



Company: Esso Australia Ltd.

Well: A-16S

Field: Tuna

Rig: Crane / Prod 4

Country: Australia

Wireline Perforating Platform  
2.0" HSD-4SPF-0deg Phasing  
Oriented Perforating Record

Gippsland	Elev.: K.B. 32.9 m
Basin	G.L. -59 m
Bass Strait	D.F. 34.2 m

Permanent Datum:	Mean Sea Level	Elev.: 0 m
Log Measured From:	Kelly Bushing	32.9 m above Perm. Datum
Drilling Measured From:	Kelly Busing	

State: Victoria	Max. Well Deviation 51 deg	Longitude 148 25' 10.575"E	Latitude 38 10' 10.912"S
-----------------	----------------------------	----------------------------	--------------------------

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

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	51 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: 26-OCT-2005 5:48:43

**Depth System Equipment**

Depth Measuring Device	Tension Device	Logging Cable
Type: IDW-B Serial Number: 754 Calibration Date: 5-May-2005 Calibrator Serial Number: 1009 Calibration Cable Type: 2-32ZT Wheel Correction 1: -3 Wheel Correction 2: -3	Type: CMTD-B/A Serial Number: 1037 Calibration Date: 14-July-2005 Calibrator Serial Number: 1051 Calibration Gain: 1.29 Calibration Offset: 777.00	Type: 2-32ZT Serial Number: 22372 Length: 4799.99 M Conveyance Method: Wireline Rig Type: Offshore_Fixed

**Depth Control Parameters**

Log Sequence:	Subsequent Trip To the Well
Reference Log Name:	Tuna A16 Petrophysical Analysis
Reference Log Run Number:	
Reference Log Date:	27-Sep-2004
Subsequent Trip Down Log Correction:	-4.50 M

**Depth Control Remarks**

1.
2.
3.
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
OS1: None
OS2:
OS3:
OS4:
OS5:

REMARKS: RUN NUMBER 1
Log Correlated to Exxon Mobil Petrophysical Analysis, log date 27-Sep-2004.
Tool string run as per tool sketch with centraliser at top to ensure gun rotation.
Maximum well deviation = 51 degrees at 1950m MDKB.
Bottom hole pressure survey conducted first to confirm pressure at shooting depth.
BHP = 1946 psia @ 1700m MDKB, at temperature of 164 degF.
Completion mapping performed at 1699m (middle of perforation interval) and 1693.5m MDKB (with gun positioned on depth).
Mapping performed at both 50Hz and 100Hz frequencies.
Perforations added from 1696-1702m MDKB at a relative bearing of -140 degrees

RUN 1		RUN 2	
SURFACE EQUIPMENT		SURFACE EQUIPMENT	
WITM-A		No SHM WITM-A	
DOWNHOLE EQUIPMENT		DOWNHOLE EQUIPMENT	
AH-Swbs-a 761 AH-Swbs-a 761  AH-Swbs-a 762 AH-Swbs-a 762  AH-Swbs-a 763 AH-Swbs-a 763  AH-Swbs-a 731 AH-Swbs-a 731  MH-Swbs-a 724 MH-Swbs-a 724  PSPT-A/B PSC-A PSPT-B PSTC 1864 PBMS-B 1750 CQG_F_Mano RTD_Thermometer GR CCL PBMS	7.42  6.74  6.05  5.36  4.68 4.35 3.22	MH-SWHS-A 754 SAH-G 1035 PL-CMIR-AB 3 WPMOT-AA WPMOT-AA 1  WPTET-AA PSC-A WPTEH-AA 6 WPTC-A 6 WPMOC 1 WPTec 6  WPGRT-A WPGRH-A 4 WPGRC-A 4  WPPCM-AA WPCIH-AA 11 WPCIC 11  WPST-AA WPSH-AA 10 WPSC 10  WPP_GUN GUN	15.09 14.76 14.45 14.15  12.55  10.75  9.73  8.43  7.39

Well\_Temp \_\_\_\_\_ 2.29  
 CQG Manom \_\_\_\_\_ 2.18  
 CCL \_\_\_\_\_ 2.06  
 PBMS PSTC \_\_\_\_\_ 1.83

EQF-46  
 EQF-46

1.83

Tension HV \_\_\_\_\_ 0.00  
 TOOL ZERO

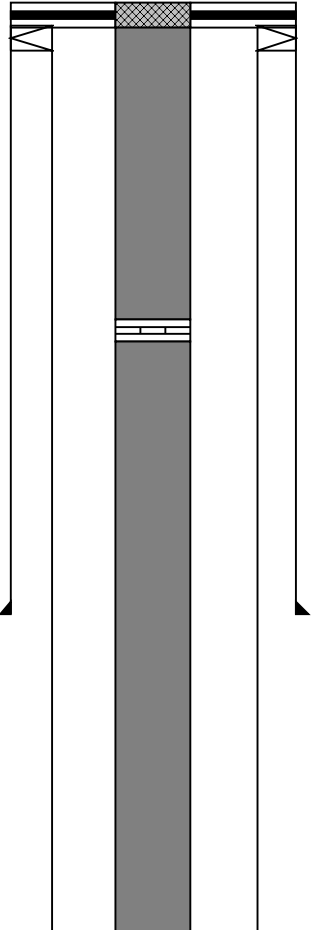
MAXIMUM STRING DIAMETER 2.13 IN  
 MEASUREMENTS RELATIVE TO TOOL ZERO  
 ALL LENGTHS IN METERS

TOOL BOTTOM

MAXIMUM STRING DIAMETER 2.00 IN  
 MEASUREMENTS RELATIVE TO TOOL ZERO  
 ALL LENGTHS IN METERS

Client: Esso Australia Pty Ltd  
 Well: TNA A-16S  
 Field: Tuna  
 State: Victoria  
 CountryAustralia

Drawing Date: 26/10/2005  
  
 Rig Name: Prod 4 / Crane  
 Reference Datum: Mean Sea Level  
 Elevation: 32.9 m

Production String	(in)		(m)	Well Schematic	(m)	(in)		Casing String
	OD	ID	MD		MD	OD	ID	
Tubing Hanger Tubing	13.375 3.500	3.500 2.992	13.0 13.3		14.5	13.375		Casing String
Nipple Tubing	3.500 3.500	2.750 2.992	455.4 456.1					
					837.0	13.375		Casing Shoe

Gas Lift Mandrel Tubing	3.500 3.500	2.906 2.906	1225.1 1227.1						
Gas Lift Mandrel Nipple Tubing	3.500 3.500 3.500		1580.3 1593.9 1594.2						
Packer Nipple Tubing	9.625 3.500 3.500	3.500 2.329 2.992	1673.1 1678.0 1678.4						
						1762.0 1764.0 1781.8 1904.4	7.000 9.625		Perforation Zone Perforation Zone Bottom Casing String Casing Shoe
Packer – Long String	7.000		2301.4			2880.0	7.000		Casing Shoe



