

Company: Esso Australia Pty Ltd.

Well: A-16a  
Field: Halibut  
Rig: Crane

Country: Australia

2-1/8" Phased Powerjet MWPT  
Perforation Record

Rig: Crane

Field: Halibut

Location: Gippsland

Well: A-16a

Company: Esso Australia Pty Ltd.

LOCATION

Gippsland Basin Bass Strait

Elev.: K.B. 29.45 m  
G.L. -73.00 m  
D.F. 29.45 m

Permanent Datum: M.S.L.

Log Measured From: K.B.

Elev.: 0.00 m

29.50 m above Perm. Datum

Drilling Measured From: K.B.

State: Victoria

Max. Well Deviation 19 deg

Longitude 148° 19' 07.62"E

Latitude 38° 24' 20.36"S

Logging Date	12-Jan-2009		
Run Number	1		
Depth Driller	2489.4 m		
Schlumberger Depth	2489 m		
Bottom Log Interval	2434 m		
Top Log Interval	2380 m		
Casing Fluid Type	Production Fluids		
Salinity			
Density			
Fluid Level	0 m		
BIT/CASING/TUBING STRING			
Bit Size	8.500 in		
From	535 m		
To	3273 m		
Casing/Tubing Size	7.000 in		
Weight	26 lbn/ft		
Grade	L-80		
From	11.98 m		
To	2563 m		
Maximum Recorded Temperatures	232 degF		
Logger On Bottom	12-Jan-2009	17:13	
Unit Number	889	Prod 4 / AUSL	
Recorded By	S Gilbert , B Donahoe		
Witnessed By	B.White		

Run 1

PVT DATA			
Oil Density			
Water Salinity			
Gas Gravity			
Bo			
Bw			
1/Bg			
Bubble Point Pressure			
Bubble Point Temperature			
Solution GOR			
Maximum Deviation	19 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: 23-DEC-2008 7:10:01

### Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-EB	Type:	PSDS/OSDS	Type:	2-32ZT
Serial Number:	6373	Serial Number:	325337	Serial Number:	207308
Calibration Date:	2-Dec-2008	Calibration Date:	11-Dec-2008	Length:	6400 M
Calibrator Serial Number:	30	Calibrator Serial Number:	1174	Conveyance Method: Wireline Rig Type: Offshore Fixed	
Calibration Cable Type:	2-32ZT	Number of Calibration Points:	9		
Wheel Correction 1:	-1	Calibration RMS:	16		
Wheel Correction 2:	-2	Calibration Peak Error:	27		

### Depth Control Parameters

Log Sequence:	Subsequent Log In the Well
Reference Log Name:	Solar Composite Log
Reference Log Run Number:	
Reference Log Date:	

### Depth Control Remarks

1. IDW-EB 6373 Used as primary depth control .
2. Z-Chart used as Backup .
3. Log correlated on depth over Zone of interest .
4.
5.
6.

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OTHER SERVICES1
OS1: None
OS2:
OS3:
OS4:
OS5:
REMARKS: RUN NUMBER 1
Log correlated to ExxonMobil Solar Composite Log supplied with logging program.
Objectives: Perforate the well over the interval 2432m - 2434m MDKB using 2-1/8" 6 SPF, 45 deg phased Powerjet gun with MWPT.
Maximum deviation of well of 19 deg @ 1100m MDKB.
HUD not tagged with Perforating Guns
Perforation interval: 2432m to 2434m MDKB.
CCL to top shot = 3.6m MDKB

Max well Temperature = 232.4DEGF

Schlumberger crews: J Light, R.Murray

RUN 1			RUN 2		
SERVICE ORDER #:		AXWT-00009	SERVICE ORDER #:		
PROGRAM VERSION:		16C0-147	PROGRAM VERSION:		
FLUID LEVEL:		0 m	FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

[illegible]

RUN 1		RUN 2	
SURFACE EQUIPMENT			
MWPM-AA			
DOWNHOLE EQUIPMENT			
AH-SWBS-B 789 AH-SWBS-B 789		12.39	
AH-SWBS-B 788 AH-SWBS-B 788		11.70	
AH-SWBS-B 787 AH-SWBS-B 787		11.01	
AH-SWBS-B 786 AH-SWBS-B 786		10.33	
AH-SWBS-B 785 AH-SWBS-B 785		9.64	
MH-SWHS-A 759 MH-SWHS-A 759		8.96	
AH-124 7002 MWGT-AA 19 MWPG-AA 19 MWGH-AA 19	 	8.63 8.53	
MWPT-CA 11 MWPH-AA 94 MWPS-AA 11		7.55	
CCL SMWP Pres SMWP Temp Tension		TOOL ZERO	

