

Woodside Energy Limited

Geographe North-1 8 1/2 in. Hole

Permit VIC/P43

Ocean Bounty State: **Victoria**

<div><div></div><div><div><div>Schlumberger</div><div>VISION Resistivity 1:200 Measured Depth Recorded Mode</div></div></div></div>						Rig: Ocean Bounty Field: Permit VIC/P43 Location: Otway Basin Well: Geographe North-1 Company: Woodside Energy Limited							
Location							Total depth: 2156 m Spud date: 29 September 2001 Runs: 1 To 2 Permanent datum: L.A.T. Log measured from: Drill Floor Depth reference: Driller's Depth						
API serial no.								Longitude		Latitude			
Elev.: 0.0 m				K.B. Top Drive				G.L. -107 m					
D.F. 25 m				Elev.: 0.0 m				above Perm. datum					
Mag decl: 11.034				Mag dip: -70.256				Other services: Directional Surveys					
Bore hole record				Casing record									
Hole size	from	to	Size	Density	from	to							
12.25 in	565 m	1,790 m	13.375 in	61 lb/ft	165 m	558 m							
8.5 in	1,790 m	2,156 m	9.625 in	61 lb/ft	558 m	1784 m							
Type	Mud record from	to	Min	Max	Borehole deviation record from	to							
Aquadrill	1,790 m	2,156 m	0.5 deg	1.94 deg	1,790 m	2,156 m							
Surface equipment		Software record											
Unit	TWIS - EA	IDEAL Wis	6.1c_03										
Depth system	Geograph	SPM	6.1c_03										
		LWD	6.4										
		MWD	6.1										
							IDEAL services from Anadrill						





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 RUN2 Directional Surveys Drilling Mechanics (DWOB, DTORQ, 4-axis vibration monitoring) Annular Pressure While Drilling (APWD)	OTHER SERVICES FOR RUN	OTHER SERVICES FOR RUN
REMARKS: RUN NUMBER 2 ARC GR is corrected for bit size and mud weight. ARC Resistivity is borehole compensated but not environmentally corrected. Rotary Drilled from 1790 – 2156 m Depth logged; 1791 – 2151 m 07–Oct–01 18:40 hrs – Geograph cable was disconnected by the driller during bad	REMARKS: RUN NUMBER	REMARKS: RUN NUMBER

10.46 hrs - Geograph cable was disconnected by the driller during bad weather prior to racking back 5 stands. Lost data inside the casing. All data from the start of new hole was recovered.

EQUIPMENT DESCRIPTION		
RUN2	RUN	RUN

DOWNHOLE EQ		
6.75 in. Pow		16.5
SN: 19		
	D&I	12.6
XOS		9.1
In-line		8.6
ARC5-		7.1

A vertical number line is shown with tick marks at 1, 2, 3, and 5. The tick mark at 4 is missing.

[illegible]

DOWNHOLE EQ

6.75 in. Pow

16.5

SN: 19

D&I

12.6

XOS

9.11

In-line

8.63

ARC5-

7.12

7.12

SN: 1	R-O P	4.98
	T5	4.87
	T3	4.57
	T1	4.26
	Gamma	3.83
	Receiv	3.76
	T2	3.60
	T4	3.30
	ARC AP	3.14

1.76

XOS		1.39
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Bit-PD		0.00 0.30
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MAXIMUM STRING DI

ALL LENGTHS I

Bit Run Summary

Run number		2								
Bit size		in. 8.5								
Bit start depth		m 1790 m								
Bit end depth		m 2156 m								
Top interval logged		m 1790 m								
Bottom interval logged		m 2152 m								
Begin log: time		05:23 hrs								
Begin log: date		07-Oct-01								
End log: time		20:30 hrs								
End log: date		08-Oct-01								
Mud data										
Depth		m 2156								
Type		Aquadrill								
Mud weight		sg 1.15								
Solids		%vol 7								
Chlorides		mg/l 43000								
Rm		ohm.m@degC 0.084@24								
Rmf		ohm.m@degC 0.072@24								
Rmc		ohm.m@degC 0.120@24								
Potassium		mg/l 37000								
Environmental data										
GR										

Environmental data

GR											
Mud weight	sg	1.15									
Bit size	in.	8.5									
Resistivity											
Neutron porosity											
Hole Size		n/a									
Mud weight		n/a									
Temperature		n/a									
Mud salinity		n/a									
Formation salinity		n/a									
Recording rate 1	SEC	10 sec	GR								
Recording rate 2	SEC	10 sec	RES								
Filtering GR		3 point									
Filtering density		n/a									
Filtering Neutron		n/a									
Company representative		D. Bell	M. Bilek	G. Westie							
Anadrill personnel		A. Abad	M. Saicic								

IDEAL Version: ID6_1C_10
IDF

ARC5_675 id6_1c_10 MWD_10 id6_1c_10

Format: ARC_Dual_Freq_Res_1 Vertical Scale: 1:200 Graphics File Created: 11-Oct-2001 07:21

Parameters

DLIS Name	Description	Value
AAPS	ARC5 Attenuation and Phase-Shift source	1_UPHOLE
APICG	ARC5 Gamma Ray Gain Factor	1.147
ATRN	ARC5 Tool Run Number	GEOGRAPHE8_5 in sect
ATSN	ARC5 Tool Serial Number	117
BS_RM	Bit Size (RM)	8.500 in
DO	Depth Offset	0.0 m
KPER	ARC5:Potassium Concentration	37500.0
MST_RM	Mud Sample temperature (RM)	24.000 degC
MW_RM	Mud Weight (RM)	1.150 g/cm3
RMS_RM	Resistivity of Mud Sample (RM)	0.102 ohm.m
VERS_ARC	ARC5 Down hole software version Number	6.400
WRK	ARC5: Way to Report Potassium Concentration	POTASSIUM_BY_WEIGHT_%

