geoVISION - APWD

Gamma Ray - Resistivity - Image - APWD

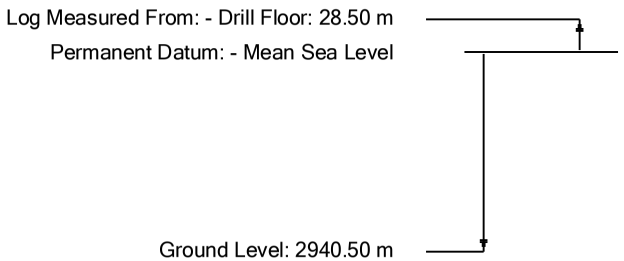
12.25in Recorded Mode Log. Measured Depth 1:500

Schlumberger

Company:	JAMSTEC
Well:	C0021A
Field:	Nankai Trough - Kumano Basin
Rig Name:	Chikyu
Prefecture:	Wakayama
Country:	Japan

Latitude:	33° 10' 2.892" N	Custom:	12JAP0021
Longitude:	136° 39' 50.724" E	Rig Name:	Chikyu
Block:		Rig Type:	Drill Vessel

FL:	Philippine Sea
FL1:	X= 656 797.7158m
FL2:	Y= 3 671 089.2502m



Acquisition Dates:	26-Dec-2012 -- 27-Dec-2012	Other Services:
Log Interval:	2965.02(m) -- 3263.47(m)	DWOB, DTOR
Index Types:	Measured Depth	Direction and Inclination
Index Scales:	1:500	Drilling Mechanics
Depth Source:	Driller's Depth	
Depth Sensor:	DES	
Print Type:	Final	
Spud Date:	26-Dec-2012	

Country: Japan
Prefecture: Wakayama
Rig Name: Chikyu
Field: Nankai Trough - Kumano Basin
Well: C0021A
Company: JAMSTEC

Disclaimer

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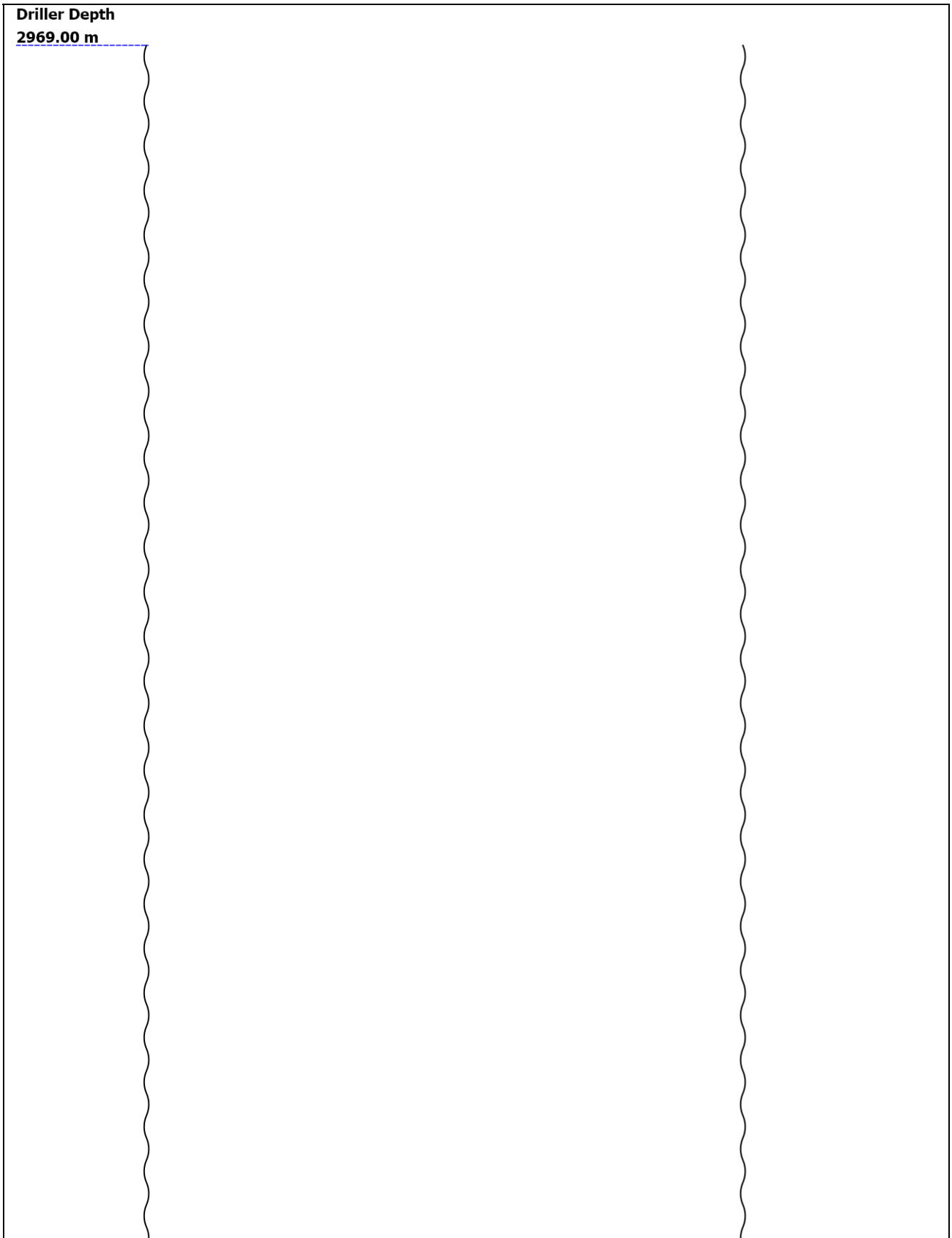
11.4 Parameter Listing
12. Calibration Report
13. Tail

