

Company: **Santos Ltd./Strike Oil**

12.25 in. Section

Well: Casino-2

Field: **VIC/P 44**

Rig: Ocean Bounty

State:

Victoria

CDR – ARC – ISONIC
Measured Depth 1:500
Recorded Mode

Rig:	Ocean Bounty
Field:	VIC/P 44
Location:	Otway Basin
Well:	Casino-2
Company:	Santos Ltd./Strike Oil

CDR – ARC – ISONIC					
Measured Depth 1:500					
Recorded Mode					
		Total depth:	2112.0 m		K.B. Top Drive m
		Spud date:	24 Sep 02		G.L. - 68 m
		Runs:	1 To 3		D.F. 25 m
		Permanent datum:	LAT _____	Elev.: 0.0 m	
		Log measured from:	Drill Floor	25 m	above Perm. datum
		Depth reference:	Driller's Depth		
API serial no.	X = 651 752.63 mE Y = 5 704 463.79 mN	Longitude	Latitude		
		142°44'50.746" E	38°47'43.887" S		

Depth logged: 690.5 m		To 2106.9 m		Mag decl: 10.89 deg.		Other services:	
Date logged: 27 Sep 02		To 04 Oct 02		Mag dip: -70.02 deg.		MWD Survey, IWW	
Bore hole record				Casing record			
Hole size	from	to	Size	Density	from	to	
914 mm/36 in.	Seabed	140.0 m	762 mm	461 kg/m	Wellhead	137.0 m	
445 mm/17.5 in.	140.0 m	700.0 m	340 mm	101 kg/m	Wellhead	690.55 m	
311 mm/12.25 in.	700.0 m	2112.0 m					
Type	Mud record		Borehole deviation record				
	from	to	Min	Max	from	to	
Seawater	Seabed	700.0 m	0 deg.	0.56 deg.	Seabed	729.0 m	
KCl/HPA/Glyc	700.0 m	2112.0 m	0.56 deg.	2.47 deg.	729.0 m	2112.0 m	
Surface equipment			Software record				
Unit	OLLU-JC902	IDEAL Wis	id7_OC_02				
Depth system	Geograph, GTE	SPM	id7_2c_09				
		LWD	6.0B12				
		MWD	6.1C00				

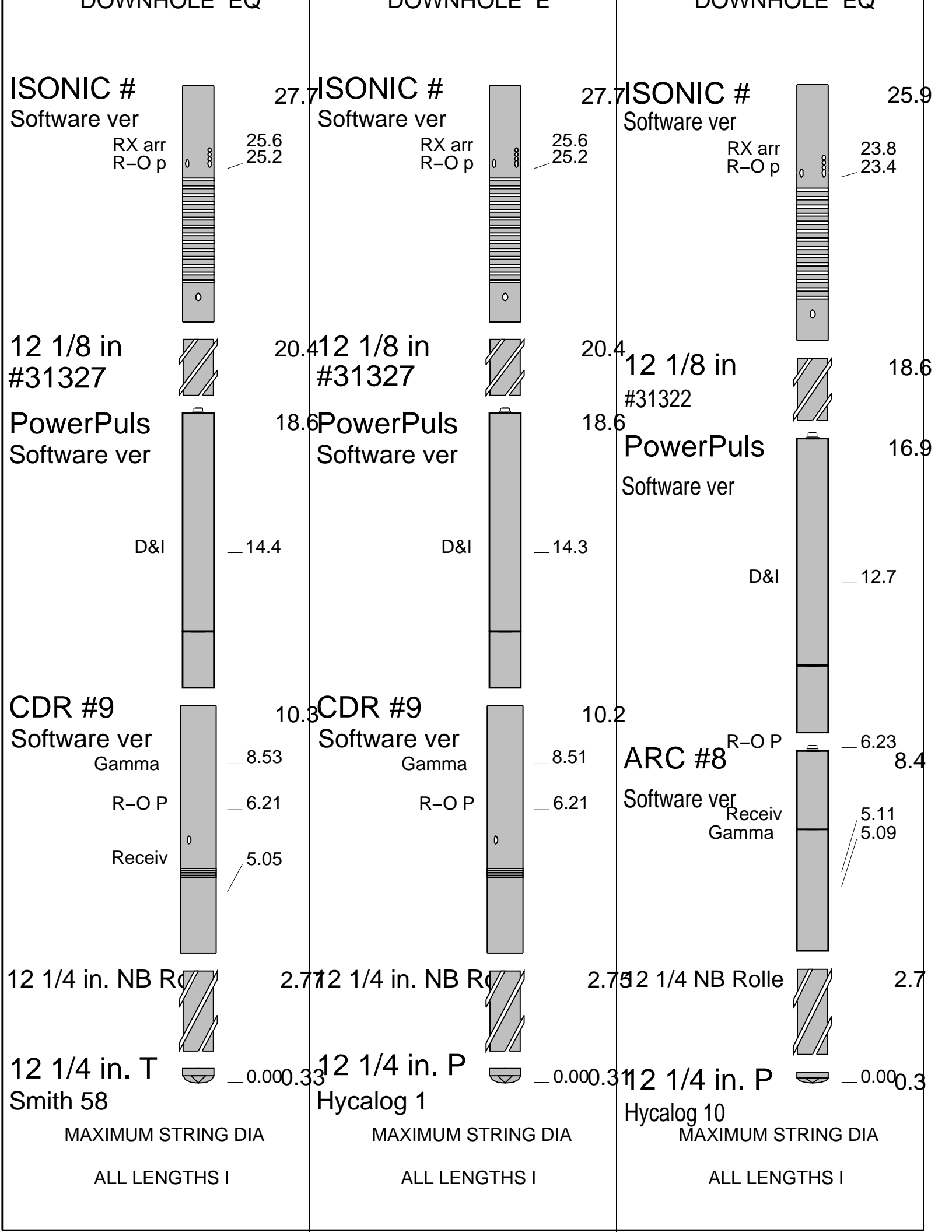
Bit Run Summary

Run number		1	2	3						
Bit size	in.	12.25	12.25	12.25						
Bit start depth	m	700.00	1646.0	1763.0						
Bit end depth	m	1646.00	1763.0	2112.0						
Top interval logged	m	690.55	1640.95	1757.97						
Bottom interval logged	m	1640.95	1757.97	2106.9						
Begin log: time		22:30	23:31	22:00						
Begin log: date		27 Sep 02	30 Sep 02	02 Oct 02						
End log: time		21:10	10:30	10:30						
End log: date		30 Sep 02	01 Oct 02	04 Oct 02						
Mud data										
Depth	m	1646	1763	2112						
Type		KCl/PHPA/Gly	KCl/PHPA/Gly	KCl/PHPA/Gly						
Mud weight	ppg	10.0	10.1	10.3						
Solids	%	10.0	10.4	10.8						
Chlorides	mg/L	23000	31000	31500						
Rm	ohmm@degC	0.188@24	0.132@24	0.146@22						
Rmf	ohmm@degC	0.138@24	0.129@23	0.128@23						
Rmc	ohmm@degC	0.252@24	0.232@24	0.242@23						

Potassium	mg/L	27000	32000	32400						
Environmental data										
GR										
Mud weight	ppg	10.0	10.1	10.3						
Bit size	in.	12.25	12.25	12.25						
Resistivity										
Neutron porosity										
Hole Size	in.	12.25	12.25	12.25						
Mud weight	ppg	10.0	10.1	10.3						
Borehole Temperature	degC	53.0	55.0	70.0						
Mud salinity	n/a	n/a	n/a	n/a						
Formation salinity	n/a	n/a	n/a	n/a						
Recording rate 1	SEC	10	10	10	GR / Res Sonic Array					
Recording rate 2	SEC	10	10	10						
Filtering GR		3 pt	3 pt	3 pt						
Filtering density		n/a	n/a	n/a						
Filtering Neutron		n/a	n/a	n/a						
Company representative		R. King	G. Othen	S. Hodgetts	R. Subramanian	M. D'Cruz				
Anadrill personnel		A. Abad	C. Tue							

