8" casing, with Top of seal surface

at 2563.5m MDKB

Gun 1

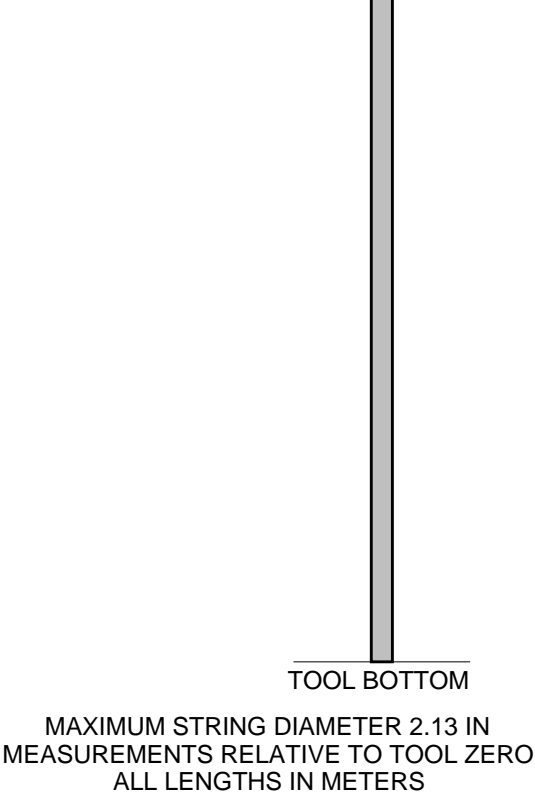
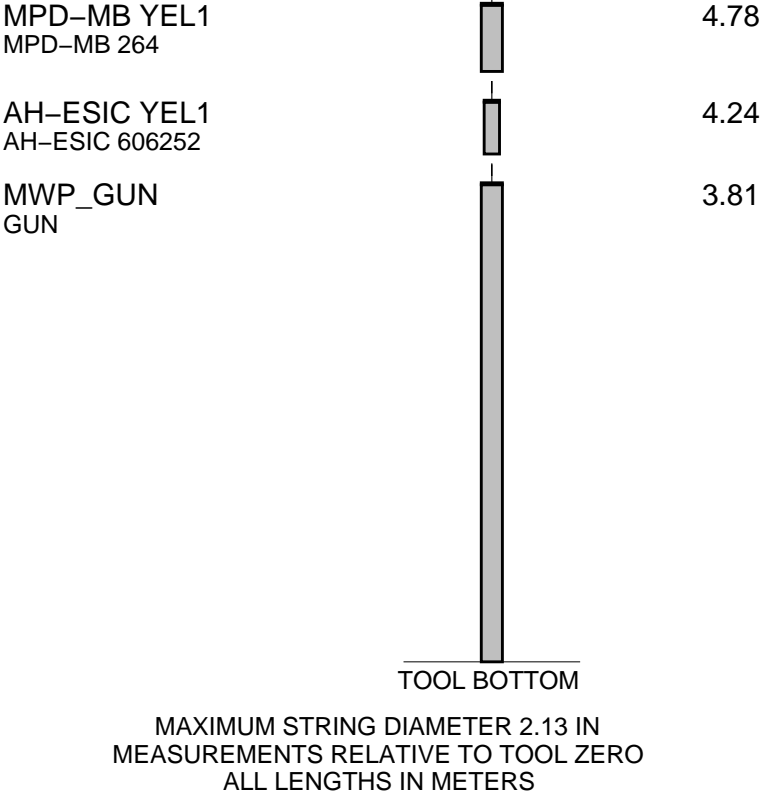
Top Shot: 2559.5m MDKB CCL
CCL to Top Shot: 3.11m MDKB
CCL Stop Depth: 2556.39m MDKB
BHP Before Firing: 3246 Psia, BHP After Firing: 3245.9 Psia
Plug # 1
Top of Seal: 2563.5m MDKB
CCL to Top of Seal: 11.68m
CCL Stop Depth: 2551.82m MDKB
Crew: (Days) B. Glover & M. Hancock
Night: B. Glover & M. Hancock

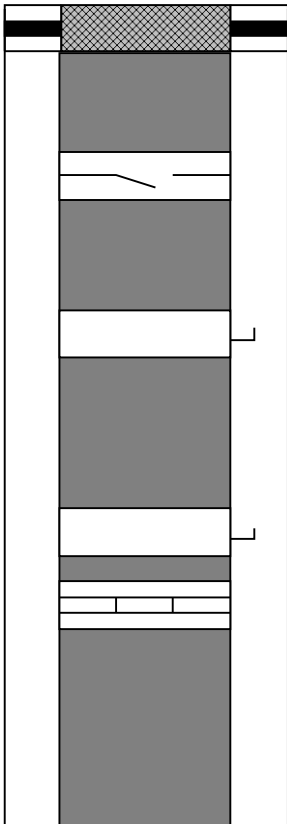
RUN 1			RUN 2		
SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:			SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:		
		15C0-309 298 m			
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

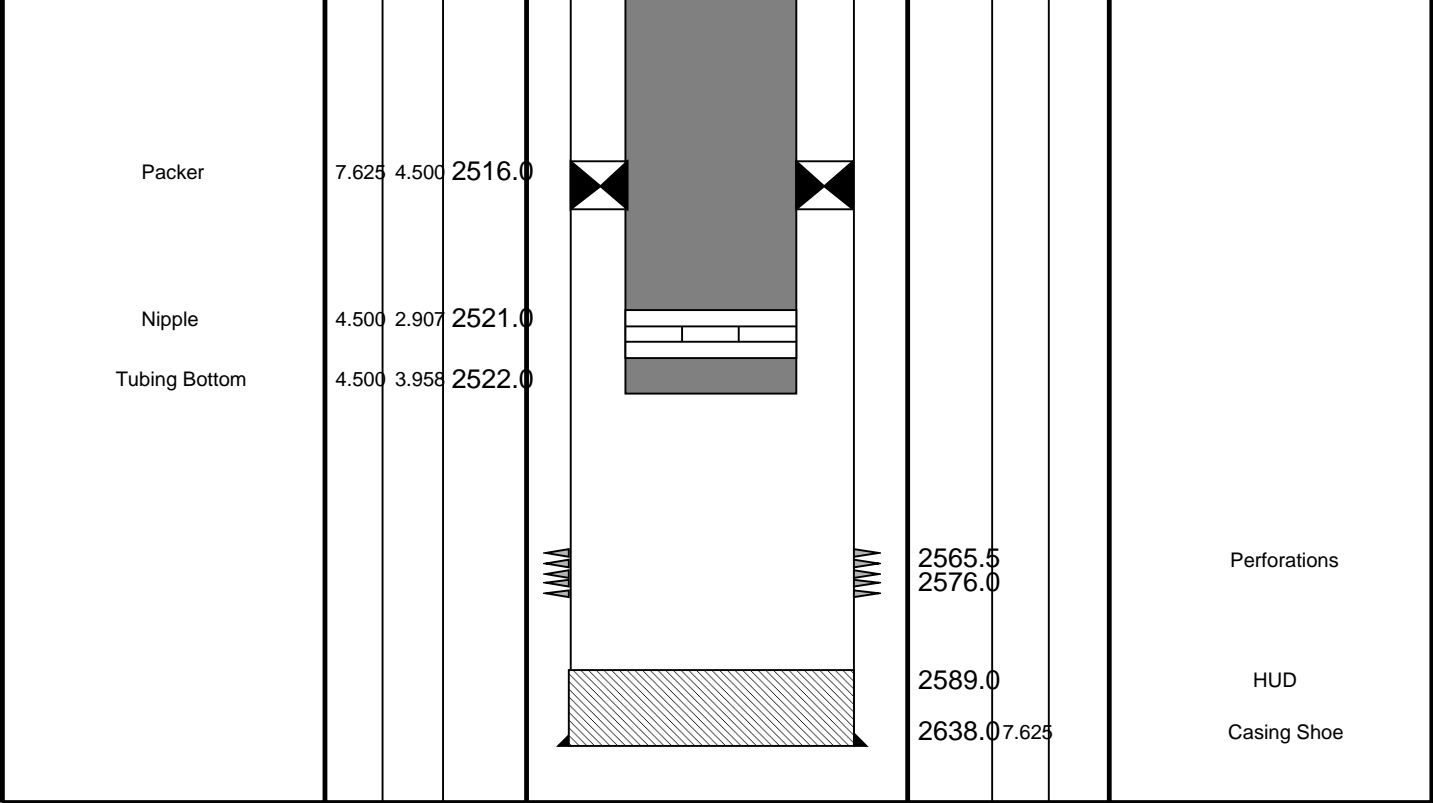
EQUIPMENT DESCRIPTION	
RUN 1	RUN 2
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
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93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