AH-Flex Joint 42

AH-Flex Joint 42

SAH-G 1035

SAH-G 1035

MPD-MB 336

MPD-MB 336

AH-ESIC 4007395

AH-ESIC 4007395

AH-Firing Head 1

MWP\_GUN

GUN-2 1/8" Phased Powerjet 1

4.73

4.27

3.94

3.40

2.97

2.74

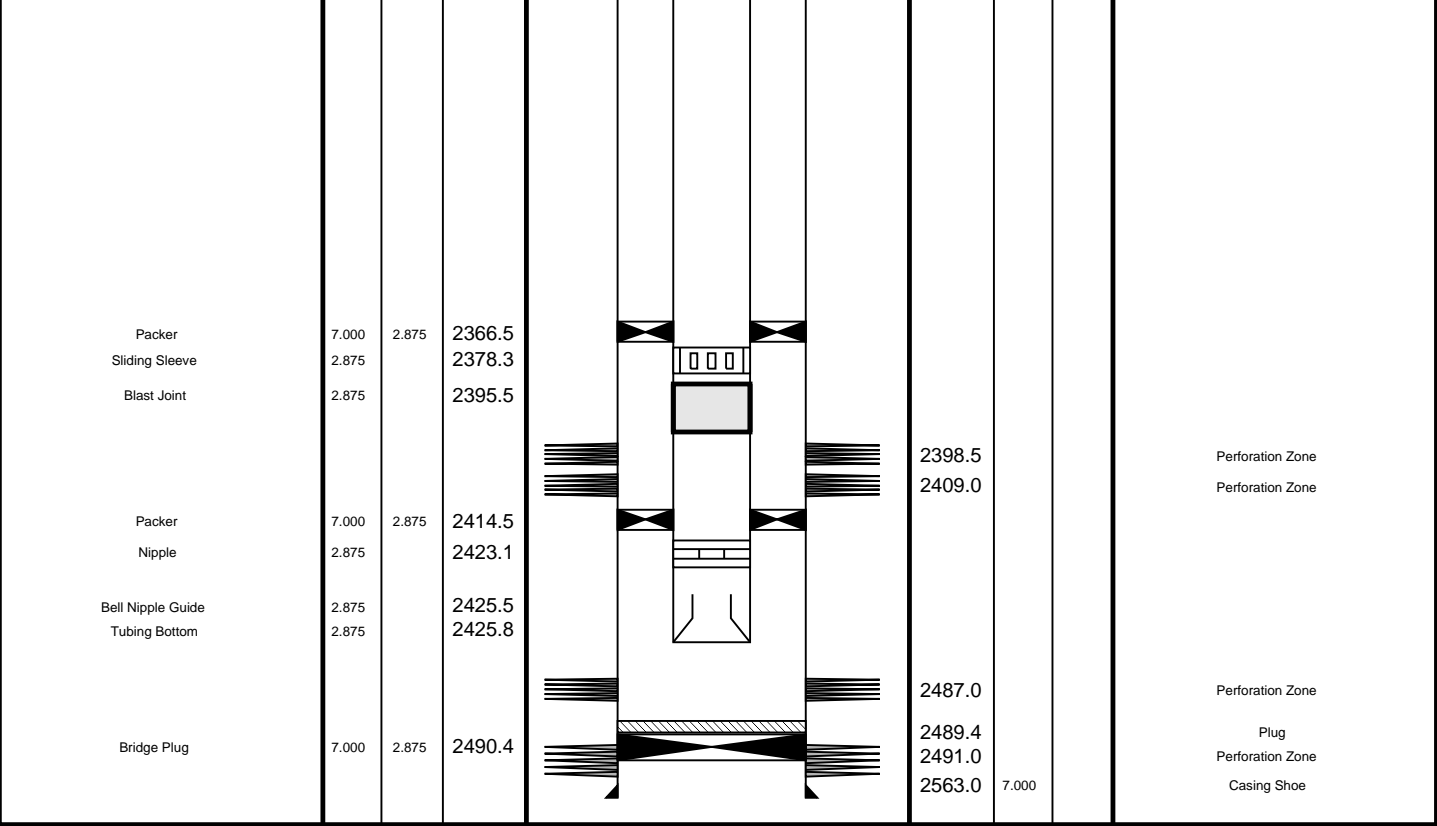
TOOL BOTTOM

MAXIMUM STRING DIAMETER 2.13 IN

MEASUREMENTS RELATIVE TO TOOL ZERO

ALL LENGTHS IN METERS

Production String	(in)		(m)	Well Schematic				(m)	(in)		Casing String	
	OD	ID	MD					MD	OD	ID		
Tubing Tubing Hanger	2.875 7.000	2.875	12.0 12.0	<div></div>	<div></div>	<div></div>	<div></div>	13.2 -0.8	10.750 7.000		Casing String Casing String	
SSSV	2.875		137.7		<div></div>	<div></div>	<div></div>				Casing Shoe	
Side Pocket Mandrel	2.875		648.9		<div></div>	<div></div>	<div></div>	544.6	10.750			
Side Pocket Mandrel	2.875		860.5		<div></div>	<div></div>	<div></div>					
Side Pocket Mandrel	2.875		1099.2		<div></div>	<div></div>	<div></div>					
Side Pocket Mandrel	2.875		1386.0		<div></div>	<div></div>	<div></div>					
Landing Nipple	2.875		1410.1		<div></div>	<div></div>	<div></div>					
					<div></div>	<div></div>	<div></div>					
					<div></div>	<div></div>	<div></div>					