<p style="text-align: center;">DISCLAIMER</p> <p>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.</p>		
OTHER SERVICES FOR RUN1 MWD Surveys Interact Web Witness (IWW)	OTHER SERVICES FOR RUN2 MWD Surveys Interact Web Witness (IWW)	OTHER SERVICES FOR RUN3 MWD Surveys Interact Web Witness (IWW)
REMARKS: RUN NUMBER 1 CDR gamma ray is corrected for mud weight, bit size and tool size, but not environmentally corrected for potassium content in mud. CDR resistivity is bore hole compensated but not environmentally corrected. ISONIC measurements are borehole compensated, but not environmentally corrected. Depth is Driller's Depth. Sensor offsets are described in Toolskech. ISONIC data quality was affected by high rate of penetrations, shocks and vibrations while drilling from 700 meters to 900 meters. POOH to change bit. Run TD: 1646 meters	REMARKS: RUN NUMBER 2 CDR gamma ray is corrected for mud weight, bit size and tool size, but not environmentally corrected for potassium content in mud. CDR resistivity is bore hole compensated but not environmentally corrected. ISONIC measurements are borehole compensated, but not environmentally corrected. Depth is Driller's Depth. Sensor offsets are described in Toolskech. MWD Realtime transmission failure in this bit run from 1696.0 meters to run TD but did not affect the recorded data form CDR and ISONIC tool. POOH to change bit and laid down CDR and PowerPulse MWD tool. Run TD: 1763 meters	REMARKS: RUN NUMBER 3 ARC gamma ray is corrected for mud weight, bit size and tool size and environmentally corrected for potassium content in mud. ARC resistivity is bore hole compensated but not environmentally corrected. ISONIC measurements are borehole compensated, but not environmentally corrected. Depth is Driller's Depth. Sensor offsets are described in Toolskech. ARC tool was pick-up due to the fact that it was set-up to run with the back-up MWD tool. ISONIC array log quality appear spiky when drilling sandstone formations interbedded with siltstones. The ISONIC array response was consistent throughout the entire run reflecting every change in formation. This run resulted to well TD at 2112 meters.