<p>MWPM-AA 3005</p> <p>SURFACE EQUIPMENT</p>	<p>WITM (SHM)</p> <p>SURFACE EQUIPMENT</p>
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DOWNHOLE EQUIPMENT		DOWNHOLE EQUIPMENT	
AH-SWBS YEL1 AH-SWBS 785	11.85	AH-SWHS YEL1 AH-SWHS 759	16.22
AH-SWBS YEL1 AH-SWBS 786	11.15	SAH-G SAH-G 1032	15.82
AH-SWBS YEL1 AH-SWBS 787	10.45	CCL-L YEL1 CCL-L 4346	15.37
AH-SWHS A AH-SWHS 759	9.75	SHM_GUN HPI Setting Tool GUN	14.91
AH-124 BLK1	9.36		
MWGT-AA BLK1 MWPG-AA 24 MWGH-AA 19	9.14		
MWPT-CA ORA1 MWPH-AA 90 MWPS-AA 121	8.17		
CCL SMWP Pres SMWP Temp Tension	TOOL ZERO		
AH-WPSA BA AH-WPSA 4001	5.35		



Production String	(in)		(m)	Well Schematic	(m)	(in)		Casing String
	OD	ID	MD		MD	OD	ID	
Tubing Hanger	7.625	4.500	11.9		7.625	<div>Casing String</div>		
Tubing	4.500	3.958						
SSSV	4.500	3.813	459.0					
Mandrel – Side Pocket	4.500	3.855	988.0					
Mandrel – Side Pocket	4.500	3.855	1325.0					
Nipple	4.500	3.688	1339.0					



HPI Plug Setting Pass

MAXIS Field Log

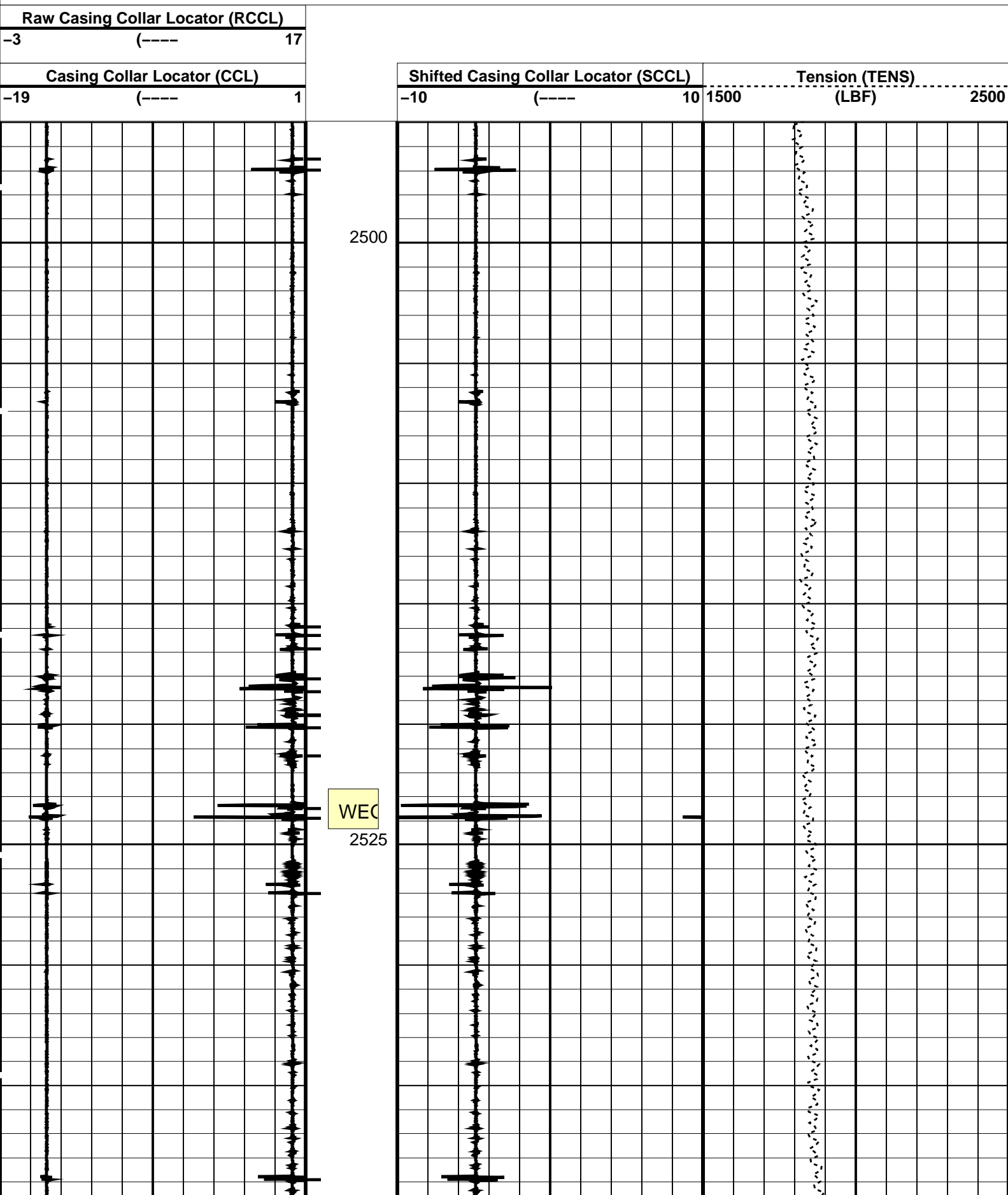
PERFO2 Operational Summary Listing

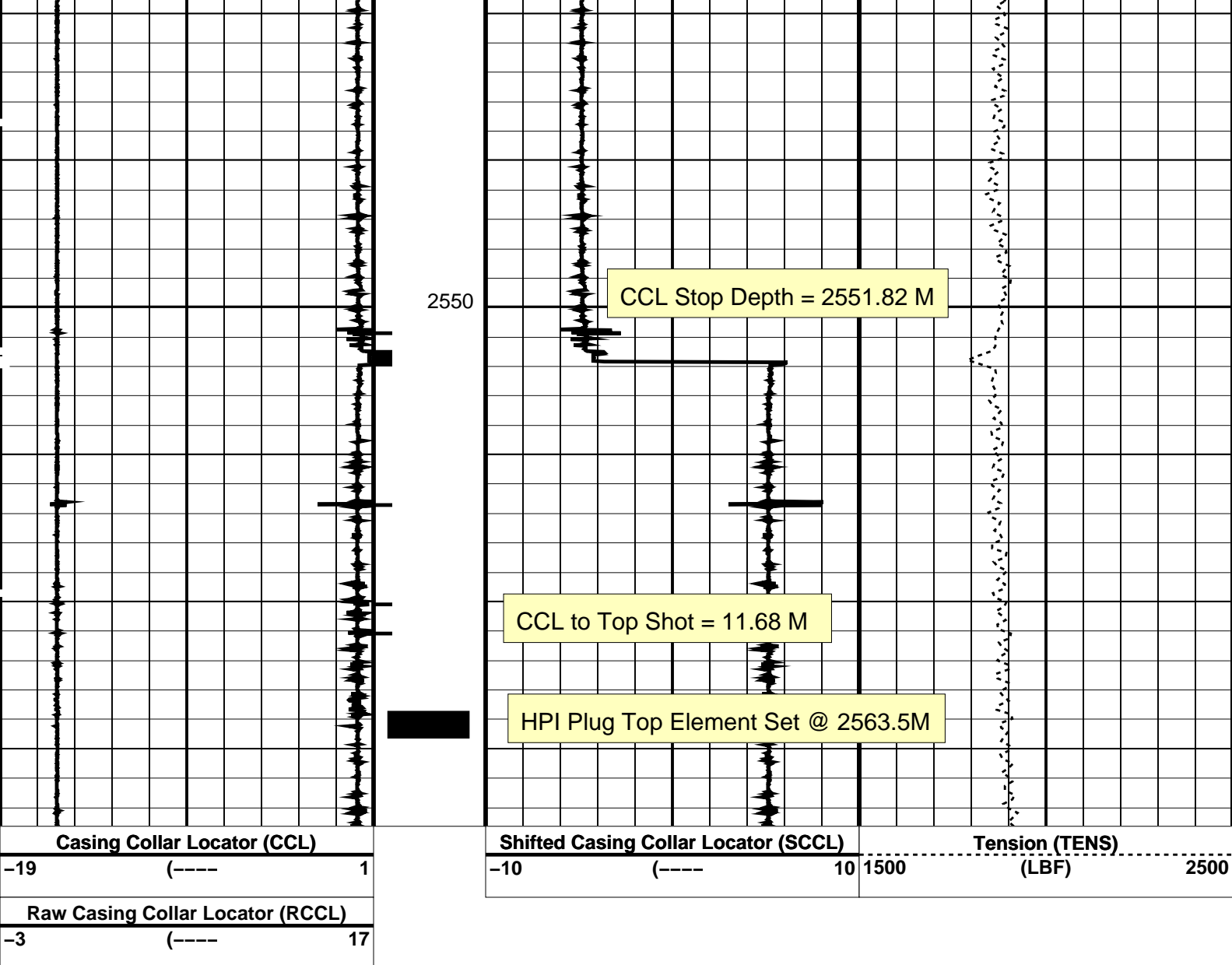
Device	Status	Req Depth (M)	Obs Depth (M)	Time Used
HPI PLUG	Used	2563.5	2563.5	Fri Nov 02 08:59:48 2007