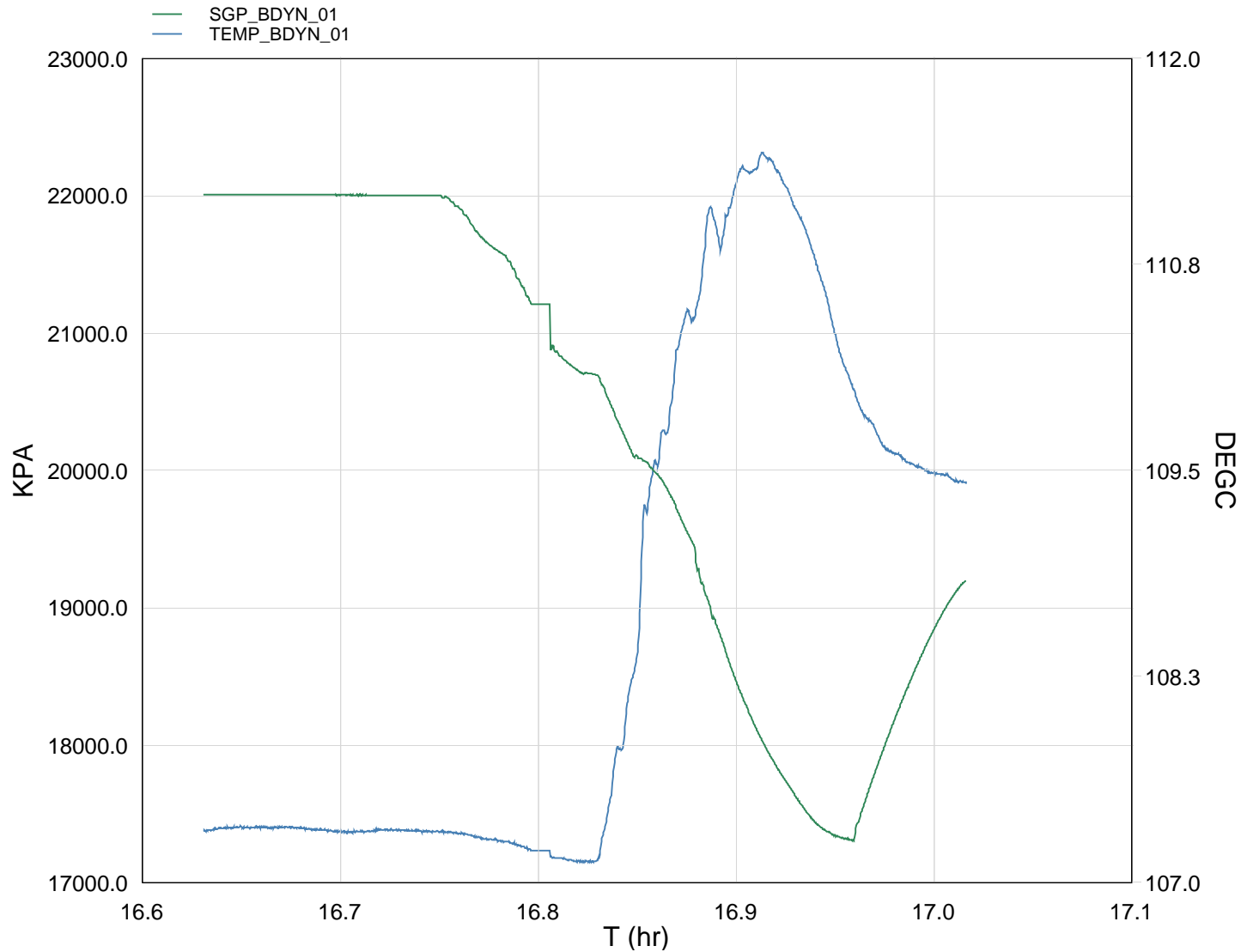


Job Event Summary

MAXIS Field Log

Schlumberger Job Event Summary						
		Time	Elapsed Time	Depth (M)		File
Log Pass (up)		12-Jan-2009 16:23	000:04	2454.4 - 2422.4		PERFO_014LUP
Log Pass (up)		12-Jan-2009 16:34	000:29	2451.8 - 2417.2		PERFO_016LUP
Station Log		12-Jan-2009 16:37	000:23	2428.4		PERFO_017LTP

MAXIS Field Log



TIME	KPA	PSIA	DEGF
------	-----	------	------

3600.0	21937.9806	3181.8391	224.4409
3660.0	22010.4727	3192.3533	225.2042
3720.0	22009.8137	3192.2577	225.2011
3780.0	22009.3761	3192.1942	225.2067
3840.0	22007.8164	3191.9680	225.1681
3900.0	22006.8749	3191.8314	225.1608
3960.0	22004.7549	3191.5240	225.1779
4020.0	22004.0665	3191.4241	225.1643
4080.0	21903.8166	3176.8841	225.1323
4140.0	21621.0522	3135.8726	225.0669
4200.0	21270.6816	3085.0557	224.9695
4260.0	20836.5195	3022.0857	224.8688

4280.0	20838.5195	3022.0857	224.8888
4320.0	20703.8382	3002.8419	224.8276
4380.0	20228.3923	2933.8844	226.4287
4440.0	19957.6749	2894.6200	229.2245
4500.0	19483.2896	2825.8163	230.7274
4560.0	18703.5300	2712.7218	231.8147
4620.0	18095.1202	2624.4793	232.4260
4680.0	17683.1513	2564.7283	232.0810
4740.0	17388.3078	2521.9649	231.1115
4800.0	17429.9555	2528.0053	229.8801
4860.0	18097.5125	2624.8263	229.3168
4920.0	18676.3698	2708.7825	229.1234
4980.0	19115.4564	2772.4667	228.9863