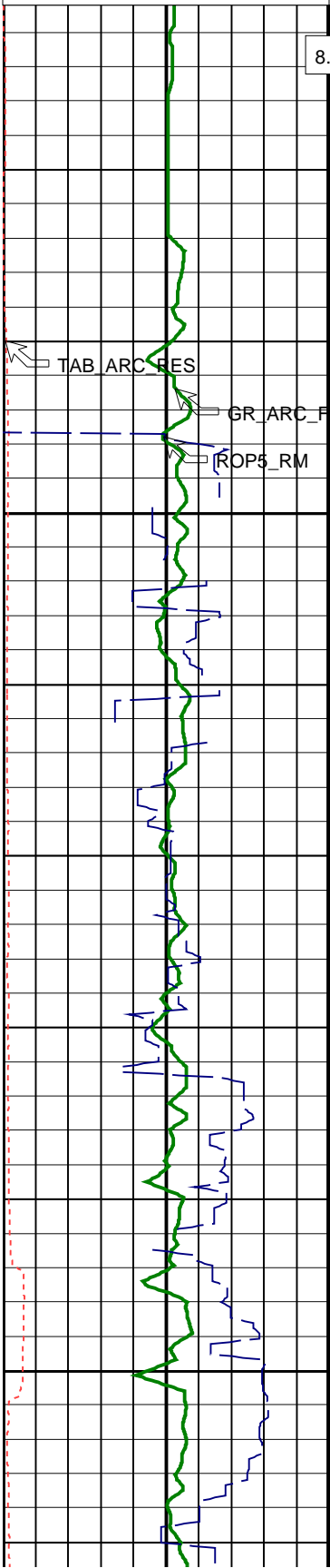
PIP SUMMARY

- ARC Gamma Ray Samples
- ARC Resistivity Samples

<div>ARC Calibrated, Filtered Gamma Ray (GR_ARC_FILT)</div> <div>0 (GAPI) 200</div> <div>Rate of Penetration, Averaged over Last 5ft (ROP5_RM)</div> <div>500 (M/HR) 0</div>	ARC Non-BHCorr Phase-Shift Resistivity 40-in. at 2 MHz (P40H_UNC)		ARC Non-BHCorr Phase-Shift Resistivity 40-in. at 400 KHz (P40L_UNC)	
	0.2 (OHMM) 2000		0.2 (OHMM) 2000	
	ARC Non-BHCorr Phase-Shift Resistivity 34-in. at 2 MHz (P34H_UNC)		ARC Non-BHCorr Phase-Shift Resistivity 34-in. at 400 KHz (P34L_UNC)	
	0.2 (OHMM) 2000		0.2 (OHMM) 2000	
	ARC Non-BHCorr Phase-Shift Resistivity 28-in. at 2 MHz (P28H_UNC)		ARC Non-BHCorr Attenuation Resistivity 40-in. at 2 MHz (A40H_UNC)	ARC Non-BHCorr Phase-Shift Resistivity 28-in. at 400 KHz (P28L_UNC)
	0.2 (OHMM) 2000		0.2 (OHMM) 2000	0.2 (OHMM) 2000
ARC Non-BHCorr Phase-Shift Resistivity 22-in. at 2 MHz (P22H_UNC)		ARC Non-BHCorr Attenuation Resistivity 34-in. at 2 MHz (A34H_UNC)	ARC Non-BHCorr Phase-Shift Resistivity 22-in. at 400 KHz (P22L_UNC)	
0.2 (OHMM) 2000		0.2 (OHMM) 2000	0.2 (OHMM) 2000	

500 (M/HR) 0

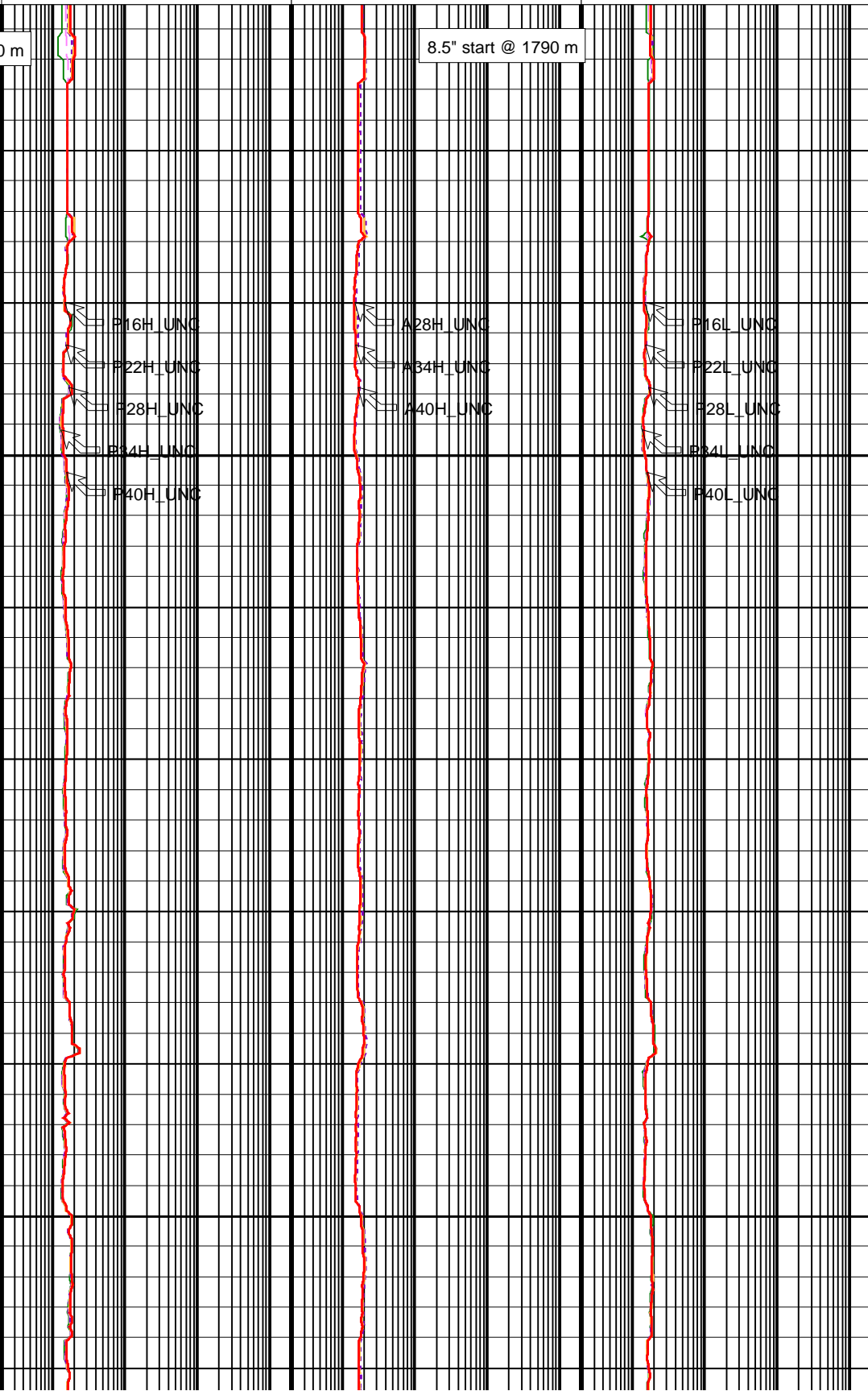
ARC Resistivity Time After Bit (TAB_ARC_RES) (HR) 0 10

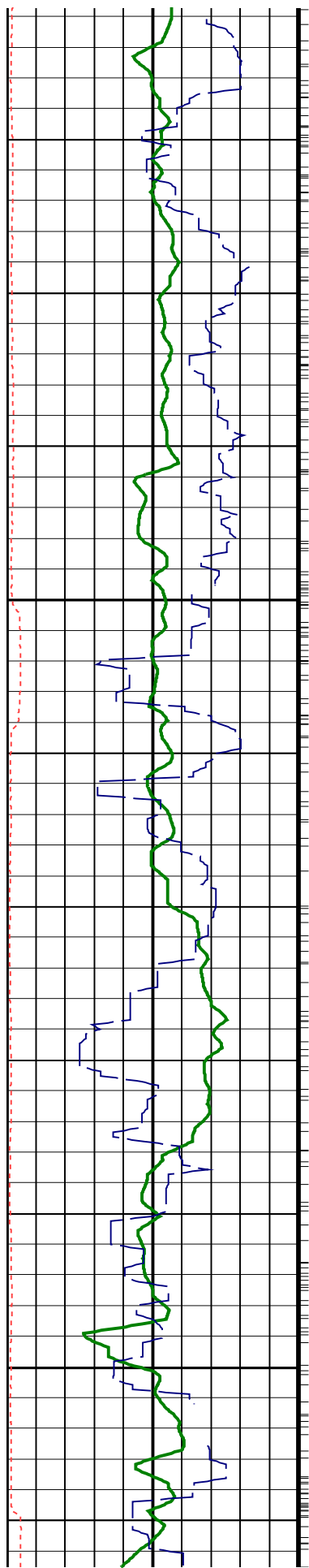


(P22H_UNC) (OHMM) 2000 (A34H_UNC) (OHMM) 2000 (P22L_UNC) (OHMM) 2000

ARC Non-BHCorr Phase-Shift Resistivity 16-in. at 2 MHz (P16H_UNC) ARC Non-BHCorr Attenuation Resistivity 28-in. at 2 MHz (A28H_UNC) ARC Non-BHCorr Phase-Shift Resistivity 16-in. at 400 KHz (P16L_UNC)