PIP SUMMARY

└─ Casing Collars

Time Mark Every 60 S





PIP SUMMARY

← Casing Collars

Parameters

DLIS Name	Description	Value
CCLD	CCL-L: Casing Collar Locator	12 IN
CCLT	CCL reset delay	0.7 V
	CCL Detection Level	

Format: CCLLog Vertical Scale: 1:200

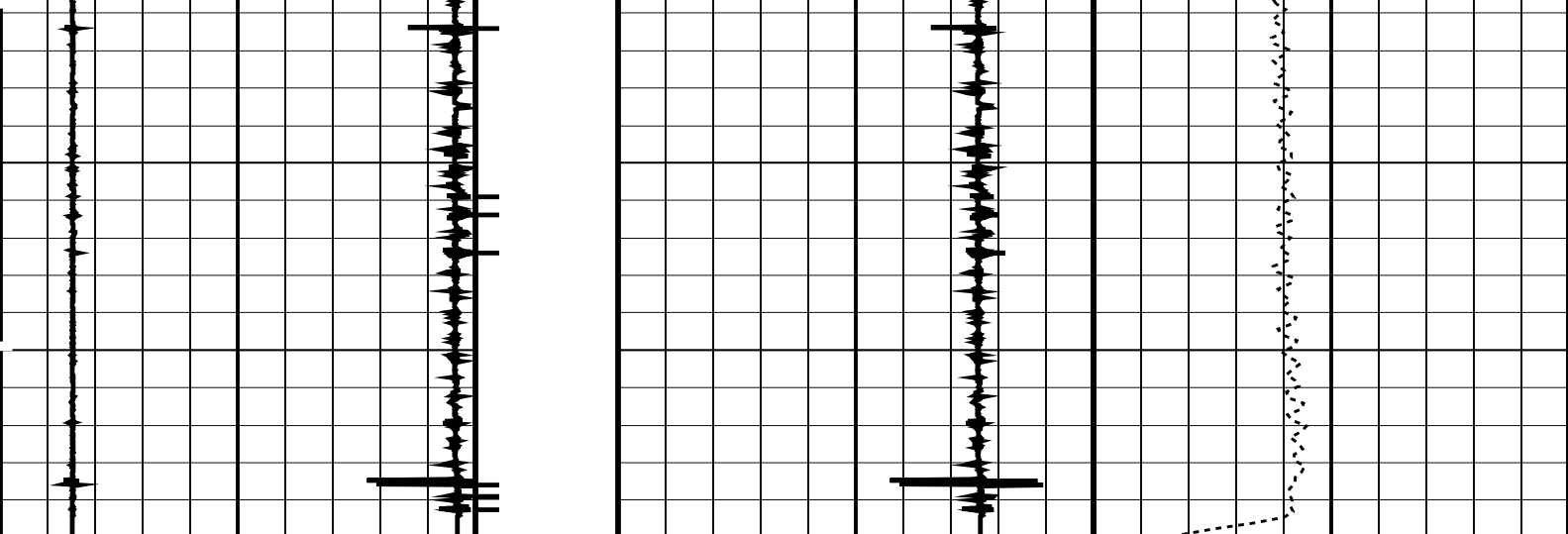
Graphics File Created: 02-Nov-2007 08:52

OP System Version: 15C0-309
MCM

SHM_GUN SRPC-3357-Q2_2007 CCL-L 15C0-309

Output DLIS Files

DEFAULT PERFO_049LUP FN:52 PRODUCER 02-Nov-2007 08:52



Casing Collar Locator (CCL)	Shifted Casing Collar Locator (SCCL)	Tension (TENS)
-19 (----) 1	-10 (----) 10	1500 (LBF) 2500
Raw Casing Collar Locator (RCCL)		
-3 (----) 17		

PIP SUMMARY

Time Mark Every 60 S

Casing Collars

Parameters		
DLIS Name	Description	Value
CCLD	CCL-L: Casing Collar Locator	12 IN
CCLT	CCL reset delay	0.7 V
	CCL Detection Level	
Format: CCLLog Vertical Scale: 1:200		Graphics File Created: 02-Nov-2007 08:41

OP System Version: 15C0-309

MCM

SHM_GUN SRPC-3357-Q2_2007 CCL-L 15C0-309

Output DLIS Files		
DEFAULT	PERFO_048LUP	FN:51 PRODUCER 02-Nov-2007 08:41



Dummy Plug Correlation Pass

MAXIS Field Log

Company: Esso Australia Pty Ltd Well: CBA A-20

Input DLIS Files					
DEFAULT	PSP_042LUP	FN:42	PRODUCER	02-Nov-2007 00:06	2591.3 M 2490.2 M
Output DLIS Files					
DEFAULT	PSP_042PUP	FN:45	PRODUCER	02-Nov-2007 00:26	2593.8 M 2493.3 M