# Shooting Log

MAXIS Field Log

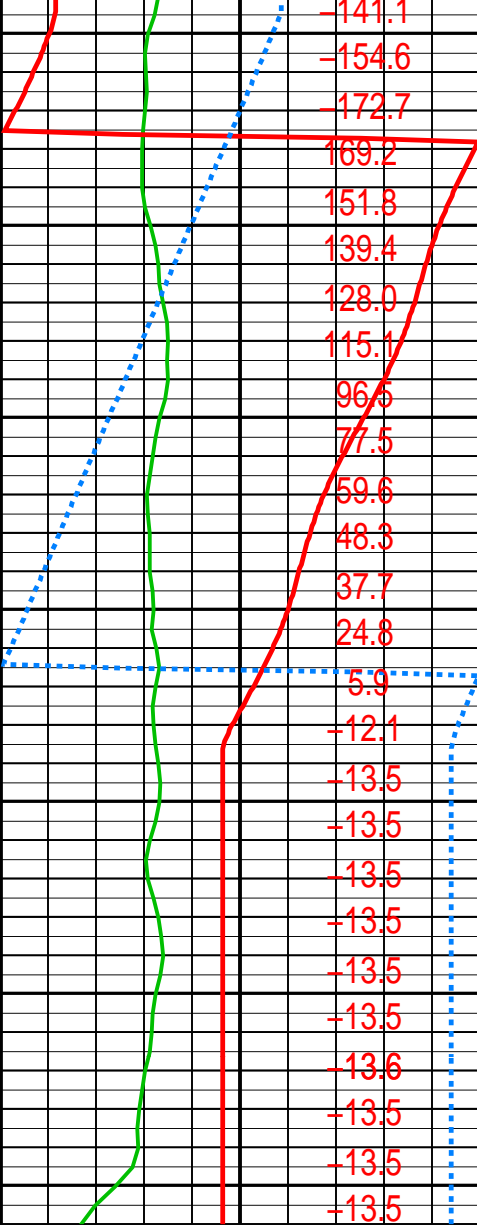
Company: Esso Australia Ltd.

Well: A-16S

Input DLIS Files						
DEFAULT	PERFO_Perfo_WPGRT_041LTP	FN:40	PRODUCER	25-Oct-2005 15:47	1691.5 M	0.4 M
OP System Version: 13C0-300						
MCM						
WPP_GUN	SRC-2820-ASFS-WPP_1	WPST-AA	SRC-2820-ASFS-WPP_1			
WPPCM-AA	SRC-2820-ASFS-WPP_1	WPGRT-A	SRC-2820-ASFS-WPP_1			
WPTET-AA	SRC-2820-ASFS-WPP_1	WPMOT-AA	SRC-2820-ASFS-WPP_1			

Shoot Negative From GUNV to LHT2	Shoot Positive From RHT2 to GUNV
Charge Negative From HVNC to	Charge Positive From RHT2 to



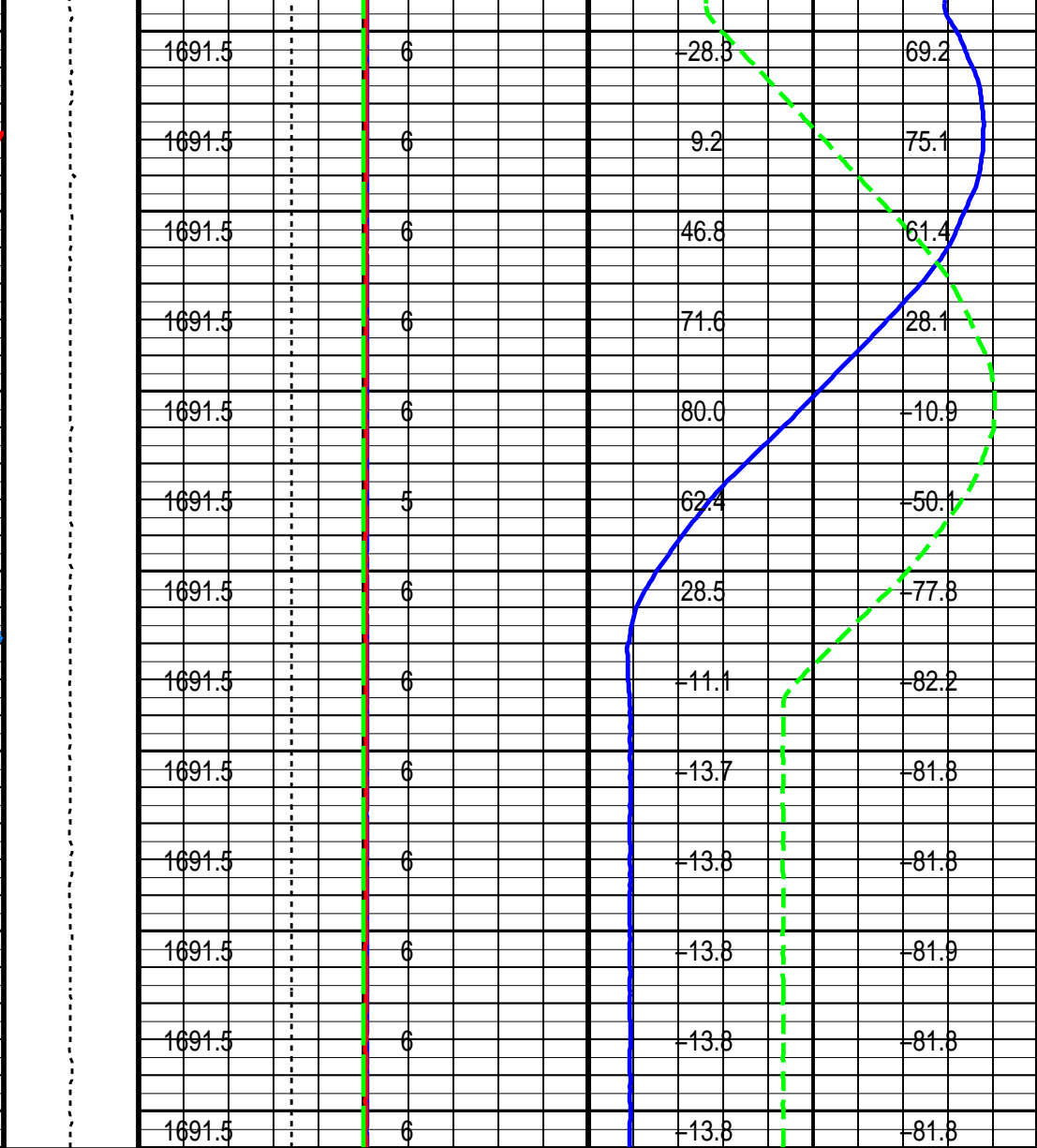


Gamma Ray (GR\_WPGRT\_SL)  
(GAPI)

Relative Bearing (RB\_SL)  
(DEG)

Tool Rotation Angle (ROTA\_SL)  
(DEG)

Relative Bearing  
(RB\_SL)  
(DEG)



WPST Gun Voltage (GUNV\_WPST\_SL)  
(V)

WPST Positive Charge Voltage (HVPC\_WPST\_SL)  
(V)

WPST Negative Charge Voltage (HVNC\_WPST\_SL)  
(V)

Depth (DEPT\_SL)  
(M)

Alpha DEPTH (DEPT\_SL) (M)

Alpha GUNV (GUNV\_WPST\_SL) (V)