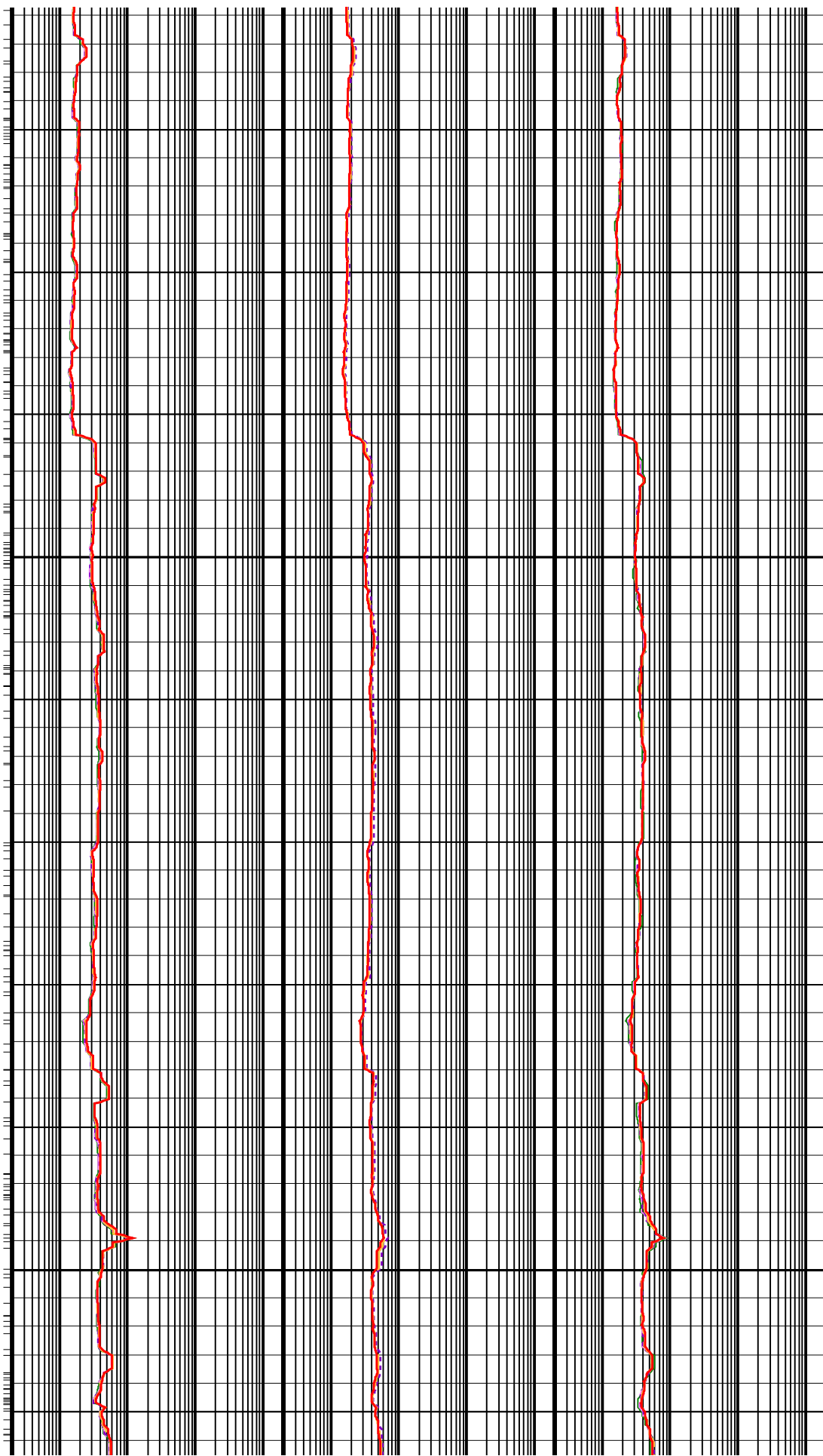
0.2 (OHMM) 2000 0.2 (OHMM) 2000 0.2 (OHMM) 2000

