Schlumberger

Company: Santos Ltd./Strike Oil

Well: Casino−2

Field: VIC/P 44

Rig: Ocean Bounty **State:** Victoria

12.25 in. Section

CDR – ARC – ISONIC
Measured Depth 1:1000
Recorded Mode

Location	
Total depth:	2112.0 m
Spud date:	24 Sep 02
Runs:	1 To 3
Permanent datum:	LAT Elev.: 0.0 m
Log measured from:	Drill Floor 25 m above Perm. datum
Depth reference:	Driller's Depth

Elevation	
K.B.	Top Drive m
G.L.	− 68 m
D.F.	25 m

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

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

Depth logged: 690.5 m To 2106.9 m
Date logged: 27 Sep 02 To 04 Oct 02
Mag decl: 10.89 deg.
Mag dip: −70.02 deg.
Other services: MWD Survey, IWW

Bore hole record

Hole size	from	to
914 mm/36 in.	Seabed	140.0 m
445 mm/17.5 in.	140.0 m	700.0 m
311 mm/12.25 in.	700.0 m	2112.0 m

Casing record

Size	Density	from	to
762 mm	461 kg/m	Wellhead	137.0 m
340 mm	101 kg/m	Wellhead	690.55 m

Mud record

Type	from	to
Seawater	Seabed	700.0 m
KCl/PHPA/Glyc	700.0 m	2112.0 m

Borehole deviation record

Min	Max	from	to
0 deg.	0.56 deg.	Seabed	729.0 m
0.56 deg.	2.47 deg.	729.0 m	2112.0 m

Surface equipment

Unit	OLU−JC902
Depth system	Geograph, GTE

Software record

IDEAL Wis	id7_0C_02
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						
Recording rate 2	SEC	10	10	10	Sonic Array						
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								

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.

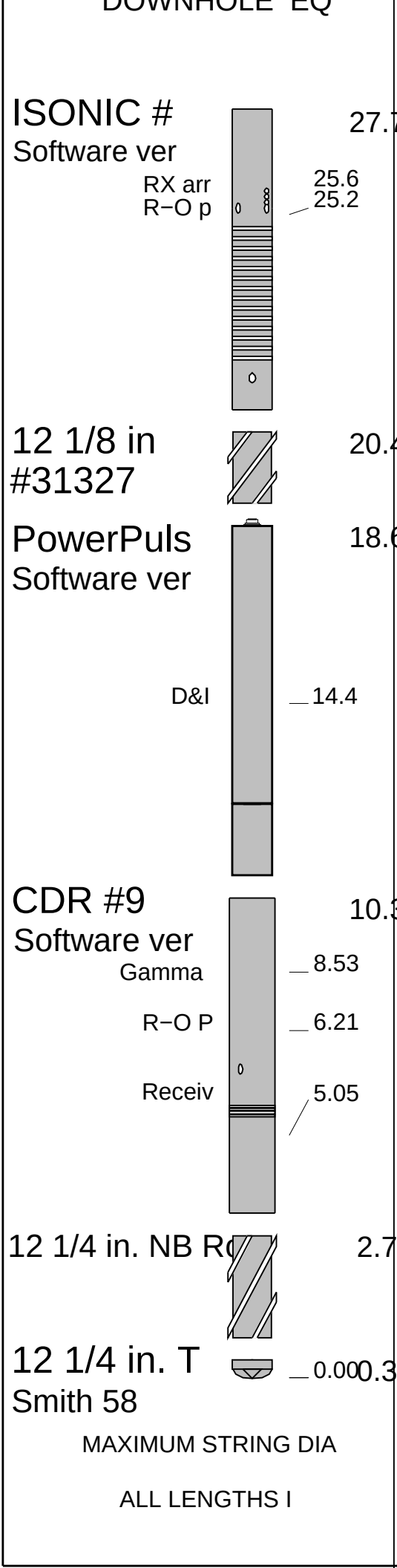
OTHER SERVICES FOR RUN1	OTHER SERVICES FOR RUN2	OTHER SERVICES FOR RUN3
MWD Surveys Interact Web Witness (IWW)	MWD Surveys Interact Web Witness (IWW)	MWD Surveys Interact Web Witness (IWW)

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2	REMARKS: RUN NUMBER 3
CDR gamma ray is corrected for mud weight, bit size and tool size, but not environmentally corrected for potassium content in mud. CDR resitivity 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	CDR gamma ray is corrected for mud weight, bit size and tool size, but not environmentally corrected for potassium content in mud. CDR resitivity 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	ARC gamma ray is corrected for mud weight, bit size and tool size and environmentally corrected for potassium content in mud. ARC resitivity 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

