

Company: Esso Australia Pty Ltd.

Well: A-7a  
Field: Snapper  
Rig: Prod4 / Crane  
Country: Australia

2 1/8" MWPT  
Powerjet Perforation  
Record

Rig: Prod4 / Crane  
Field: Snapper  
Location: Gippsland  
Well: A-7a  
Company: Esso Australia Pty Ltd.

LOCATION	
Gippsland	Elev.: K.B. 41.68 m
Basin	G.L. -55 m
Bass Strait	D.F. 41.68 m
Permanent Datum:	M.S.L. _____
Log Measured From:	D.F. _____
Drilling Measured From:	D.F. _____
State: Victoria	Max. Well Deviation 64 deg
	Longitude 148 10'126.72"E
	Latitude 038 11'43.23"S

Logging Date	23-Aug-2008
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Run Number	1 through 3
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Depth Driller	2931 m
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Schlumberger Depth	2918 m
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Bottom Log Interval	2918 m
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Top Log Interval	2800 m
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Casing Fluid Type	Production Fluids
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Salinity	
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Density	
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Fluid Level	660 m
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BIT/CASING/TUBING STRING	
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Bit Size	8.500 in
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From	2068 m
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To	3304 m
----	--------

Casing/Tubing Size	7.000 in
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Weight	26 lbm/ft
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Grade	L-80
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From	21.72 m
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To	2984 m
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Maximum Recorded Temperatures	242 degF
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Logger On Bottom	23-Aug-2008
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Unit Number	899
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Recorded By	S gilbert.
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Witnessed By	B White
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Run 1

Oil Density  
Water Salinity  
Gas Gravity

Bo

Bw

1/Bq

Bubble Point Pressure

Bubble Point Temperature

Solution GOR

Maximum Deviation

64 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

GUN # 1

Top shot @ 2862m MDKB			After shot– SBHT: 241.8 degf		
CCL to Top shot =3. 5 m			After shot– SBHP: 2439.1 psia		
CCL Stop Depth = 2858.5m MDKB					
GUN # 2					
Top shot @ 2876m MDKB			After shot– SBHT: 228.98 degf		
CCL to Top Shot =3.5 m			Afer Shot – SBHP: 2283.1 psia		
CCL Stop Depth = 2872.5m MDKB					
Schlumberger Crew: J Light , C Shiells					
RUN 1			RUN 2		
SERVICE ORDER #:			AUSL08356990		
PROGRAM VERSION:			15C0–309		
FLUID LEVEL:			660 m		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP
EQUIPMENT DESCRIPTION					
RUN 1			RUN 2		
SURFACE EQUIPMENT			SURFACE EQUIPMENT		
MWPM–AA 3008			MWPM–AA 3008		
DOWNHOLE EQUIPMENT			DOWNHOLE EQUIPMENT		
AH–SWBS–B 785 AH–SWBS–B 785			AH–SWBS–B 785 AH–SWBS–B 785		
AH–SWBS–B 786 AH–SWBS–B 786			AH–SWBS–B 786 AH–SWBS–B 786		
AH–SWBS–B 787 AH–SWBS–B 787			AH–SWBS–B 787 AH–SWBS–B 787		
AH–SWBS–B 788 AH–SWBS–B 788			AH–SWBS–B 788 AH–SWBS–B 788		
MH–SWHS–A 759			AH–SWBS–B 788 AH–SWBS–B 788		
AH–124 7002			MH–SWHS–A 759		
MWGT–AA 69			MH–SWHS–A 759		
MWPG–AA			AH–124 7002		
MWGH–AA 69			MWGT–AA 69		
MWPT–CA 74			MWPG–AA		
MWPH–AA 74			MWGH–AA 69		
MWPS–AA 74			MWPG GR		
CCL SMWP Pres SMWP Temp Tension			MWPT–CA 74		
TOOL ZERO			MWPH–AA 74		
			MWPS–AA 74		
AH–Flex Joint 41			CCL SMWP Pres SMWP Temp Tension		
AH–Flex Joint 41			TOOL ZERO		
SAH–G 1038					
MPD–MB 336					
MPD–MB 336					

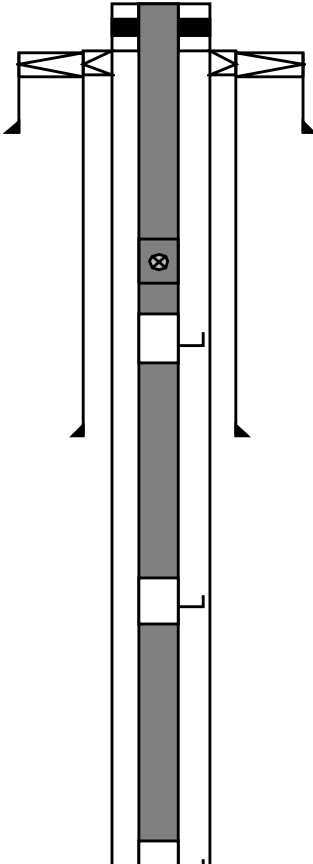
Component	Length (m)	Component	Length (m)
MPD-MB 336	6.16	MPD-MB 336	3.20
SAH-G 1038	5.73	SAH-G 1038	3.53
SAH-G 1038	5.50	SAH-G 1038	3.20
MPD-MB 336		MPD-MB 336	3.20
MPD-MB 336		MPD-MB 336	3.20
AH-ESIC 4007395		AH-ESIC 4007395	2.66
AH-ESIC 4007395		AH-ESIC 4007395	2.66
AH-Firing Head 1		AH-Firing Head 1	2.23
AH-Firing Head 1		AH-Firing Head 1	2.23
MWP_GUN		MWP_GUN	2.00
GUN-4.5m 2 1/8" Phased Powerjet Gun 1		GUN-1.5m 2 1/8" Phased Powerjet Gun 1	2.00
GUN-4.5m 2 1/8" Phased Powerjet Gun 1		GUN-1.5m 2 1/8" Phased Powerjet Gun 1	2.00

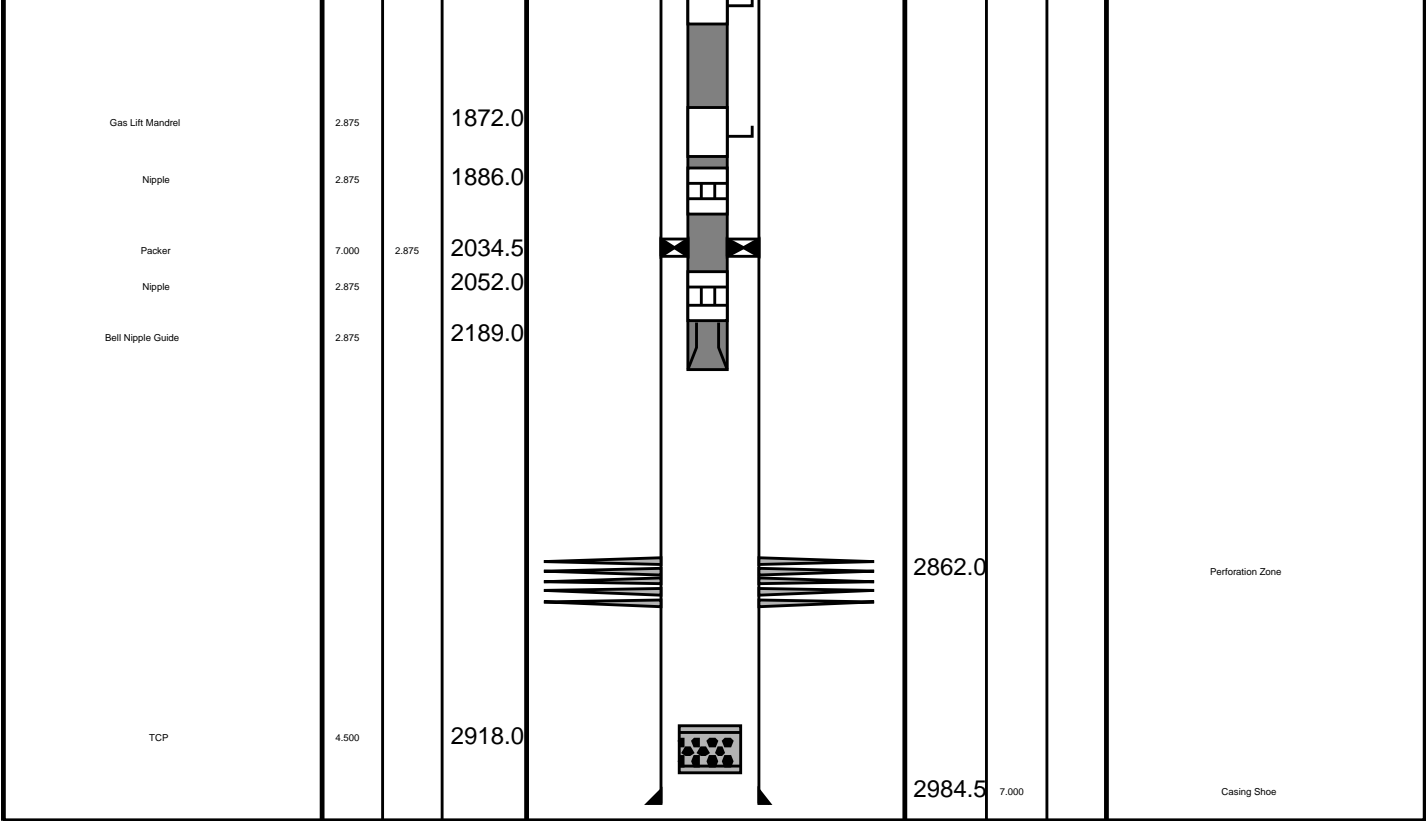
TOOL BOTTOM

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

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 Hanger	7.000	2.875	21.7		22.7	20.000		Casing String
Tubing	2.875		21.1		23.7	10.750		Casing String
					23.7	20.000	10.750	Liner Hanger
					171.0	20.000		Casing Shoe
					21.7	7.000		Casing String
					21.7	10.750	7.000	Liner Hanger
Shutin Valve	2.875		449.0					
Gas Lift Mandrel	2.875		496.0					
					729.0	10.750		Casing Shoe
Gas Lift Mandrel	2.875		1099.0					
Gas Lift Mandrel	2.875		1615.0					