Well Sketch



Borehole Size/Casing Record

Bit						
Bit Size (in)	12.25					
Top Driller (m)	2969					
Bottom Driller (m)	3263.47					

Operational Run Summary

Parameter (unit)	Run1					
Date Log Started	26-Dec-2012					
Time Log Started	20:05:06					
Date Log Finished	27-Dec-2012					
Time Log Finished	16:58:36					
Bit Size (in)	12.250					
Bit Start Depth (m)	2969.00					
Bit Stop Depth (m)	3263.47					
Top Log Interval (m)	2969.00					
Bottom Log Interval (m)	3263.21					
Max Hole Deviation (deg)	0.26					
Azimuth of Max Deviation (deg)	342.36					
Logging Unit Number	OLU-KC-504					
Logging Unit Location	Comp Deck					
Recorded By	Wang Feng TomasCosendey					
Witnessed By	Moe Kyaw Thu Yoshi Sanada					
Service Order Number	12JAP0021					

Borehole Fluids

Parameter(unit)	Run1					
Fluid Type	Water					
Fluid Name	Sea Water					
Max Recorded Temperatures (degC)	5					
Source of Sample	Active Tank					
Salinity (ppm)	30470.42					
Density (g/cm3)	1.04					

Funnel Viscosity (s)						
Fluid Loss (cm3)						
PH	10.7					
Source RMF						
RMC	Pressed					
RM @ Meas Temp (ohm.m@degC)	0.22 @ 20.3					
RMF @ Meas Temp (ohm.m@degC)	0.15 @ 20					
RMC @ Meas Temp (ohm.m@degC)						
RM @ BHT (ohm.m@degC)	0.35 @ 5					
RMF @ BHT (ohm.m@degC)						
RMC @ BHT (ohm.m@degC)	NaN @ 5					
Total Solid (%)						
High Gravity Solids (%)						

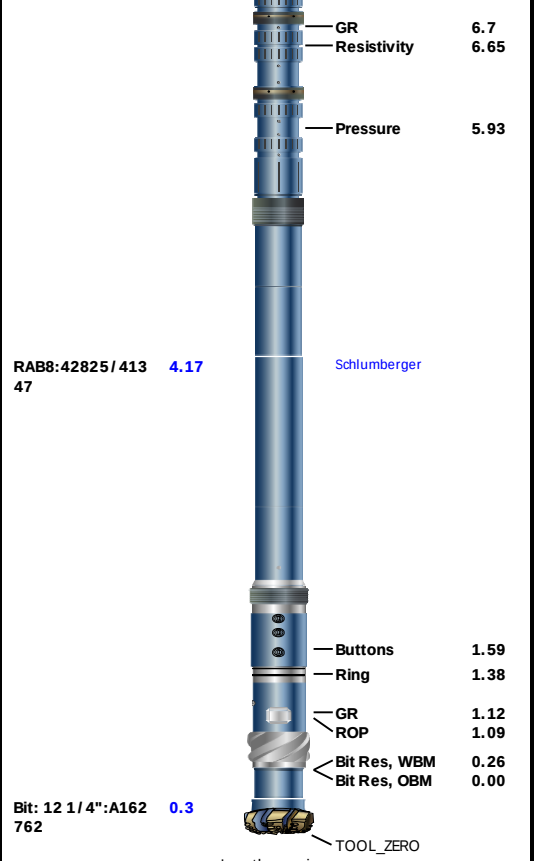
Remarks and Equipment Summary

Run1: Toolstring

Equip name	Length	MP name	Offset
TELE825-IWOB:G 0159	18.99	Schlumberger	
		D&I	14.21
		GR	13.56
		ROP	11.85
		IWOB	10.84
ARC8:2791-SRPC	10.08	Schlumberger	
		ROP	7.76

Run1: Remarks

- Data presented is Recorded Mode data which was acquired while ream down and drilling.
- Depth reference is driller's depth measured from Rotary Table.
- geoVISION record rate is 5s, APWD record rate is 5s.
- geoVISION GR is corrected for bit size, tool size and mud weight. No potassium concentration in mud.
- geoVISION resistivity is environmentally corrected for bit size and mud resistivity.
- Reason for POOH: Well TD.
- Drilling Time: 7.24 hrs
- Pumping Time: 10.38 hrs
- Warning in calibration list is due to MaxWell bug.



Lengths are in m
Maximum Outer Diameter = 12.250 in
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

Survey Record

Survey Calculation

Method :	Minimum Radius of Curvature	DLS Method :	Lubinski
North Reference :	Grid North	Total Correction Formula :	Magnetic Dec - Grid Convergence
Grid Convergence :	0.91 deg		

Rig Location

Latitude :	33° 10' 2.892" N	Longitude :	136° 39' 50.724" E

Tie In Point

Measured Depth:	0.00 m	Inclination:	0.00 deg	Azimuth:	0.00 deg
True Vertical Depth:	0.00 m	North Displacement:	0.00 m	East Displacement:	0.00 m
N/-S VSec Origin:	0.00 m	E/-W VSec Origin:	0.00 m	Vertical Section Azimuth:	0.00 deg

D&I Inits Computed and Values Used - Run1

Geomagnetic Model :	BGGM 2011	Geomagnetic Date :	26-Dec-2012
Computed Location B :	45884.85 nT +/- 300.00nT	Used Location B :	45884.85 nT +/- 300.00nT
Computed Location G :	9.80 m/s2 +/- 0.02m/s2	Used Location G :	9.80 m/s2 +/- 0.02m/s2
Computed Magnetic Dip :	46.66 deg +/- 0.45deg	Used Magnetic Dip :	46.66 deg +/- 0.45deg
Computed Magnetic Dec :	-6.70 deg	Used Magnetic Dec :	-6.70 deg
Computed Total Correction :	-7.61 deg	Used Total Correction :	-7.61 deg