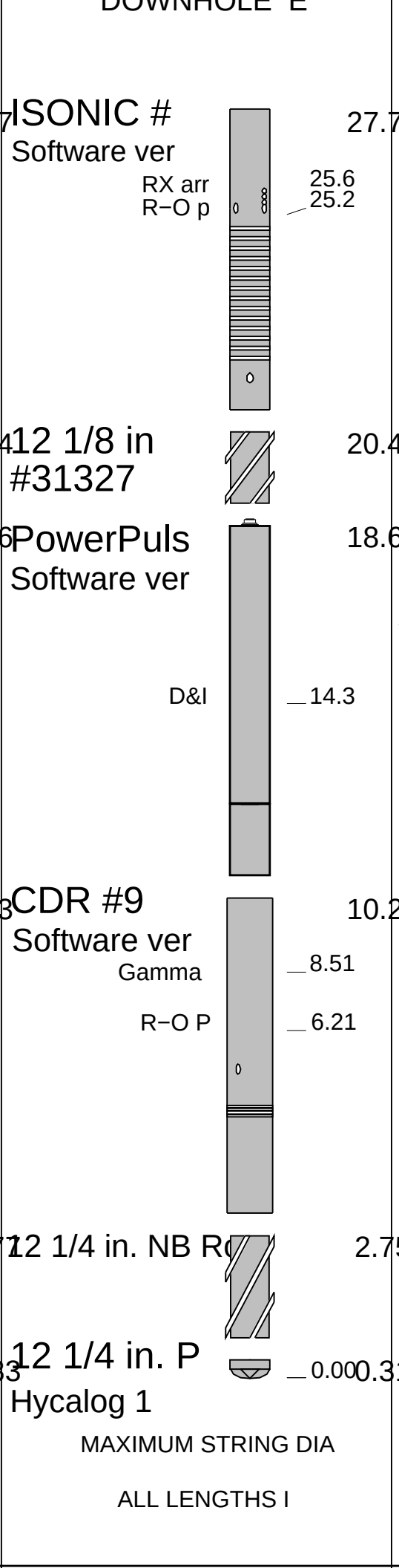
DOWNHOLE EQ



MAXIMUM STRING DIA

ALL LENGTHS I

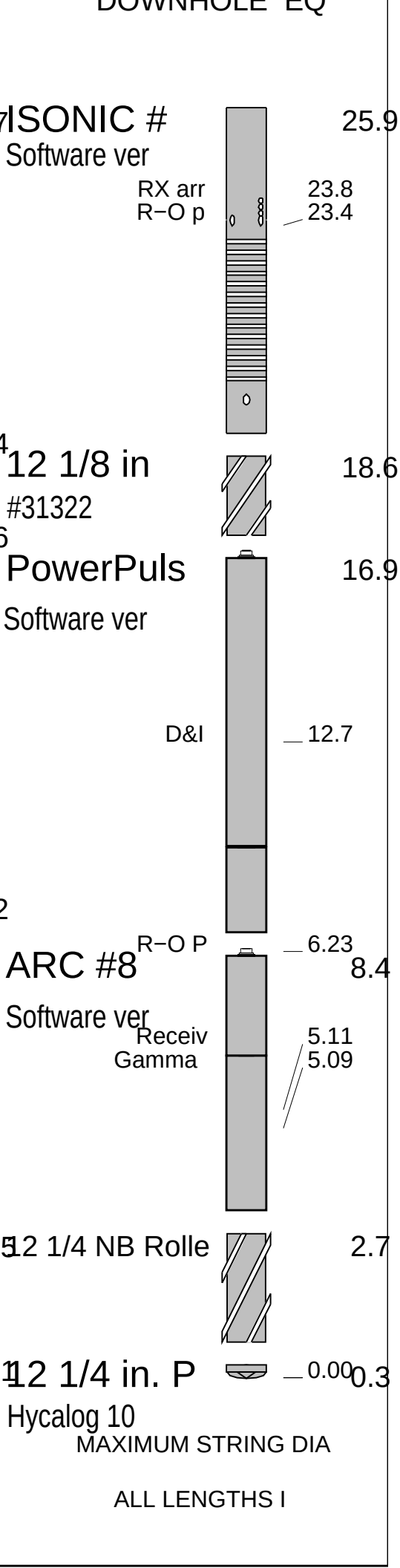
DOWNHOLE E



MAXIMUM STRING DIA

ALL LENGTHS I

DOWNHOLE EQ



MAXIMUM STRING DIA

ALL LENGTHS I

IDEAL Version: ID7_0C_02

IDF

MWD_10	IDEAL Version: ID7_0C_02	SON825	IDEAL Version: ID7_0C_02

Format: ISON_CDR_ARC_Log 1:1000MD Vertical Scale: 1:1000 Graphics File Created: 09−Oct−2002 16:09