Gun Shooting Pass

MAXIS Field Log

Company: Esso Australia Pty Ltd. Well: A-16a

Output DLIS Files

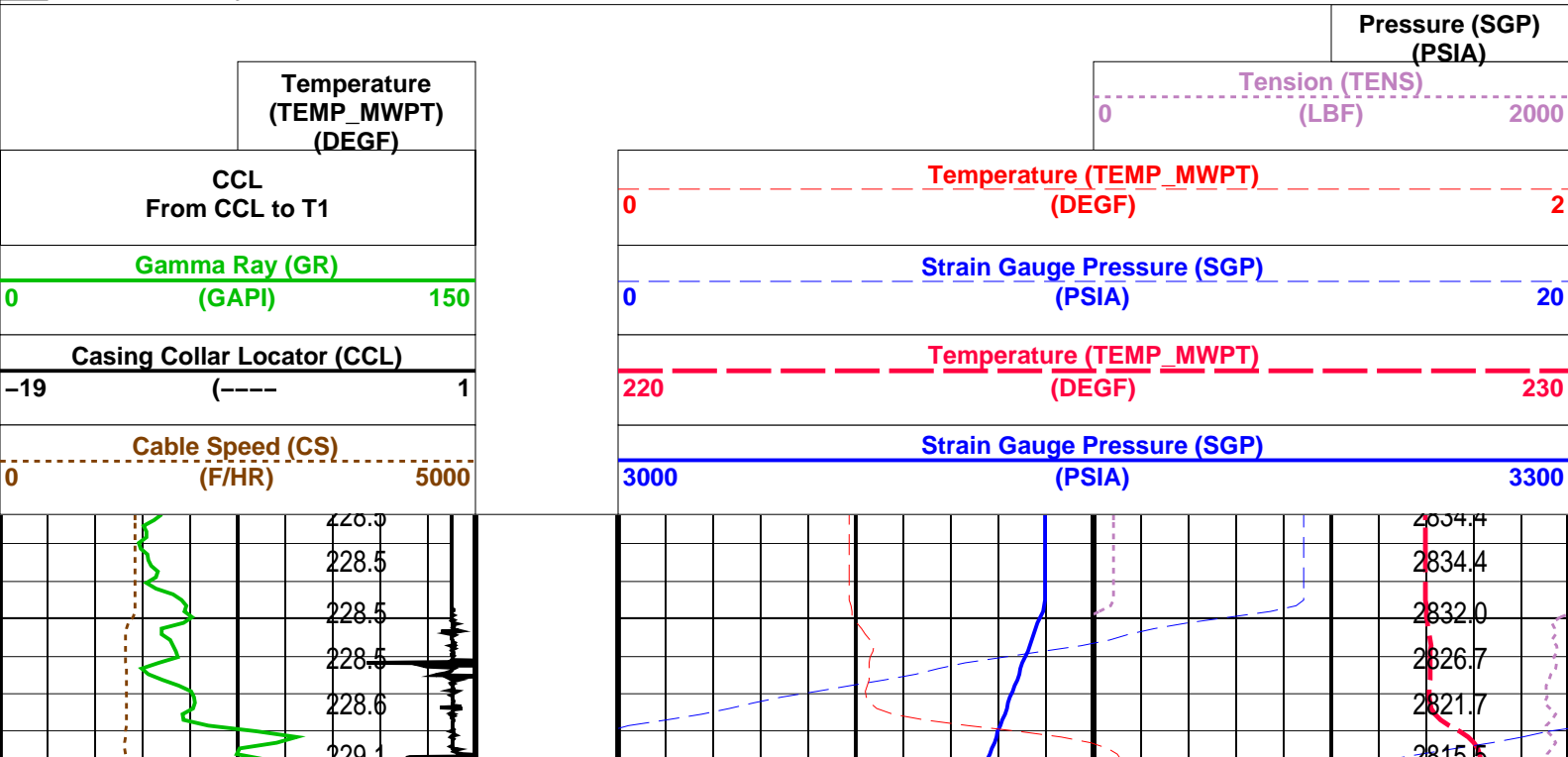
DEFAULT PERFO\_016LUP FN:15 PRODUCER 12-Jan-2009 16:34 2451.8 M 2417.2 M