Survey Quality Index

0 : Long Survey passed all criteria
2 : Long Survey failed mag criteria
3 : Long Survey failed G criteria
9 : Manual
28 : Tie-In Point

Survey Correction Index

0 : No correction

Survey Description Index

0 : Not Flagged Survey
11 : Secondary Tie-In Point

Seq	MD (m)	Incl (deg)	Azim (deg)	Course (m)	TVD (m)	V Sec (m)	N/ -S (m)	E/ -W (m)	Closure (m)	at Azim (deg)	DLS deg/30m	Tool Type	QI	CI	DI
1	0.00	0.00	0.00	- - - -	0.00	0.00	0.00	0.00	0.00	90.00	0.00	TIP	28	0	0
2	2969.00	0.00	0.00	2969.00	2969.00	0.00	0.00	0.00	0.00	90.00	0.00	Other	9	0	11
3	2977.21	0.26	342.36	8.21	2977.21	0.02	0.02	-0.01	0.02	342.36	0.96	TeleScope	3	0	0
4	3015.34	0.14	259.64	38.12	3015.34	0.09	0.09	-0.08	0.12	319.62	0.22	TeleScope	2	0	0
5	3053.85	0.09	306.88	38.51	3053.85	0.10	0.10	-0.15	0.18	304.25	0.08	TeleScope	0	0	0

6	3092.05	0.15	280.85	38.21	3092.05	0.13	0.13	-0.23	0.26	300.07	0.07	TeleScope	0	0	0
7	3130.20	0.12	325.36	38.15	3130.20	0.17	0.17	-0.30	0.34	300.06	0.09	TeleScope	0	0	0
8	3168.62	0.09	292.95	38.42	3168.62	0.22	0.22	-0.35	0.41	301.93	0.05	TeleScope	3	0	0
9	3206.71	0.08	298.27	38.10	3206.71	0.24	0.24	-0.40	0.46	301.17	0.01	TeleScope	0	0	0

Well Composite

Integration Summary

Output Channel(s)	Output Description	Input Parameter	Output Value	Unit

Composite Summary

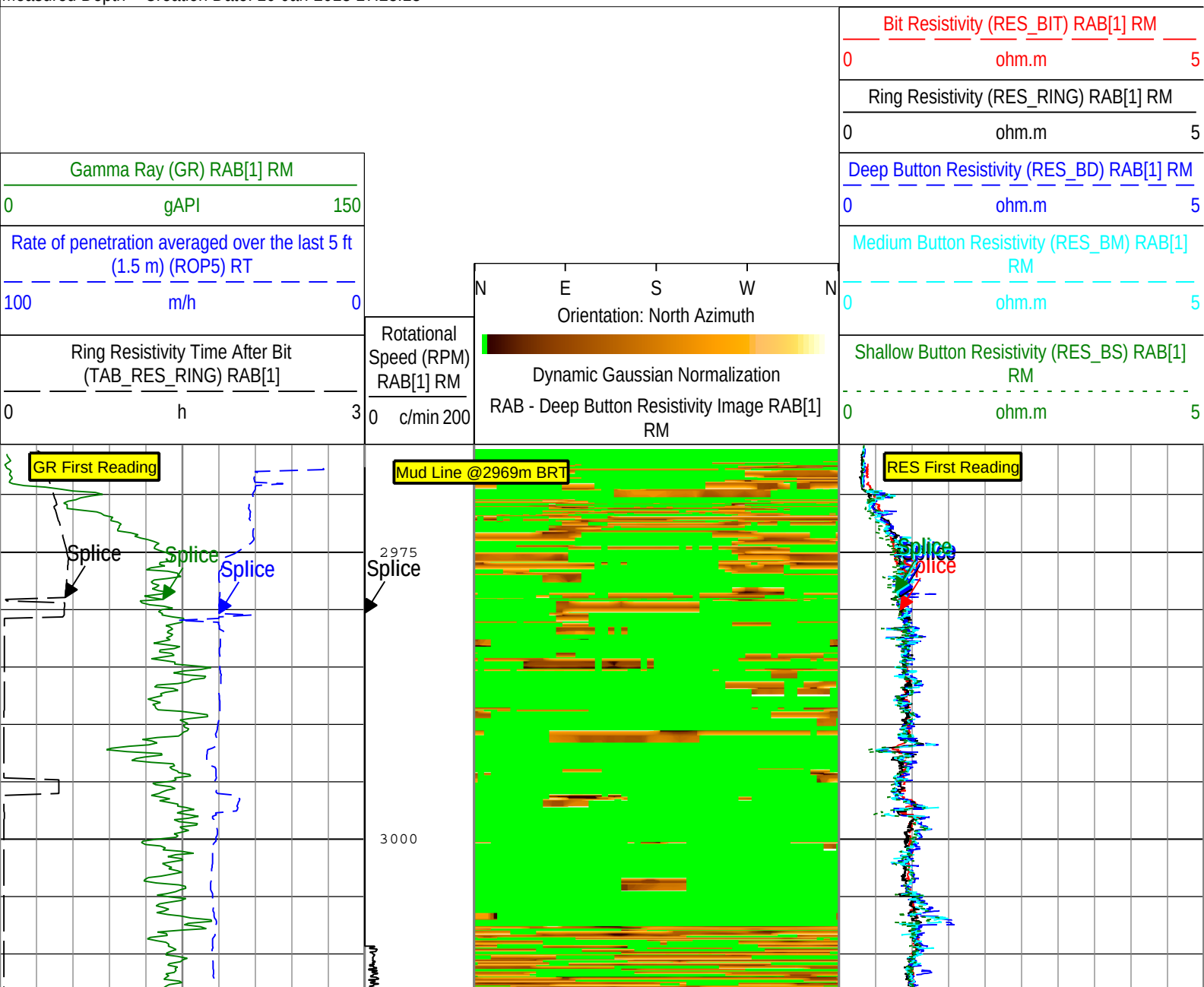
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Include Parallel Data
Run1	Ream Down 2	Down	2967.48 m	2980.69 m	26-Dec-2012 11:22:08 PM	26-Dec-2012 11:46:15 PM	
Run1	Drilling	Down	2965.02 m	3263.47 m	26-Dec-2012 11:03:41 PM	27-Dec-2012 4:58:36 PM	