## Job Events Summary

MAXIS Field Log

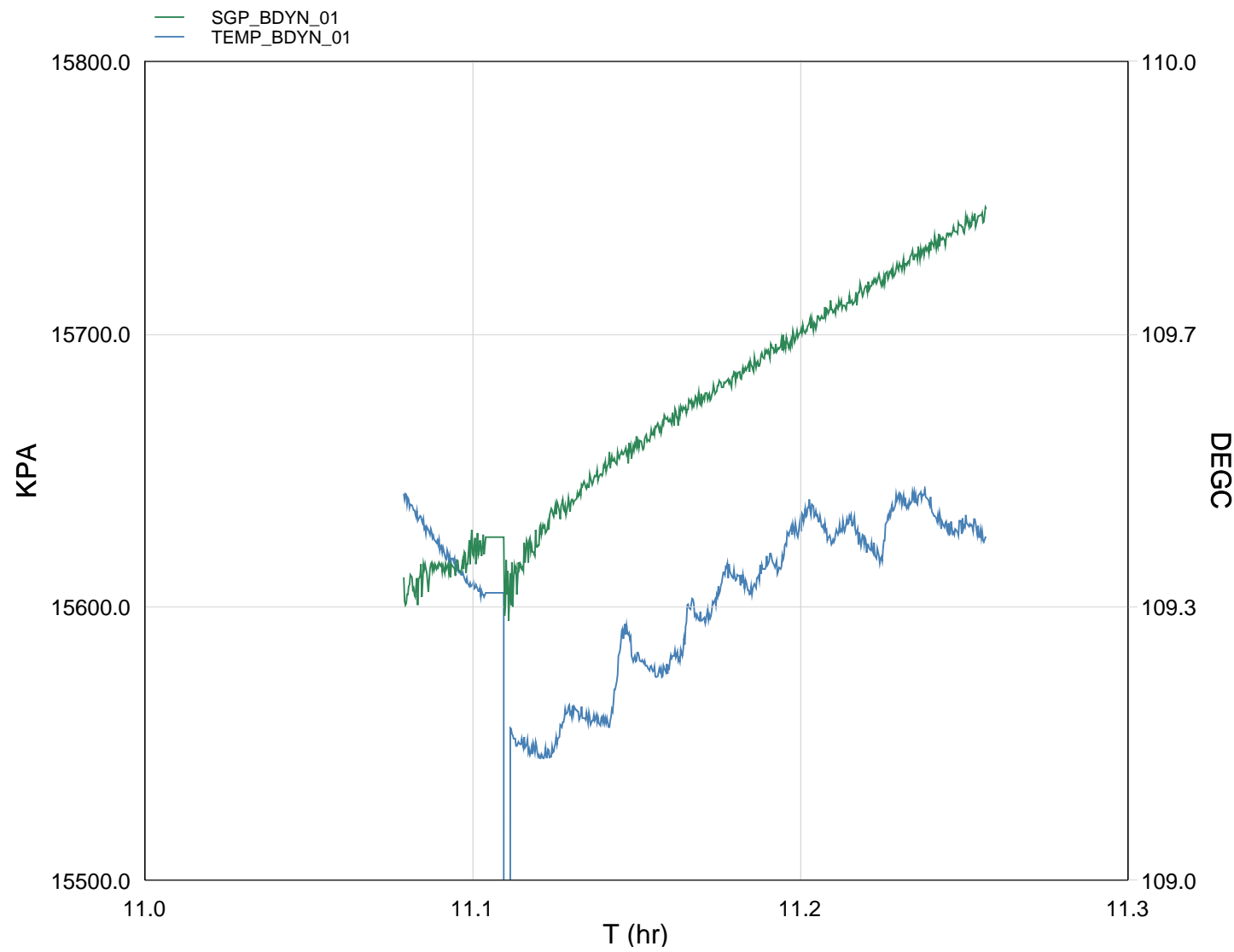
### Schlumberger Job Event Summary

	Time	Elapsed Time	Depth (M)	File
Log Pass (up)	23-Aug-2008 14:00	000:09	2915.7 - 2792.3	PERFO_009LUP
Log Pass (up)	23-Aug-2008 16:58	000:06	2901.5 - 2822.1	PERFO_019LUP
Log Pass (up)	23-Aug-2008 17:13	000:26	2900.3 - 2821.5	PERFO_021LUP
Station Log	23-Aug-2008 17:18	000:16	2858.5 - 2.5	PERFO_022LTP
Log Pass (up)	24-Aug-2008 10:42	000:11	2911.6 - 2851.4	PERFO_034LUP
Log Pass (up)	24-Aug-2008 10:56	000:23	2909.3 - 2844.1	PERFO_035LUP
Station Log	24-Aug-2008 11:04	000:11	2872.5 - 1.6	PERFO_036LTP



Gun # 2 Fired @  
2876m to 2877.5m MDKB

MAXIS Field Log



TIME	KPA	PSIA	DEGF
3990.0	15569.7829	2258.2102	228.5841
4020.0	15615.4765	2264.8375	228.9906
4050.0	15611.5120	2264.2625	228.8918
4080.0	15619.5039	2265.4215	228.8349
4110.0	15599.7799	2262.5608	-104.2644
4140.0	15620.9759	2265.6351	228.4790
4170.0	15633.0169	2267.3815	228.5374
4200.0	15645.3252	2269.1666	228.5567
4230.0	15654.3380	2270.4738	228.6206
4260.0	15659.0396	2271.1557	228.6841
4290.0	15668.2281	2272.4885	228.6716
4320.0	15676.5189	2273.6909	228.7772
4350.0	15682.1674	2274.5101	228.8769
4380.0	15688.8476	2275.4791	228.8422
4410.0	15694.9554	2276.3649	228.8859
4440.0	15701.8912	2277.3708	228.9964
4470.0	15708.4978	2278.3889	229.0405

4470.0 15708.4378 2278.3203 228.9465  
4500.0 15717.6379 2279.6546 228.9445  
4530.0 15720.6159 2280.0867 228.9952  
4560.0 15728.4107 2281.2172 229.0357  
4590.0 15735.3745 2282.2272 228.9848  
4620.0 15741.0780 2283.0544 228.9821

Schlumberger

Gun # 2 Shooting Pass

MAXIS Field Log

Company: Esso Australia Pty Ltd.