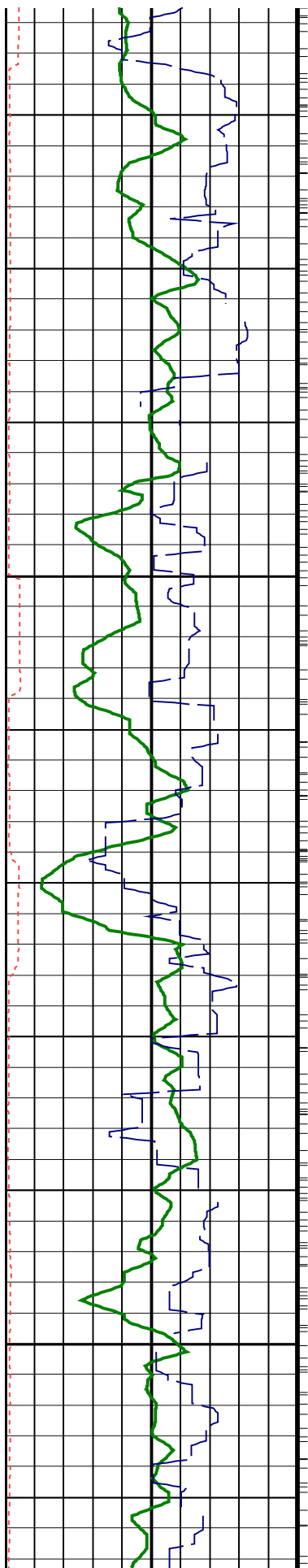




1850

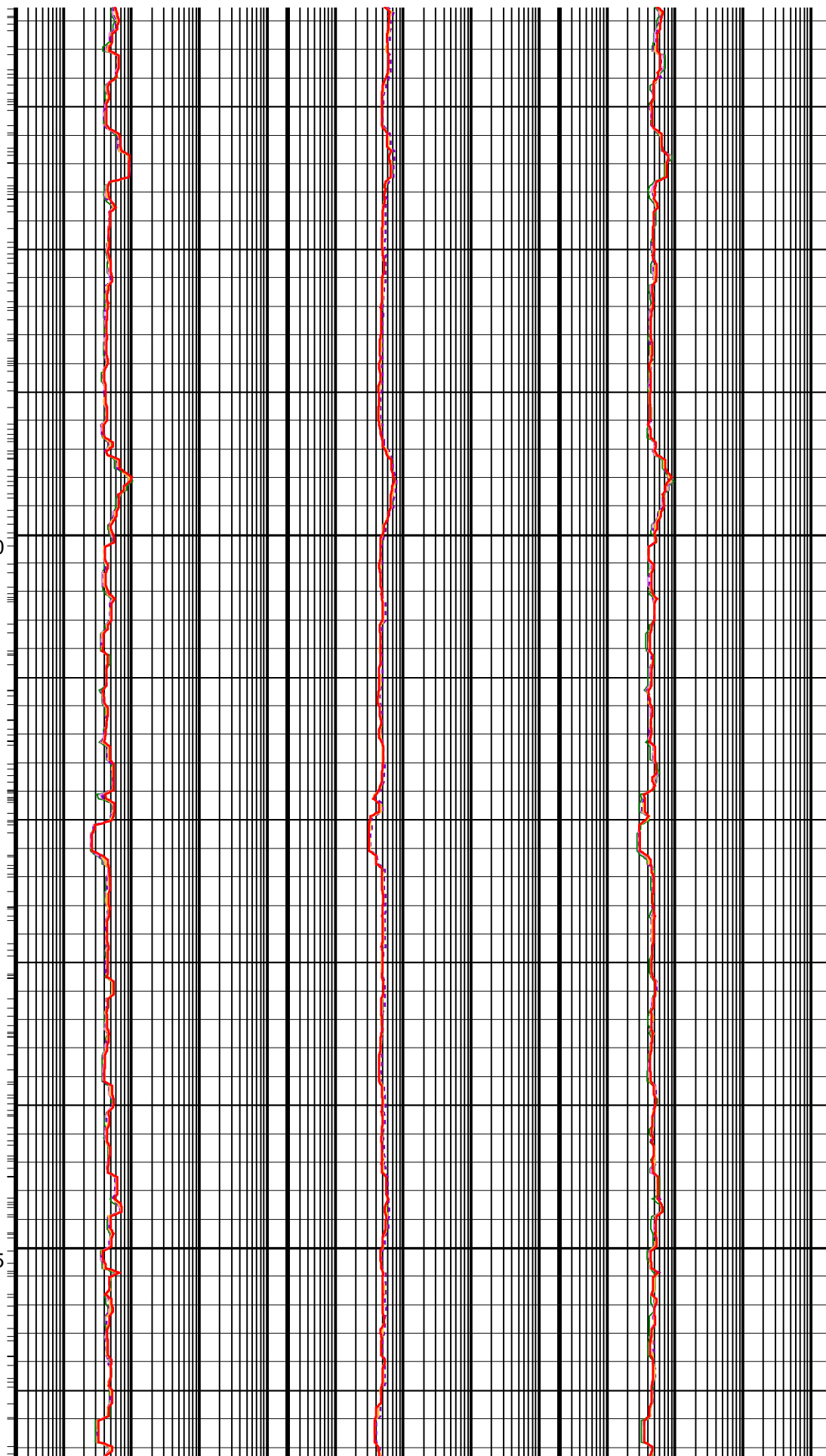
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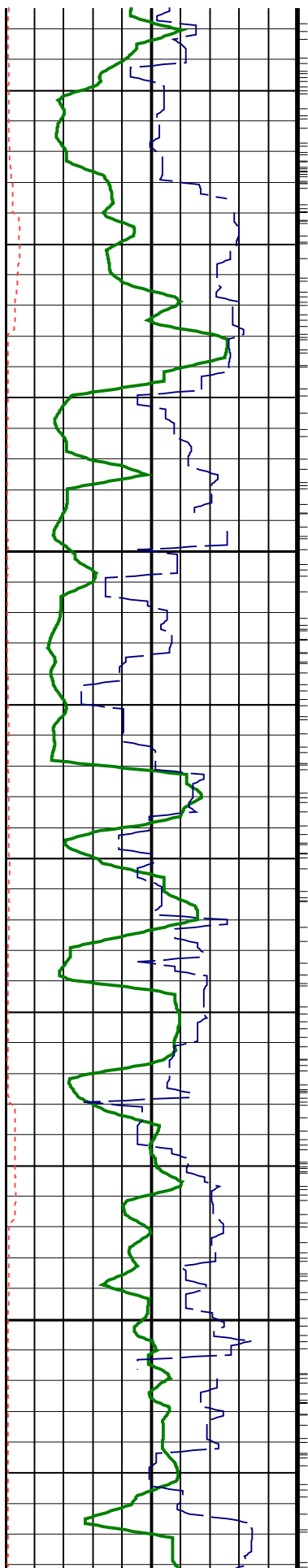




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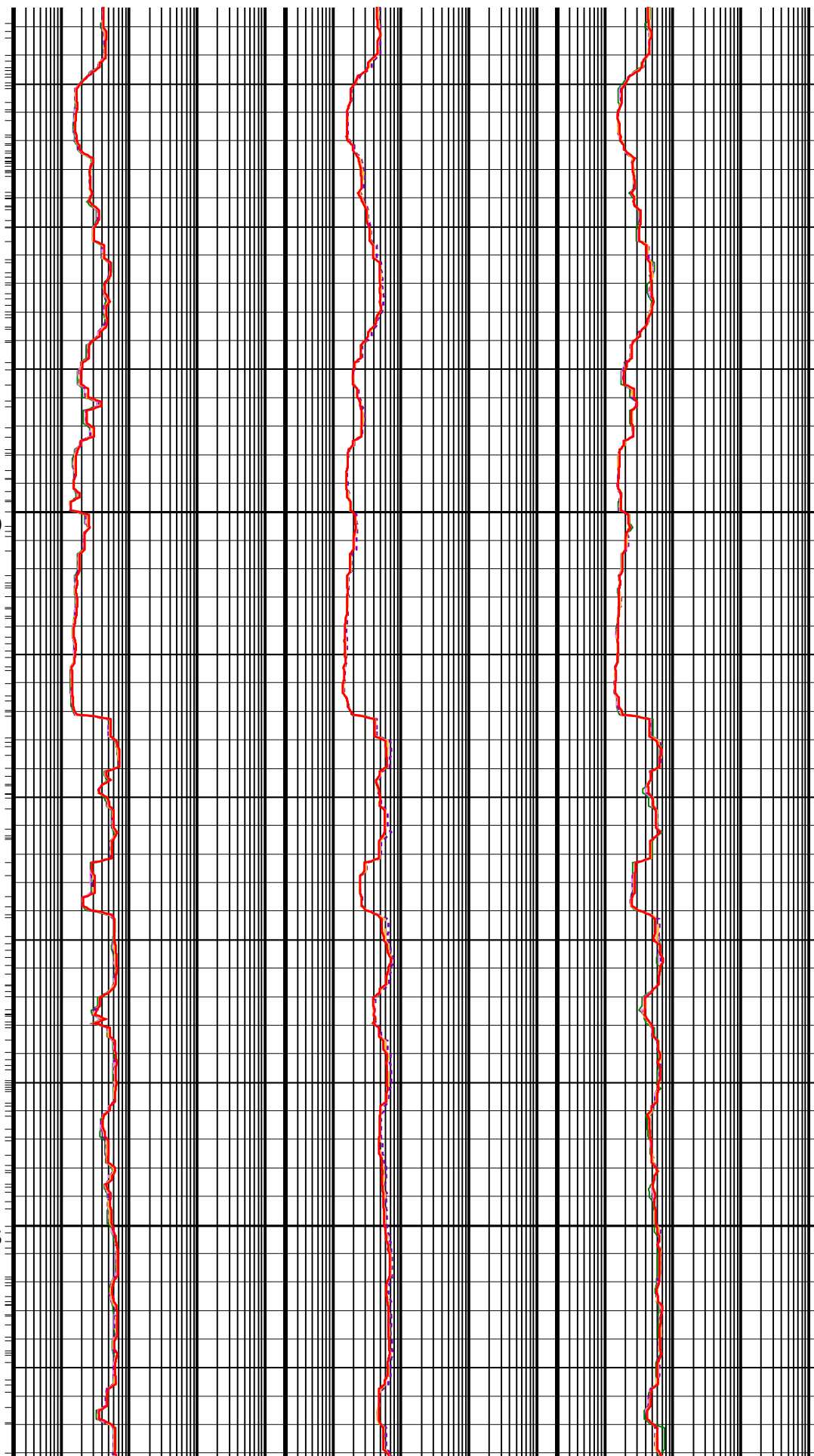
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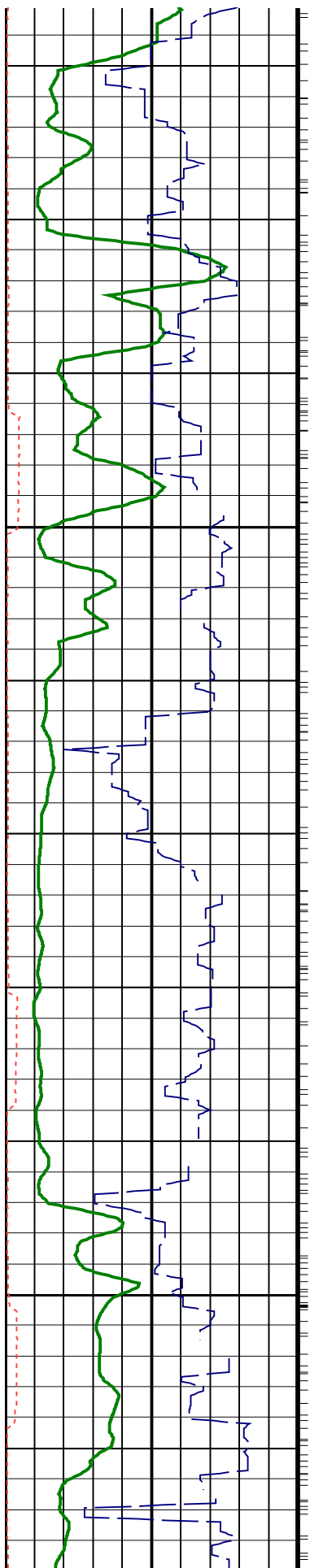