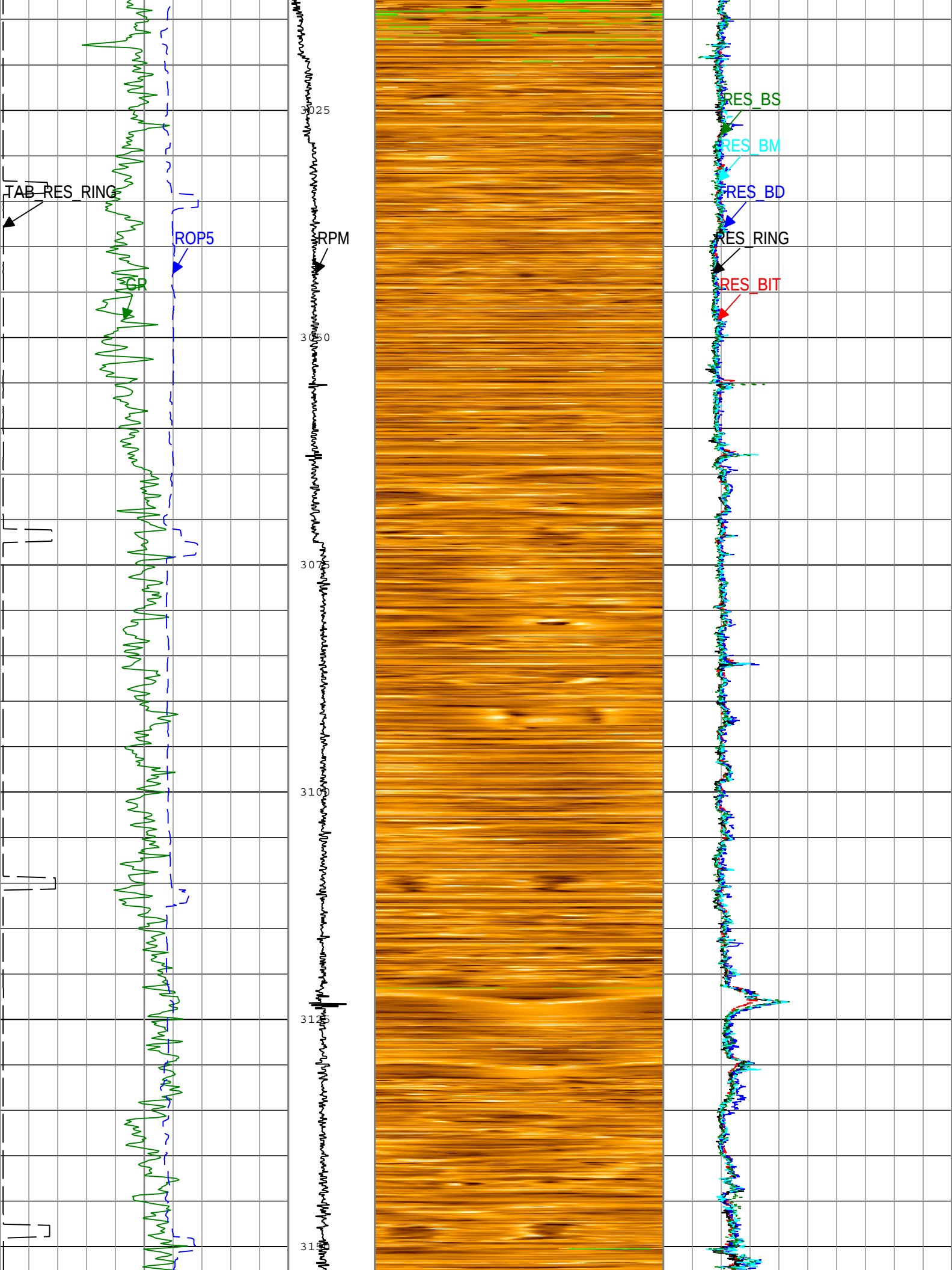
All depths are referenced to toolstring zero