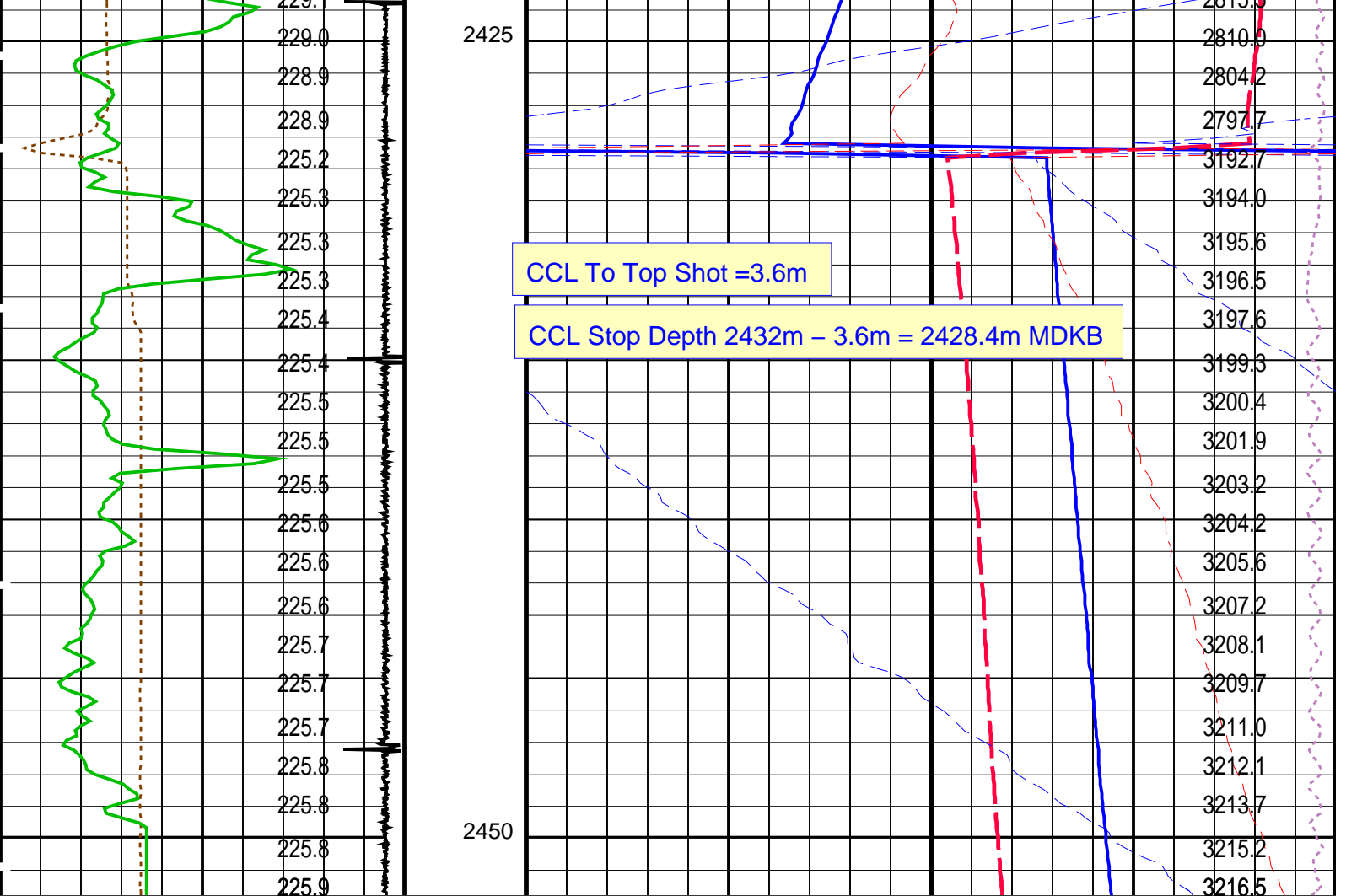
OP System Version: 16C0-147  
MCM

MWP\_GUN 16C0-147 MWPT-CA 16C0-147  
MWGT-AA 16C0-147

PIP SUMMARY

Time Mark Every 60 S





CCL To Top Shot =3.6m

CCL Stop Depth 2432m – 3.6m = 2428.4m MDKB

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

Casing Collar Locator (CCL)  
(----) -19 1

Gamma Ray (GR)  
(GAPI) 0 150

CCL  
From CCL to T1

Temperature  
(TEMP\_MWPT)  
(DEGF)

Strain Gauge Pressure (SGP)  
(PSIA) 3000 3300

Temperature (TEMP\_MWPT)  
(DEGF) 220 230

Strain Gauge Pressure (SGP)  
(PSIA) 0 20

Temperature (TEMP\_MWPT)  
(DEGF) 0 2

Tension (TENS)  
(LBF) 0 2000

Pressure (SGP)  
(PSIA)

#### 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  
FLD Flow Line Density  
MWPT\_NULL\_SOURCE MWPT NULL Temperature Source  
MWPT\_NULL\_TEMP MWPT NULL Temperature

0 DEG  
1 G/C3  
TEMS  
0.0 DEGC

Format: MWP Vertical Scale: 1:200

Graphics File Created: 12-Jan-2009 16:34

OP System Version: 16C0-147

MCM

MWP\_GUN 16C0-147  
MWPT\_AA 16C0-147

MWPT-CA

16C0-147





Gun Correlation Pass

MAXIS Field Log

Company: Esso Australia Pty Ltd.