Parameters

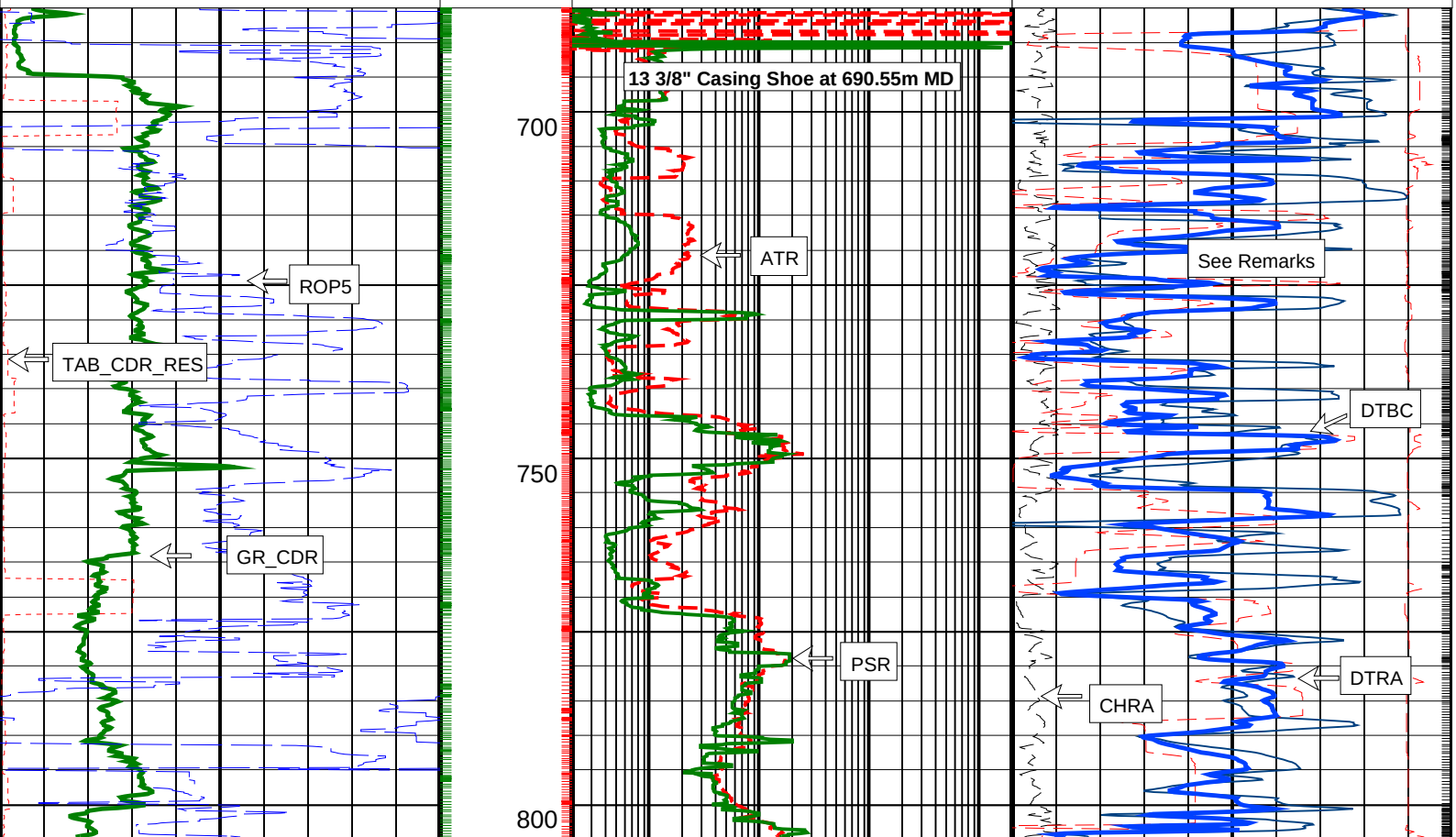
DLIS Name	Description	Value	
BS_RM	Bit Size (RM)	12.250	in
DO	Depth Offset	0.0	m