EQUIPMENT DESCRIPTION		
RUN1	RUN2	RUN3



IDEAL Version: ID7_0C_02

IDF

MWD_10

IDEAL Version: ID7_0C_02

SON825

IDEAL Version: ID7_0C_02

Format: ISON_CDR_ARC_Log 1:500MD RM

Vertical Scale: 1:500

Graphics File Created: 09-Oct-2002 16:09

Parameters

DLIS Name

Description

Value

BS_RM
DO

Bit Size (RM)
Depth Offset

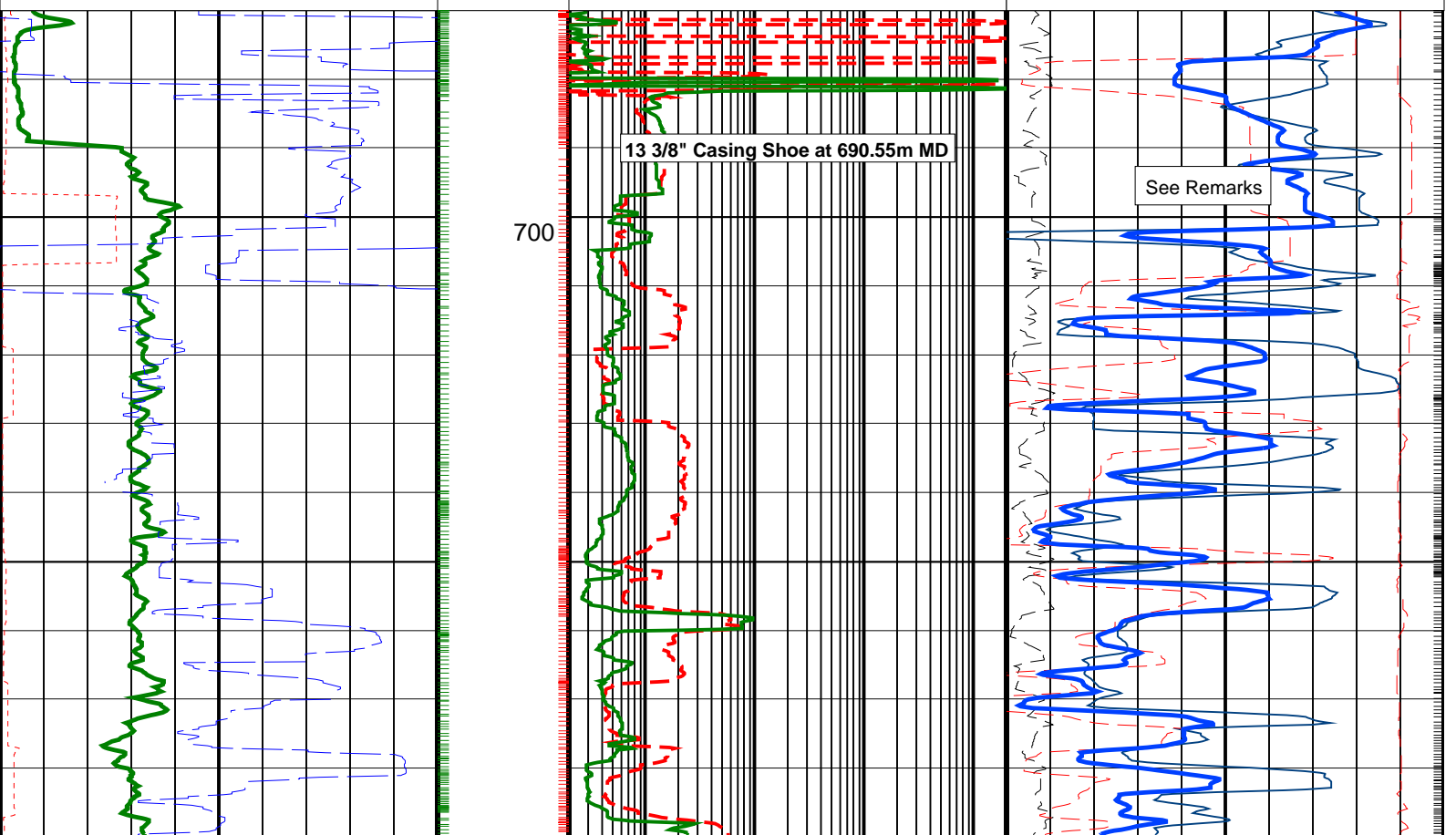
12.250 in
0.0 m

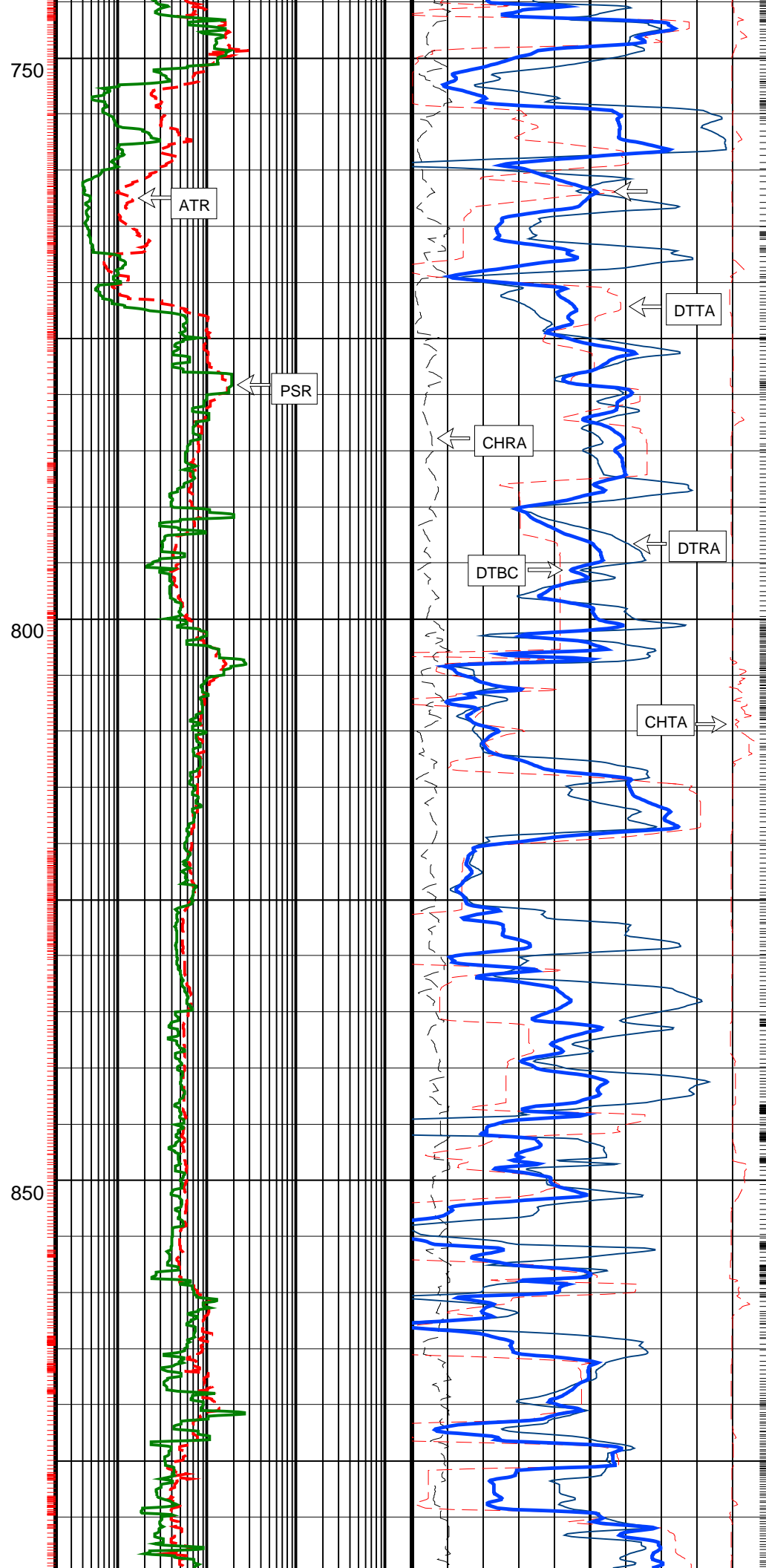
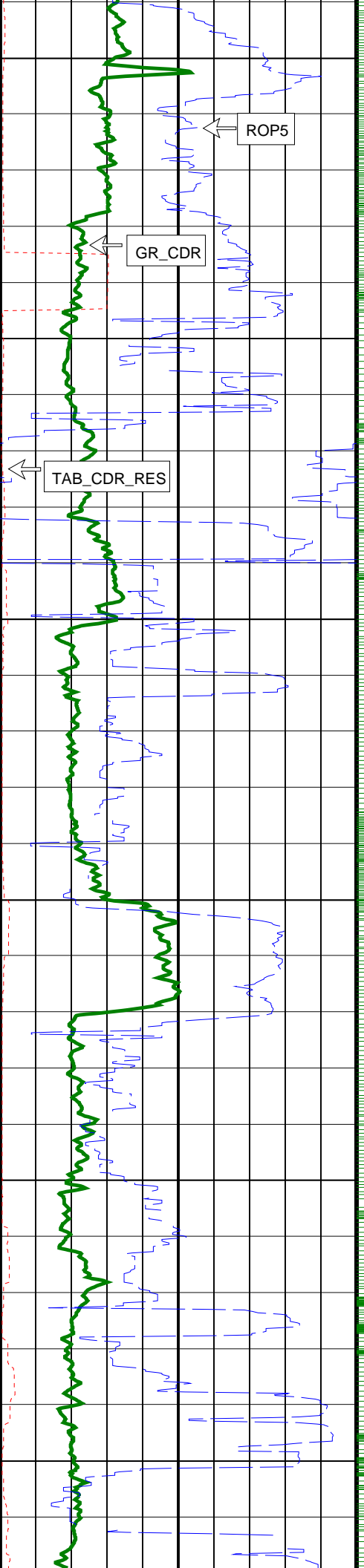
PIP SUMMARY

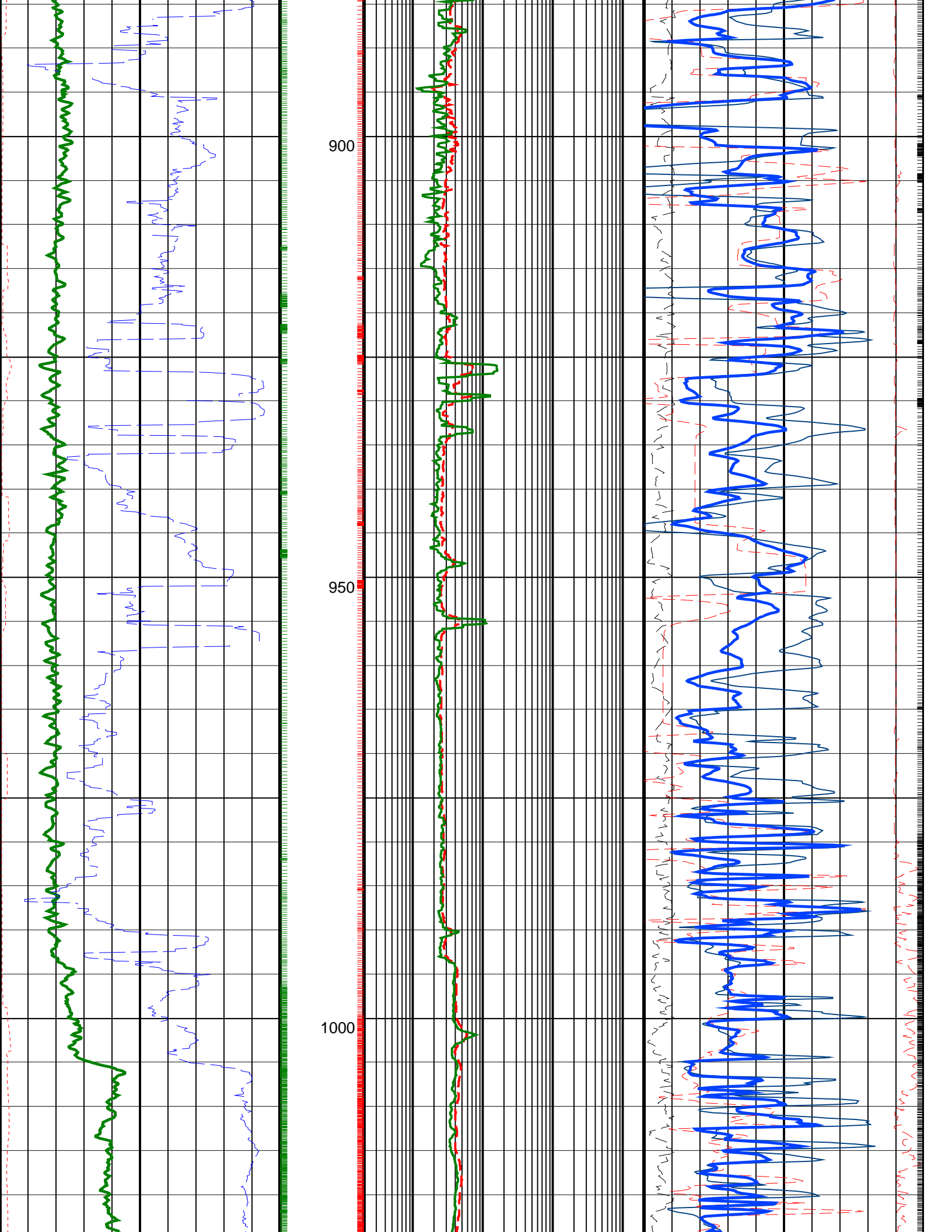
- └ ARC Gamma Ray Samples
- └ ARC Resistivity Samples
- └ CDR Resistivity Samples
- └ CDR Gamma Ray Samples