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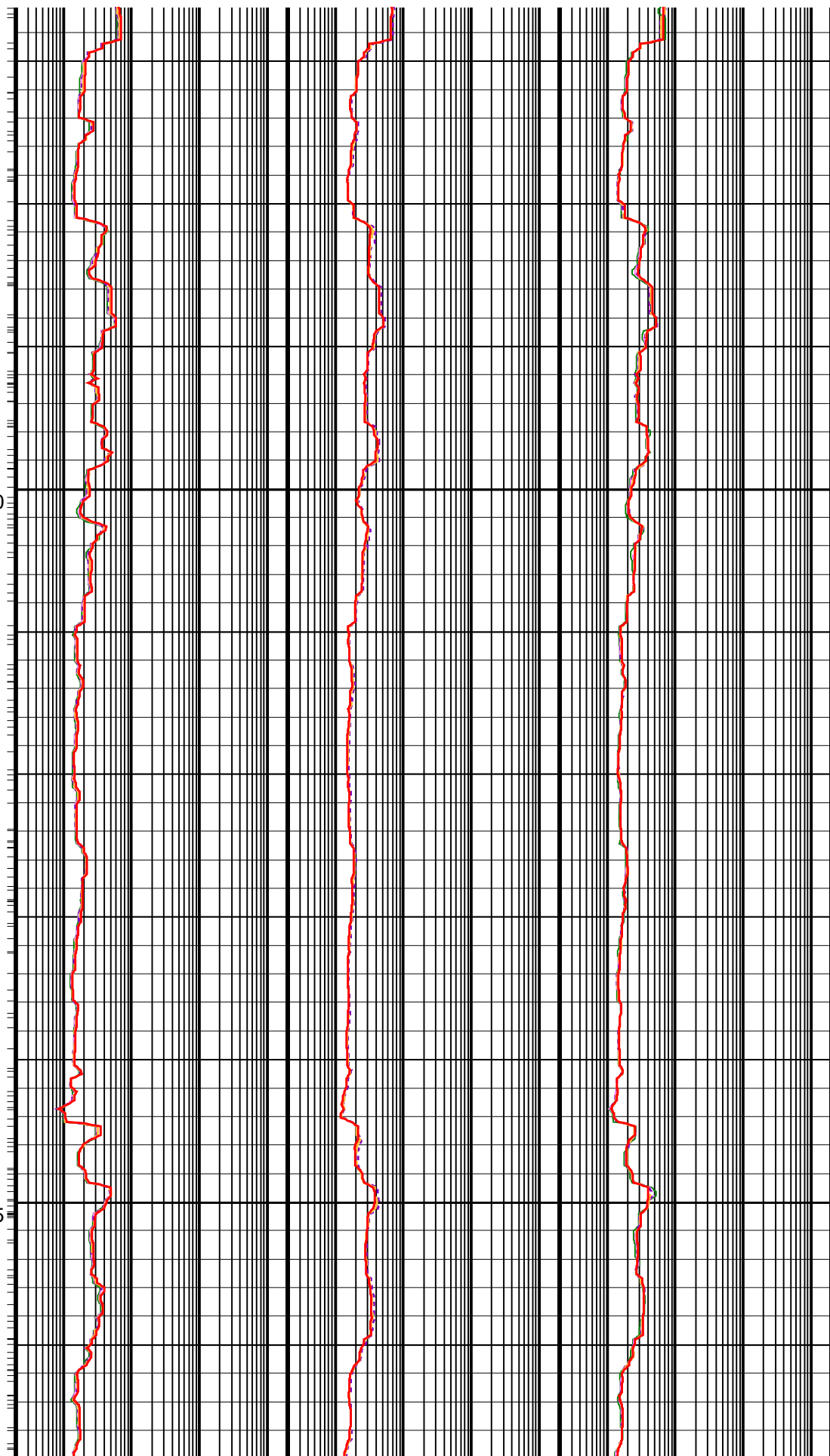
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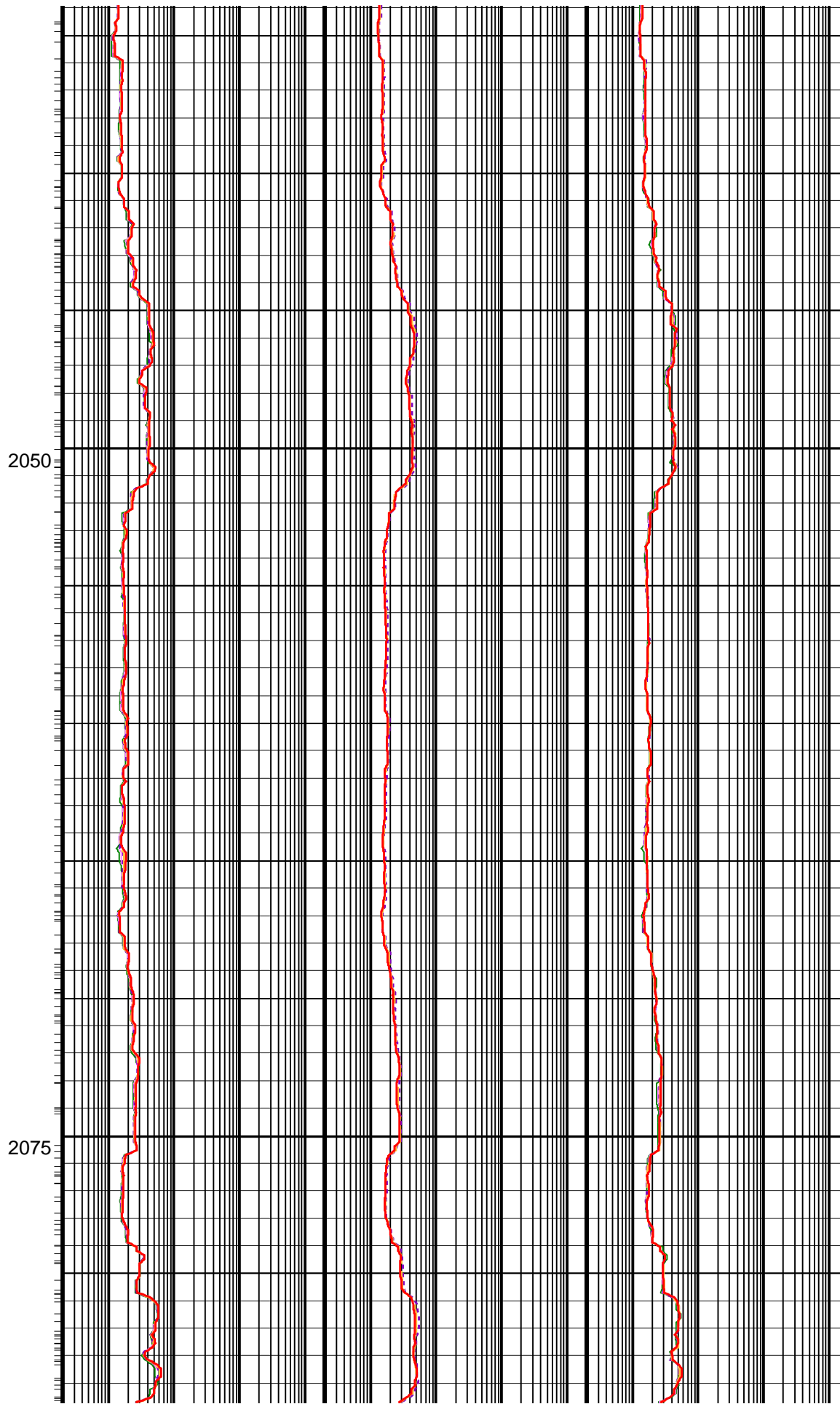
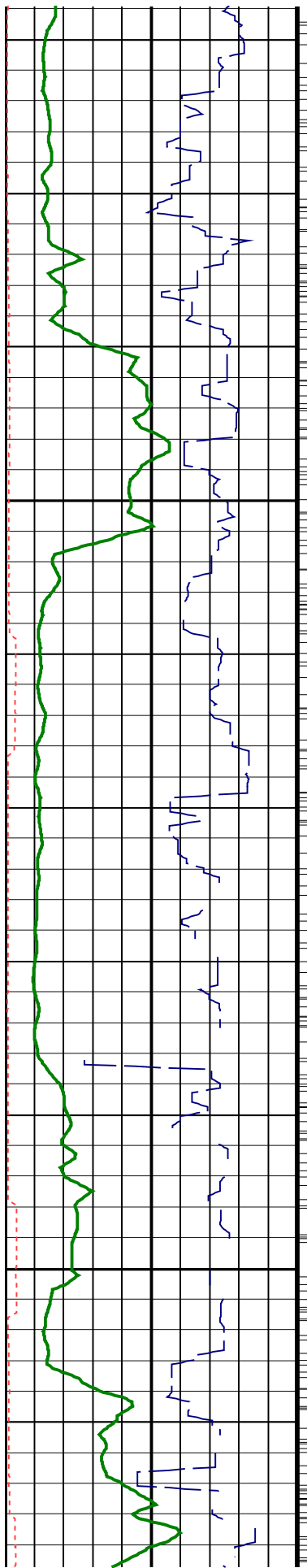