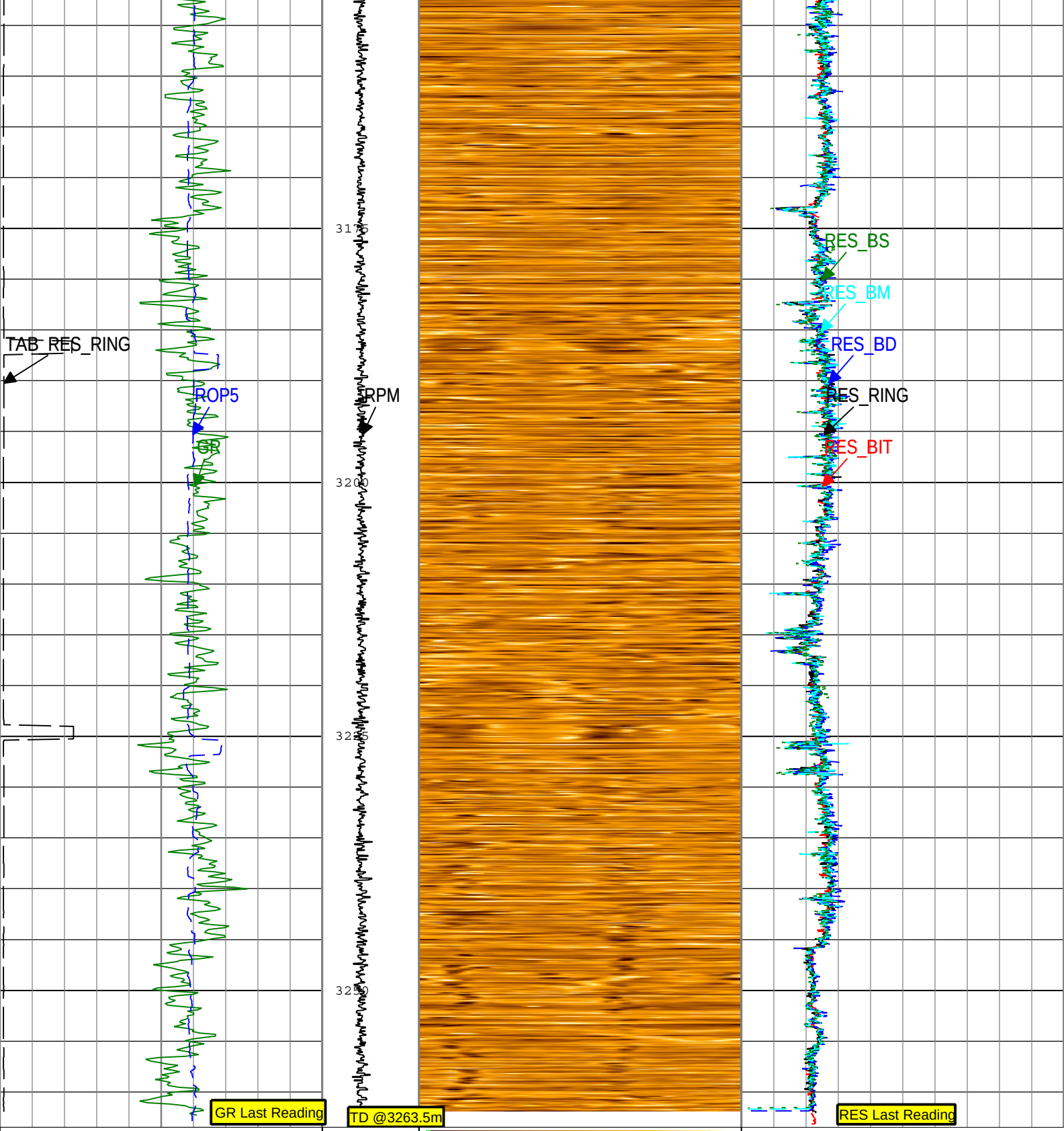
Log

Well Composite

Description: GVR Resistivity, Deep Button Image Format: Log (GVR Image-APWD Depth RM_NoTick) Index Scale: 1:500 Index Unit: m Index Type: Measured Depth Creation Date: 10-Jan-2013 17:23:18




TAB_RES_RING
ROP5
GR
RPM
RES_BS
RES_BM
RES_BD
RES_RING
RES_BIT
3025
3050
3075
3100
3125
3150



Gamma Ray (GR) RAB[1] RM

0 gAPI 150

Rate of penetration averaged over the last 5 ft (1.5 m) (ROP5) RT

100 m/h 0

Ring Resistivity Time After Bit (TAB_RES_RING) RAB[1]

0 h 3

Rotational Speed (RPM) RAB[1] RM

0 c/min 200

Dynamic Gaussian Normalization

RAB - Deep Button Resistivity Image RAB[1] RM

Orientation: North Azimuth

N E S W N

Bit Resistivity (RES_BIT) RAB[1] RM

0 ohm.m 5

Ring Resistivity (RES_RING) RAB[1] RM

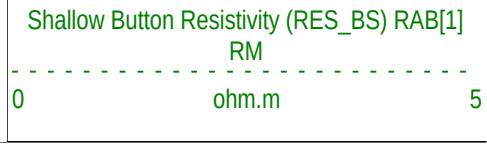
0 ohm.m 5

Deep Button Resistivity (RES_BD) RAB[1] RM

0 ohm.m 5

Medium Button Resistivity (RES_BM) RAB[1] RM

0 ohm.m 5



Description: GVR Resistivity, Deep Button Image Format: Log (GVR Image-APWD Depth RM_NoTick) Index Scale: 1:500 Index Unit: m Index Type: Measured Depth Creation Date: 10-Jan-2013 17:23:18

Channel Processing Parameters

Run1: Parameters

Parameter	Description	Tool	Value	Unit
BHK	Drilling Fluid Potassium Concentration	Borehole	0	%
BHT	Bottom Hole Temperature	Borehole	5	degC
BS	Bit Size	DNMSESSION	Depth Zoned	in
DEPTH_SEL	Depth Selection Parameter	DNMSESSION	Driller's Depth	
DFD	Drilling Fluid Density	Borehole	1.04	g/cm3
DFT	Drilling Fluid Type	Borehole	Water	
GGRD	Geothermal Gradient	Borehole	18.23	degC/km
GRSE_RM	Generalized Mud Resistivity Selection for Recorded Mode	Borehole	REMS	
GTSE_RT	Generalized Temperature Selection for Realtime Mode	Borehole	GTEM_LINEST(RT)	
MST	Mud Sample Temperature	Borehole	20.3	degC
RES_BD_IMG_SEL	GVR Output Resistivity Image Selection, Deep Button	RAB8	Compensated Uphole	
RMS	Resistivity of Mud Sample	Borehole	0.22	ohm.m
SHT	Surface Hole Temperature	Borehole	1.5	degC
TD	Total Measured Depth	Borehole	3263.5	m
TEMP_SEL_RAB	RAB Temperature Selection	RAB8	Tool	

Run1Depth Zoned Parameters

Parameter	Value	Start (m)	Stop (m)
BS	0	2965.7	2969
BS	12.25	2969	3263.46

All depth are actual.