Charge Negative From HVNC to LHT2

Charge Positive From RHT2 to HVPC

Shoot Negative From GUNV to LHT2

Shoot Positive From RHT2 to GUNV

Parameters



DLIS Name	Description	Value	
WPST-AA: WPP Shooting Tool			
U-COMM_VOLT	ASFS Comm Voltage	50	V
U-ERSB_ON_TIME	ERSB Voltage Hold Time	180	S
U-SEC_ON_TIME	SECURE Voltage Hold Time	5	S
U-SHOOT_VOLT_LIM	Shooting Voltage Limit	510	V
WPPCM-AA: WPP Completion Mapping Tool			
U-REQ_EXC_FQ	Requested CM Frequency	25	HZ
WPTET-AA: WPP Telemetry Tool			
CCLG	Casing Collar Locator Gain	0DB	
CCLT	CCL Detection Level	0.3	
U-MOT_CUR_LIMIT_REQ	Requested Motor Current Limit	50	MA
U-MOT_CUR_PROT	Motor Current Protection	ENABLE	
U-TILT_X_GAIN	WPTET Tilt X Gain	1	
U-TILT_X_OFFSET	WPTET Tilt X Offset	1.73133	
U-TILT_Y_GAIN	WPTET Tilt Y Gain	0.997682	
U-TILT_Y_OFFSET	WPTET Tilt Y Offset	-0.174799	
System and Miscellaneous			
PP	Playback Processing	NORMAL	


Format: WPP\_Perfo\_SL

Vertical Scale: 1" per 10S

Graphics File Created: 26-Oct-2005 07:14

OP System Version: 13C0-300			
MCM			
WPP_GUN	SRC-2820-ASFS-WPP_t	WPST-AA	SRC-2820-ASFS-WPP_t
WPPCM-AA	SRC-2820-ASFS-WPP_t	WPGRT-A	SRC-2820-ASFS-WPP_t
WPTET-AA	SRC-2820-ASFS-WPP_t	WPMOT-AA	SRC-2820-ASFS-WPP_t

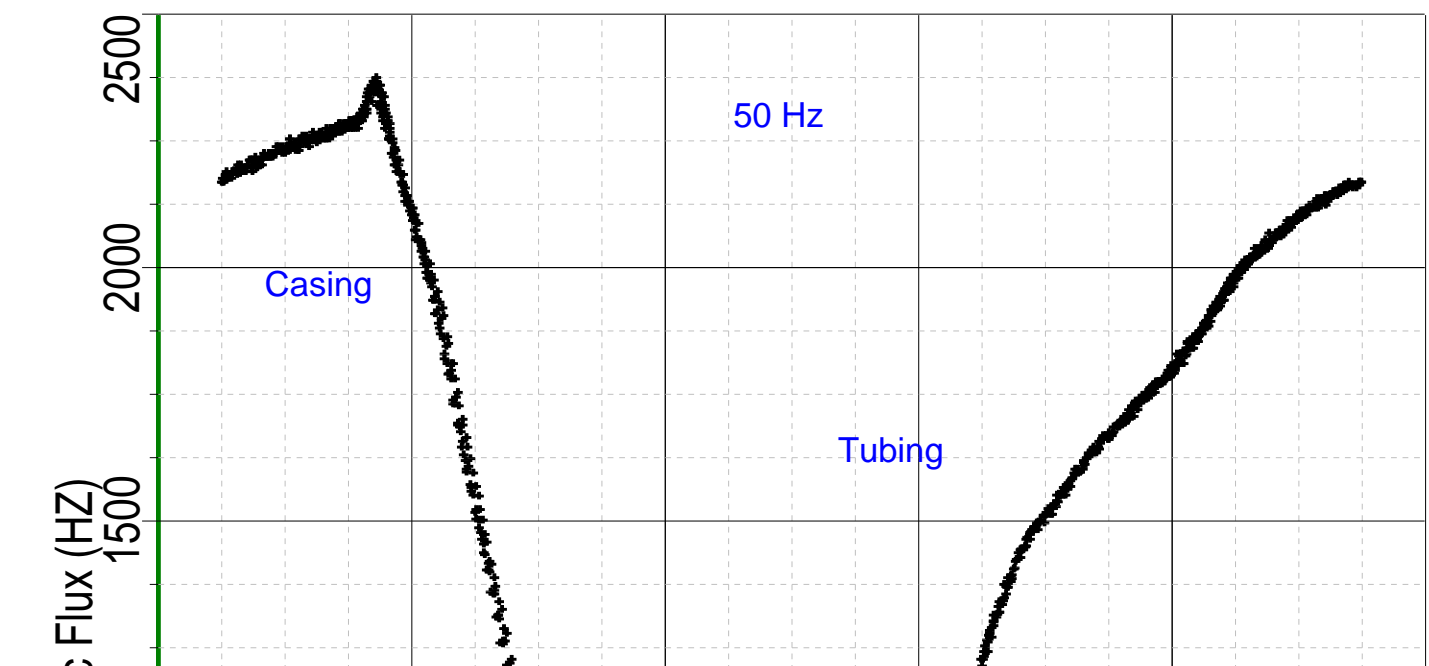
Input DLIS Files						
DEFAULT	PERFO_Perfo_WPGRT_041LTP	FN:40	PRODUCER	25-Oct-2005 15:47	1691.5 M	0.4 M