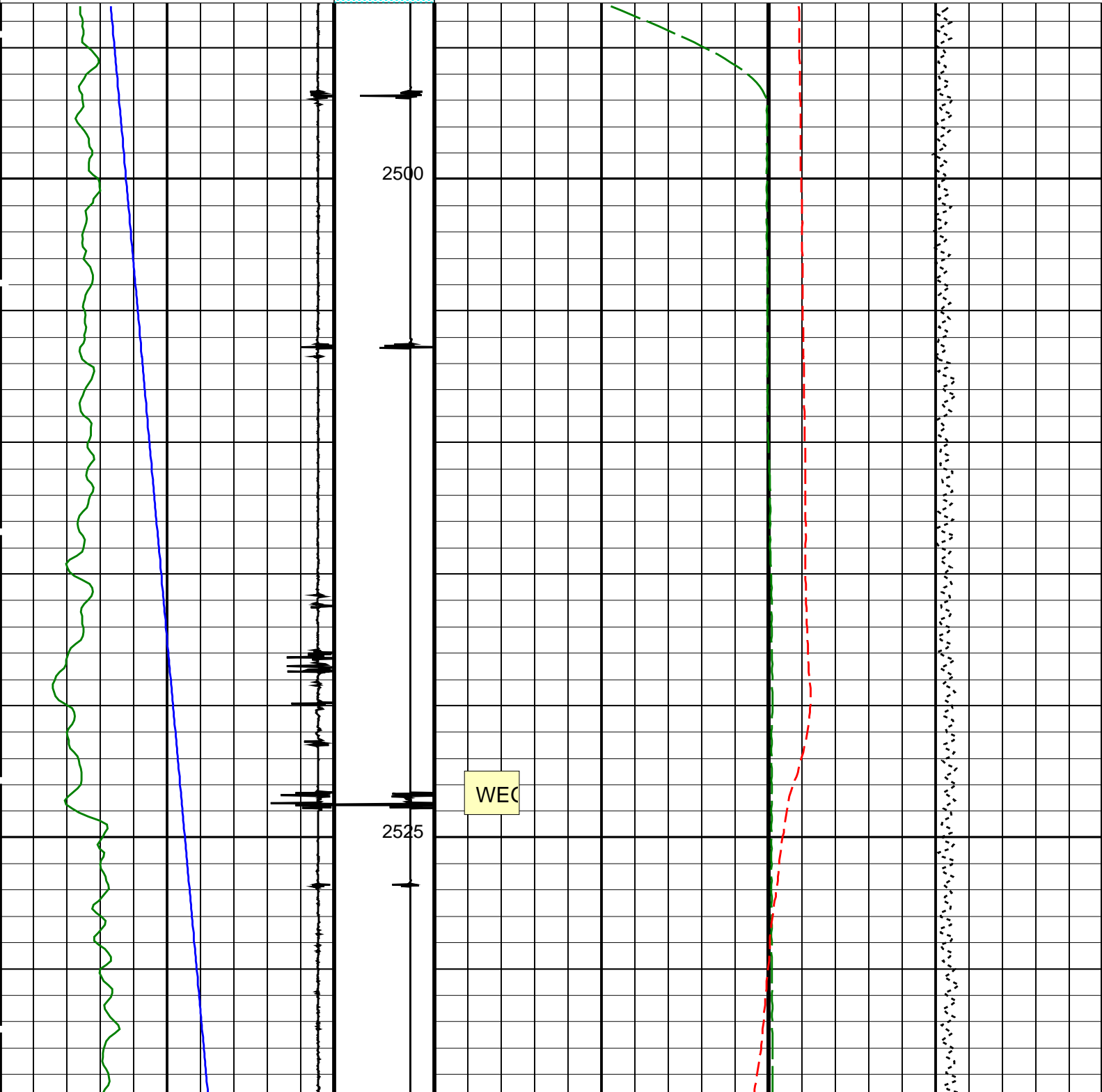
OP System Version: 15C0-309
MCM

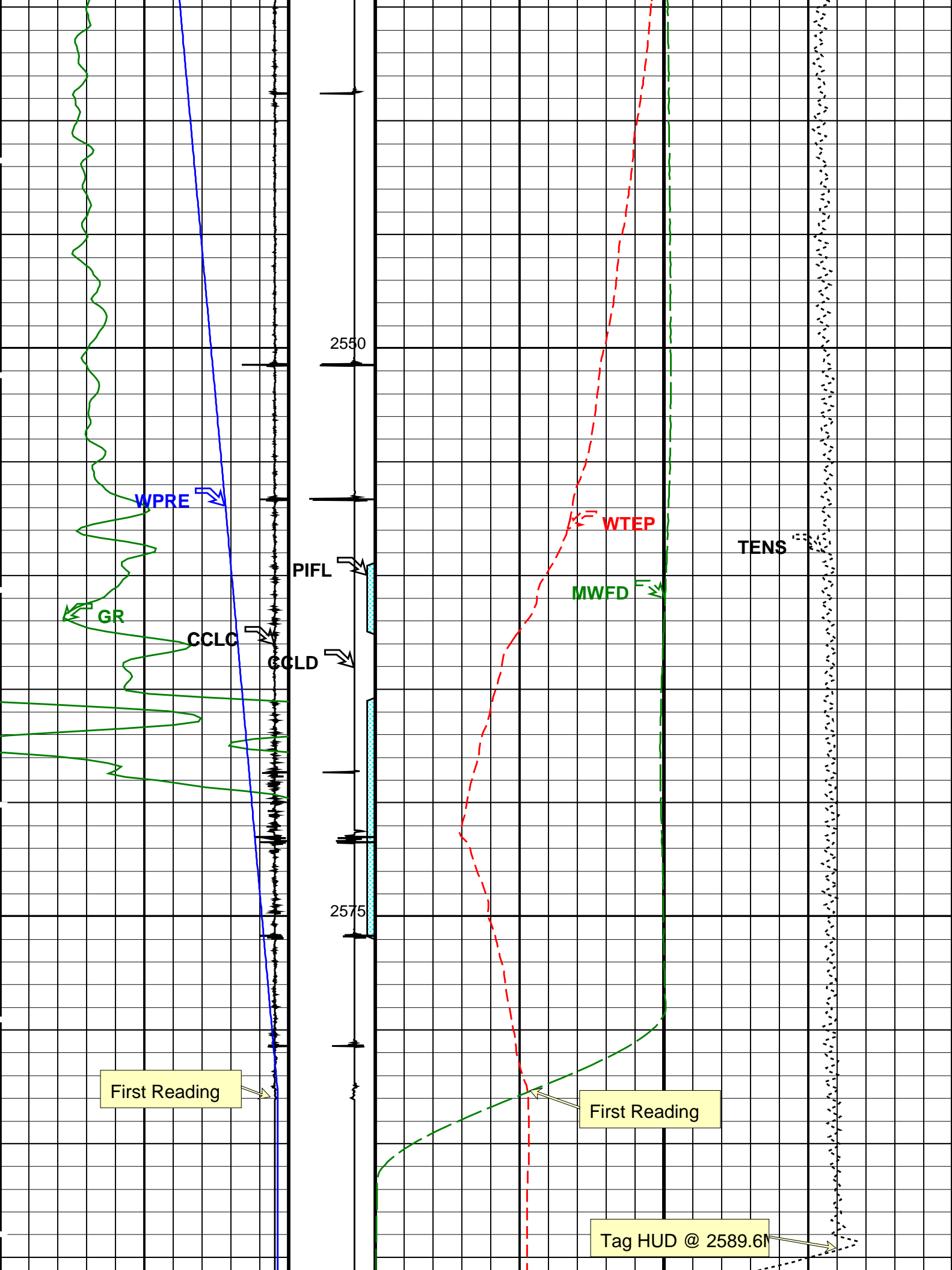
PSPT-B SRPC-3357-Q2_2007

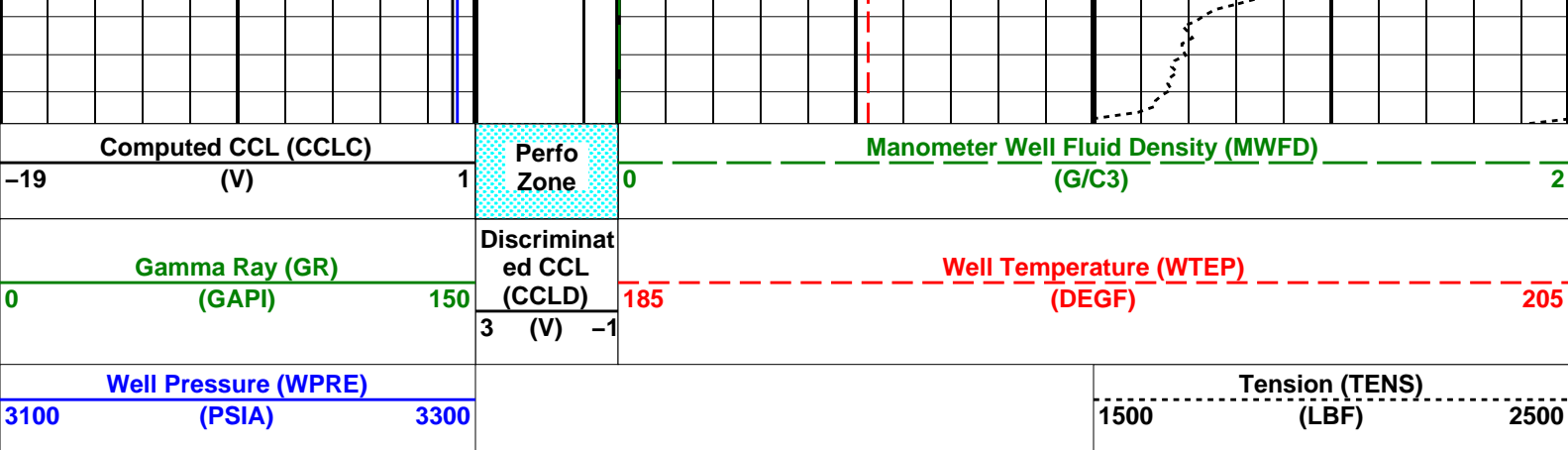
PIP SUMMARY

Time Mark Every 60 S

Well Pressure (WPRE) (PSIA)		Tension (TENS) (LBF)	
3100	3300	1500	2500
Gamma Ray (GR) (GAPI)		Well Temperature (WTEP) (DEGF)	
0	150	185	205
Discriminat ed CCL (CCLD) (V)			
3	-1		
Computed CCL (CCLC) (V)		Manometer Well Fluid Density (MWFD) (G/C3)	
-19	1	0	2
		Perfo Zone	







PIP SUMMARY

Time Mark Every 60 S

Format: PSP_1 Vertical Scale: 1:200 Graphics File Created: 02-Nov-2007 00:27

OP System Version: 15C0-309
MCM

PSPT-B SRPC-3357-Q2_2007

Input DLIS Files

DEFAULT	PSP_042LUP	FN:42	PRODUCER	02-Nov-2007 00:06	2591.3 M	2490.2 M
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Output DLIS Files

DEFAULT	PSP_042PUP	FN:45	PRODUCER	02-Nov-2007 00:26		
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Gun