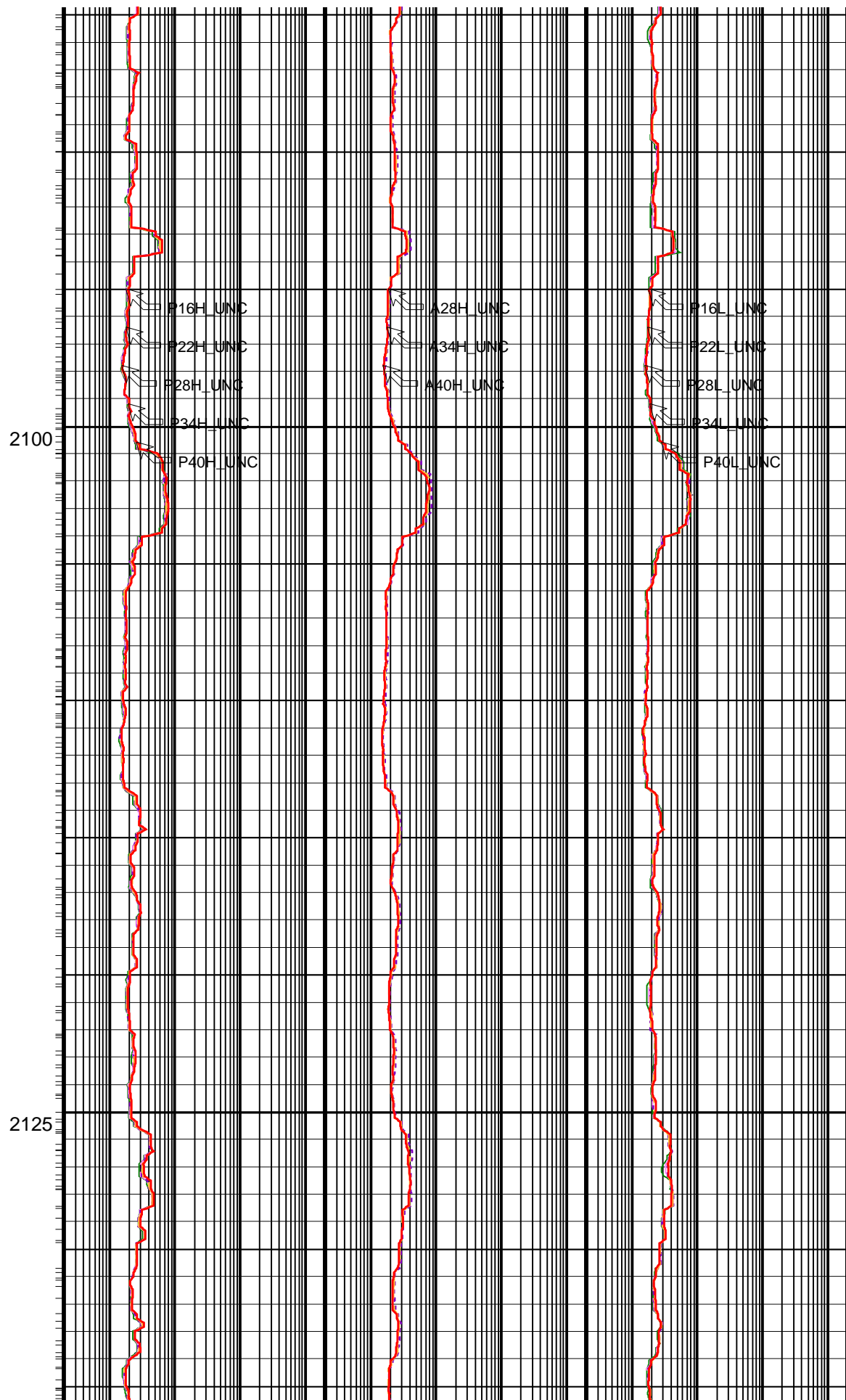
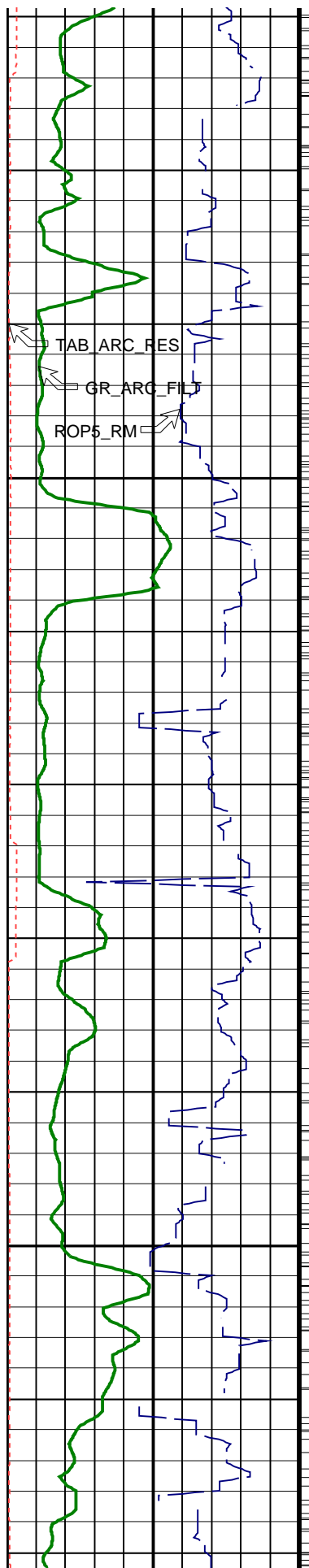