Well: A-7a

## Output DLIS Files

DEFAULT PERFO\_035LUP FN:34 PRODUCER 24-Aug-2008 10:56 2909.3 M 2844.1 M

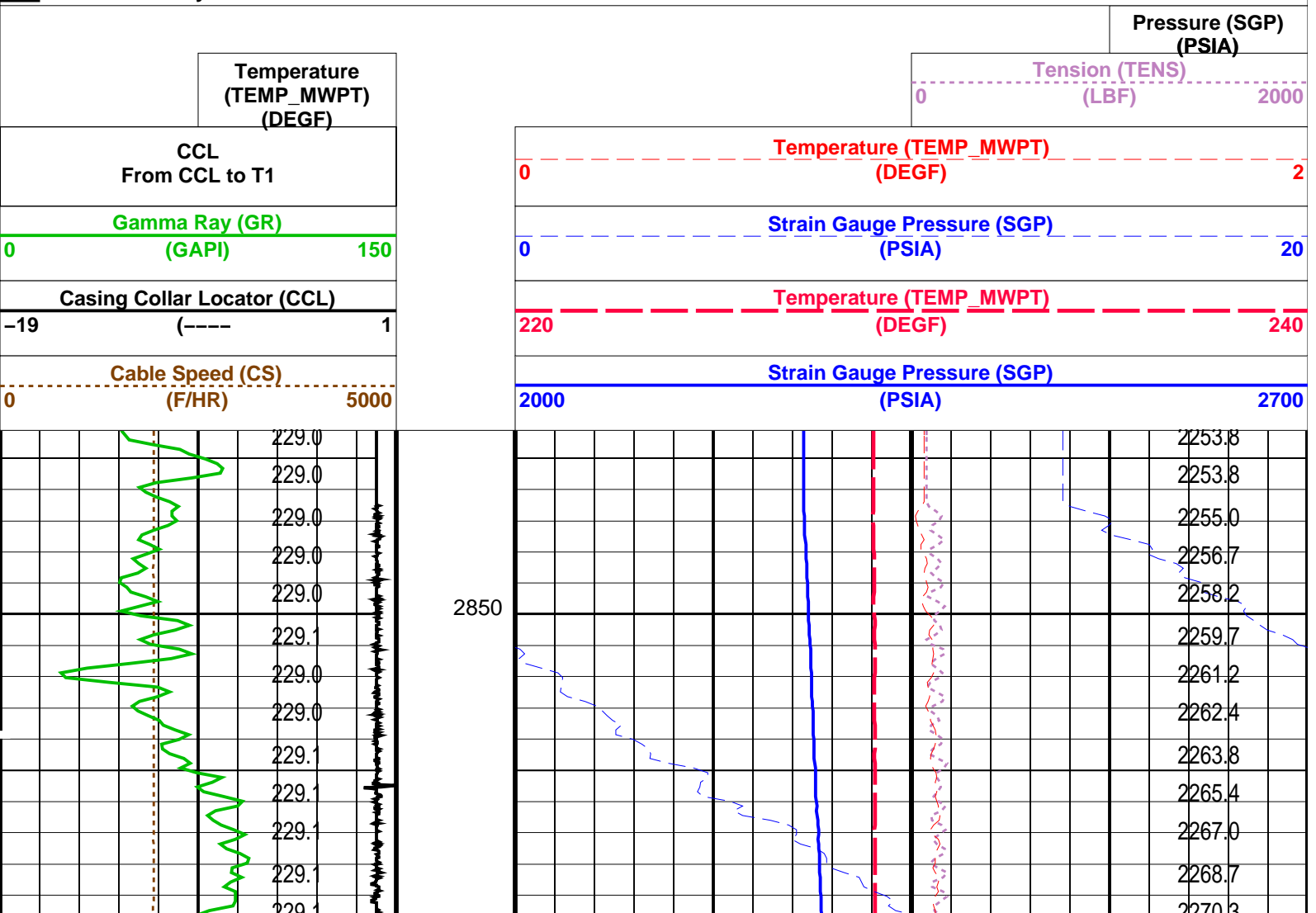
OP System Version: 15C0-309

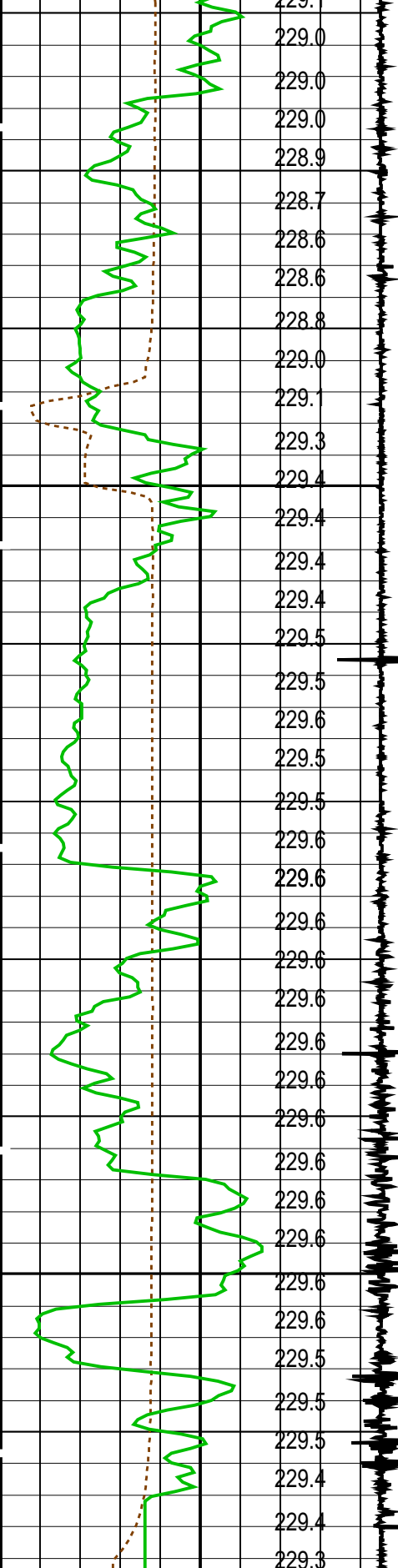
MCM

MWP\_GUN SRPC-3546-Q1\_2008\_OP15 MWPT-CA SRPC-3546-Q1\_2008\_OP15  
MWGT-AA SRPC-3546-Q1\_2008\_OP15

## PIP SUMMARY

Time Mark Every 60 S

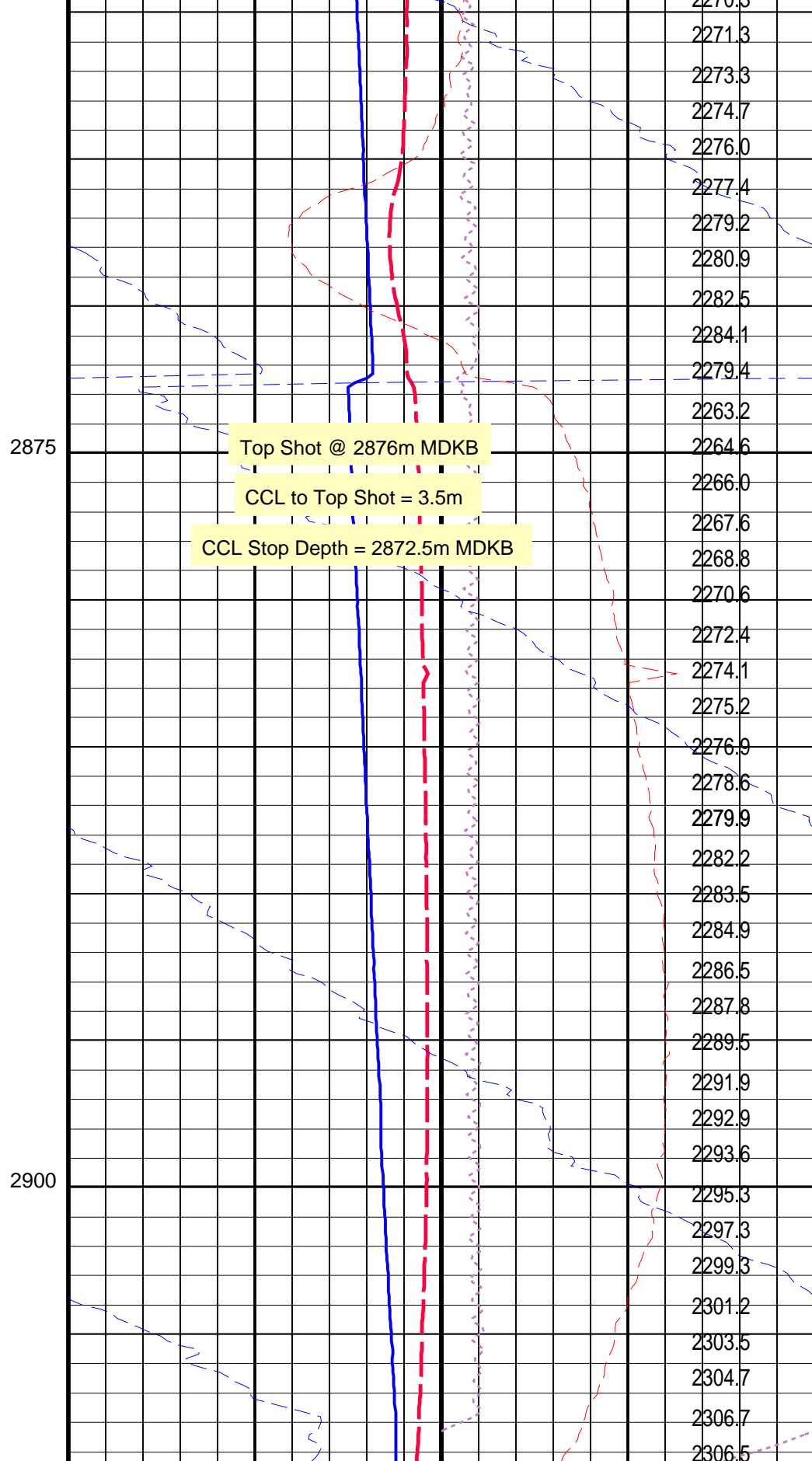




Cable Speed (CS)  
(F/HR)

Casing Collar Locator (CCL)  
(----

Gamma Ray (GR)  
(GAPI)



2875

2900

Top Shot @ 2876m MDKB

CCL to Top Shot = 3.5m

CCL Stop Depth = 2872.5m MDKB

Strain Gauge Pressure (SGP)

2000

(PSIA)

2700

Temperature (TEMP\_MWPT)

220

(DEGF)

240

Strain Gauge Pressure (SGP)

2000

(PSIA)

2700



<div>CCL From CCL to T1</div>		<div>Temperature (TEMP_MWPT) (DEGF)</div>		<div>Pressure (SGP) (PSIA)</div>	
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: 24-Aug-2008 10:56	
OP System Version: 15C0-309					
MCM					
MWP_GUN		SRPC-3546-Q1_2008_OP15		MWPT-CA SRPC-3546-Q1_2008_OP15	
MWGT-AA		SRPC-3546-Q1_2008_OP15			
Output DLIS Files					
DEFAULT		PERFO_035LUP		FN:34 PRODUCER 24-Aug-2008 10:56	
<div><div><div>Schlumberger</div><div>Gun # 2 Correlation Pass</div></div><div>MAXIS Field Log</div></div>					

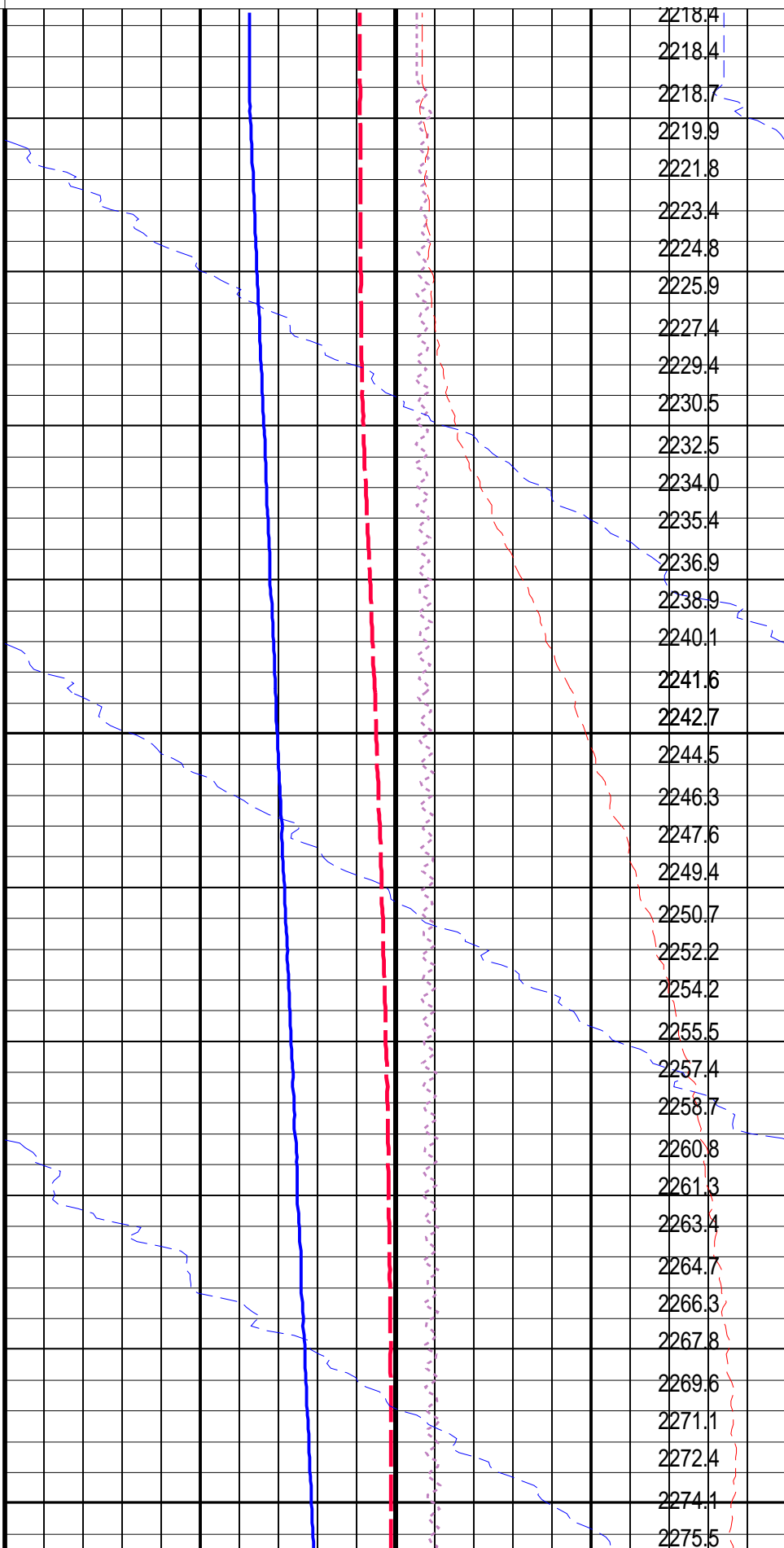
Company: Esso Australia Pty Ltd.						Well: A-7a	
Output DLIS Files							
DEFAULT		PERFO_034LUP		FN:33		PRODUCER 24-Aug-2008 10:42 2911.6 M 2851.4 M	
OP System Version: 15C0-309							
MCM							
MWP_GUN		SRPC-3546-Q1_2008_OP15		MWPT-CA		SRPC-3546-Q1_2008_OP15	
MWGT-AA		SRPC-3546-Q1_2008_OP15					
PIP SUMMARY							
Time Mark Every 60 S							
<div>CCL From CCL to T1</div>				<div>Temperature (TEMP_MWPT) (DEGF)</div>		<div>Pressure (SGP) (PSIA)</div>	
<div>Gamma Ray (GR)</div>				<div>Tension (TENS) (LBF)</div>		0 2000	
				<div>Temperature (TEMP_MWPT) (DEGF)</div>		<div>Strain Gauge Pressure (SGP) (PSIA)</div>	