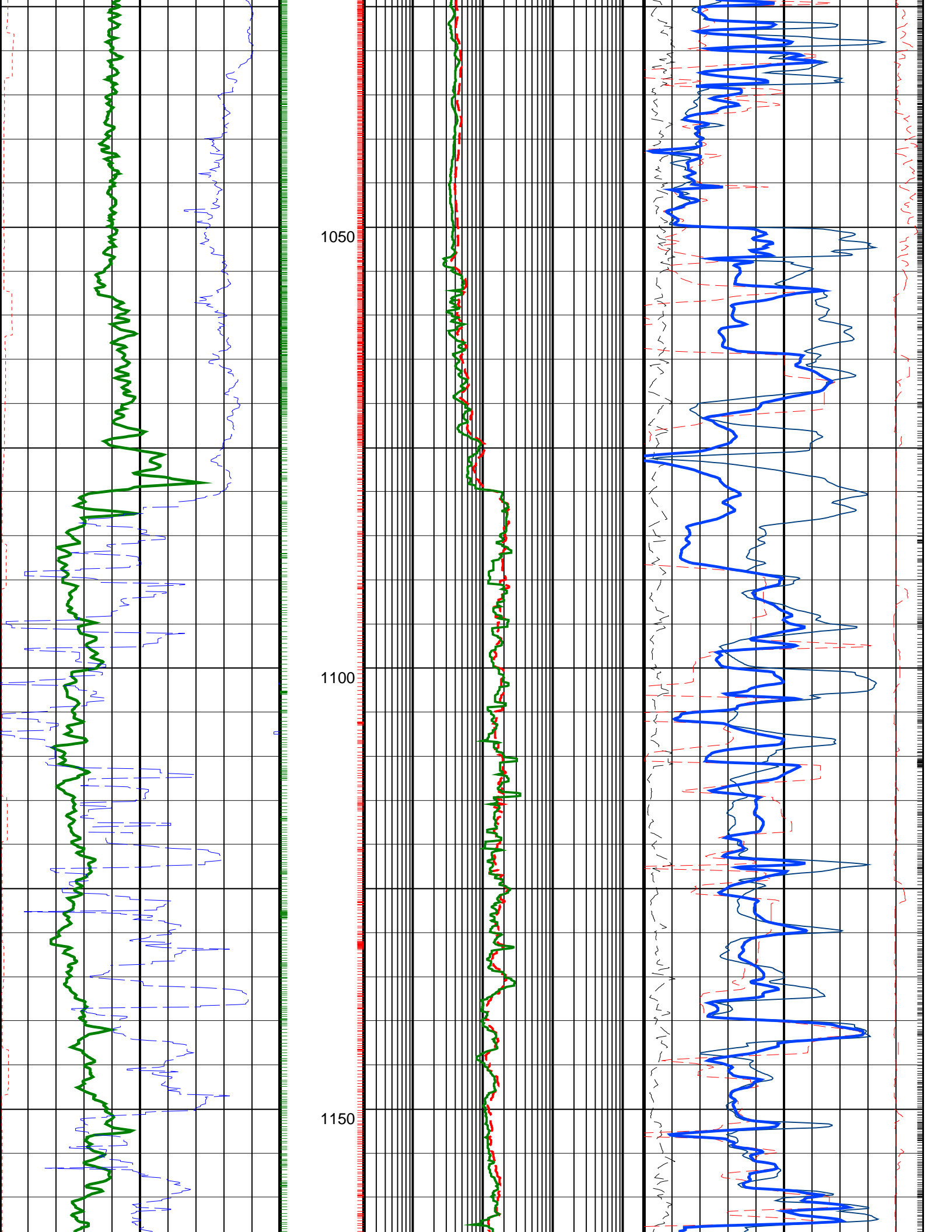
ISONIC Samples └

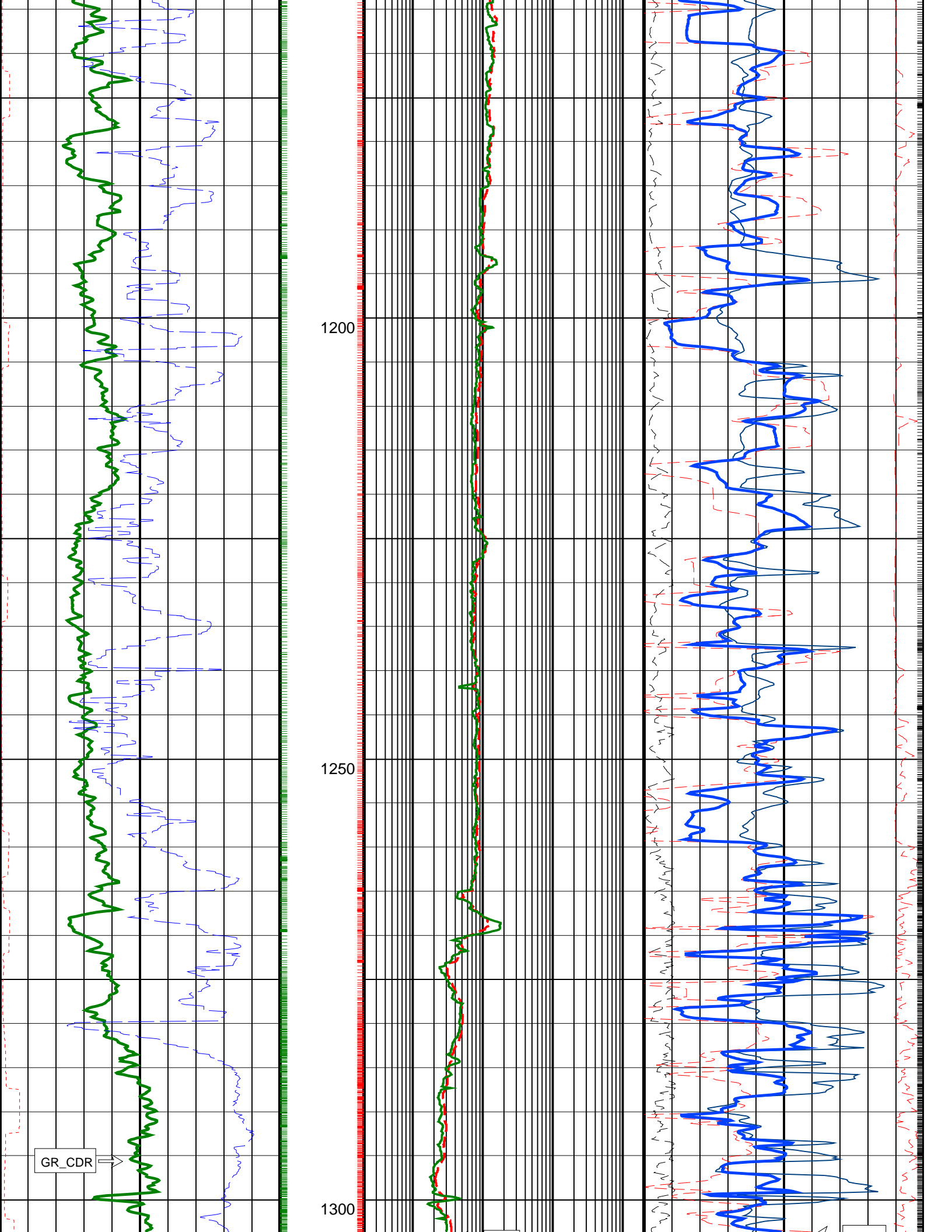
Rate of Penetration, Averaged over Last 5ft (ROP5_RM)			Delta-T Compressional Borehole Compensated (Depth Derived) (DTBC)		
200	(M/HR)	0	140	(US/F)	40
CDR Resistivity Time After Bit (TAB_CDR_RES)			Delta-T Compressional from Transmitter Array (DTTA)		
0	(HR)	10	140	(US/F)	40
ARC Resistivity Time After Bit (TAB_ARC_RES)			Delta-T Compressional from Receiver Array (DTRA)		
0	(HR)	10	140	(US/F)	40
CDR Gamma Ray (GR_CDR)			Coherence at Compressional Peak for the Transmitter Array (CHTA)		
0	(GAPI)	200	-4	(----	1
ARC Gamma Ray (GR_ARC)			Coherence at Compressional Peak for the Receiver Array (CHRA)		
0	(GAPI)	200	1	(----	-4