Tool Control Parameters

Run1: Parameters

Parameter	Description	Tool	Value	Unit
OFFBTM_TH	Threshold for deciding whether the bit is off bottom	DNMSESSION	0.6	m

Well Composite

Integration Summary

Output Channel(s)	Output Description	Input Parameter	Output Value	Unit

Composite Summary

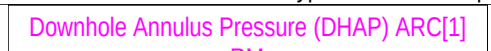
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Include Parallel Data
Run1	Ream Down 2	Down	2967.48 m	2980.69 m	26-Dec-2012 11:22:08 PM	26-Dec-2012 11:46:15 PM	
Run1	Drilling	Down	2965.02 m	3263.47 m	26-Dec-2012 11:03:41 PM	27-Dec-2012 4:58:36 PM	

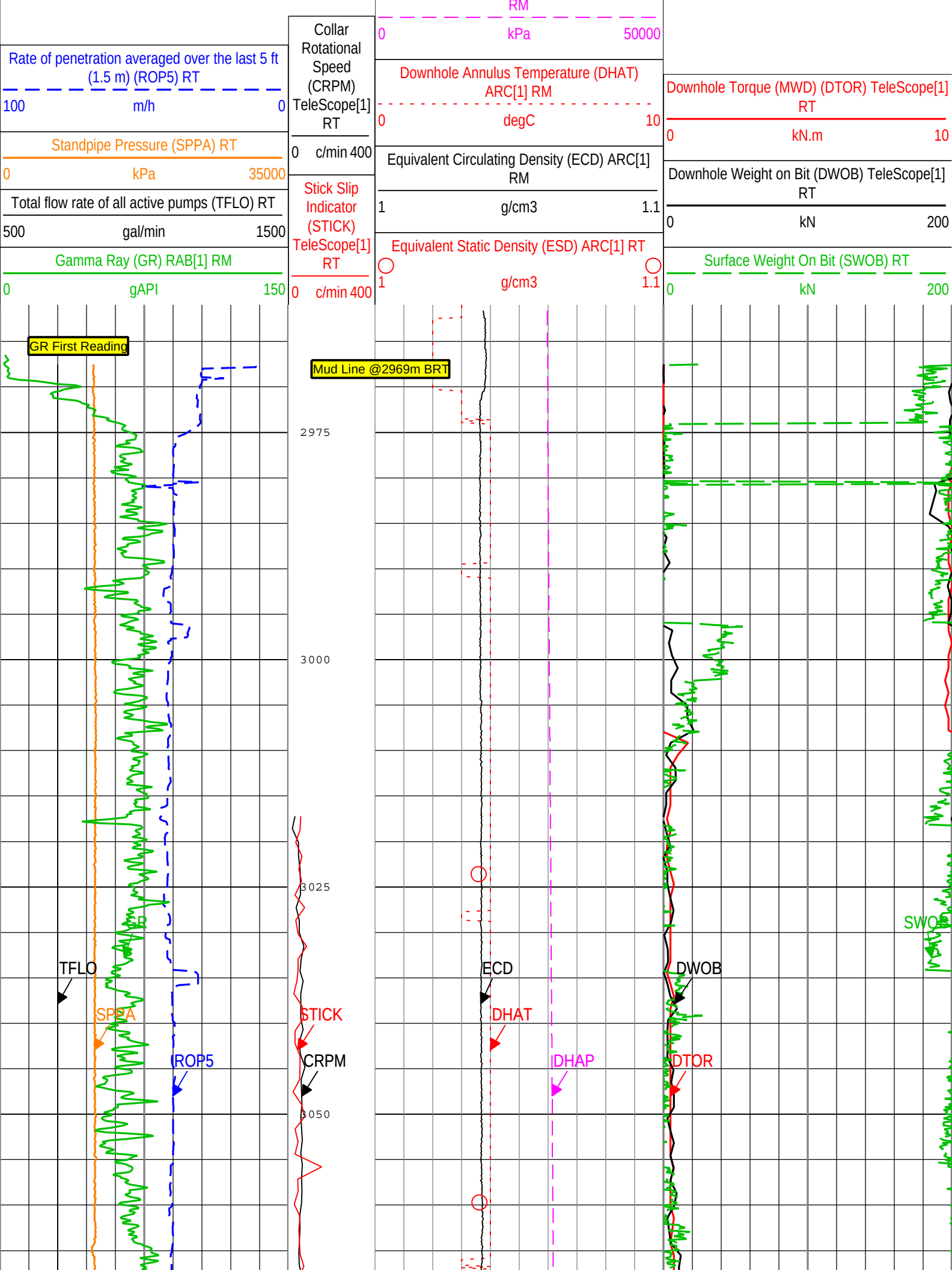
All depths are referenced to toolstring zero