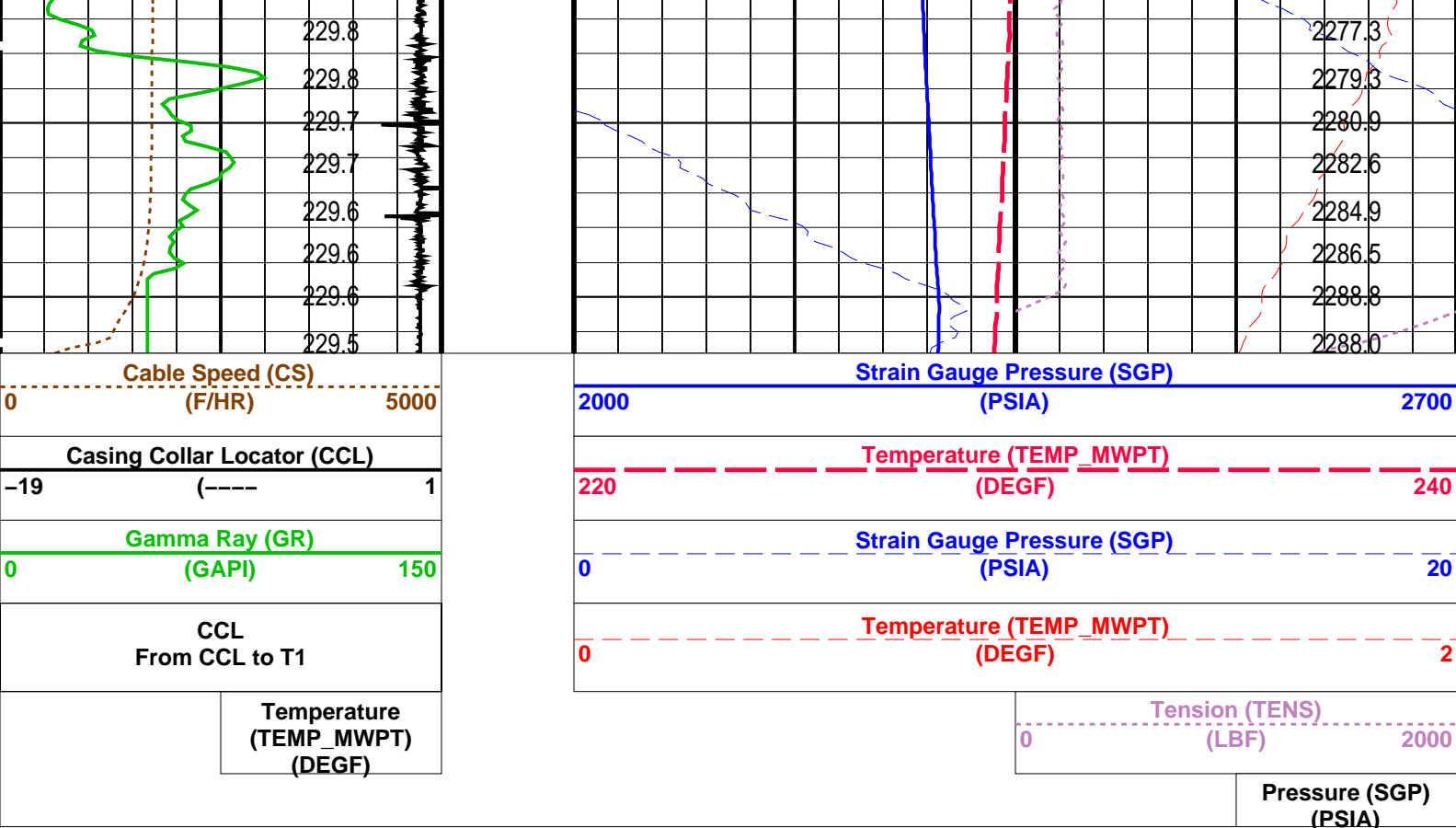
20

5000

240

**2700**





#### 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: 24-Aug-2008 10:42

#### OP System Version: 15C0-309

MCM

MWP\_GUN SRPC-3546-Q1\_2008\_OP15 MWPT-CA SRPC-3546-Q1\_2008\_OP15  
MWGT-AA SRPC-3546-Q1\_2008\_OP15

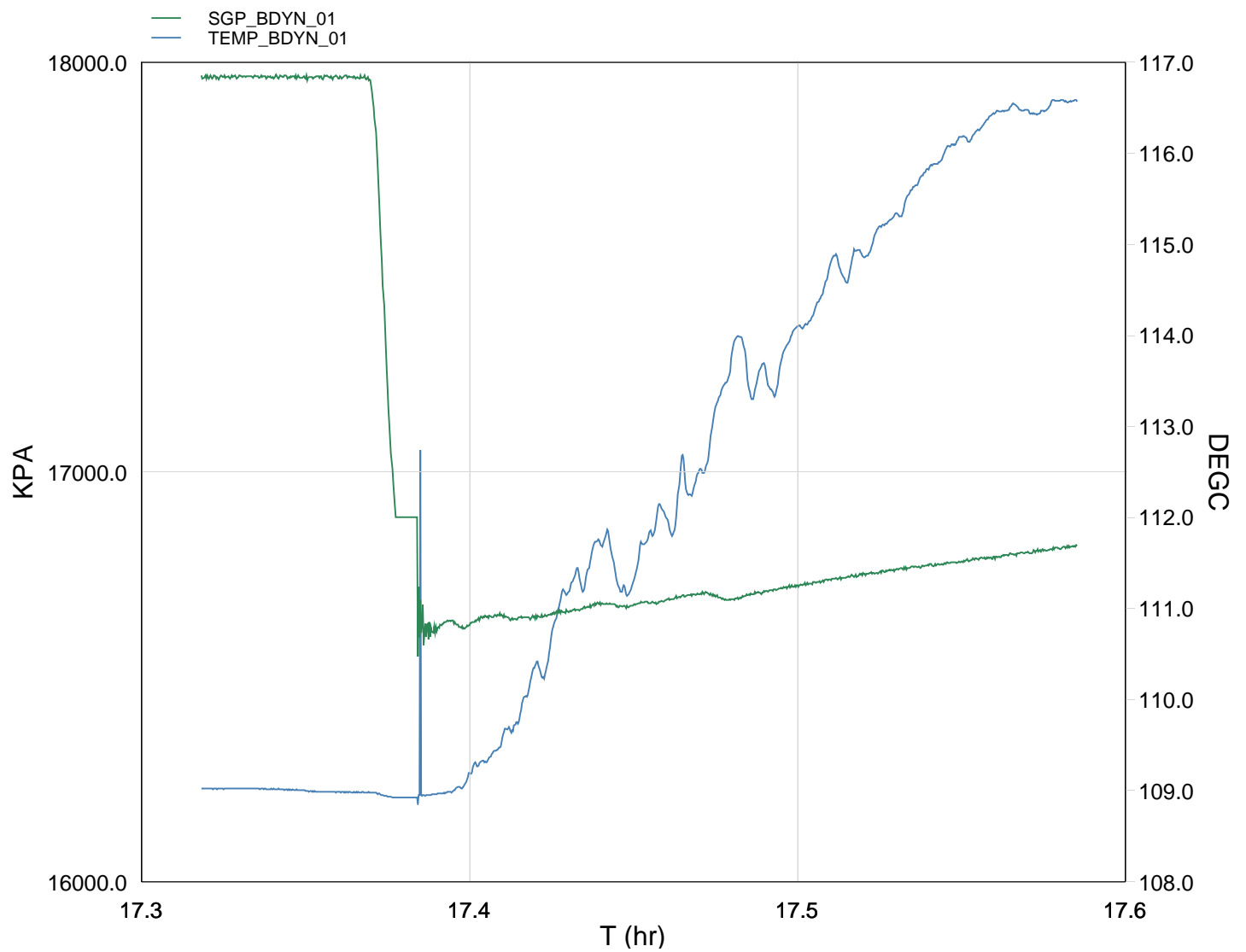
#### Output DLIS Files

DEFAULT PERFO\_034LUP FN:33 PRODUCER 24-Aug-2008 10:42

**Schlumberger**

Gun # 1 Fired @  
2862m to 2866.5m MDKB

MAXIS Field Log



TIME	KPA	PSIA	DEGF
2940.0	17885.3312	2594.0521	227.2034
2970.0	17963.9976	2605.4616	228.2378
3000.0	17966.5077	2605.8257	228.2530
3030.0	17962.5809	2605.2562	228.2338
3060.0	17963.7549	2605.4265	228.2154
3090.0	17967.4633	2605.9643	228.1776
3120.0	17965.2027	2605.6365	228.1784
3150.0	17551.2526	2545.5981	228.1215
3180.0	16889.6426	2449.6396	228.0654
3210.0	16620.9765	2410.6728	228.1411
3240.0	16619.0310	2410.3907	228.2737
3270.0	16648.8022	2414.7086	228.8814
3300.0	16644.6680	2414.1091	229.5354
3330.0	16650.9584	2415.0214	230.4999
3360.0	16663.2453	2416.8034	232.3515
3390.0	16681.0597	2419.3873	233.1051
3420.0	16673.3875	2418.2745	232.0532
3450.0	16679.6579	2419.1840	233.3543
3480.0	16696.7994	2421.6701	234.8266
3510.0	16701.4961	2422.3513	234.8884
3540.0	16691.8619	2420.9538	237.1775
3570.0	16709.5324	2423.5168	236.6491
3600.0	16720.1487	2425.0565	237.1889
3630.0	16732.5929	2426.8616	237.8729
3660.0	16741.9063	2428.2121	238.2525
3690.0	16753.9325	2429.9566	239.0491
3720.0	16765.0187	2431.5644	239.5483
3750.0	16772.8580	2432.7014	240.4903
3780.0	16779.5307	2433.6693	240.9678
3810.0	16789.0823	2435.0545	241.3469
3840.0	16801.1412	2436.8037	241.7161
3870.0	16807.7109	2437.7564	241.5597
3900.0	16817.1906	2439.1312	241.8301

Company: Esso Australia Pty Ltd.