Log out of Position

MAXIS Field Log

Company: Esso Australia Pty Ltd Well: CBA A-20

Output DLIS Files

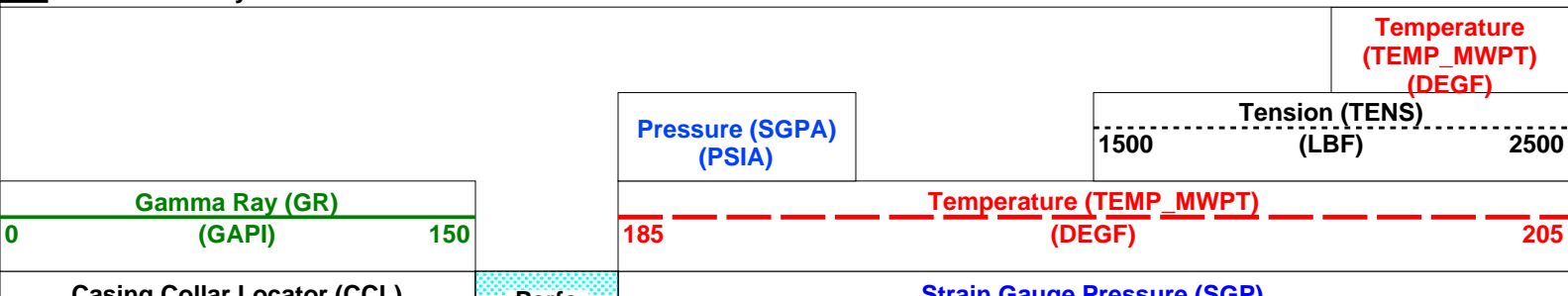
DEFAULT	PERFO_031LUP	FN:31	PRODUCER	01-Nov-2007 20:18	2556.4 M	2505.8 M
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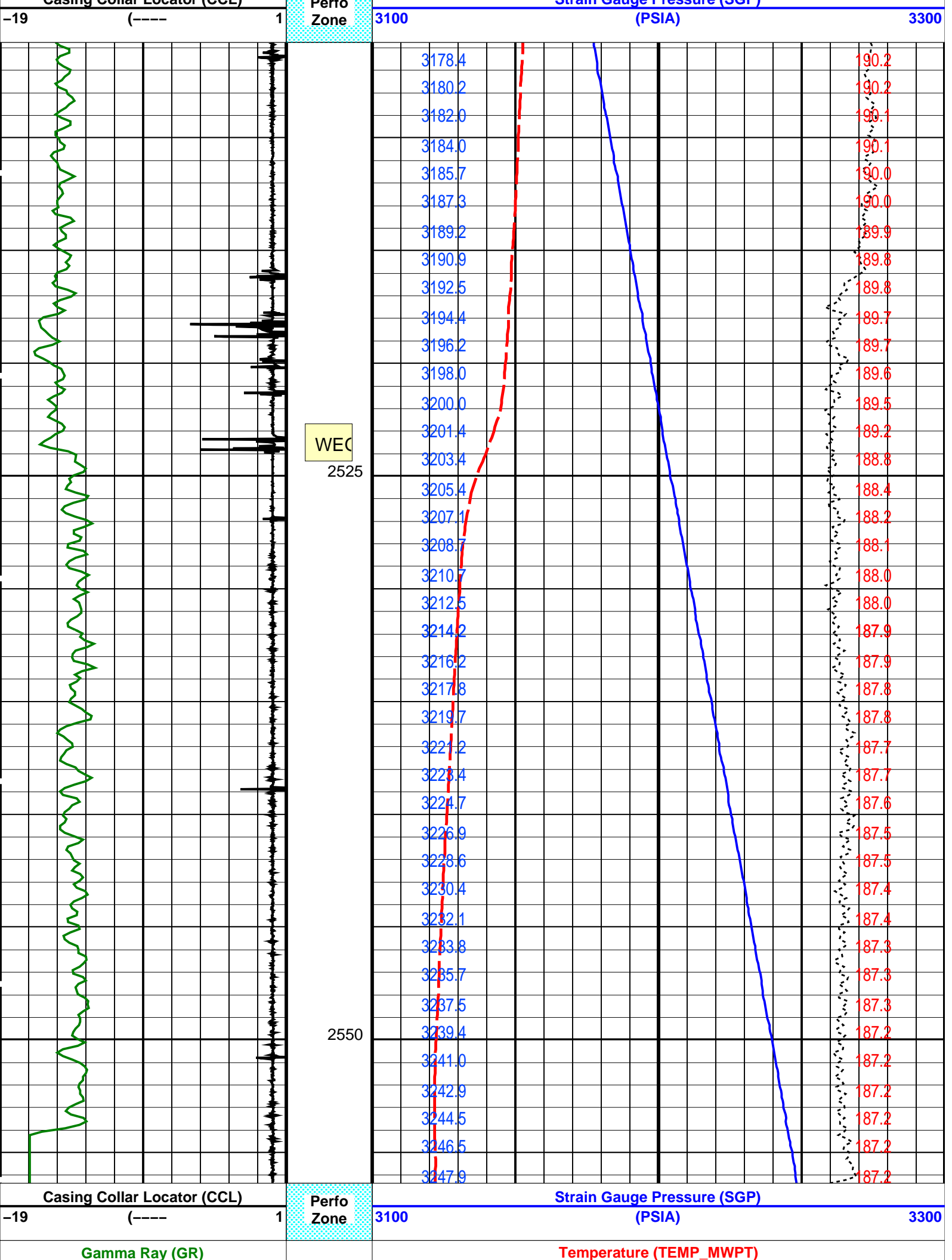
OP System Version: 15C0-309
MCM

MWP_GUN	SRPC-3357-Q2_2007	MWPT-CA	SRPC-3357-Q2_2007
MWGT-AA	SRPC-3357-Q2_2007		

PIP SUMMARY

Time Mark Every 60 S





0	(GAPI)	150	185	(DEGF)	205
			Pressure (SGPA) (PSIA)	1500	Tension (TENS) (LBF) 2500
			Temperature (TEMP_MWPT) (DEGF)		

PIP SUMMARY					
Time Mark Every 60 S					

Parameters			
DLIS Name	Description	Value	
MWPT-CA: MEASUREMENT WHILE PERFORATING TOOL			
DEVI_FL_CORR	Deviation Angle for Flow Line Correction	0	DEG
FLD	Flow Line Density	1	G/C3
MWPT_NULL_SOURCE	MWPT NULL Temperature Source	TEMS	
MWPT_NULL_TEMP	MWPT NULL Temperature	0.0	DEGC

Format: MWP	Vertical Scale: 1:200	Graphics File Created: 01-Nov-2007 20:18
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OP System Version: 15C0-309			
MCM			
MWP_GUN	SRPC-3357-Q2_2007	MWPT-CA	SRPC-3357-Q2_2007
MWGT-AA	SRPC-3357-Q2_2007		