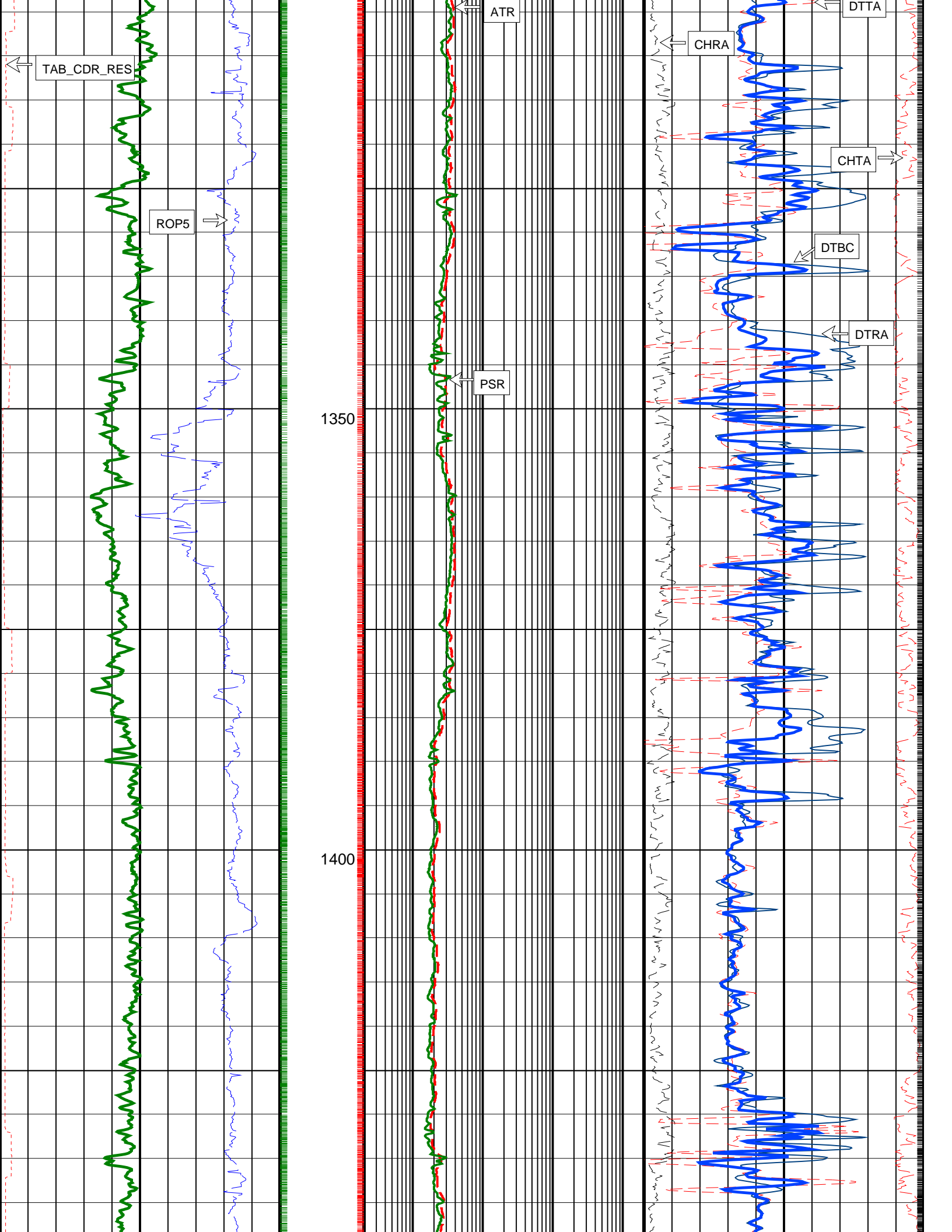


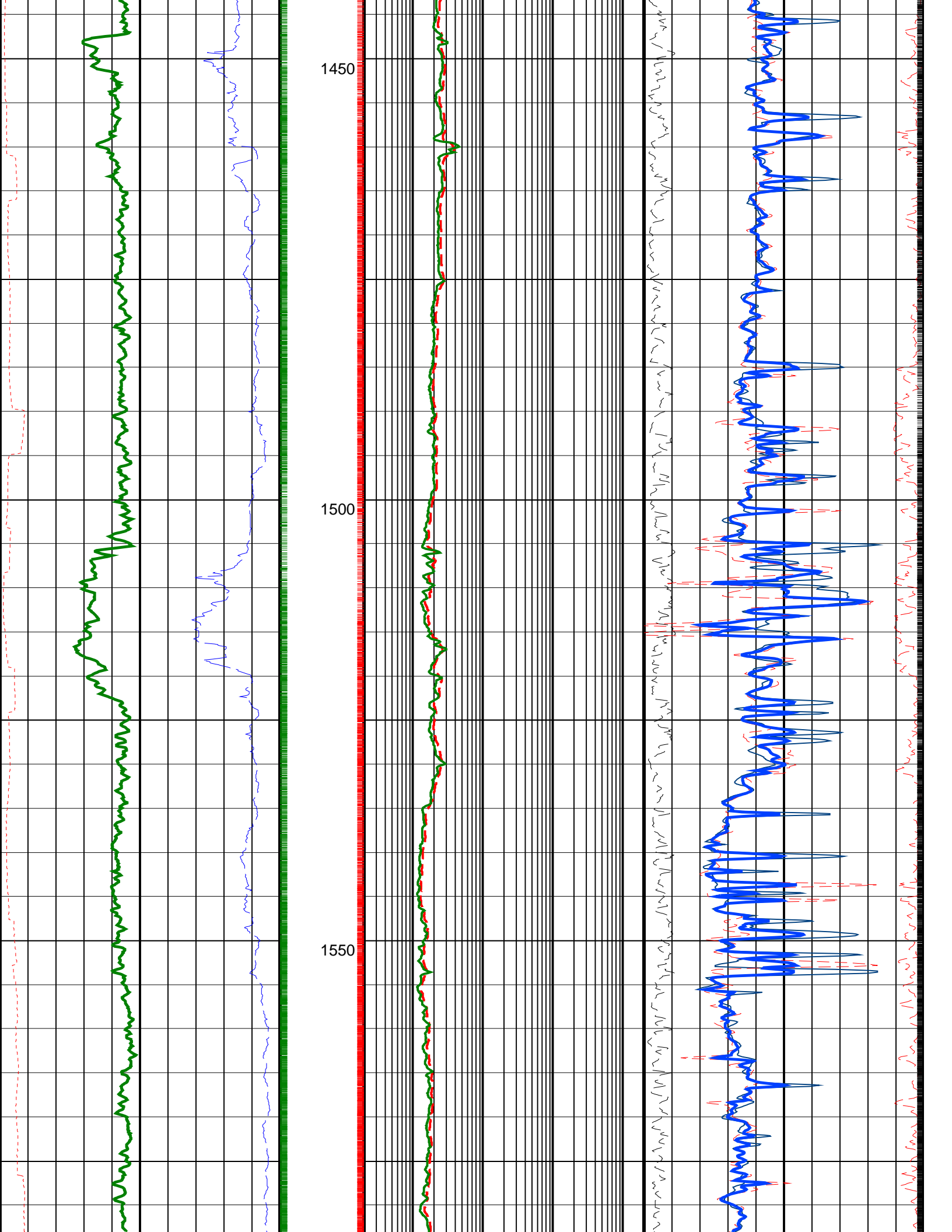


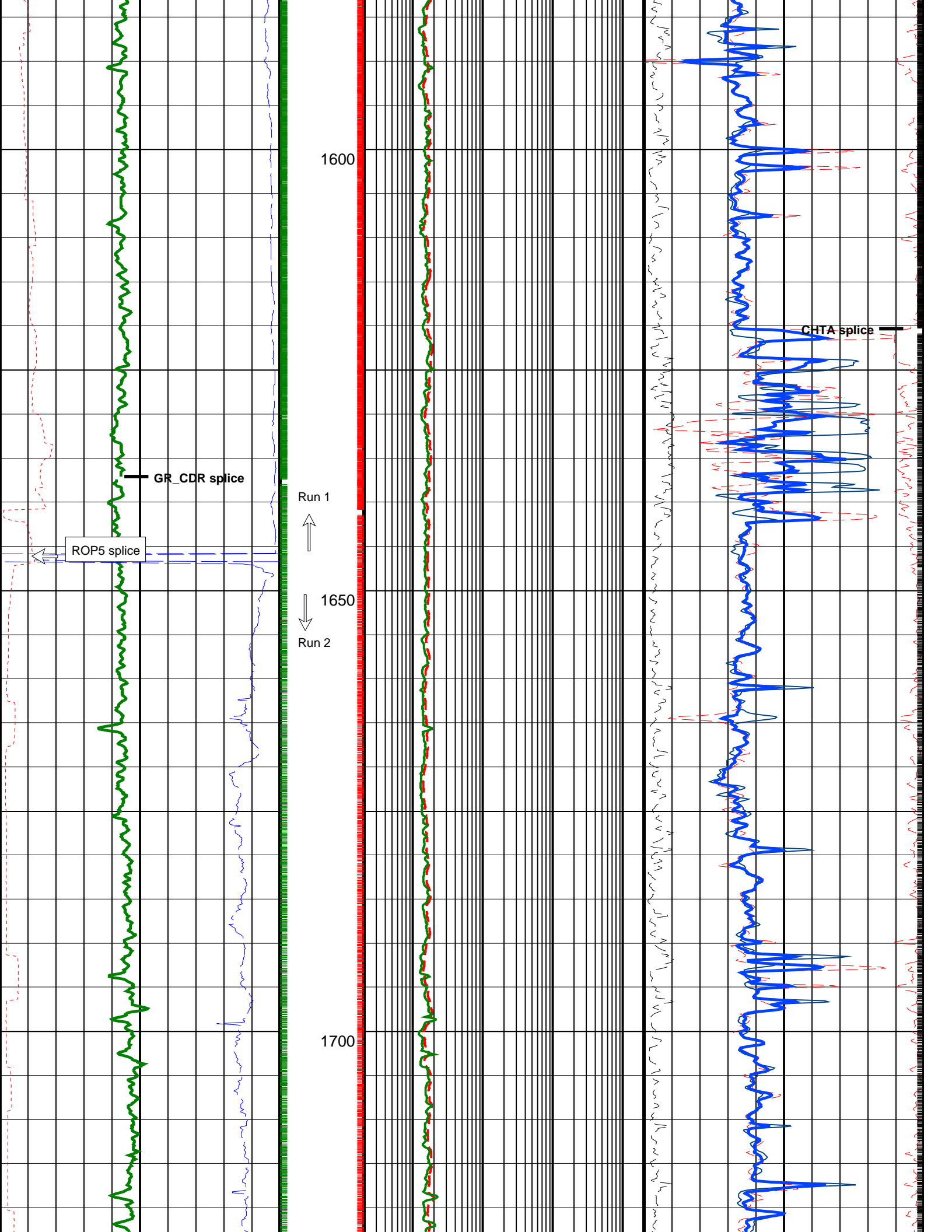


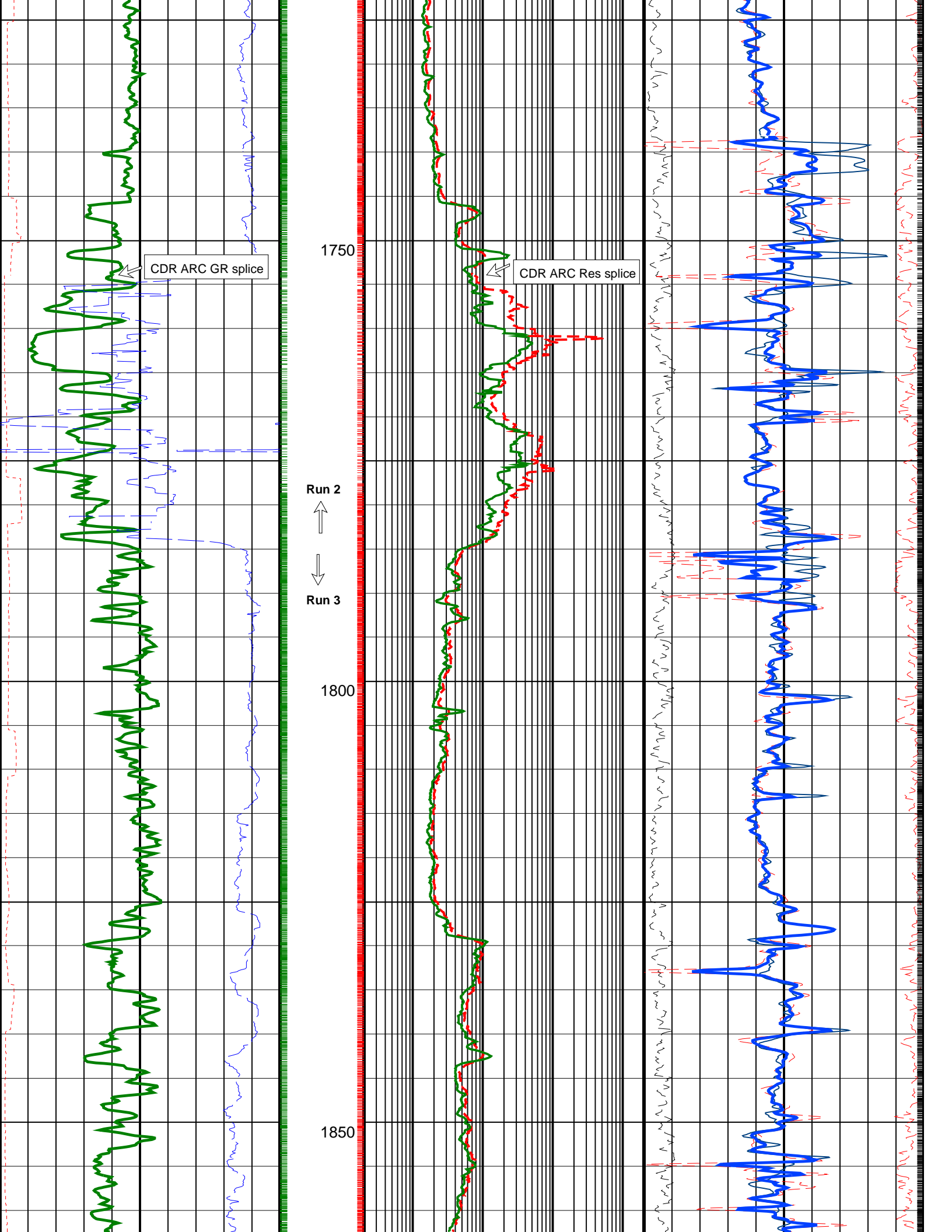


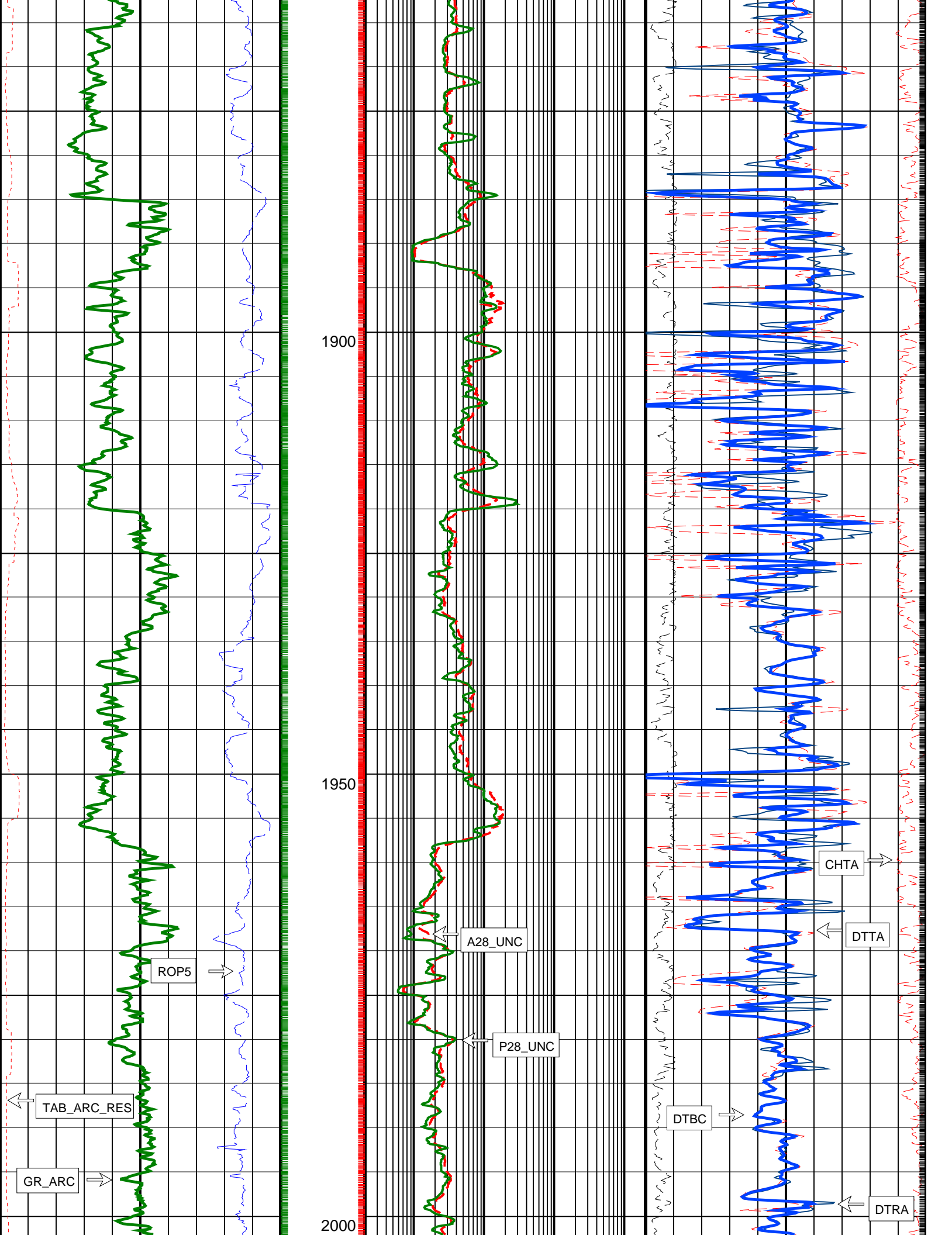


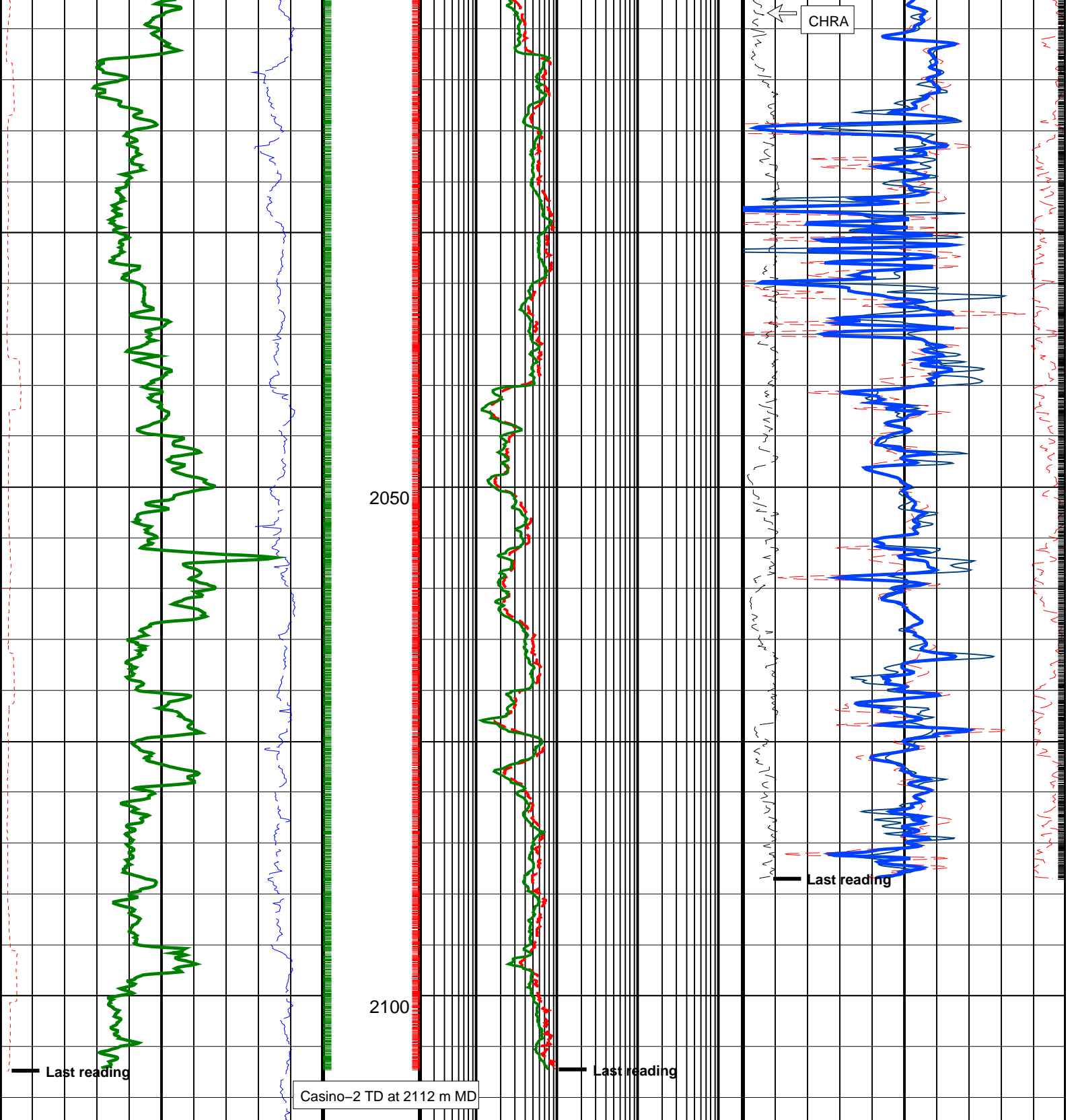












ARC Gamma Ray (GR_ARC)		Uncorrected Attenuation Resistivity (ATR)		Coherence at Compressional Peak for the Receiver Array (CHRA)	
0	(GAPI) 200	0.2	(OHMM) 2000	1	(----) -4
CDR Gamma Ray (GR_CDR)		ARC Non-BHCorr Attenuation Resistivity 28-in. at 2 MHz (A28H UNC)		Coherence at Compressional Peak for the Transmitter Array (CHTA)	
0	(GAPI) 200	0.2	(OHMM) 2000	-4	(----) 1
ARC Resistivity Time After Bit (TAB_ARC_RES)		ARC Non-BHCorr Phase-Shift Resistivity 28-in. at 2 MHz (P28H UNC)		Delta-T Compressional from Receiver Array (DTRA)	
0	(HR) 10	0.2	(OHMM) 2000	140	(US/F) 40
CDR Resistivity Time After Bit (TAB_CDR_RES)		Uncorrected Phase Shift Resistivity (PSR)		Delta-T Compressional from Transmitter Array (DTTA)	

Rate of Penetration, Averaged over Last 5ft (ROP5_RM)		Delta-T Compressional Borehole Compensated (Depth Derived) (DTBC)	
200	(M/HR)	140	(US/F)

PIP SUMMARY			
└ ARC Gamma Ray Samples			
└ ARC Resistivity Samples			
└ CDR Resistivity Samples			
└ CDR Gamma Ray Samples			
ISONIC Samples └			

IDEAL Version: ID7_0C_02			
IDF			
MWD_10	IDEAL Version: ID7_0C_02	SON825	IDEAL Version: ID7_0C_02