Well: A-16a

Output DLIS Files

DEFAULTPERFO\_014LUPFN:13PRODUCER12-Jan-2009 16:232454.4 M2422.4 M

OP System Version: 16C0-147

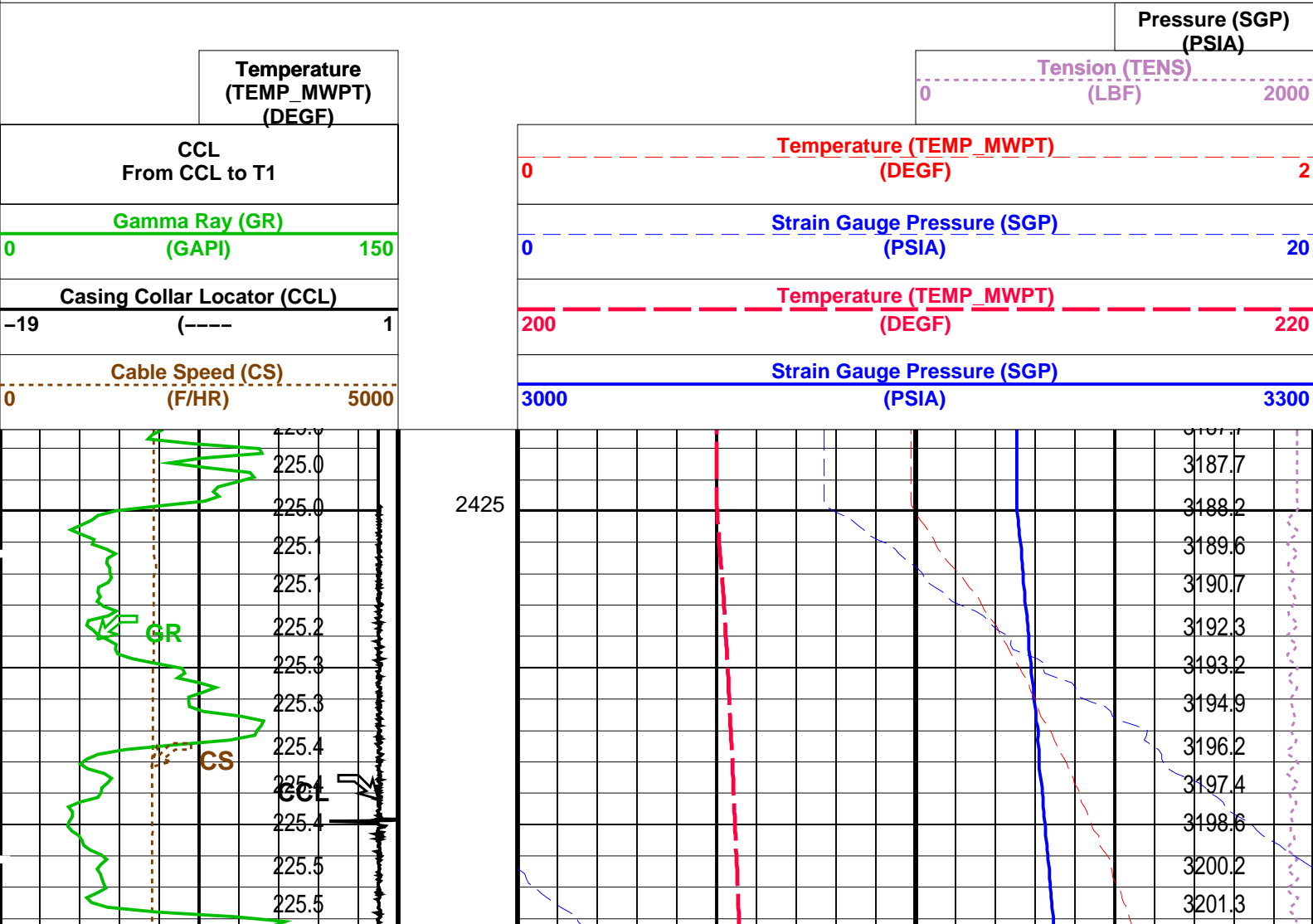
MCM

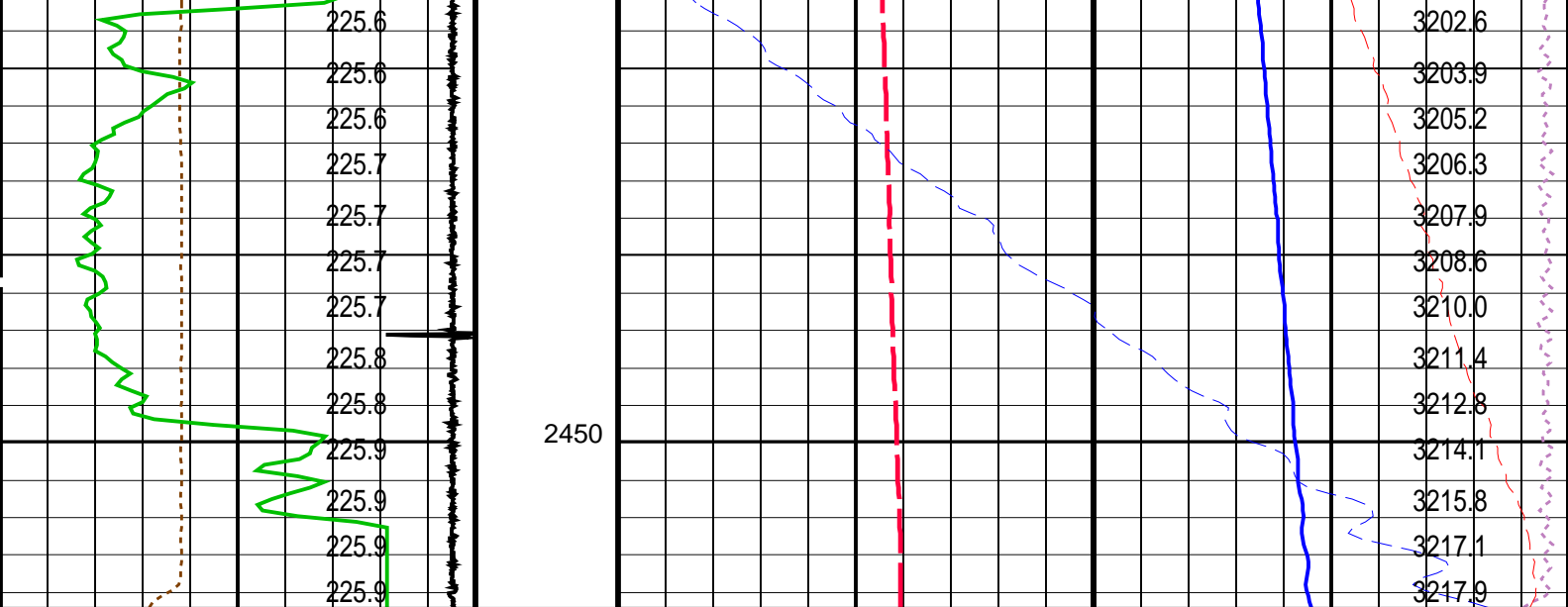
MWP\_GUN16C0-147MWPT-CA16C0-147

MWGT-AA16C0-147

PIP SUMMARY

Time Mark Every 60 S





Cable Speed (CS) (F/HR)		0	5000
Casing Collar Locator (CCL)		-19	1
Gamma Ray (GR) (GAPI)		0	150
CCL From CCL to T1			
Temperature (TEMP_MWPT) (DEGF)			
Strain Gauge Pressure (SGP) (PSIA)		3000	3300
Temperature (TEMP_MWPT) (DEGF)		200	220
Strain Gauge Pressure (SGP) (PSIA)		0	20
Temperature (TEMP_MWPT) (DEGF)		0	2
Tension (TENS) (LBF)		0	2000
Pressure (SGP) (PSIA)			

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: 12-Jan-2009 16:23

OP System Version: 16C0-147			
MCM			
MWP_GUN	16C0-147	MWPT-CA	16C0-147
MWGT-AA	16C0-147		

Output DLIS Files			
DEFAULT	PERFO_014LUP	FN:13	PRODUCER 12-Jan-2009 16:23

Company: **Esso Australia Pty Ltd.**

Well: **A-16a**

Field: **Halibut**

Rig: **Crane**

Country: **Australia**

**Schlumberger**

Country: **Australia**

2-1/8" Phased Powerjet MWPT  
Perforation Record