Output DLIS Files			
DEFAULT	PERFO_031LUP	FN:31	PRODUCER 01-Nov-2007 20:18



Gun Firing Record

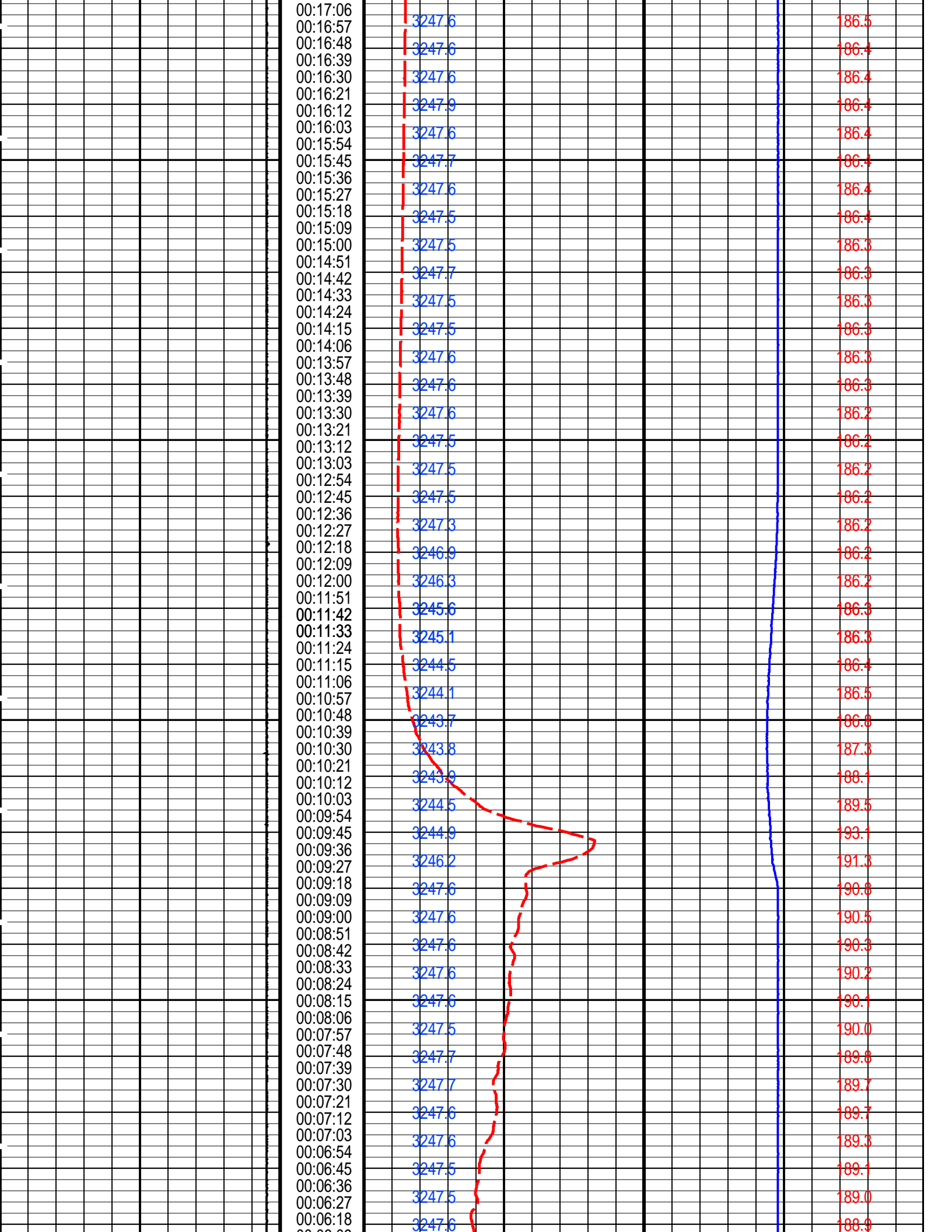
MAXIS Field Log

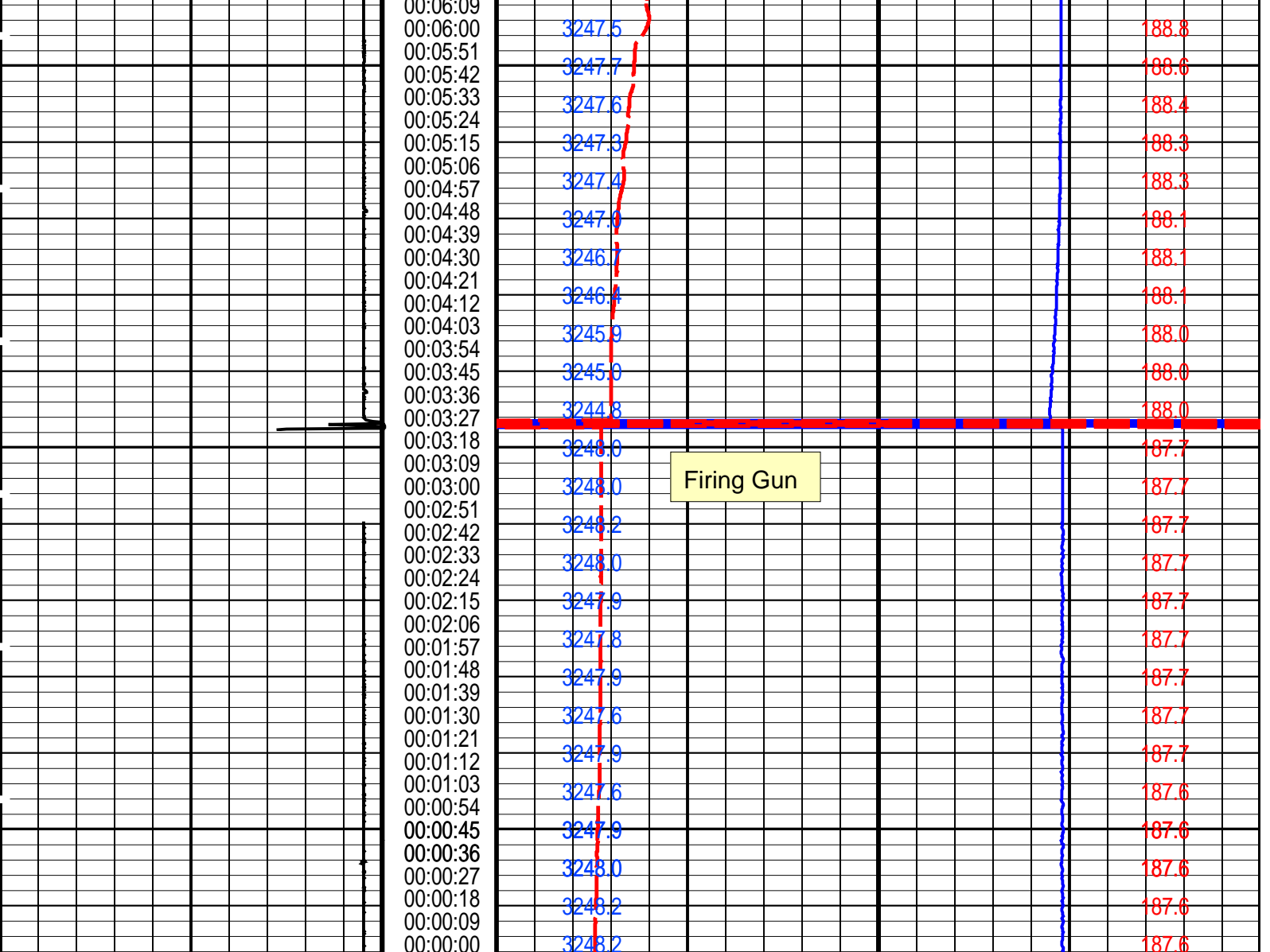
PERFO2 Operational Summary Listing					
Device	Status	Req Depth (M)	Obs Depth (M)	Time Used	
Gun1	Used	2559.5	2559.5	Thu Nov 01 20:01:44 2007	

Company: Esso Australia Pty Ltd				Well: CBA A-20	
Output DLIS Files					
DEFAULT	PERFO_030LTP	FN:30	PRODUCER	01-Nov-2007 19:58	2556.4 M 4.0 M
OP System Version: 15C0-309					
MCM					
MWP_GUN	SRPC-3357-Q2_2007	MWPT-CA	SRPC-3357-Q2_2007		
MWGT-AA	SRPC-3357-Q2_2007				
PIP SUMMARY					
<div>Time Mark Every 60 S</div>					

	Pressure (SGPA)		Temperature
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					SL (PSIA)						(TEMP_MWPT_SL) (DEGF)		
					Firing Sequence State (FSS SL) (----	Temperature (TEMP_MWPT_SL) (DEGF)					185	205	
					0	1024							
Casing Collar Locator (CCL_SL) (----					1	Elapsed Time (ETIM) (S)	Strain Gauge Pressure (SGP_SL) (PSIA)					3100	3300
						00:26:15						3247.9	187.1
						00:26:06							
						00:25:57						3248.1	187.1
						00:25:48							
						00:25:39						3247.6	187.1
						00:25:30							
						00:25:21						3248.0	187.1
						00:25:12							
						00:25:03						3248.0	187.1
						00:24:54							
						00:24:45						3247.8	187.0
						00:24:36							
						00:24:27						3247.6	187.0
						00:24:18							
						00:24:09						3247.7	187.0
						00:24:00							
						00:23:51						3247.7	187.0
						00:23:42							
						00:23:33						3247.6	187.0
						00:23:24							
						00:23:15						3248.0	187.0
						00:23:06							
						00:22:57						3248.1	187.0
						00:22:48							
						00:22:39						3247.9	186.9
						00:22:30							
						00:22:21						3247.7	186.9
						00:22:12							
						00:22:03						3247.6	186.9
						00:21:54							
						00:21:45						3248.0	186.9
						00:21:36							
						00:21:27						3247.9	186.8
						00:21:18							
						00:21:09						3247.9	186.8
						00:21:00							
						00:20:51						3247.7	186.8
						00:20:42							
						00:20:33						3248.0	186.7
						00:20:24							
						00:20:15						3247.7	186.7
						00:20:06							
						00:19:57						3247.7	186.7
						00:19:48							
						00:19:39						3247.9	186.6
						00:19:30							
						00:19:21						3247.7	186.6
						00:19:12							
						00:19:03						3247.7	186.6
						00:18:54							
						00:18:45						3247.7	186.6
						00:18:36							
						00:18:27						3247.5	186.6
						00:18:18							
						00:18:09						3247.8	186.5
						00:18:00							
						00:17:51						3247.6	186.5
						00:17:42							
						00:17:33						3247.6	186.5
						00:17:24							
						00:17:15						3247.8	186.5