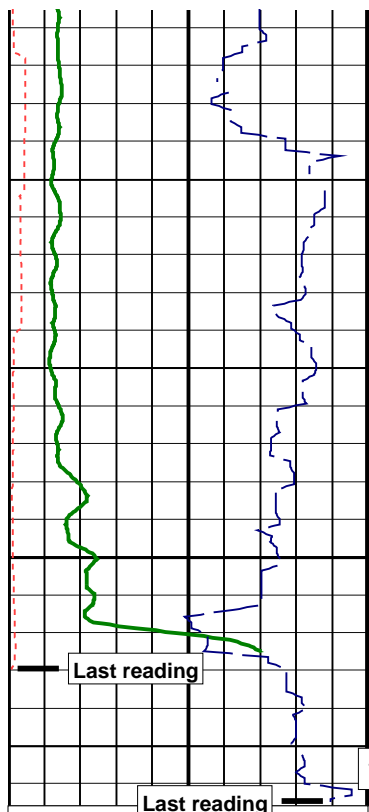
2000

2025

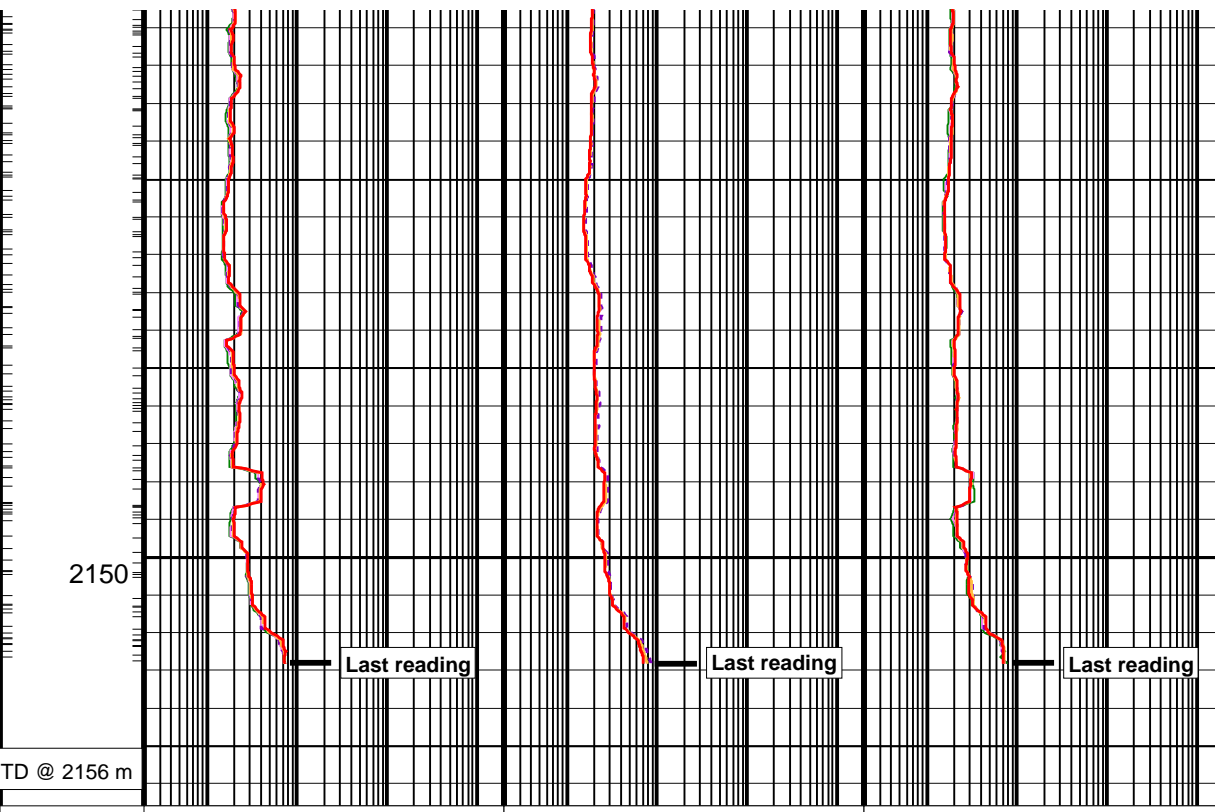








ARC Resistivity Time After Bit (TAB_ARC_RES) (HR)		
0		10
Rate of Penetration, Averaged over Last 5ft (ROP5_RM) (M/HR)		
500		0
ARC Calibrated, Filtered Gamma Ray (GR_ARC_FILT) (GAPI)		
0		200