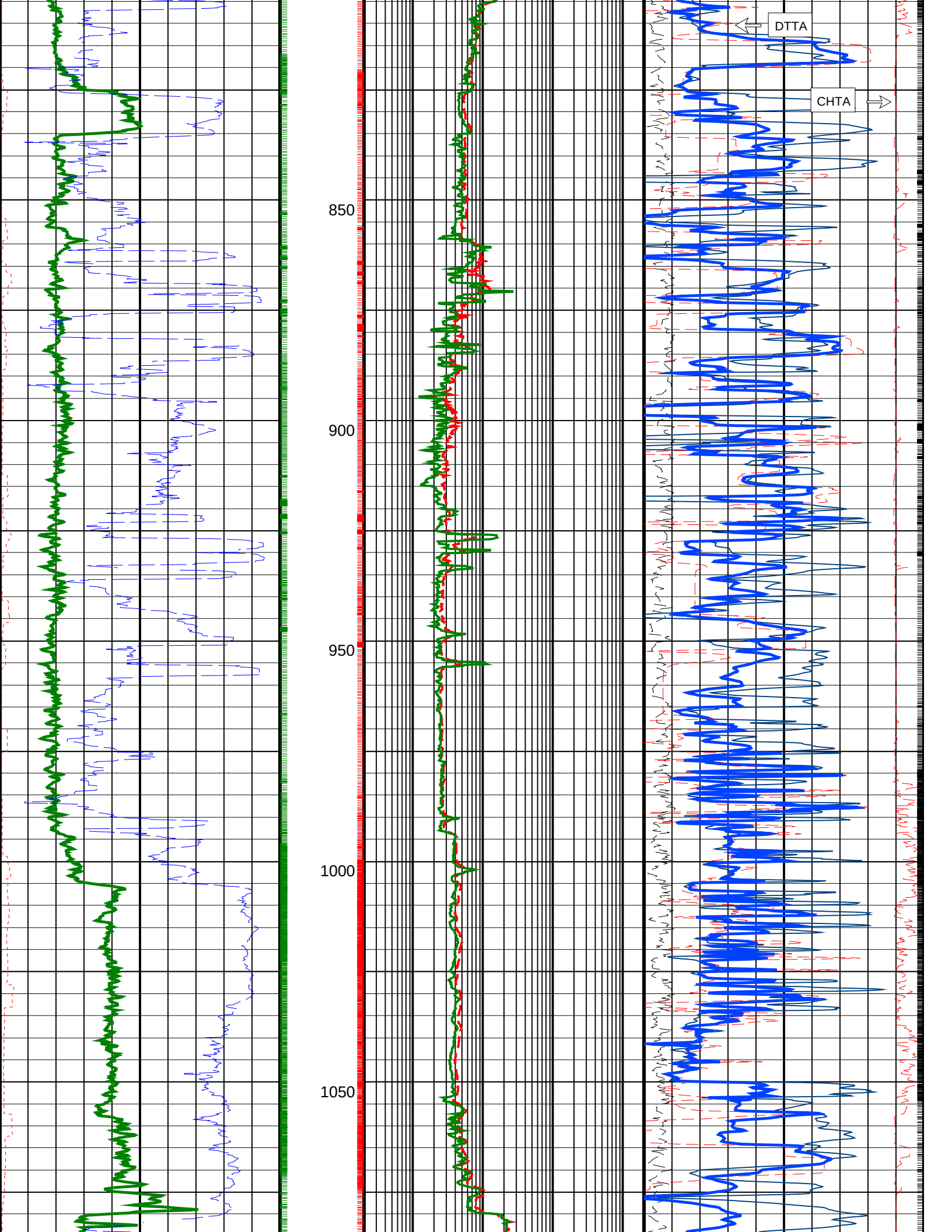
PIP SUMMARY

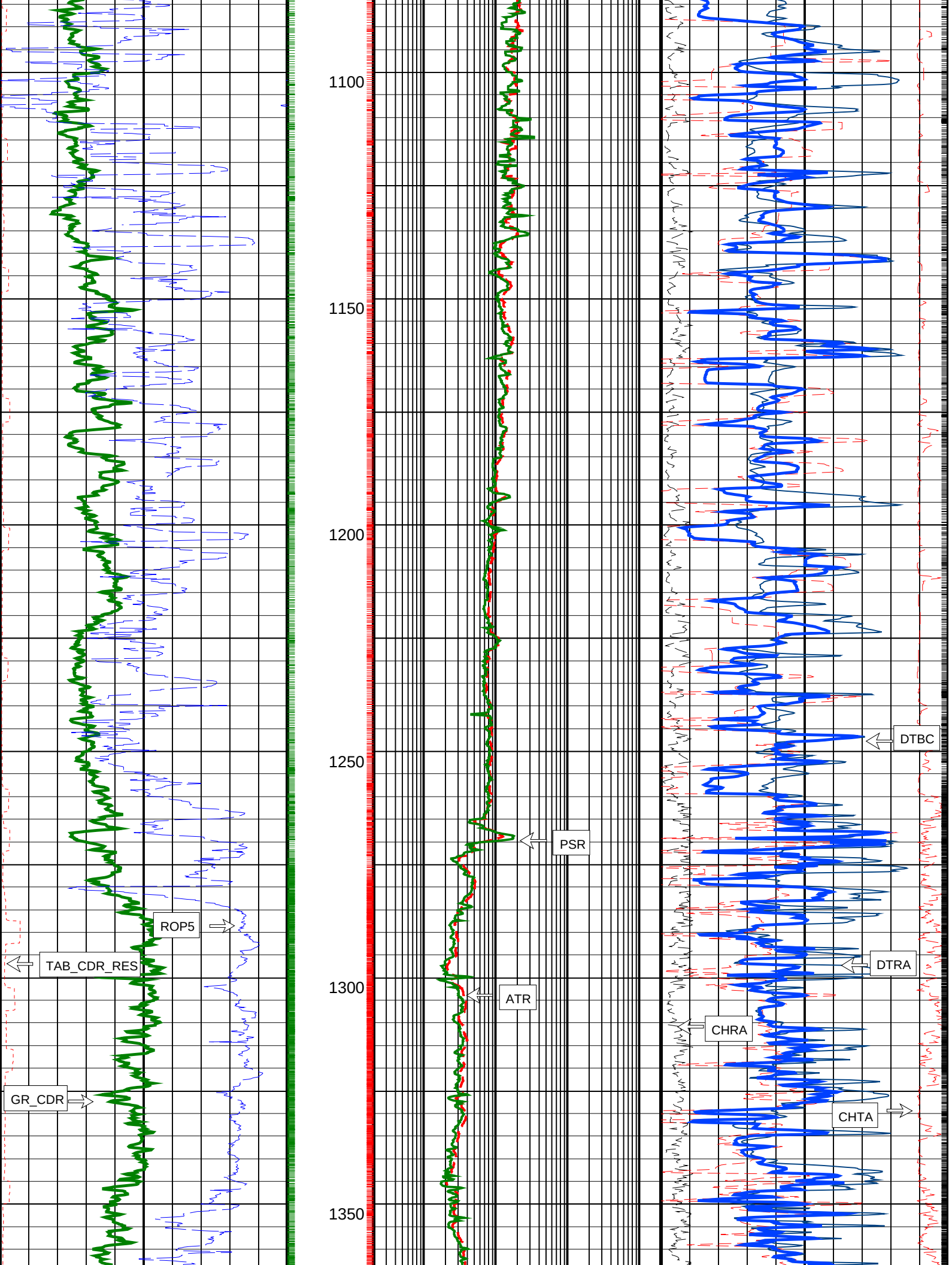
- ARC Gamma Ray Samples
  - ARC Resistivity Samples
  - CDR Resistivity Samples
- CDR Gamma Ray Samples