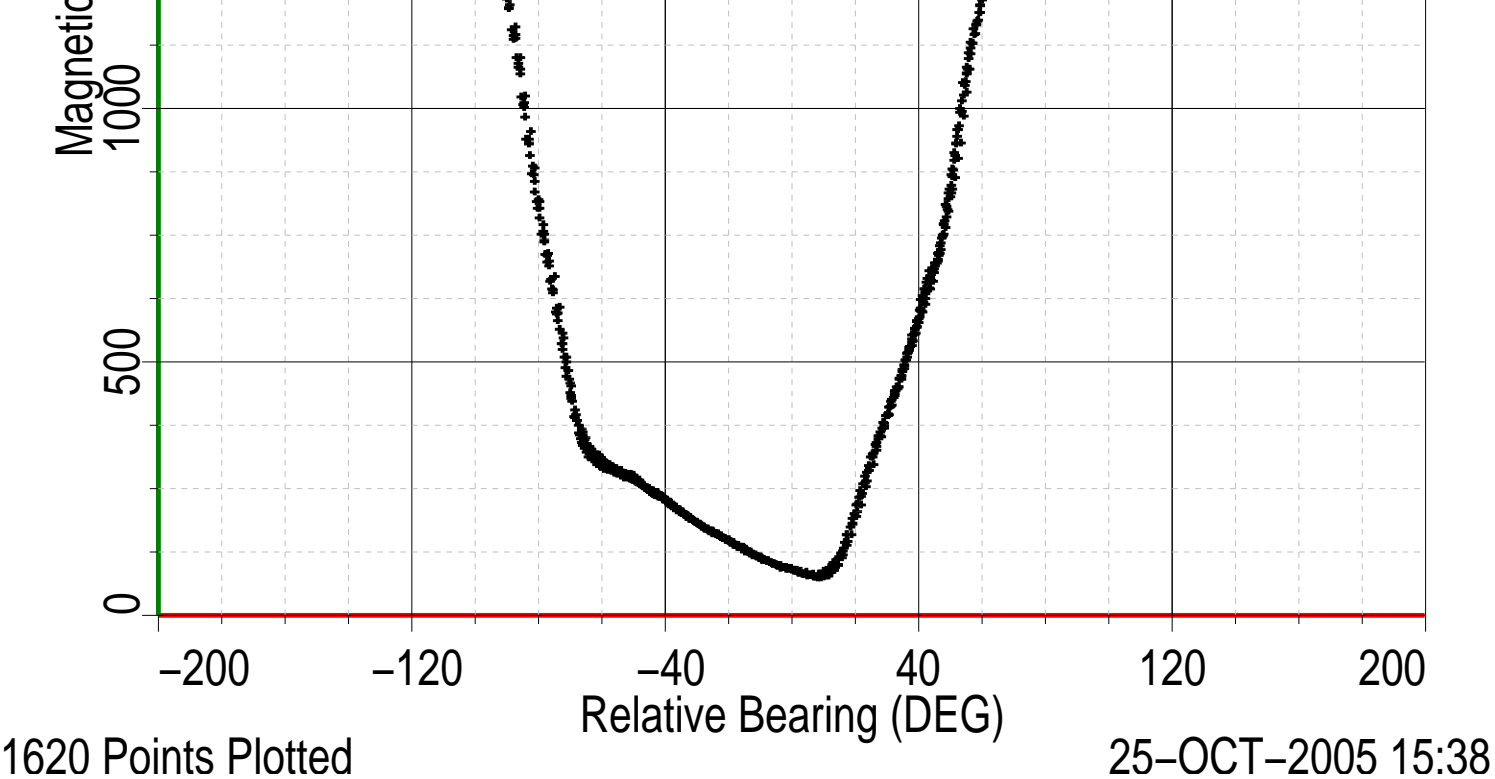


Completion Maps at 1693.5m MDKB

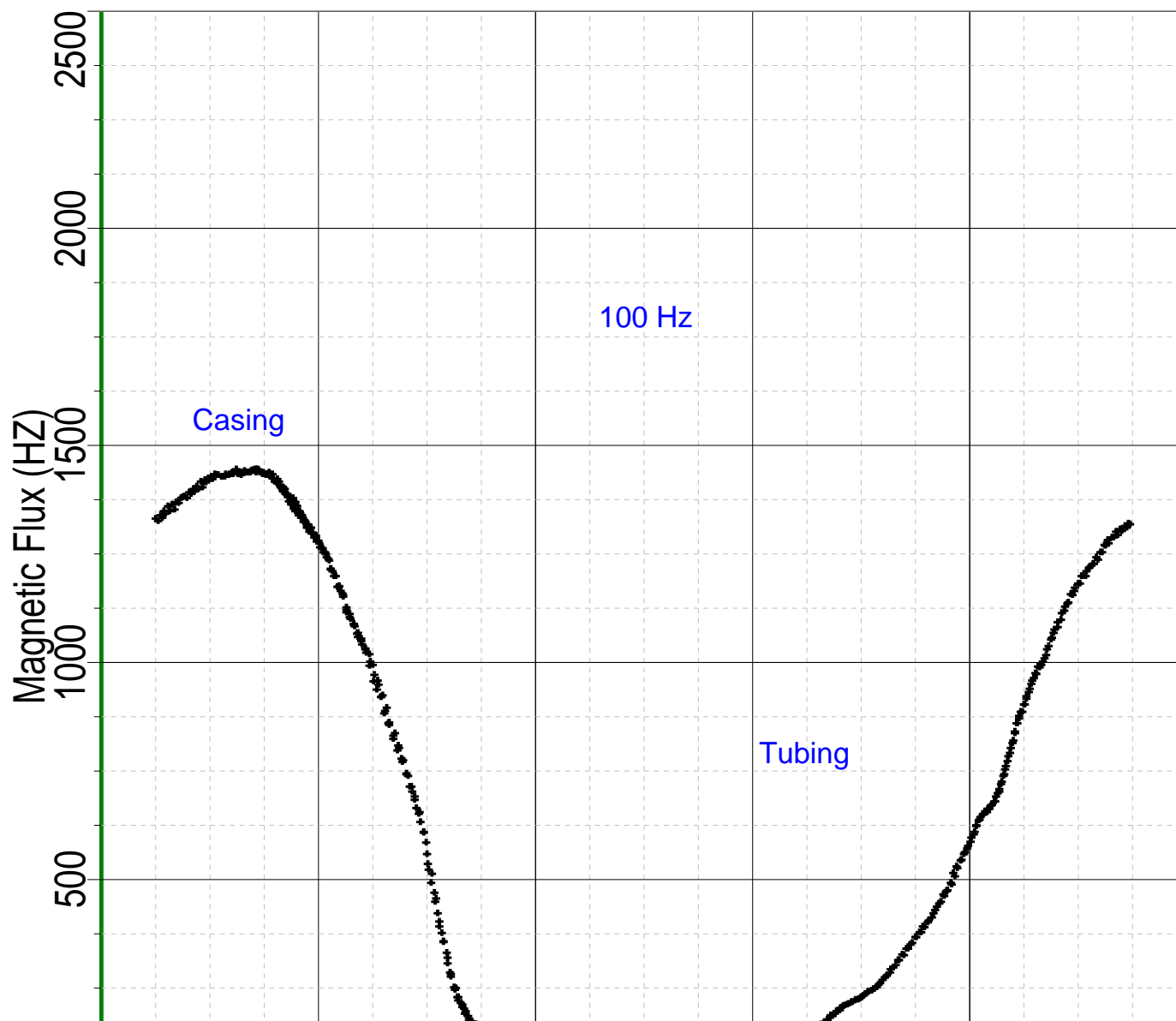
MAXIS Field Log

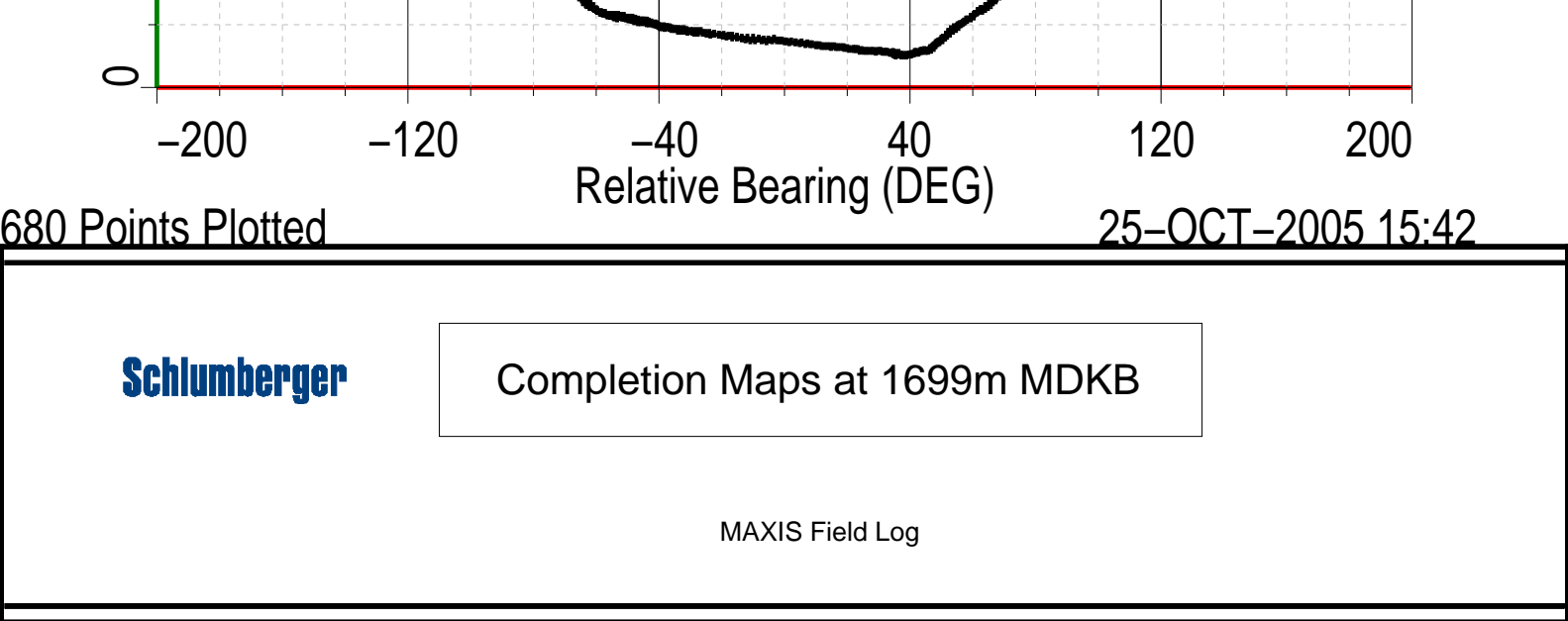
Index: 2535.6 – 4182.5 M



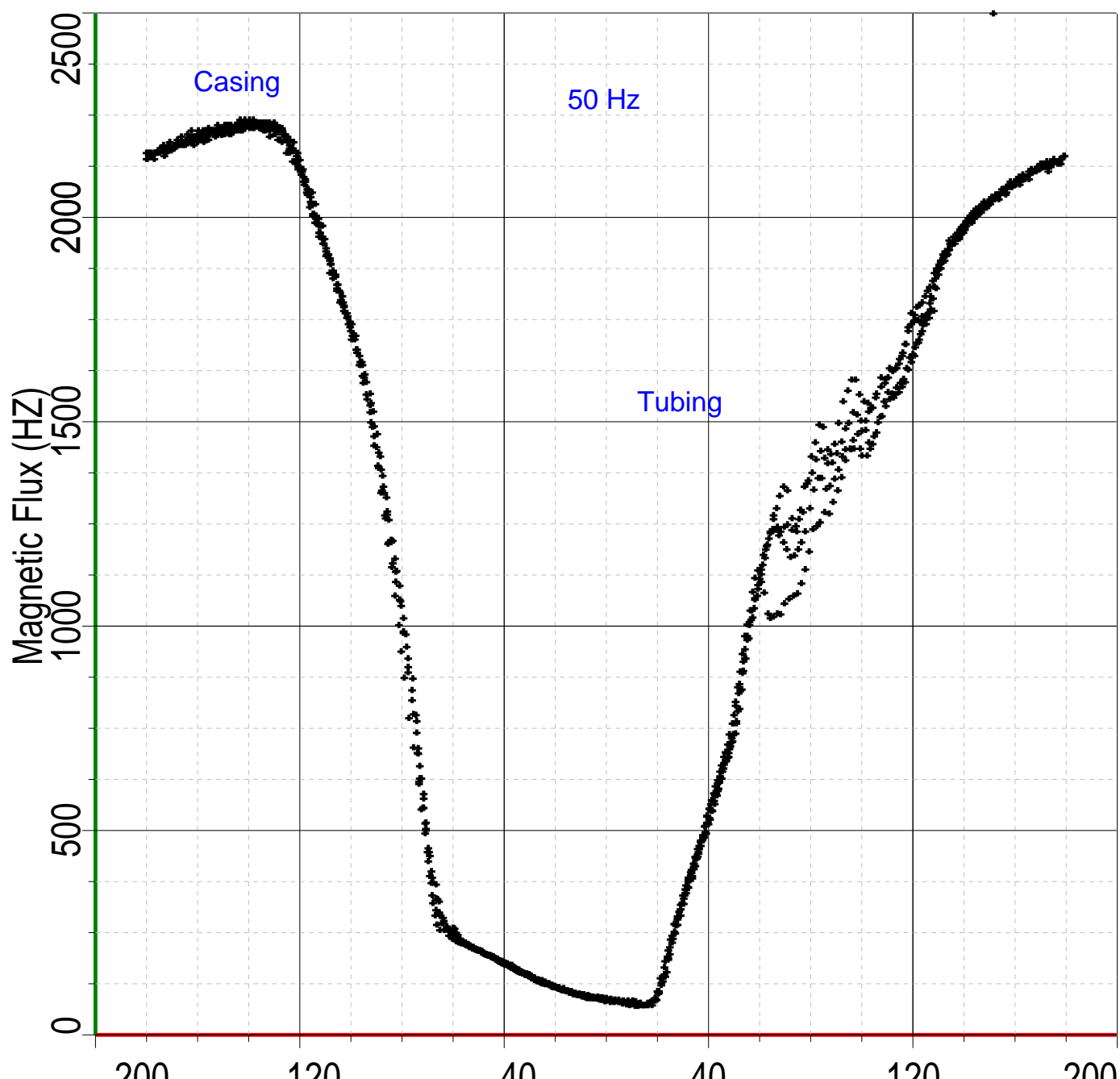


Index: 4652.6 – 5344.5 M

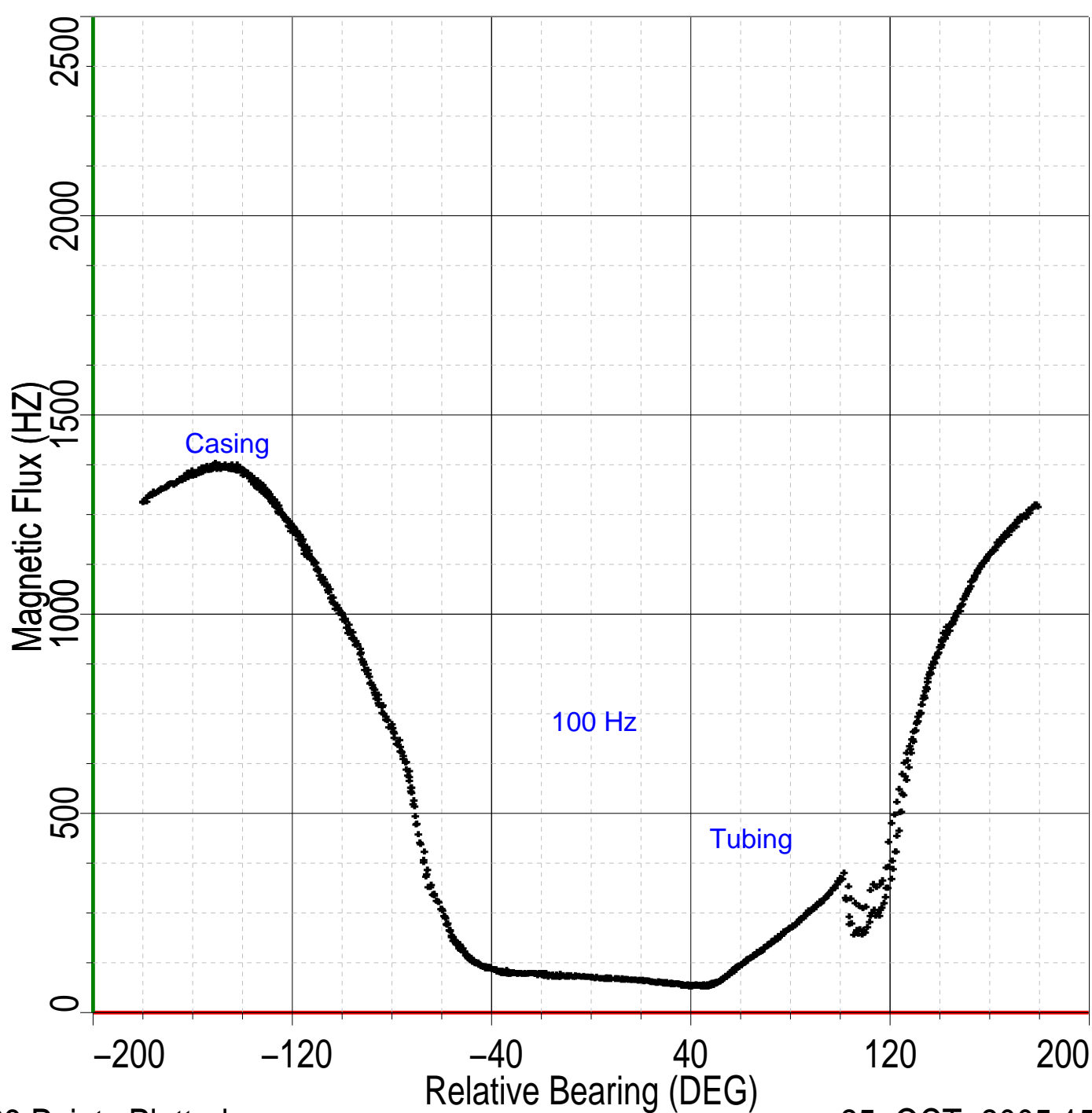




Index: 9243.9 – 10630.8 M



Index: 11063.5 – 12040.9 M



Schlumberger