ARC Non-BHCorr Phase-Shift Resistivity 16-in. at 2 MHz (P16H_UNC) 0.2 (OHMM) 2000			ARC Non-BHCorr Attenuation Resistivity 28-in. at 2 MHz (A28H_UNC) 0.2 (OHMM) 2000			ARC Non-BHCorr Phase-Shift Resistivity 16-in. at 400 KHz (P16L_UNC) 0.2 (OHMM) 2000		
ARC Non-BHCorr Phase-Shift Resistivity 22-in. at 2 MHz (P22H_UNC) 0.2 (OHMM) 2000			ARC Non-BHCorr Attenuation Resistivity 34-in. at 2 MHz (A34H_UNC) 0.2 (OHMM) 2000			ARC Non-BHCorr Phase-Shift Resistivity 22-in. at 400 KHz (P22L_UNC) 0.2 (OHMM) 2000		
ARC Non-BHCorr Phase-Shift Resistivity 28-in. at 2 MHz (P28H_UNC) 0.2 (OHMM) 2000			ARC Non-BHCorr Attenuation Resistivity 40-in. at 2 MHz (A40H_UNC) 0.2 (OHMM) 2000			ARC Non-BHCorr Phase-Shift Resistivity 28-in. at 400 KHz (P28L_UNC) 0.2 (OHMM) 2000		
ARC Non-BHCorr Phase-Shift Resistivity 34-in. at 2 MHz (P34H_UNC) 0.2 (OHMM) 2000						ARC Non-BHCorr Phase-Shift Resistivity 34-in. at 400 KHz (P34L_UNC) 0.2 (OHMM) 2000		
ARC Non-BHCorr Phase-Shift Resistivity 40-in. at 2 MHz (P40H_UNC) 0.2 (OHMM) 2000						ARC Non-BHCorr Phase-Shift Resistivity 40-in. at 400 KHz (P40L_UNC) 0.2 (OHMM) 2000		

PIP SUMMARY

- └ ARC Gamma Ray Samples
- └ ARC Resistivity Samples

IDEAL Version: ID6_1C_10

IDF

ARC5_675

id6_1c_10

MWD_10

id6_1c_10

6.75-in. Array Resistivity Compensated / Equipment Identification

Primary Equipment:
Tool Name and Serial Number
ARC675 Calibration Status

ARC 675 117
Valid

Master: 24-SEP-2001 14:21

6.75-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		-2.512	Master		2.776	Master		-2.626
	-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 T4 DEG	Value	Phase	Phase-Shift T5 DEG	Value	Phase	Phase-Shift T1 at 400KHz DEG	Value
Master		2.722	Master		-2.583	Master		-1.894
	-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		2.074	Master		-1.944	Master		2.089
	-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		-1.943						
	-3.900 (Minimum) 0.1000 (Nominal) 4.100 (Maximum)							

Master: 24-SEP-2001 14:21

6.75-in. Array Resistivity Compensated Calibration

Resistivity: Air

Phase	Attenuation T1 DB	Value	Phase	Attenuation T2 DB	Value	Phase	Attenuation T3 DB	Value
Master		7.940	Master		7.156	Master		4.528
	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		4.992	Master		3.037	Master		7.965
	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		7.076	Master		4.557	Master		4.960
	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		3.109						
	1.600 (Minimum) 3.600 (Nominal) 5.600 (Maximum)							

Master: 24-SEP-2001 16:43

6.75-in. Array Resistivity Compensated Calibration

Gamma Ray: Blanket

Phase	Gamma ray factor (equals Calibration Gain multiplied by API Gain Factor) CPS	Value
Master		5.506
	2.780 (Minimum) 4.800 (Nominal) 6.000 (Maximum)	

Client.....: Woodside Energy Ltd.
Field.....: Permit VIC/P43

Well.....: Geograph North-1
API number.....:
Engineer.....: A.Abad, M.Saicic

Rig.....: Ocean Bounty
STATE.....: Victoria

Spud date.....: 29 Sep 01
Last survey date.....: 08-Oct-01
Total accepted surveys...: 17
MD of first survey.....: 561.00 m
MD of last survey.....: 2142.68 m

----- Survey calculation methods-----
Method for positions.....: Minimum curvature
Method for DLS.....: Mason & Taylor

----- Depth reference -----
Permanent datum.....: L.A.T.
Depth reference.....: Driller's Depth
GL above permanent.....: 107.00 m
KB above permanent.....: 82.00 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

Azimuth from rotary table to target: 0.00 degrees

----- Geomagnetic data -----
Magnetic model.....: BGGM version 2000
Magnetic date.....: 01-Oct-2001
Magnetic field strength...: 1222.77 HCNT
Magnetic dec (+E/W-).....: 11.03 degrees
Magnetic dip.....: -70.26 degrees

----- MWD survey Reference Criteria -----
Reference G.....: 1000.10 mGal
Reference H.....: 1222.77 HCNT
Reference Dip.....: -70.26 degrees
Tolerance of G.....: (+/-) 2.50 mGal
Tolerance of H.....: (+/-) 6.00 HCNT
Tolerance of Dip.....: (+/-) 0.45 degrees

----- Corrections -----
Magnetic dec (+E/W-).....: 11.03 degrees
Grid convergence (+E/W-)..: -1.17 degrees
Total az corr (+E/W-).....: 12.20 degrees
(Total az corr = magnetic dec - grid conv)
Sag applied (Y/N).....: No degree: 0.00

[(c)2001 Anadrill IDEAL ID6_1C_03]
ANADRILL SCHLUMBERGER Survey Report

8-Oct-2001 21:45:01

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	561.00	0.50	0.00	0.00	561.00	0.00	0.00	0.00	0.00	0.00	0.00	TIP	-
2	582.93	0.14	140.00	21.93	582.93	0.08	0.08	0.02	0.08	12.91	0.28	MWD	6-axis
3	787.44	0.24	327.54	204.51	787.44	0.25	0.25	-0.05	0.25	348.01	0.02	MWD	6-axis
4	1045.27	1.06	176.39	257.83	1045.26	-1.68	-1.68	-0.19	1.69	186.51	0.05	MWD	6-axis
5	1134.01	1.32	323.02	88.74	1133.99	-1.68	-1.68	-0.75	1.84	204.17	0.26	MWD	6-axis
6	1221.07	1.31	340.49	87.06	1221.03	0.06	0.06	-1.69	1.69	271.93	0.05	MWD	6-axis
7	1308.98	1.44	340.75	87.91	1308.91	2.05	2.05	-2.39	3.15	310.58	0.01	MWD	6-axis
8	1395.89	1.46	335.28	86.91	1395.79	4.08	4.08	-3.21	5.20	321.80	0.02	MWD	6-axis
9	1510.17	1.39	334.24	114.28	1510.04	6.65	6.65	-4.42	7.99	326.38	0.01	MWD	6-axis
10	1568.32	1.65	336.38	58.15	1568.17	8.06	8.06	-5.07	9.52	327.84	0.05	MWD	6-axis
11	1656.23	1.91	353.24	87.91	1656.04	10.67	10.67	-5.75	12.12	331.70	0.07	MWD	6-axis
12	1713.58	1.95	1.23	57.35	1713.35	12.60	12.60	-5.84	13.88	335.13	0.05	MWD	6-axis
13	1762.43	1.84	357.96	48.85	1762.18	14.21	14.21	-5.85	15.37	337.63	0.03	MWD	6-axis
14	1810.16	1.94	4.62	47.73	1809.88	15.78	15.78	-5.81	16.82	339.79	0.05	MWD	6-axis
15	1984.85	0.73	44.27	174.69	1984.52	19.53	19.53	-4.79	20.11	346.20	0.08	MWD	6-axis
16	2142.68	0.66	64.11	157.83	2142.34	20.64	20.64	-3.28	20.90	350.98	0.02	MWD	6-axis
17	2170.70	0.65	64.11	157.83	2170.01	20.86	20.86	-3.26	20.98	351.01	0.02	projection	

[(c)2001 Anadrill IDEAL ID6_1C_03]

Company: Woodside Energy Limited

Well: Geographe North-1 8 1/2 in. Hole

Field: Permit VIC/P43

Rig: Ocean Bounty

State: Victoria

IDEAL services from Anadrill

VISION Resistivity
1:200 Measured Depth
Recorded Mode

Schlumberger