Well: A-7a

Output DLIS Files

DEFAULT

PERFO\_021LUP

FN:20

PRODUCER

23-Aug-2008 17:13

2900.3 M

2821.5 M

OP System Version: 15C0-309  
MCM

MWP\_GUN

SRPC-3546-Q1\_2008\_OP15

MWPT-CA

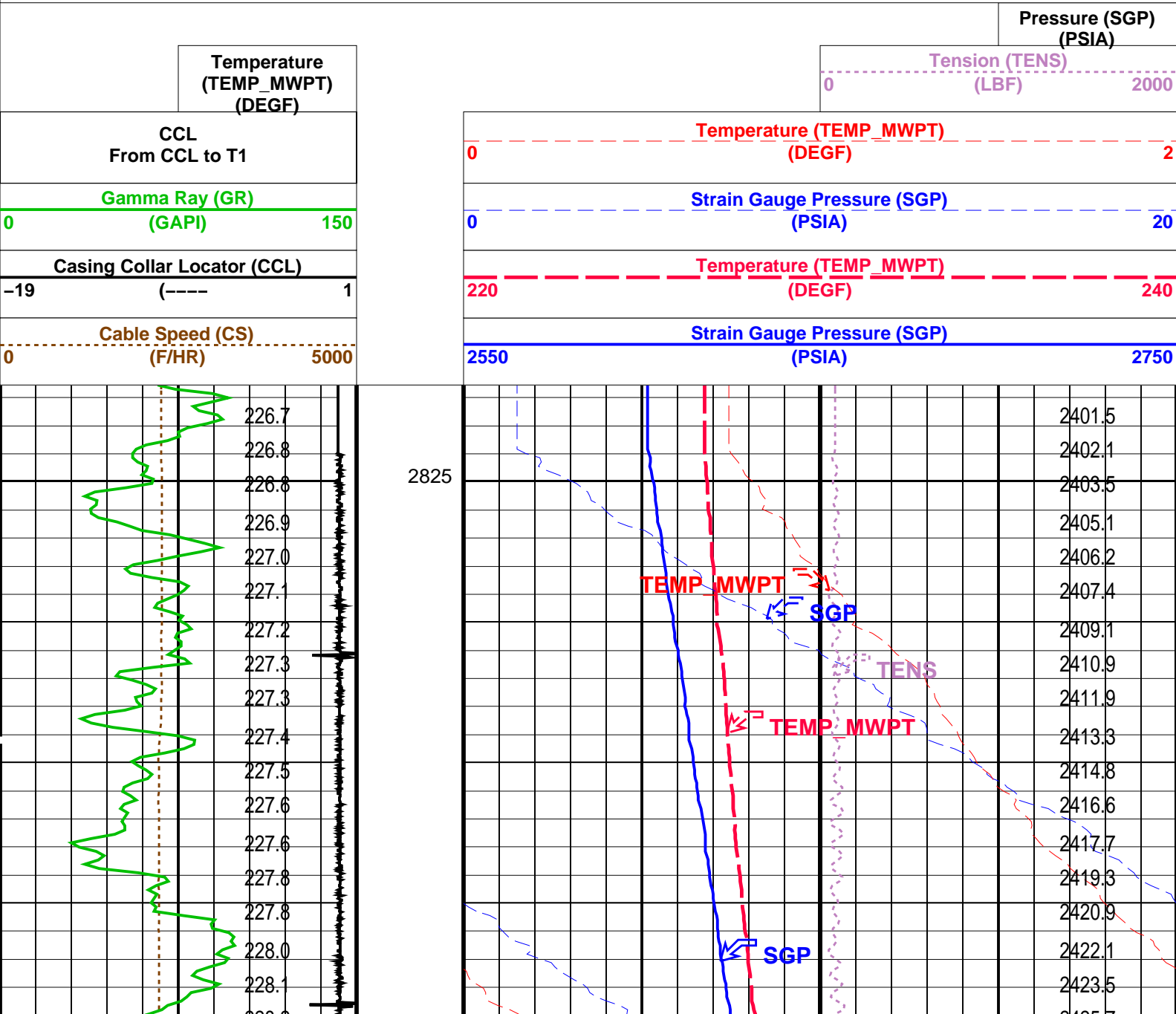
SRPC-3546-Q1\_2008\_OP15

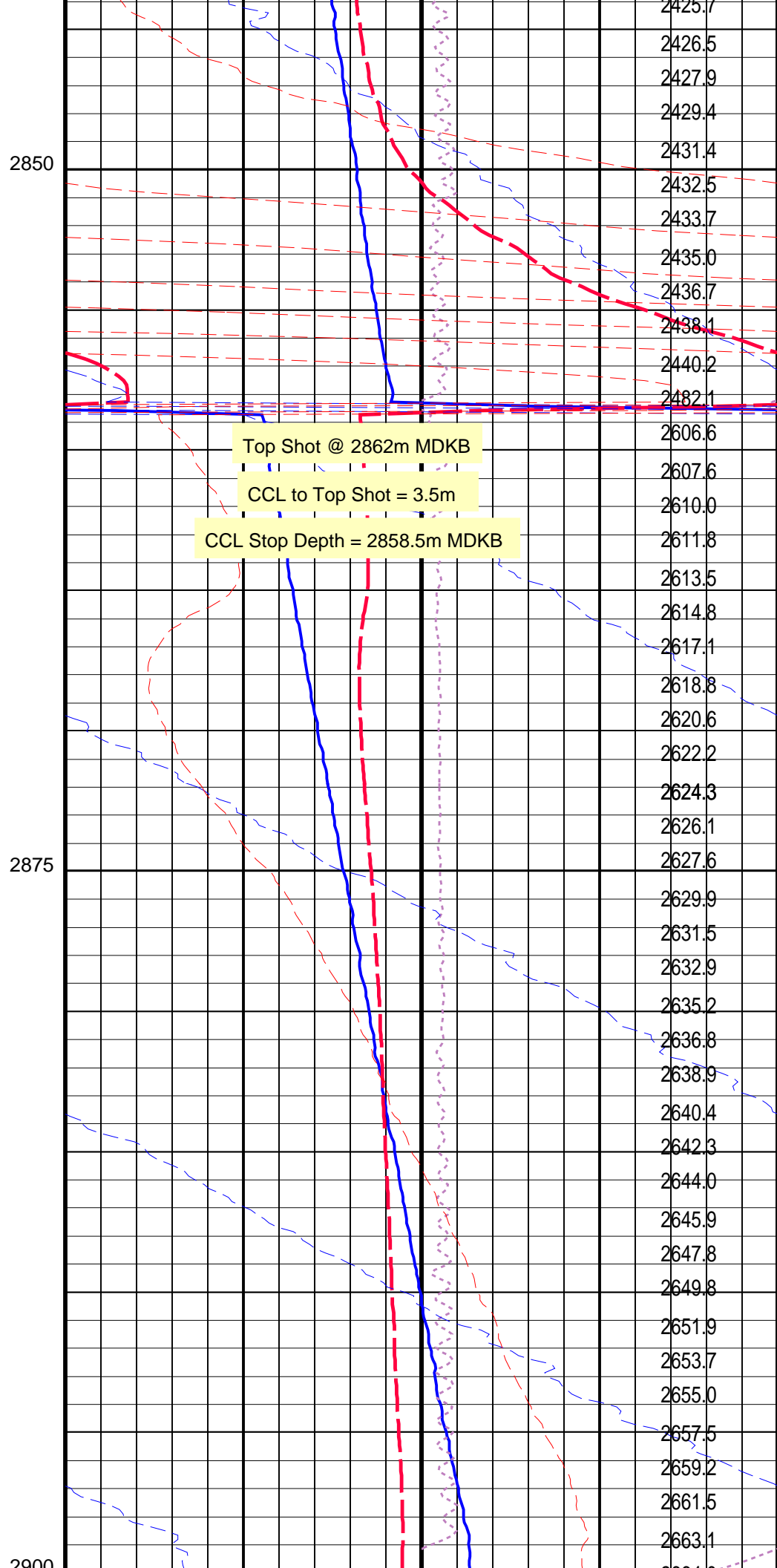
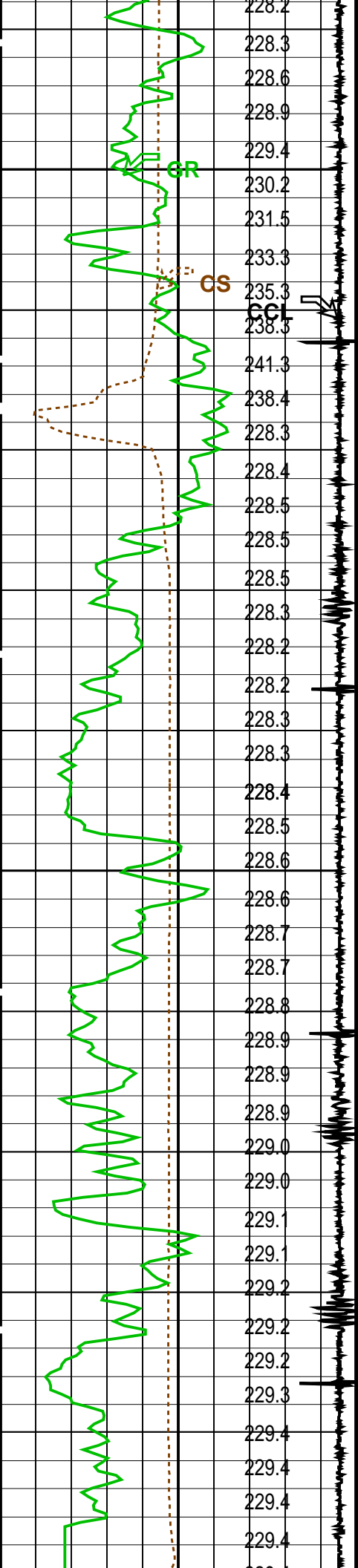
MWGT-AA