Casing Collar Locator (CCL_SL)		Elapsed Time (ETIM) (S)		Strain Gauge Pressure (SGP_SL) (PSIA)	
-19	(----	1		3100	3300
Firing Sequence State (FSS SL) (----		Temperature (TEMP_MWPT_SL) (DEGF)			
0		1024		185	
		Pressure (SGPA_SL) (PSIA)		Temperature (TEMP_MWPT_SL) (DEGF)	

PIP SUMMARY

Time Mark Every 60 S

Parameters		
DLIS Name	Description	Value
MWPT-CA: MEASUREMENT WHILE PERFORATING TOOL		
DEVI_FL_CORR	Deviation Angle for Flow Line Correction	0 DEG
FLD	Flow Line Density	1 G/C3
MWPT_NULL_SOURCE	MWPT NULL Temperature Source	TEMS
MWPT_NULL_TEMP	MWPT NULL Temperature	0.0 DEGC

Format: MWP_SL Vertical Scale: 1" per 60S Graphics File Created: 01-Nov-2007 19:58

OP System Version: 15C0-309
MCM

MWPT-GUN
MWGT-AA

SRPC-3357-Q2_2007

SRPC-3357-Q2_2007

Output DLIS Files

DEFAULTPERFO_030LTPFN:30PRODUCER01-Nov-2007 19:58

Schlumberger

Gun
Log into Position

MAXIS Field Log

Company: Esso Australia Pty Ltd

Well: CBA A-20

Output DLIS Files

DEFAULTPERFO_029LUPFN:29PRODUCER01-Nov-2007 19:512582.3 M2556.5 M

OP System Version: 15C0-309

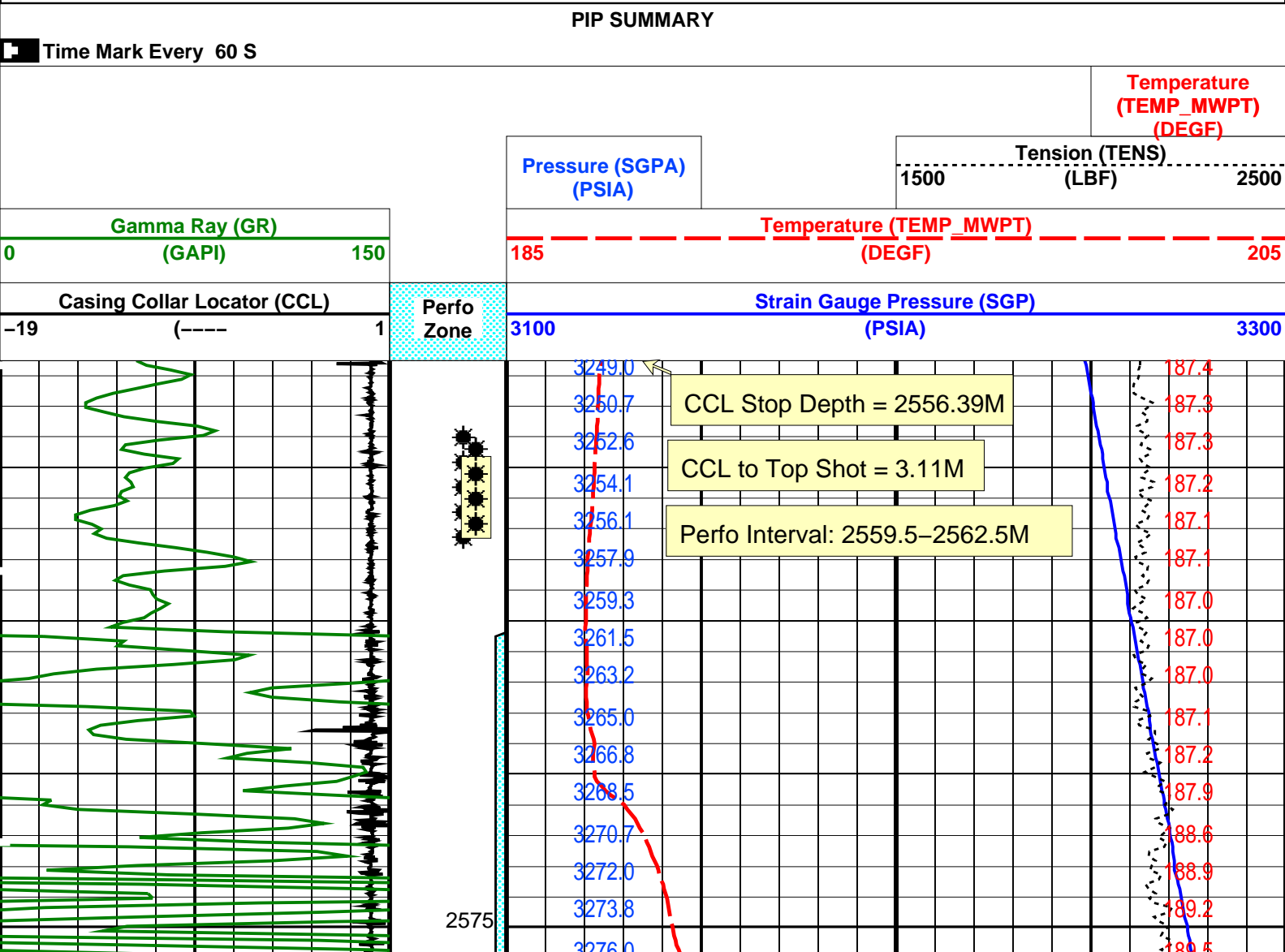
MCM

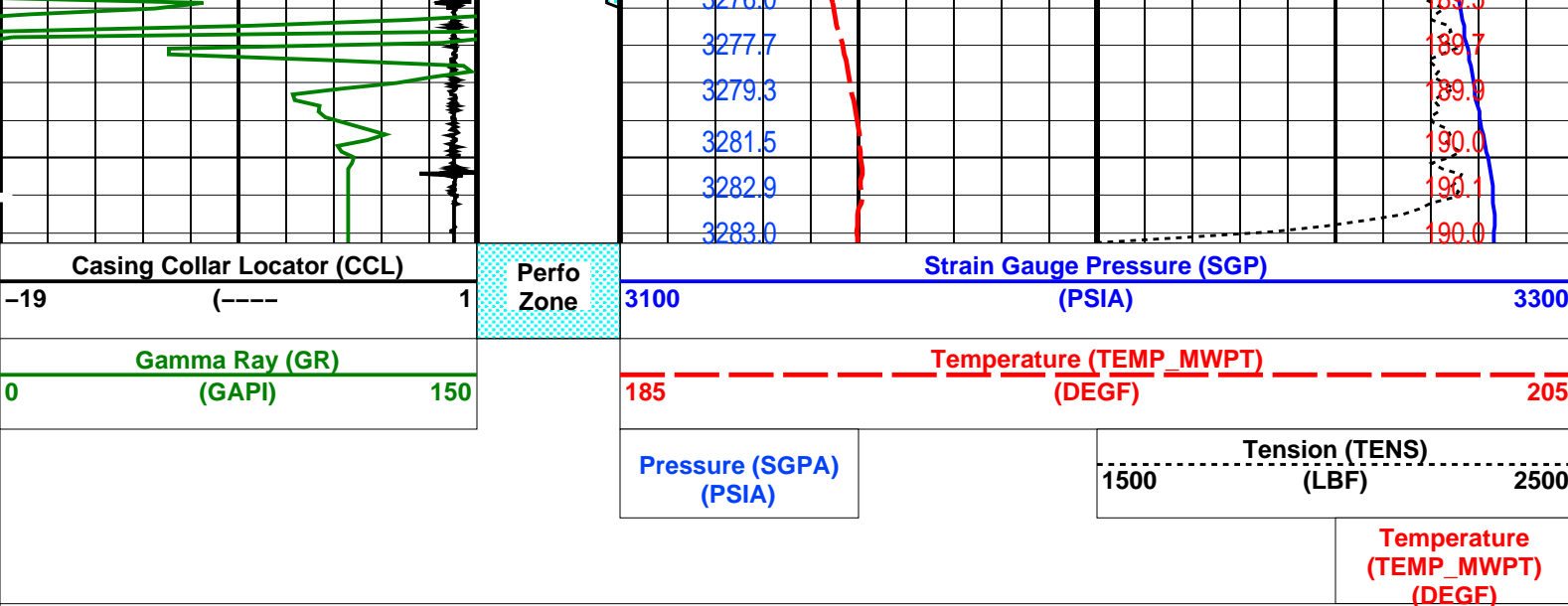
MWP_GUN
MWGT-AA

SRPC-3357-Q2_2007
SRPC-3357-Q2_2007

MWPT-CA

SRPC-3357-Q2_2007





PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
MWPT-CA: MEASUREMENT WHILE PERFORATING TOOL		
DEVI_FL_CORR	Deviation Angle for Flow Line Correction	0 DEG
FLD	Flow Line Density	1 G/C3
MWPT_NULL_SOURCE	MWPT NULL Temperature Source	TEMS
MWPT_NULL_TEMP	MWPT NULL Temperature	0.0 DEGC