Correlation

MAXIS Field Log

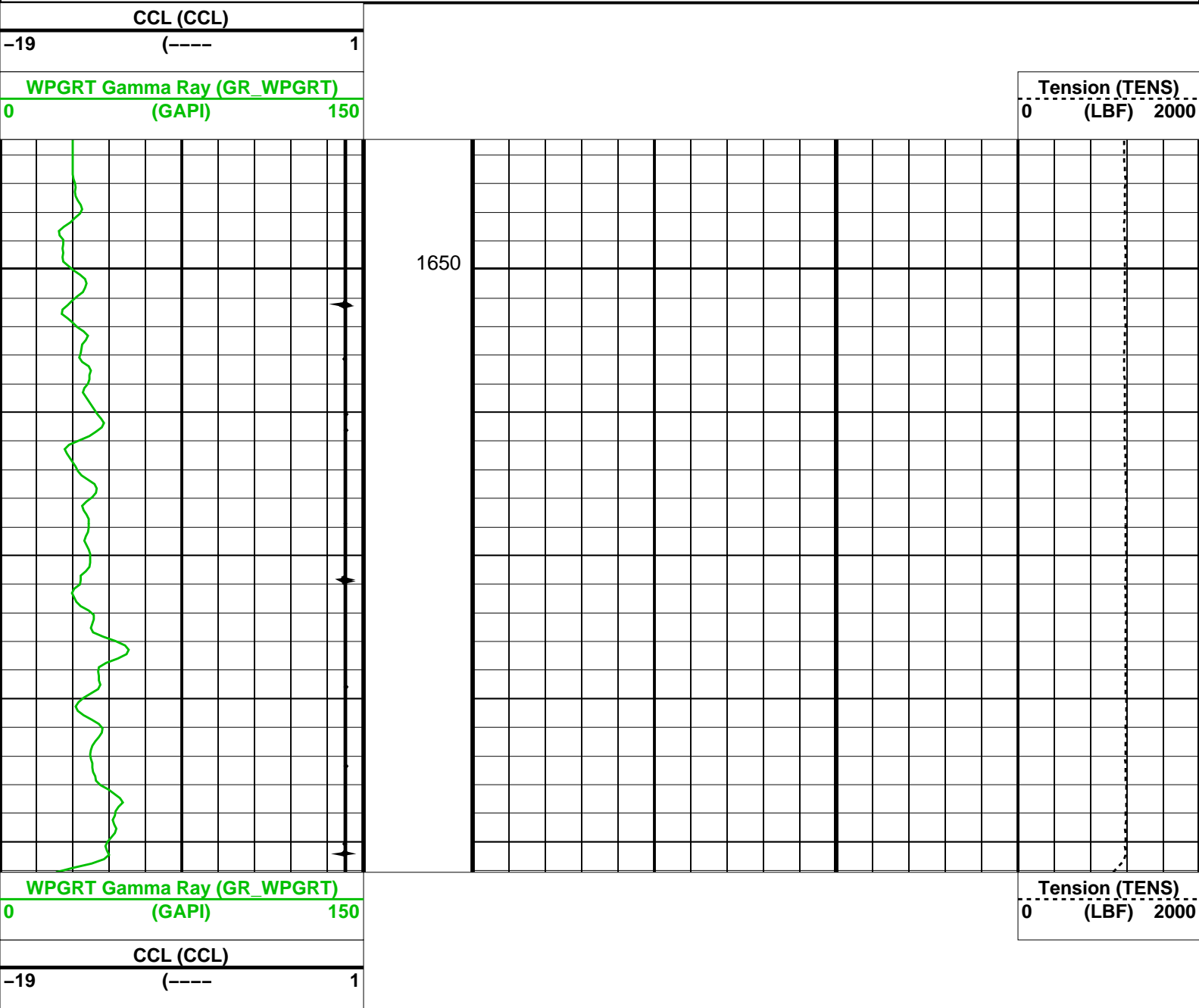
Output DLIS Files

DEFAULTPERFO\_Perfo\_WPGRT\_032LUPFN:31PRODUCER25-Oct-2005 15:00

OP System Version: 13C0-300

MCM

WPP\_GUNSRC-2820-ASFS-WPP\_tWPST-ASFS-2820-WPP\_tWPPCM-ASFS-2820-WPP\_tWPGRT-ASFS-2820-WPP\_tWPTET-ASFS-2820-WPP\_tWPMOT-ASFS-2820-WPP\_t




Parameters		
DLIS Name	Description	Value
WPST-AA: WPP Shooting Tool		
U-COMM_VOLT	ASFS Comm Voltage	50 V
U-ERSB_ON_TIME	ERSB Voltage Hold Time	180 S
U-SEC_ON_TIME	SECURE Voltage Hold Time	2 S
U-SHOOT_VOLT_LIM	Shooting Voltage Limit	500 V
WPPCM-AA: WPP Completion Mapping Tool		
U-REQ_EXC_FQ	Requested CM Frequency	50 HZ
WPTET-AA: WPP Telemetry Tool		
CCLD	CCL reset delay	12 IN
CCLG	Casing Collar Locator Gain	0DB
CCLT	CCL Detection Level	0.3