SRPC-3546-Q1\_2008\_OP15

PIP SUMMARY


Time Mark Every 60 S





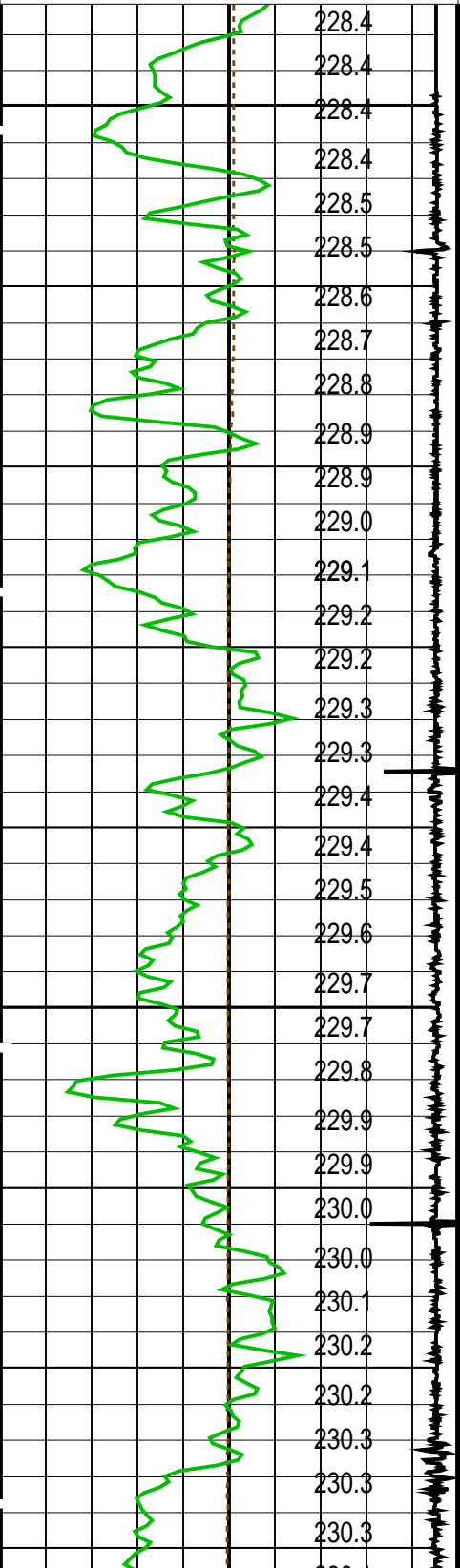
Cable Speed (CS) (F/HR)		229.4	2500	Strain Gauge Pressure (SGP) (PSIA)		2550	2750
Casing Collar Locator (CCL) (----		-19	1	Temperature (TEMP_MWPT) (DEGF)		220	240
Gamma Ray (GR) (GAPI)		0	150	Strain Gauge Pressure (SGP) (PSIA)		0	20
CCL From CCL to T1				Temperature (TEMP_MWPT) (DEGF)		0	2
Temperature (TEMP_MWPT) (DEGF)				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: 23-Aug-2008 17:13	
OP System Version: 15C0-309			
MCM			
MWP_GUN	SRPC-3546-Q1_2008_OP15	MWPT-CA	SRPC-3546-Q1_2008_OP15
MWGT-AA	SRPC-3546-Q1_2008_OP15		
Output DLIS Files			
DEFAULT	PERFO_021LUP	FN:20	PRODUCER 23-Aug-2008 17:13

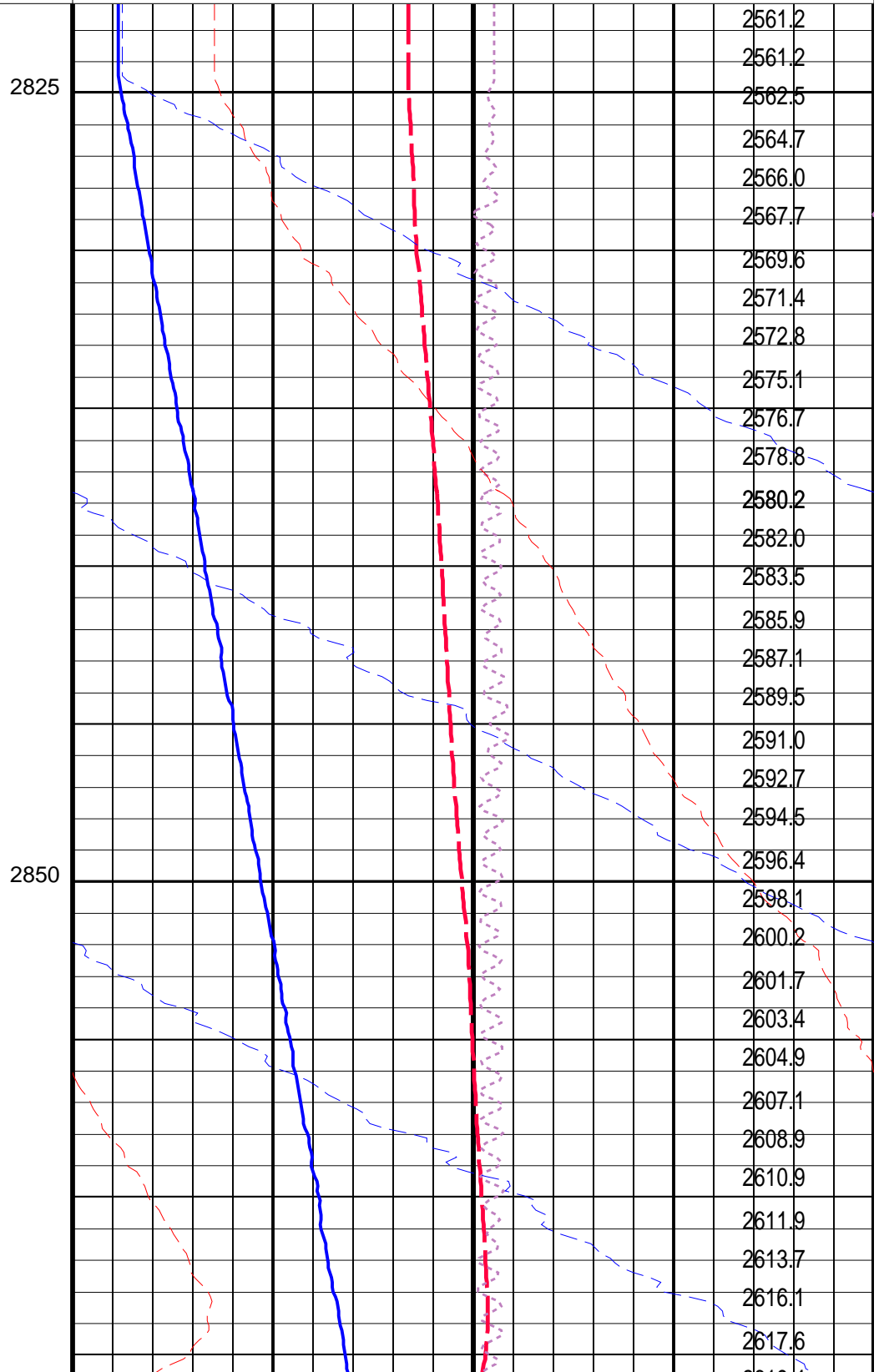
		Gun # 1 Correlation Pass	
		MAXIS Field Log	

Company: Esso Australia Pty Ltd.							Well: A-7a
Output DLIS Files							
DEFAULT	PERFO_019LUP	FN:18	PRODUCER	23-Aug-2008 16:58	2901.5 M	2822.1 M	
OP System Version: 15C0-309							
MCM							
MWP_GUN	SRPC-3546-Q1_2008_OP15	MWPT-CA		SRPC-3546-Q1_2008_OP15			
MWGT-AA	SRPC-3546-Q1_2008_OP15						
PIP SUMMARY							
<div><div></div>Time Mark Every 60 S</div>							
						Pressure (SGP)	

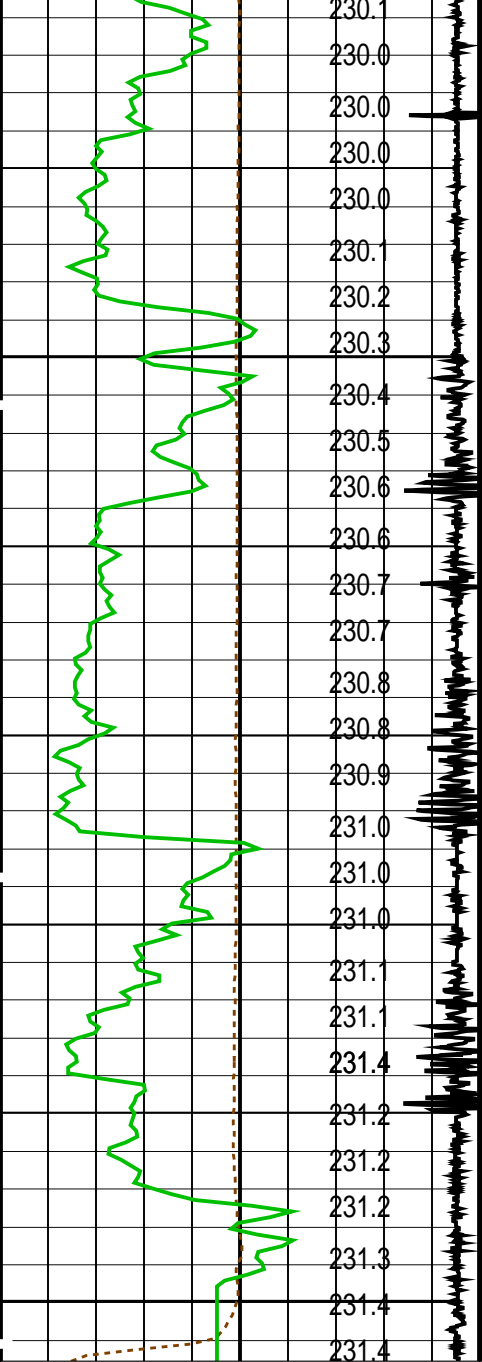
Temperature (TEMP_MWPT) (DEGF)		
CCL From CCL to T1		
Gamma Ray (GR) (GAPI)		
0		150
Casing Collar Locator (CCL)		
-19	(----	1
Cable Speed (CS) (F/HR)		
0		5000



Tension (TENS) (LBF)		
0		2000
Temperature (TEMP_MWPT) (DEGF)		
0		2
Strain Gauge Pressure (SGP) (PSIA)		
0		20
Temperature (TEMP_MWPT) (DEGF)		
220		240
Strain Gauge Pressure (SGP) (PSIA)		
2550		2750