Format: MWP Vertical Scale: 1:200

Graphics File Created: 01-Nov-2007 19:51

OP System Version: 15C0-309

MCM

MWP_GUN	SRPC-3357-Q2_2007	MWPT-CA	SRPC-3357-Q2_2007
MWGT-AA	SRPC-3357-Q2_2007		

Output DLIS Files

DEFAULT	PERFO_029LUP	FN:29	PRODUCER	01-Nov-2007 19:51
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Schlumberger

Gun Correlation Pass

MAXIS Field Log

Company: Esso Australia Pty Ltd

Well: CBA A-20

Output DLIS Files

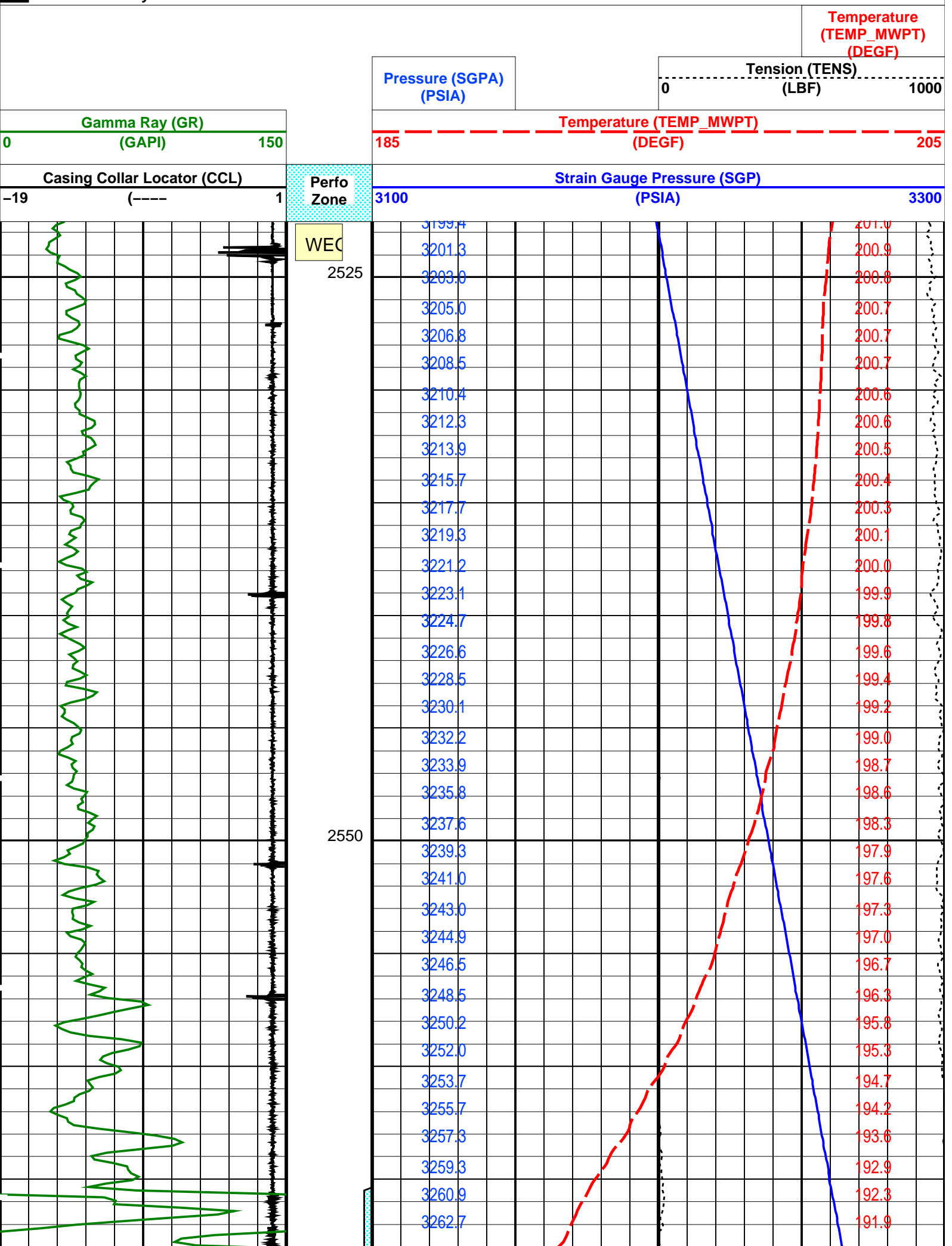
DEFAULT	PERFO_023LUP	FN:22	PRODUCER	01-Nov-2007 07:05	2575.0 M	2522.5 M
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OP System Version: 15C0-309

MCM

MWP_GUN	SRPC-3357-Q2_2007	MWPT-CA	SRPC-3357-Q2_2007
MWGT-AA	SRPC-3357-Q2_2007		

PIP SUMMARY





Casing Collar Locator (CCL)			Perfo Zone	Strain Gauge Pressure (SGP)		
-19	(----	1		3100	(PSIA)	3300
Gamma Ray (GR)				Temperature (TEMP_MWPT)		
0	(GAPI)	150	185	(DEGF)	205	
			Pressure (SGPA) (PSIA)	Tension (TENS) 0-----1000 (LBF)		
			Temperature (TEMP_MWPT) (DEGF)			

PIP SUMMARY

Time Mark Every 60 S

Parameters			
DLIS Name	Description	Value	
MWPT-CA: MEASUREMENT WHILE PERFORATING TOOL			
DEVI_FL_CORR	Deviation Angle for Flow Line Correction	0	DEG
FLD	Flow Line Density	1	G/C3
MWPT_NULL_SOURCE	MWPT NULL Temperature Source	TEMS	
MWPT_NULL_TEMP	MWPT NULL Temperature	0.0	DEGC

Format: MWP Vertical Scale: 1:200 Graphics File Created: 01-Nov-2007 07:05

OP System Version: 15C0-309			
MCM			
MWP_GUN	SRPC-3357-Q2_2007	MWPT-CA	SRPC-3357-Q2_2007
MWGT-AA	SRPC-3357-Q2_2007		

Output DLIS Files			
DEFAULT	PERFO_023LUP	FN:22	PRODUCER 01-Nov-2007 07:05



MAXIS Field Log

Calibration and Check Summary							
Measurement	Nominal	Master	Before	After	Change	Limit	Units
MEASUREMENT WHILE PERFORATING GAMMA RAY TOOL Wellsite Calibration – Detector Calibration							
Before: 31-Oct-2007 11:11							
Gamma Ray (Signal) Background	30.00	N/A	2.709	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Background)	136.0	N/A	136.0	N/A	N/A	12.37	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI

MEASUREMENT WHILE PERFORATING GAMMA RAY TOOL / Equipment Identification

Primary Equipment:

GAMMA RAY CARTRIDGE

MWPG – AA

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BLK1

Auxiliary Equipment:

GAMMA RAY HOUSING

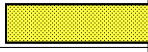


MWGH – AA

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BLK1

MEASUREMENT WHILE PERFORATING GAMMA RAY TOOL Wellsite Calibration

Detector Calibration

Phase	Gamma Ray (Signal)	Background	GAPI	Value	Phase	Gamma Ray (Jig – Background)	GAPI	Value	Phase	Gamma Ray (Calibrated)	GAPI	Value
Before				2.709	Before			136.0	Before			165.0
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)			123.7 (Minimum)	136.0 (Nominal)	148.4 (Maximum)		150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)

Before: 31-Oct-2007 11:11

Company: **Esso Australia Pty Ltd**

Schlumberger

Well: **CBA A-20**

Field: **Cobia**

Rig: **Rig 22**

Country: **Australia**

2 1/8" Power Enerjet
Perforation Record
01-Nov-2007