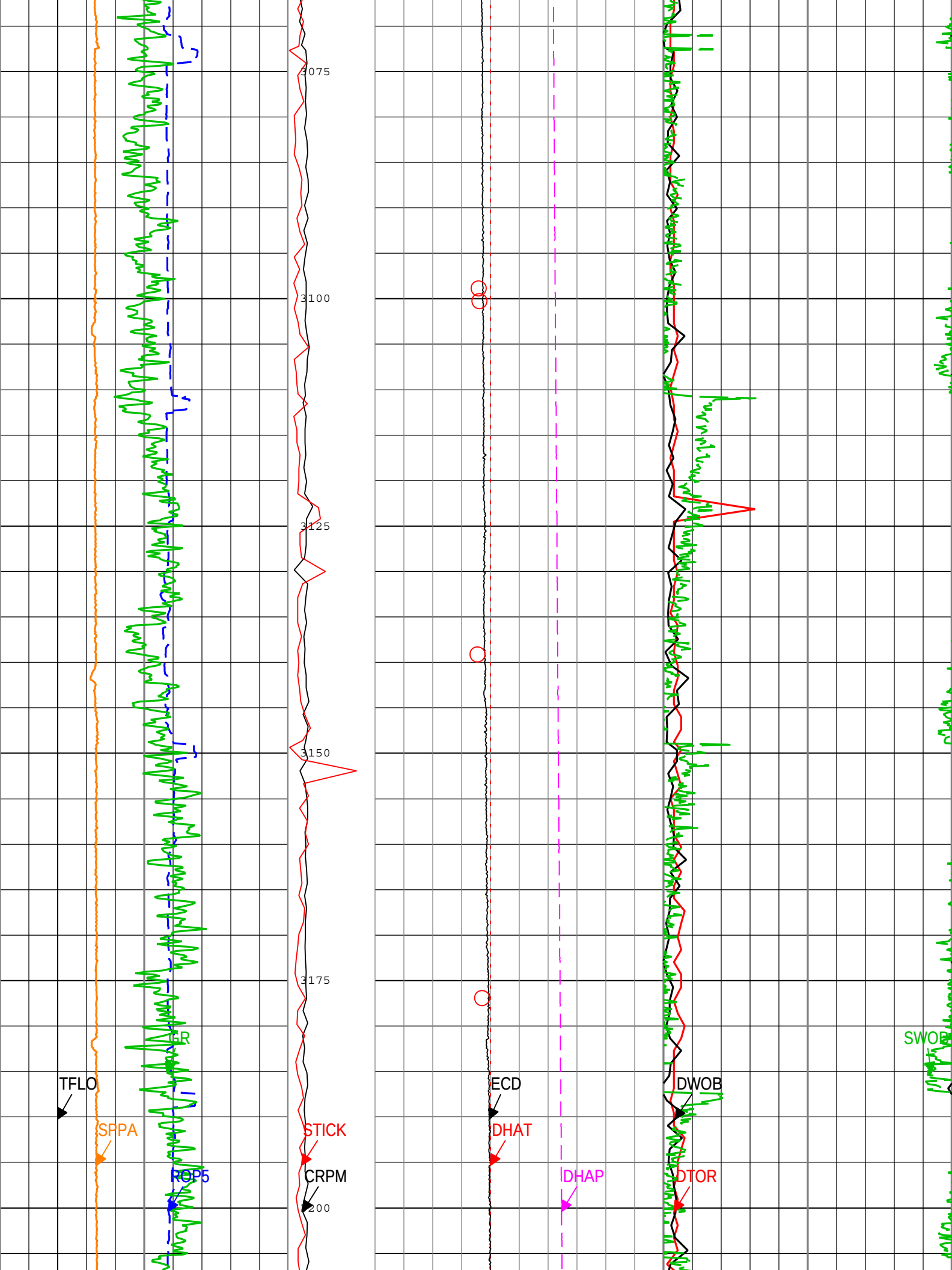
Log

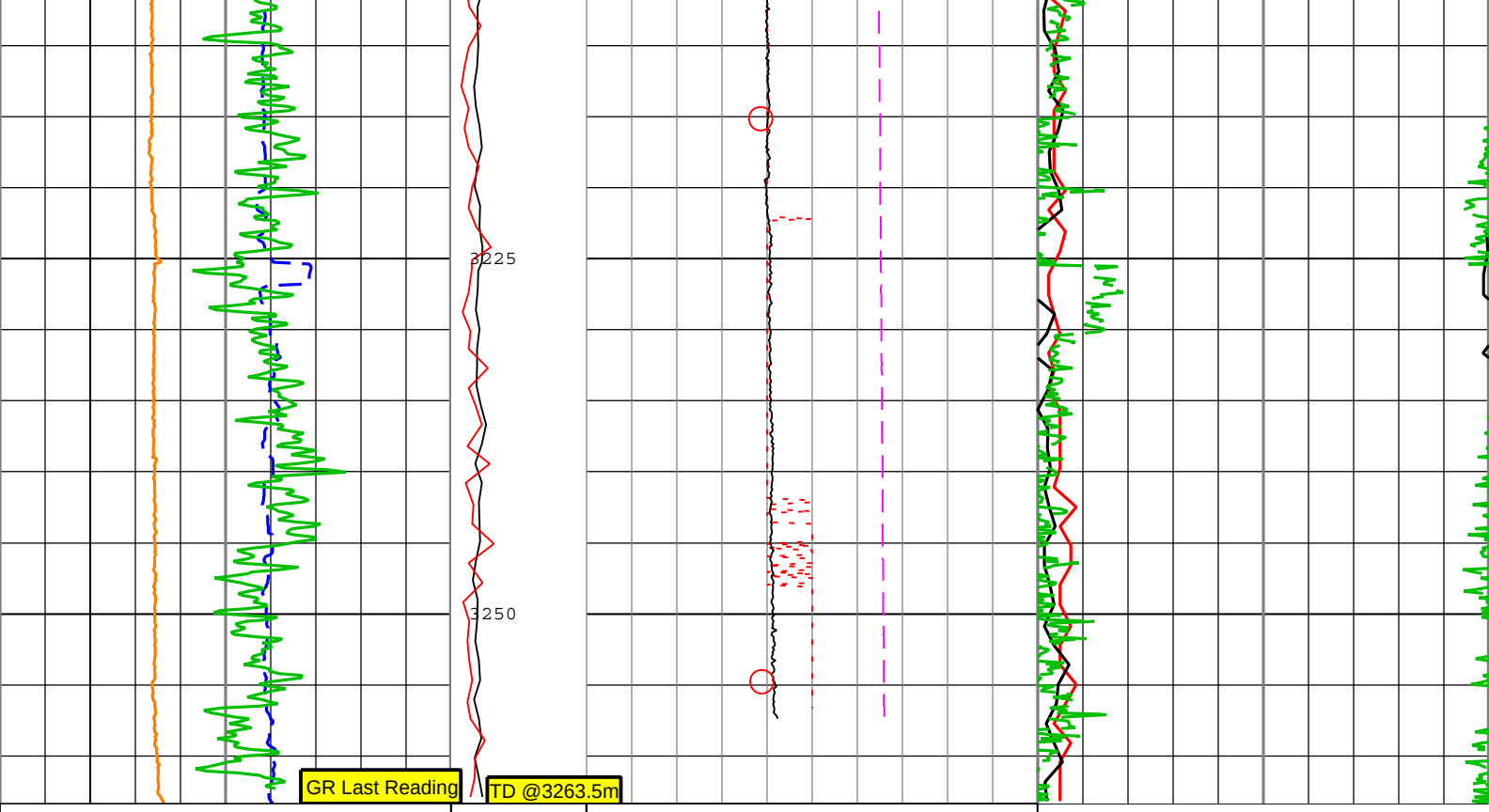
Well Composite

Description: Format: Log (DML Depth RM) Index Scale: 1:500 Index Unit: m Index Type: Measured Depth Creation Date: 10-Jan-2013 17:23:22




Rate of penetration averaged over the last 5 ft (1.5 m) (ROP5) RT
100
m/h
0
Standpipe Pressure (SPPA) RT
0
kPa
35000
Total flow rate of all active pumps (TFLO) RT
500
gal/min
1500
Gamma Ray (GR) RAB[1] RM
0
gAPI
150
Collar Rotational Speed (CRPM) TeleScope[1] RT
0
c/min
400
Stick Slip Indicator (STICK) TeleScope[1] RT
0
c/min
400
RM
0
kPa
50000
Downhole Annulus Temperature (DHAT) ARC[1] RM
0
degC
10
Equivalent Circulating Density (ECD) ARC[1] RM
1
g/cm3
1.1
Equivalent Static Density (ESD) ARC[1] RT
1
g/cm3
1.1
Downhole Torque (MWD) (DTOR) TeleScope[1] RT
0
kN.m
10
Downhole Weight on Bit (DWOB) TeleScope[1] RT
0
kN
200
Surface Weight On Bit (SWOB) RT
0
kN
200
GR First Reading
Mud Line @2969m BRT
2975
3000
3025
3050
GR
TFLO
SPPA
ROP5
STICK
CRPM
ECD
DHAT
IDHAP
DWOB
DTOR
SWOB


3075
3100
3125
3150
3175
GR
TFLO
SPPA
ROP5
STICK
CRPM
200
ECD
DHAT
DHAP
DWOB
DTOR
SWOB



Rate of penetration averaged over the last 5 ft (1.5 m) (ROP5) RT
100 m/h 0

Standpipe Pressure (SPPA) RT
0 kPa 35000

Total flow rate of all active pumps (TFLO) RT
500 gal/min 1500

Gamma Ray (GR) RAB[1] RM
0 gAPI 150

Collar Rotational Speed (CRPM) TeleScope[1] RT
0 c/min 400

Stick Slip Indicator (STICK) TeleScope[1] RT
0 c/min 400

Downhole Annulus Pressure (DHAP) ARC[1] RM
0 kPa 50000

Downhole Annulus Temperature (DHAT) ARC[1] RM
0 degC 10

Equivalent Circulating Density (ECD) ARC[1] RM
1 g/cm3 1.1