9.50-in. Compensated Dual Resistivity / Equipment Identification			
Primary Equipment:			
Tool Name and Serial Number		RGS9 – AA	9556
Gamma Ray Type		Plat – GR	
Calibration Status		–	

Master: 17–Aug–2002 0:16											
9.50-in. Compensated Dual Resistivity Calibration											
Resistivity: Air											
Phase	Attenuation down	DB	Value	Phase	Attenuation up	DB	Value	Phase	BHC attenuation	DB	Value
Master			3.920	Master			3.912	Master			3.916
3.290 (Minimum)				3.290 (Minimum)				3.790 (Minimum)			
3.890 (Nominal)				3.890 (Nominal)				3.890 (Nominal)			
4.490 (Maximum)				4.490 (Maximum)				3.990 (Maximum)			

Master: 17–Aug–2002 0:16											
9.50-in. Compensated Dual Resistivity Calibration											
Resistivity: Air											
Phase	Phase shift down	DEG	Value	Phase	Phase shift up	DEG	Value	Phase	BHC phase shift	DEG	Value
Master			–0.4190	Master			0.5240	Master			0.05250
–2.400 (Minimum)				–2.400 (Minimum)				–0.9000 (Minimum)			
0.1000 (Nominal)				0.1000 (Nominal)				0.1000 (Nominal)			
2.600 (Maximum)				2.600 (Maximum)				1.100 (Maximum)			

Master: 18–Aug–2002 0:27											
9.50-in. Compensated Dual Resistivity Calibration											
Gamma Ray: Blanket											
Phase		Gain							Value		
Master									1.000		
		0.8000 (Minimum)									
		1.000 (Nominal)									
		1.200 (Maximum)									

8.25-in. Array Resistivity Compensated / Equipment Identification			