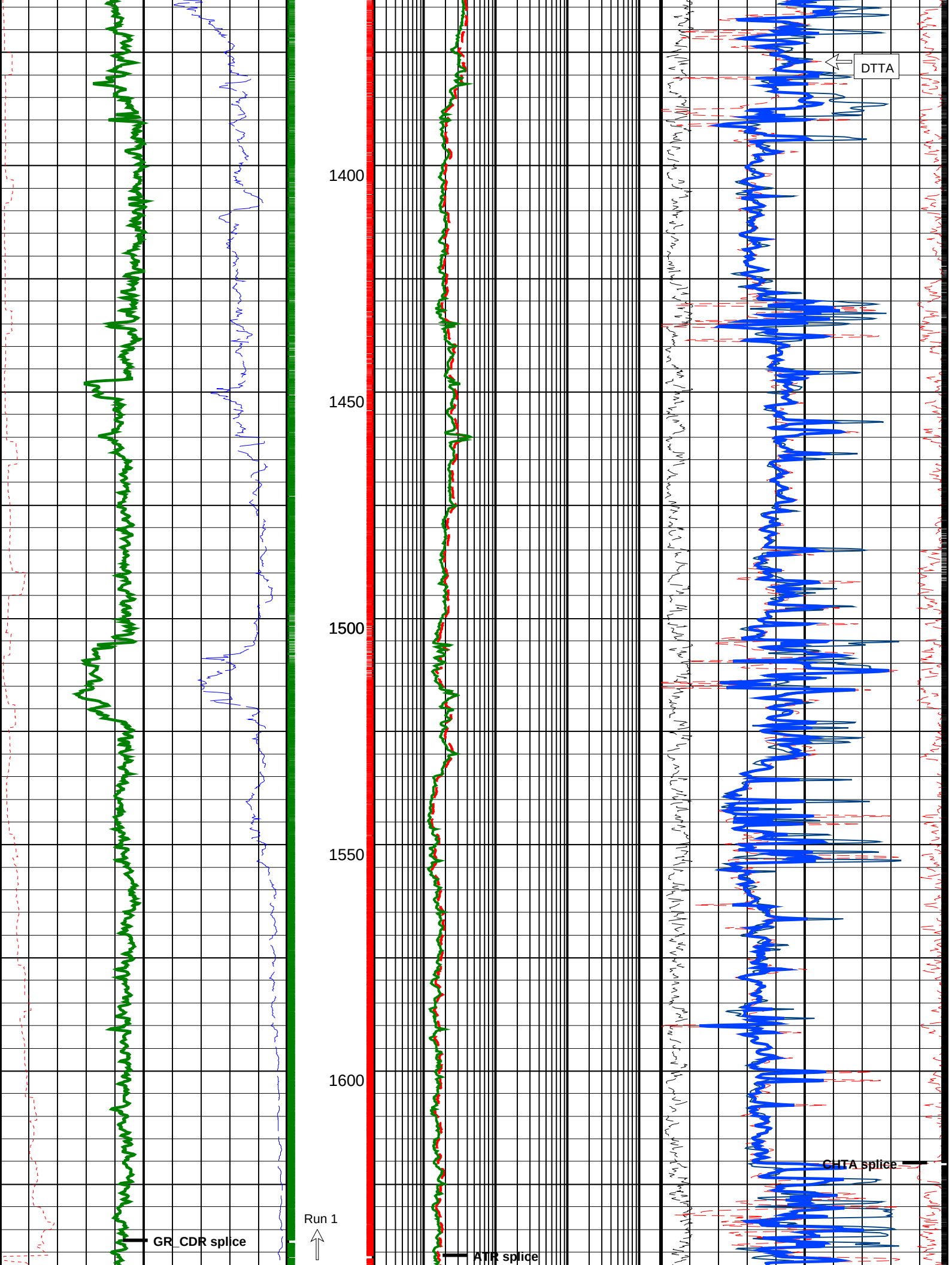
ISONIC Samples

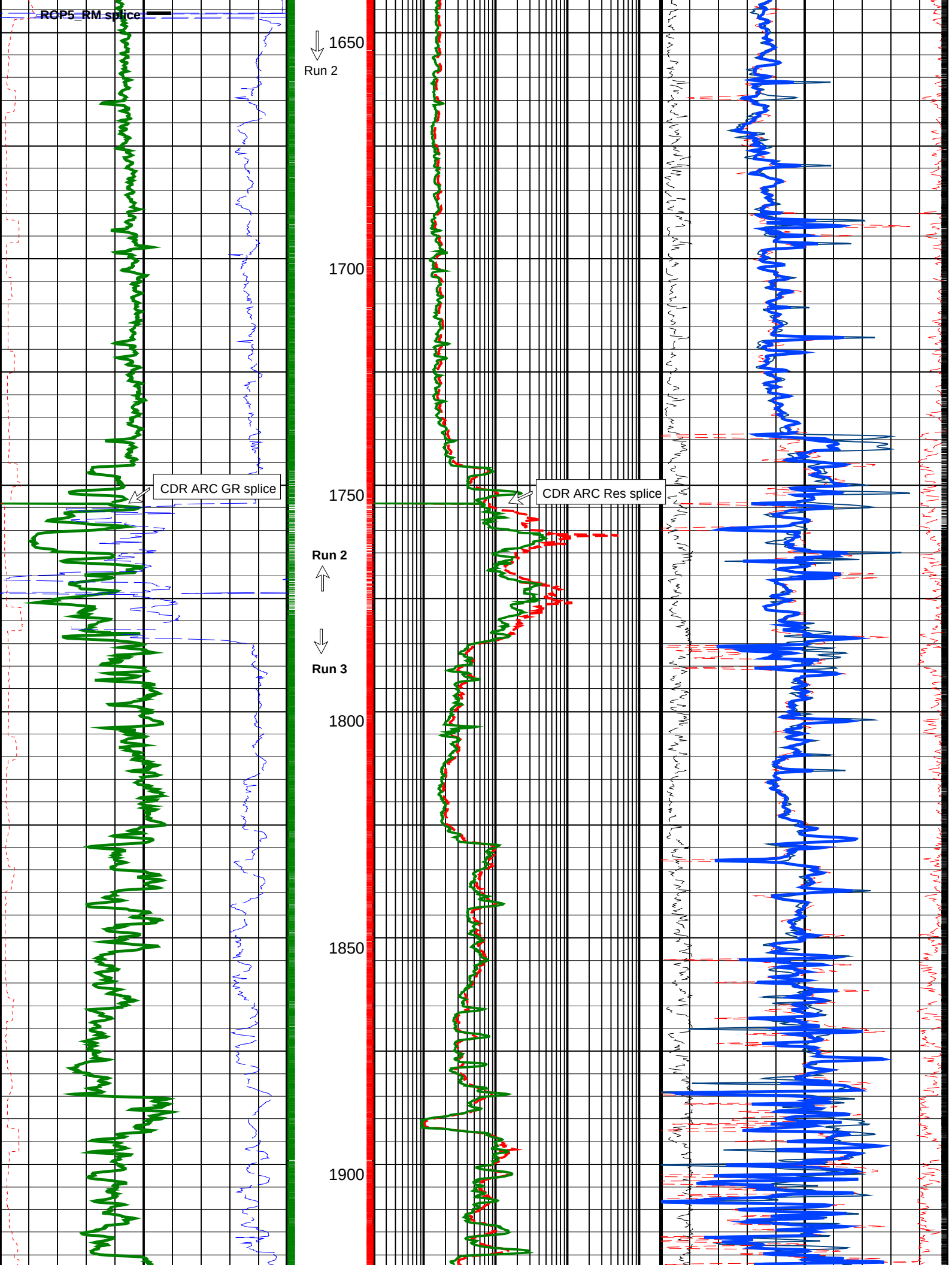
Rate of Penetration, Averaged over Last 5ft (ROP5_RM) 200 (M/HR) 0		Delta−T Compressional Borehole Compensated (Depth Derived) (DTBC) 140 (US/F) 40
CDR Resistivity Time After Bit (TAB_CDR_RES) 0 (HR) 10	Uncorrected Phase Shift Resistivity (PSR) 0.2 (OHMM) 2000	Delta−T Compressional from Transmitter Array (DTTA) 140 (US/F) 40
ARC Resistivity Time After Bit (TAB_ARC_RES) 0 (HR) 10	ARC Non−BHCorr Phase−Shift Resistivity 28−in. at 2 MHz (P28H_UNC) 0.2 (OHMM) 2000	Delta−T Compressional from Receiver Array (DTRA) 140 (US/F) 40
CDR Gamma Ray (GR_CDR) 0 (GAPI) 200	ARC Non−BHCorr Attenuation Resistivity 28−in. at 2 MHz (A28H_UNC) 0.2 (OHMM) 2000	Coherence at Compressional Peak for the Transmitter Array (CHTA) −4 (−−−− 1
ARC Gamma Ray (GR_ARC) 0 (GAPI) 200	Uncorrected Attenuation Resistivity (ATR) 0.2 (OHMM) 2000	Coherence at Compressional Peak for the Receiver Array (CHRA) 1 (−−−− −4