U-MOT_CUR_LIMIT_REQ	Requested Motor Current Limit	50	MA
U-MOT_CUR_PROT	Motor Current Protection	ENABLE	
U-TILT_X_GAIN	WPTET Tilt X Gain	1	
U-TILT_X_OFFSET	WPTET Tilt X Offset	1.73133	
U-TILT_Y_GAIN	WPTET Tilt Y Gain	0.997682	
U-TILT_Y_OFFSET	WPTET Tilt Y Offset	-0.174799	

Format: WPGRT_CORRELATION	Vertical Scale: 1:200	Graphics File Created: 25-Oct-2005 15:00
---------------------------	-----------------------	--

OP System Version: 13C0-300			
MCM			
WPP_GUN	SRC-2820-ASFS-WPP_1	WPST-AA	SRC-2820-ASFS-WPP_1
WPPCM-AA	SRC-2820-ASFS-WPP_1	WPGRT-A	SRC-2820-ASFS-WPP_1
WPTET-AA	SRC-2820-ASFS-WPP_1	WPMOT-AA	SRC-2820-ASFS-WPP_1

Output DLIS Files			
DEFAULT	PERFO_Perfo_WPGRT_032LUP	FN:31	PRODUCER 25-Oct-2005 15:00



Pressure-Temperature Pass

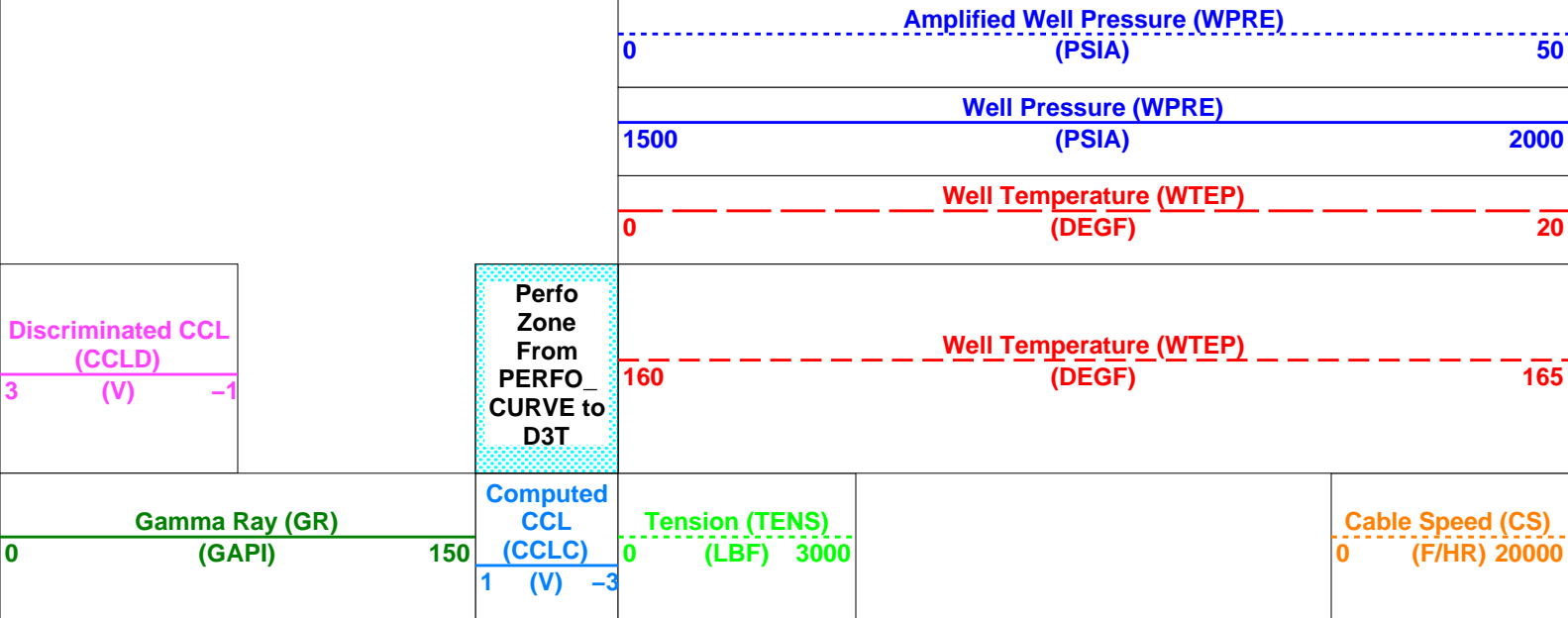
MAXIS Field Log

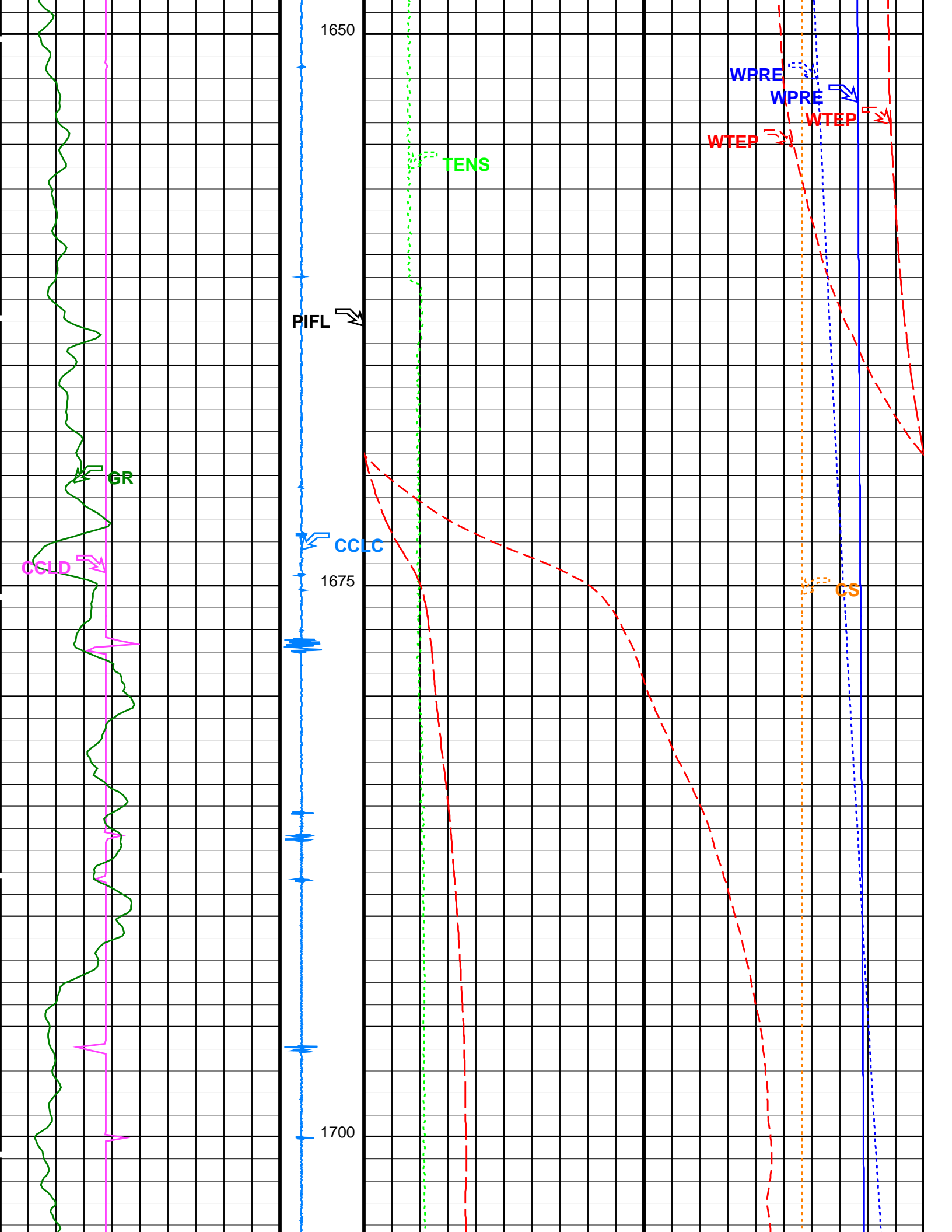
Input DLIS Files					
DEFAULT	PSP_020LUP	FN:19	PRODUCER	25-Oct-2005 08:13	1725.2 M 1646.4 M
Output DLIS Files					
DEFAULT	PSP_021PUP	FN:20	PRODUCER	25-Oct-2005 08:20	1725.6 M 1647.3 M