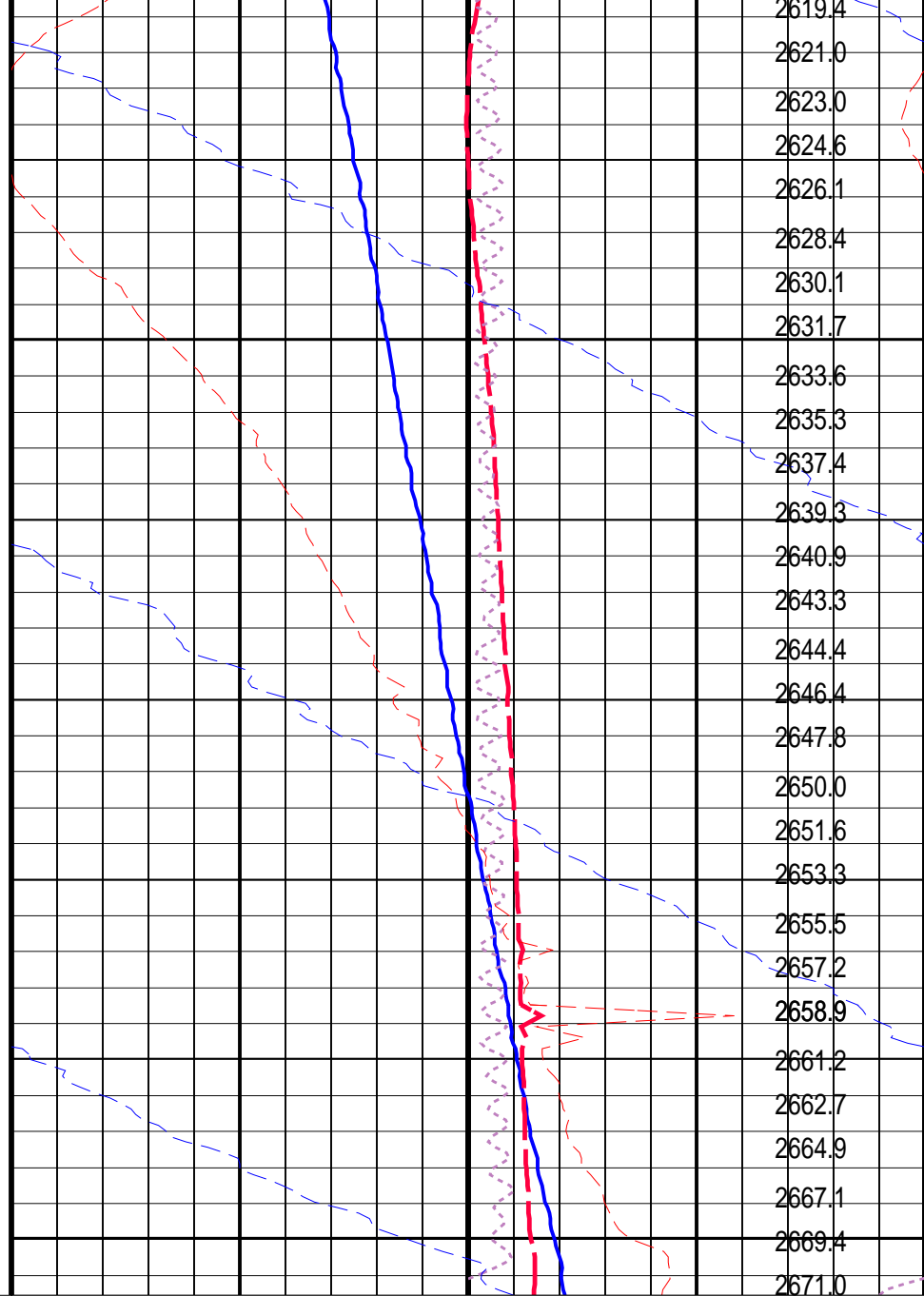




Cable Speed (CS) (F/HR)	
0	5000
Casing Collar Locator (CCL) (----)	
-19	1
Gamma Ray (GR) (GAPI)	
0	150
CCL From CCL to T1	
Temperature (TEMP_MWPT) (DEGF)	

2875

2900



Strain Gauge Pressure (SGP) (PSIA)	
2550	2750
Temperature (TEMP_MWPT) (DEGF)	
220	240
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		

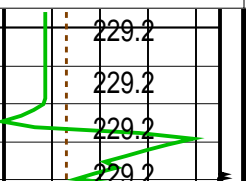
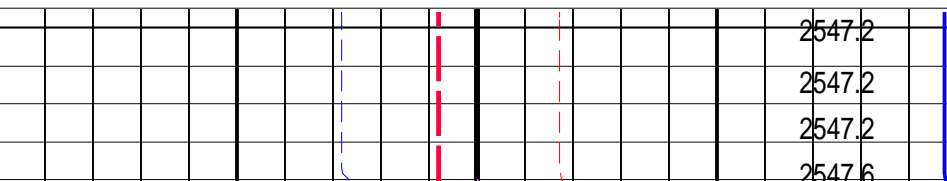
DEVI_FL_CORR	Deviation Angle for Flow Line Correction	0	DEG
FLD	Flow Line Density	1	G/C3
MWPT_NULL_SOURCE	MWPT NULL Temperature Source	TEMS	
MWPT_NULL_TEMP	MWPT NULL Temperature	0.0	DEGC

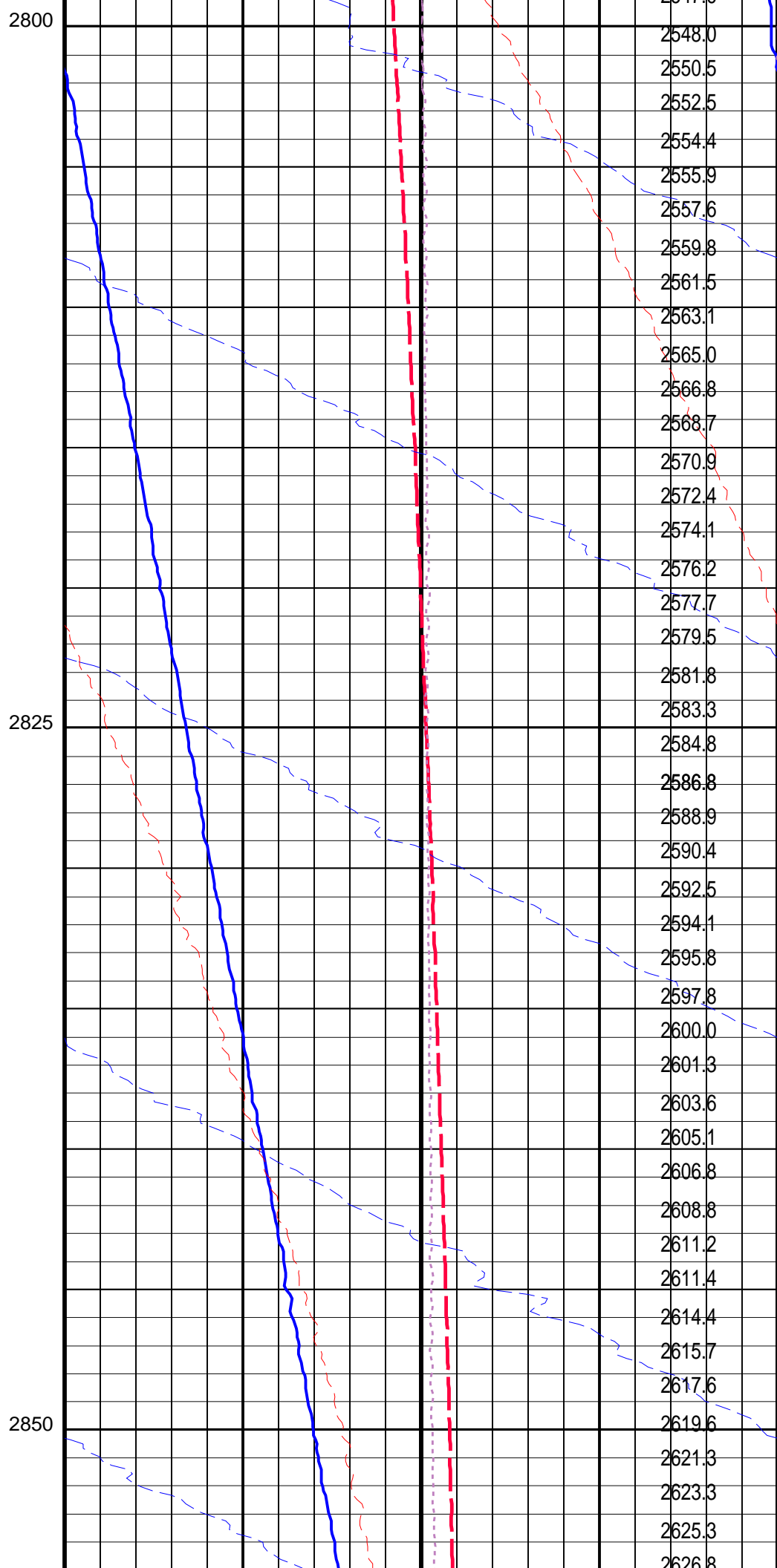
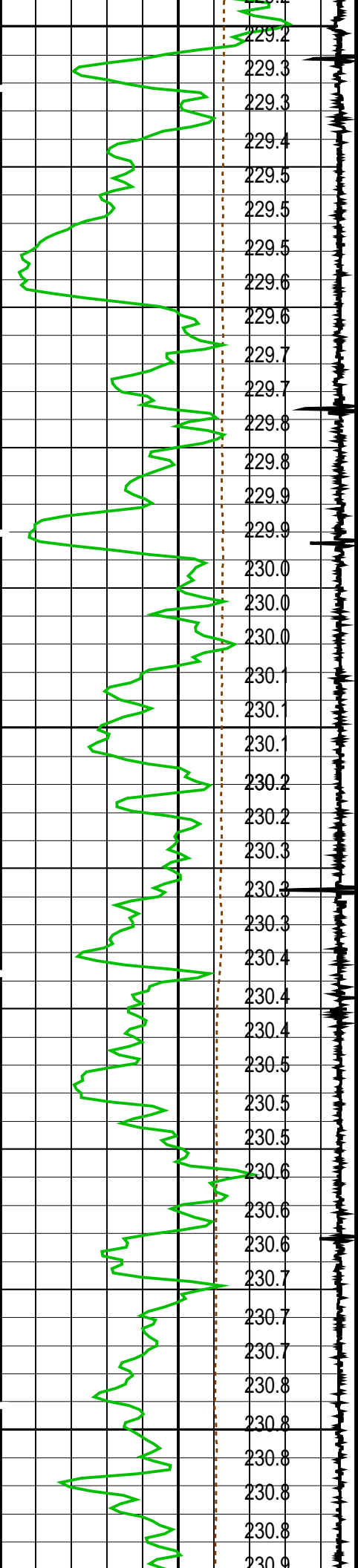
Format: MWP		Vertical Scale: 1:200		Graphics File Created: 23-Aug-2008 16:58	
OP System Version: 15C0-309					
MCM					
MWP_GUN	SRPC-3546-Q1_2008_OP15	MWPT-CA	SRPC-3546-Q1_2008_OP15		
MWGT-AA	SRPC-3546-Q1_2008_OP15				
Output DLIS Files					
DEFAULT	PERFO_019LUP	FN:18	PRODUCER	23-Aug-2008 16:58	