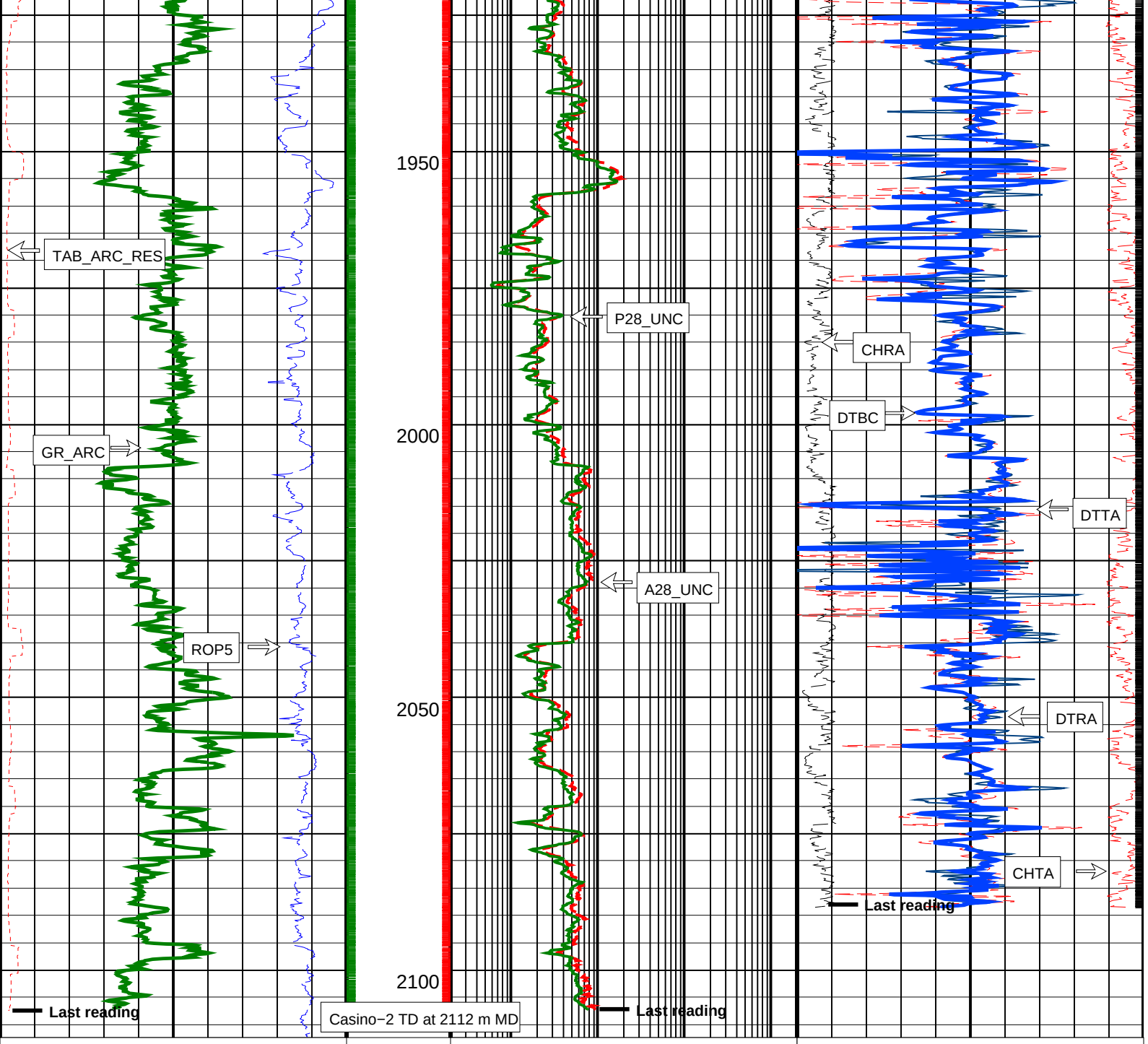



DTTA
CHTA
850
900
950
1000
1050


1100
1150
1200
1250
1300
1350
ROP5
TAB_CDR_RES
GR_CDR
PSR
ATR
DTBC
DTRA
CHRA
CHTA


DTTA
1400
1450
1500
1550
1600
GR_CDR splice
Run 1
ATR splice
CHTA splice


RCP5_RM splice
1650
Run 2
1700
CDR ARC GR splice
CDR ARC Res splice
1750
Run 2
Run 3
1800
1850
1900



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)**
0 (HR) 10	0.2 (OHMM) 2000	140 (US/F) 40
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

PIP SUMMARY

ARC Gamma Ray 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
Master		3.920
3.290 (Minimum)	3.890 (Nominal)	4.490 (Maximum)

Phase	Attenuation up DB	Value
Master		3.912
3.290 (Minimum)	3.890 (Nominal)	4.490 (Maximum)

Phase	BHC attenuation DB	Value
Master		3.916
3.790 (Minimum)	3.890 (Nominal)	3.990 (Maximum)

Master: 17−Aug−2002 0:16

9.50−in. Compensated Dual Resistivity Calibration

Resistivity: Air

Phase	Phase shift down DEG	Value
Master		−0.4190
−2.400 (Minimum)	0.1000 (Nominal)	2.600 (Maximum)