Primary Equipment:			
Tool Name and Serial Number		ARC5 – 825	
ARC825 Calibration Status		–	

Master: 8–Aug–2002 22:40											
8.25-in. Array Resistivity Compensated Calibration											
Resistivity: Air											
Phase	Phase–Shift T1	DEG	Value	Phase	Phase–Shift T2	DEG	Value	Phase	Phase–Shift T3	DEG	Value
Master			–0.04785	Master			1.116	Master			–0.7664
–3.900				–3.900				–3.900			
0.1000				0.1000				0.1000			
4.100				4.100				4.100			

(Minimum)	(Nominal)	(Maximum)		(Minimum)	(Nominal)	(Maximum)		(Minimum)	(Nominal)	(Maximum)	
Phase	Phase-Shift T4 DEG		Value	Phase	Phase-Shift T5 DEG		Value	Phase	Phase-Shift T1 at 400KHz DEG		Value
Master			0.5778	Master			-0.7787	Master			-0.01738
	-3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)		-3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)		-3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)
Phase	Phase-Shift T2 at 400KHz DEG		Value	Phase	Phase-Shift T3 at 400KHz DEG		Value	Phase	Phase-Shift T4 at 400KHz DEG		Value
Master			0.6494	Master			-0.4933	Master			0.6468
	-3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)		-3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)		-3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)
Phase	Phase-Shift T5 at 400KHz DEG		Value								
Master			-0.6120								
	-3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)								