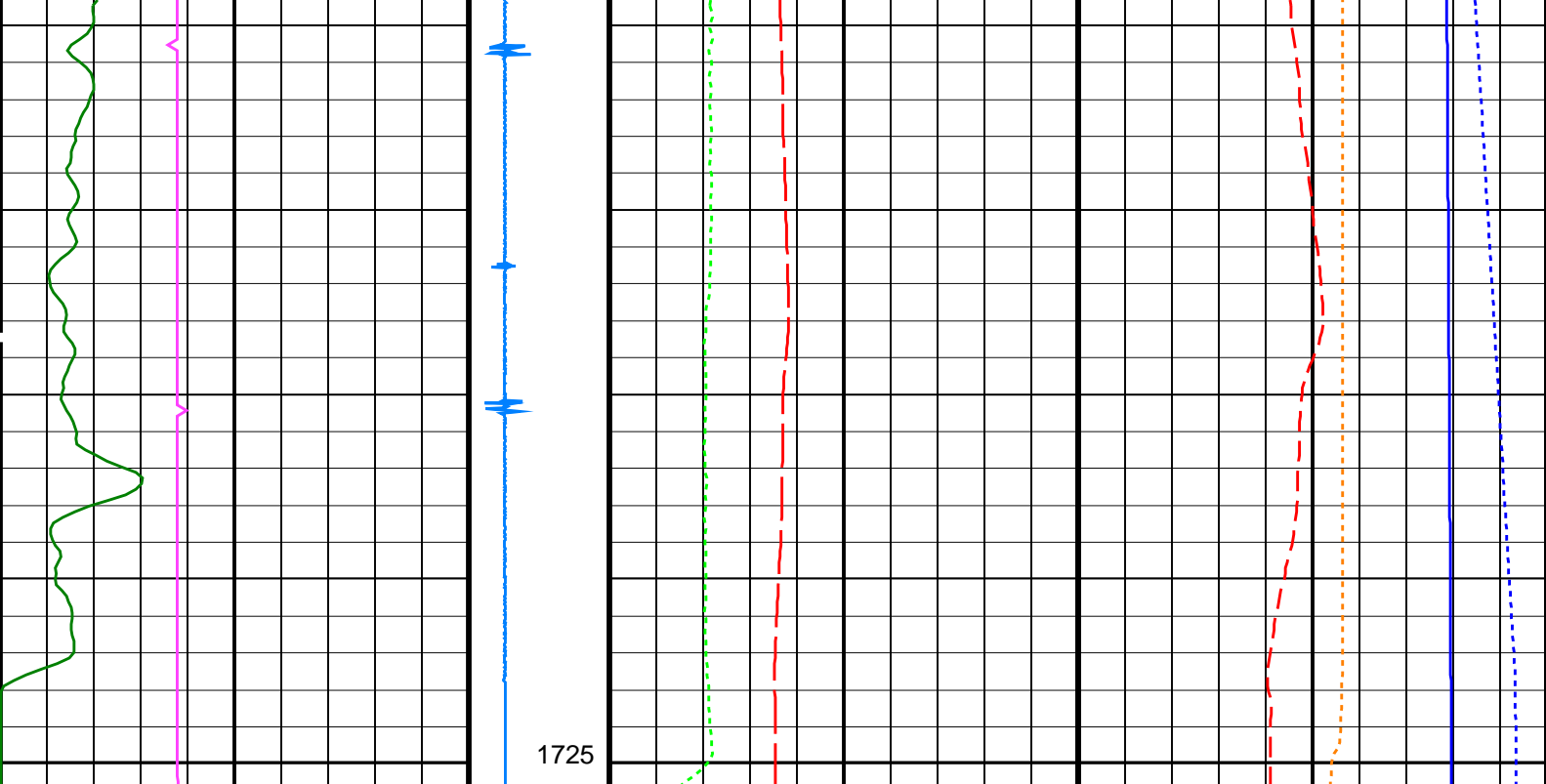
OP System Version: 13C0-300	
MCM	
PSPT-A/B	13C0-300

PIP SUMMARY

Time Mark Every 60 S







Gamma Ray (GR) (GAPI)	Computed CCL (CCLC) (V)	Tension (TENS) (LBF)	Cable Speed (CS) (F/HR)
0 150	1 -3	0 3000	0 20000

Discriminated CCL (CCLD) (V)	Perfo Zone From PERFO_CURVE to D3T	Well Temperature (WTEP) (DEGF)
3 -1		160 165

Well Temperature (WTEP) (DEGF)	Well Pressure (WPRE) (PSIA)	Amplified Well Pressure (WPRE) (PSIA)
0 20	1500 2000	0 50

PIP SUMMARY

Time Mark Every 60 S

Format: PSP\_1 Vertical Scale: 1:200 Graphics File Created: 25-Oct-2005 08:20

OP System Version: 13C0-300  
MCM

PSPT-A/B 13C0-300

Parameters		
DLIS Name	Description	Value
DO	System and Miscellaneous	
PP	Depth Offset for Playback Playback Processing	0.4 M NORMAL

Input DLIS Files

DEFAULT	PSP_020LUP	FN:19	PRODUCER	25-Oct-2005 08:13	1725.2 M	1646.4 M
---------	------------	-------	----------	-------------------	----------	----------

Output DLIS Files



Company:	Esso Australia Ltd.	Schlumberger
Well:	A-16S	
Field:	Tuna	
Rig:	Crane / Prod 4	
Country:	Australia	
Wireline Perforating Platform 2.0" HSD-4SPF-0deg Phasing Oriented Perforating Record		