Phase	Phase shift up DEG	Value
Master		0.5240
−2.400 (Minimum)	0.1000 (Nominal)	2.600 (Maximum)

Phase	BHC phase shift DEG	Value
Master		0.05250
−0.9000 (Minimum)	0.1000 (Nominal)	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
Master		−0.04785
−3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)

Phase	Phase−Shift T2 DEG	Value
Master		1.116
−3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)

Phase	Phase−Shift T3 DEG	Value
Master		−0.7664
−3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)

Phase	Phase−Shift T4 DEG	Value
Master		0.5778
−3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)

Phase	Phase−Shift T5 DEG	Value
Master		−0.7787
−3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)

Phase	Phase−Shift T1 at 400KHz DEG	Value
Master		−0.01738
−3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)

Phase	Phase−Shift T2 at 400KHz DEG	Value
Master		0.6494

Phase	Phase−Shift T3 at 400KHz DEG	Value
Master		−0.4933

Phase	Phase−Shift T4 at 400KHz DEG	Value
Master		0.6468

−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
Master		7.863
6.500 (Minimum)	8.500 (Nominal)	10.50 (Maximum)

Phase	Attenuation T2 DB	Value
Master		6.846
4.500 (Minimum)	6.500 (Nominal)	8.500 (Maximum)

Phase	Attenuation T3 DB	Value
Master		4.618
2.500 (Minimum)	4.500 (Nominal)	6.500 (Maximum)

Phase	Attenuation T4 DB	Value
Master		4.695
2.600 (Minimum)	4.600 (Nominal)	6.600 (Maximum)

Phase	Attenuation T5 DB	Value
Master		3.201
1.600 (Minimum)	3.600 (Nominal)	5.600 (Maximum)

Phase	Attenuation T1 at 400KHz DB	Value
Master		7.873
6.500 (Minimum)	8.500 (Nominal)	10.50 (Maximum)

Phase	Attenuation T2 at 400KHz DB	Value
Master		6.819
4.500 (Minimum)	6.500 (Nominal)	8.500 (Maximum)

Phase	Attenuation T3 at 400KHz DB	Value
Master		4.546
2.500 (Minimum)	4.500 (Nominal)	6.500 (Maximum)

Phase	Attenuation T4 at 400KHz DB	Value
Master		4.757
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                        Spud date................: 24 Sep 02
API number...............:                                 Last survey date.........: 04-Oct-02
Engineer.................: A. Abad, C. Tue                 Total accepted surveys...: 25
                                                           MD of first survey.......:     0.00 m
RIG:.....................: Ocean Bounty                    MD of last survey........:  2112.00 m
STATE:...................: Victoria

----- Survey calculation methods-------------             ----- Geomagnetic data ----------------------
Method for positions.....: Minimum curvature             Magnetic model...........: BGGM version 2001
Method for DLS...........: Mason & Taylor                Magnetic date............: 27-Sep-2002
                                                         Magnetic field strength..:    1220.24 HCNT
----- Depth reference ------------------------           Magnetic dec (+E/W-).....:      10.89 degrees
Permanent datum..........: GROUND LEVEL                  Magnetic dip.............:     -70.02 degrees
Depth reference..........:
GL above permanent.......:    -68.00 m                   ----- MWD survey Reference Criteria ---------
KB above permanent.......:      0.00 m                   Reference G..............:    1000.08 mGal
DF above permanent.......:     25.00 m                   Reference H..............:    1220.24 HCNT
                                                         Reference Dip............:     -70.02 degrees
----- Vertical section origin----------------           Tolerance of G...........: (+/-) 2.50 mGal
Latitude (+N/S-).........:      0.00 m                   Tolerance of H...........: (+/-) 6.00 HCNT
Departure (+E/W-)........:      0.00 m                   Tolerance of Dip.........: (+/-) 0.45 degrees

----- Platform reference point---------------           ----- Corrections -----------------------------
Latitude (+N/S-).........:      0.00 m                   Magnetic dec (+E/W-).....:      10.89 degrees
Departure (+E/W-)........:      0.00 m                   Grid convergence (+E/W-).:      -1.09 degrees
                                                         Total az corr (+E/W-)....:      11.98 degrees
Azimuth from rotary table to target:    0.00 degrees       (Total az corr = magnetic dec - grid conv)
                                                         Sag applied (Y/N)........: No    degree: 0.00


[(c)2002 Anadrill IDEAL ID7_0C_02]
ANADRILL SCHLUMBERGER Survey Report                          4-Oct-2002 19:26:55            Page   2 of 2

 ===  ========  ======  =======  ======  ========  ========  ================  ===============  =====  =====  ======
 Seq  Measured   Incl    Azimuth  Course    TVD     Vertical    Displ    Displ   Total     At     DLS    Srvy   Tool
  #     depth    angle    angle   length   depth     section    +N/S-    +E/W-   displ    Azim   (deg/   tool   qual
  -       (m)    (deg)    (deg)     (m)      (m)       (m)       (m)      (m)     (m)    (deg)   10m)   type   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	

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 1:1000

Recorded Mode