Master: 8-Aug-2002 22:40											
8.25-in. Array Resistivity Compensated Calibration											
Resistivity: Air											
Phase	Attenuation T1 DB		Value	Phase	Attenuation T2 DB		Value	Phase	Attenuation T3 DB		Value
Master			7.863	Master			6.846	Master			4.618
	6.500 (Minimum)	8.500 (Nominal)	10.50 (Maximum)		4.500 (Minimum)	6.500 (Nominal)	8.500 (Maximum)		2.500 (Minimum)	4.500 (Nominal)	6.500 (Maximum)
Phase	Attenuation T4 DB		Value	Phase	Attenuation T5 DB		Value	Phase	Attenuation T1 at 400KHz DB		Value
Master			4.695	Master			3.201	Master			7.873
	2.600 (Minimum)	4.600 (Nominal)	6.600 (Maximum)		1.600 (Minimum)	3.600 (Nominal)	5.600 (Maximum)		6.500 (Minimum)	8.500 (Nominal)	10.50 (Maximum)
Phase	Attenuation T2 at 400KHz DB		Value	Phase	Attenuation T3 at 400KHz DB		Value	Phase	Attenuation T4 at 400KHz DB		Value
Master			6.819	Master			4.546	Master			4.757
	4.500 (Minimum)	6.500 (Nominal)	8.500 (Maximum)		2.500 (Minimum)	4.500 (Nominal)	6.500 (Maximum)		2.600 (Minimum)	4.600 (Nominal)	6.600 (Maximum)
Phase	Attenuation T5 at 400KHz DB		Value								
Master			3.133								
	1.600 (Minimum)	3.600 (Nominal)	5.600 (Maximum)								

Master: 8-Aug-2002 9:39											
8.25-in. Array Resistivity Compensated Calibration											
Gamma Ray: Blanket											
Phase	Gamma ray factor (equals Calibration Gain multiplied by API Gain Factor) CPS									Value	
Master										8.496	
	4.960 (Minimum)			7.200 (Nominal)			9.650 (Maximum)				

ANADRILL			
SCHLUMBERGER			
Survey report		4-Oct-2002 19:26:55	Page 1 of 2
Client.....: Santos			
Field.....: Exploration			
Well.....: Casino-2			
API number.....:			
Engineer.....: A. Abad, C. Tue			
RIG.....: Ocean Bounty			
STATE.....: Victoria			
----- Survey calculation methods-----			
Method for positions.....: Minimum curvature			
Method for DLS.....: Mason & Taylor			
----- Depth reference -----			
Permanent datum.....: GROUND LEVEL			
Depth reference.....:			
GL above permanent.....: -68.00 m			
KB above permanent.....: 0.00 m			
DF above permanent.....: 25.00 m			
----- Vertical section origin-----			
Latitude (+N/S-).....: 0.00 m			
Departure (+E/W-).....: 0.00 m			
----- Platform reference point-----			
Latitude (+N/S-).....: 0.00 m			
Departure (+E/W-).....: 0.00 m			
----- Geomagnetic data -----			
Magnetic model.....: BGGM version 2001			
Magnetic date.....: 27-Sep-2002			
Magnetic field strength..: 1220.24 HCNT			
Magnetic dec (+E/W-).....: 10.89 degrees			
Magnetic dip.....: -70.02 degrees			
----- MWD survey Reference Criteria -----			
Reference G.....: 1000.08 mGal			
Reference H.....: 1220.24 HCNT			
Reference Dip.....: -70.02 degrees			
Tolerance of G.....: (+/-) 2.50 mGal			
Tolerance of H.....: (+/-) 6.00 HCNT			
Tolerance of Dip.....: (+/-) 0.45 degrees			
----- Corrections -----			
Magnetic dec (+E/W-).....: 10.89 degrees			
Grid convergence (+E/W-)..: -1.09 degrees			
Total az corr (+E/W-)....: 11.98 degrees			

[(c)2002 Anadrill IDEAL ID7_0C_02]
ANADRILL SCHLUMBERGER Survey Report

4-Oct-2002 19:26:55

Page 2 of 2

Seq # -	Measured depth (m)	Incl angle (deg)	Azimuth angle (deg)	Course length (m)	TVD depth (m)	Vertical section (m)	Displ +N/S- (m)	Displ +E/W- (m)	Total displ (m)	At Azim (deg)	DLS (deg/ 10m)	Srvy tool type	Tool qual type
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIP	-
2	729.86	0.57	116.39	729.86	729.85	-1.61	-1.61	3.25	3.63	116.39	0.01	MWD	6-axis
3	842.72	0.61	203.59	112.86	842.70	-2.41	-2.41	3.51	4.26	124.48	0.07	MWD	6-axis
4	958.13	0.69	268.77	115.41	958.11	-2.99	-2.99	2.57	3.95	139.29	0.06	MWD	6-axis
5	1074.07	0.52	252.87	115.94	1074.04	-3.16	-3.16	1.37	3.45	156.52	0.02	MWD	6-axis
6	1130.64	0.79	283.25	56.57	1130.61	-3.15	-3.15	0.75	3.24	166.63	0.08	MWD	6-axis
7	1161.14	0.82	278.20	30.50	1161.10	-3.07	-3.07	0.33	3.09	173.91	0.03	MWD	6-axis
8	1188.85	0.76	272.62	27.71	1188.81	-3.03	-3.03	-0.05	3.03	180.99	0.04	MWD	6-axis
9	1217.68	0.78	286.97	28.83	1217.64	-2.97	-2.97	-0.43	3.00	188.27	0.07	MWD	6-axis
10	1247.53	0.88	282.51	29.85	1247.49	-2.86	-2.86	-0.85	2.98	196.55	0.04	MWD	6-axis
11	1277.80	0.94	274.80	30.27	1277.75	-2.79	-2.79	-1.32	3.08	205.41	0.05	MWD	6-axis
12	1364.44	1.05	276.88	86.64	1364.38	-2.63	-2.63	-2.82	3.86	226.98	0.01	MWD	6-axis
13	1421.10	1.45	272.46	56.66	1421.03	-2.54	-2.54	-4.05	4.78	237.93	0.07	MWD	6-axis
14	1450.24	1.55	270.01	29.14	1450.16	-2.52	-2.52	-4.81	5.43	242.35	0.04	MWD	6-axis
15	1508.96	1.49	255.36	58.72	1508.86	-2.72	-2.72	-6.35	6.90	246.84	0.07	MWD	6-axis
16	1565.71	1.58	268.16	56.75	1565.59	-2.93	-2.93	-7.84	8.37	249.53	0.06	MWD	6-axis
17	1622.24	1.67	265.96	56.53	1622.09	-3.01	-3.01	-9.44	9.91	252.32	0.02	MWD	6-axis
18	1652.08	1.45	267.41	29.84	1651.92	-3.06	-3.06	-10.25	10.70	253.40	0.07	MWD	6-axis
19	1796.08	1.43	253.78	144.00	1795.88	-3.64	-3.64	-13.80	14.27	255.22	0.02	MWD	6-axis
20	1853.43	1.50	250.23	57.35	1853.21	-4.10	-4.10	-15.19	15.74	254.91	0.02	MWD	6-axis
21	1911.17	1.48	243.72	57.74	1910.93	-4.68	-4.68	-16.57	17.22	254.23	0.03	MWD	6-axis
22	1998.68	1.91	243.21	87.51	1998.40	-5.84	-5.84	-18.89	19.77	252.82	0.05	MWD	6-axis
23	2028.08	2.08	243.11	29.40	2027.78	-6.30	-6.30	-19.80	20.78	252.35	0.06	MWD	6-axis
24	2085.35	2.47	242.08	57.27	2085.01	-7.35	-7.35	-21.82	23.02	251.39	0.07	MWD	6-axis
25	2112.00	2.47	242.08	26.65	2111.63	-7.89	-7.89	-22.83	24.16	250.94	0.00	TD Projection	

[(c)2002 Anadrill IDEAL ID7_0C_02]

Company: Santos Ltd./Strike Oil

Schlumberger

Well: Casino-2

Field: VIC/P 44

Rig: Ocean Bounty

12.25 in. Section

State: Victoria

CDR - ARC - ISONIC

Measured Depth 1:500

Recorded Mode