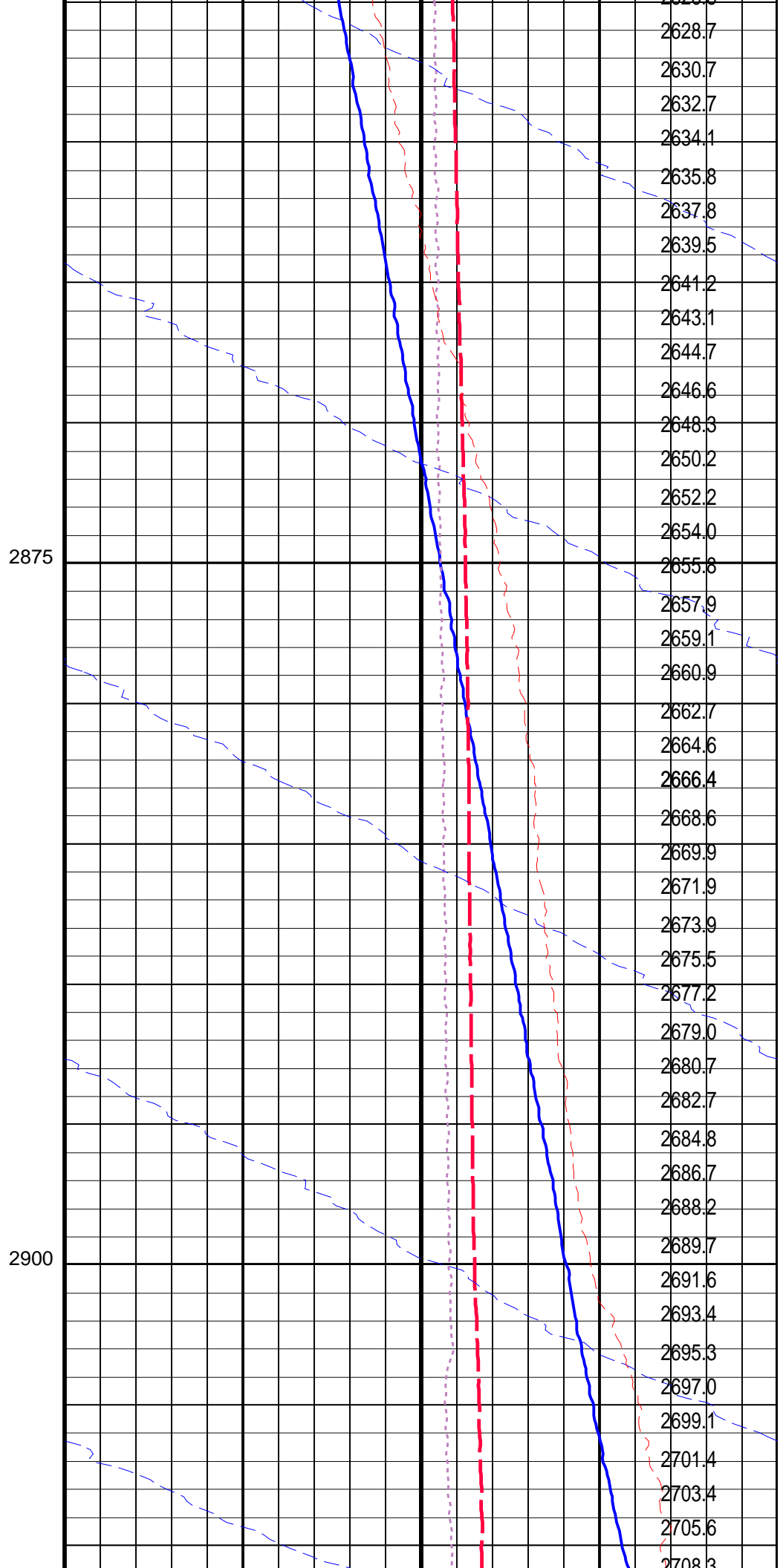
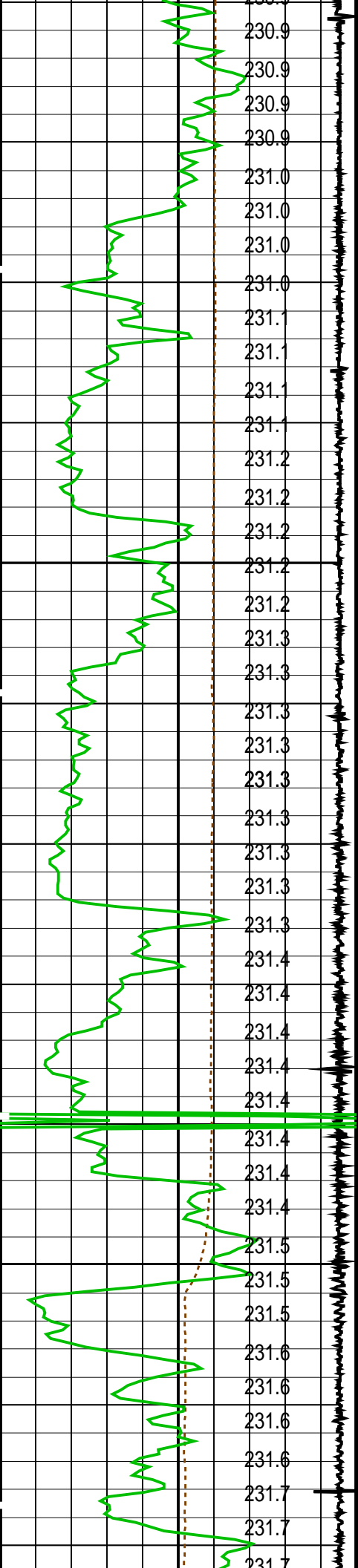
		2.125" Gun Dummy Pass	
MAXIS Field Log			

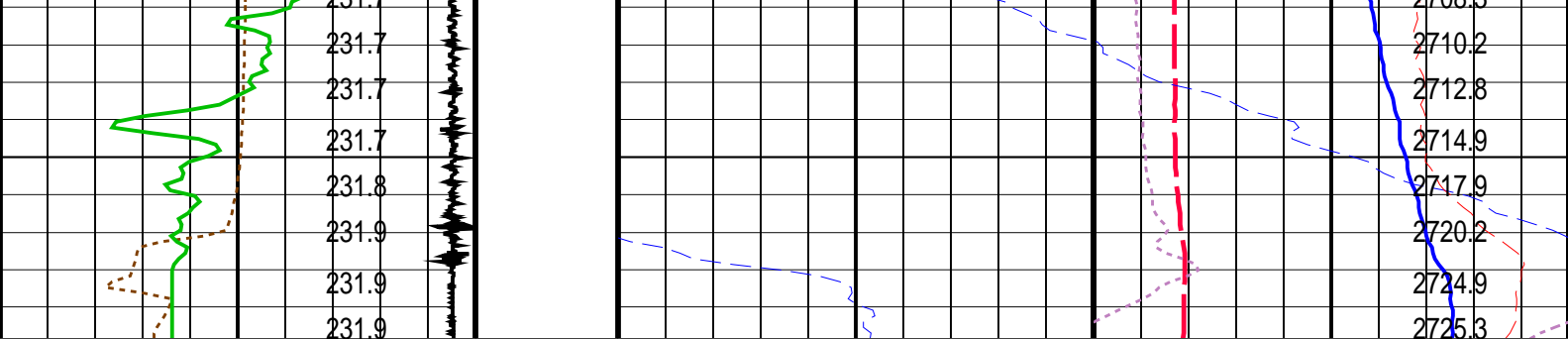
Company: Esso Australia Pty Ltd.				Well: A-7a		
Input DLIS Files						
DEFAULT	PERFO_009LUP	FN:8	PRODUCER	23-Aug-2008 14:00	2915.7 M	2792.3 M
Output DLIS Files						
DEFAULT	PERFO_011PUP	FN:10	PRODUCER	23-Aug-2008 14:15	2919.8 M	2794.4 M
OP System Version: 15C0-309						
MCM						
MWP_GUN	SRPC-3546-Q1_2008_OP15	MWPT-CA		SRPC-3546-Q1_2008_OP15		
MWGT-AA	SRPC-3546-Q1_2008_OP15					

PIP SUMMARY	
 Time Mark Every 60 S	

		Pressure (SGP) (PSIA)	
		Tension (TENS) (LBF)	
Temperature (TEMP_MWPT) (DEGF)		0	2000
CCL From CCL to T1		0	2
Gamma Ray (GR) (GAPI)		0	20
Casing Collar Locator (CCL)		220	240
Cable Speed (CS) (F/HR)		2550	2750
			







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)		2550	2750
Temperature (TEMP_MWPT) (DEGF)		220	240
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
System and Miscellaneous		
DO	Depth Offset for Playback	4.1 M
PP	Playback Processing	NORMAL

Format: MWP Vertical Scale: 1:200

Graphics File Created: 23-Aug-2008 14:15

#### OP System Version: 15C0-309

MCM

MWP_GUN	SRPC-3546-Q1_2008_OP15	MWPT-CA	SRPC-3546-Q1_2008_OP15
MWGT-AA	SRPC-3546-Q1_2008_OP15		

#### Input DLIS Files

DEFAULT	PERFO_009LUP	FN:8	PRODUCER	23-Aug-2008 14:00	2915.7 M	2792.3 M
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#### Output DLIS Files

DEFAULT	PERFO_011PUP	FN:10	PRODUCER	23-Aug-2008 14:15
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Company: Esso Australia Pty Ltd.

**Schlumberger**

Well: A-7a

Field: Snapper

Rig: Prod4 / Crane

Country: Australia

2 1/8" MWPT

2 1/2" MIN. H.  
Powerjet Perforation  
Record