Equivalent Static Density (ESD) ARC[1] RT
1 g/cm3 1.1

Downhole Torque (MWD) (DTOR) TeleScope[1] RT
0 kN.m 10

Downhole Weight on Bit (DWOB) TeleScope[1] RT
0 kN 200

Surface Weight On Bit (SWOB) RT
0 kN 200

Description: Format: Log (DML Depth RM) Index Scale: 1:500 Index Unit: m Index Type: Measured Depth Creation Date: 10-Jan-2013 17:23:22

Calibration Report

RAB8 (GeoVision Resistivity 825) Calibration - Run Run1

Primary Equipment :

Electronics Chassis	RBEC	865

M21V - Resistivity

Master (Time Frame File): 04:11:41 23-Nov-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Monitor 2 at T1 Calibration Coefficient		Master	1.00000	0.90000	1.02224	1.20000

M22V - Resistivity

Master (Time Frame File): 04:11:41 23-Nov-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Monitor 2 at T2 Calibration Coefficient		Master	1.00000	0.90000	0.99342	1.20000

M01V - Resistivity

Master (Time Frame File): 04:11:41 23-Nov-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Monitor 0 at T1 Calibration Coefficient		Master	1.00000	0.90000	1.05380	1.20000

M02V - Resistivity

Master (Time Frame File): 04:11:41 23-Nov-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Monitor 0 at T2 Calibration Coefficient		Master	1.00000	0.90000	1.04467	1.20000

R1V - Resistivity

Master (Time Frame File): 04:11:41 23-Nov-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Ring at T1 Calibration Coefficient		Master	0.01000	0.00950	0.01096	0.01250

R2V - Resistivity

Master (Time Frame File): 04:11:41 23-Nov-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Ring at T2 Calibration Coefficient		Master	0.01000	0.00950	0.01097	0.01250

BDM1 - Resistivity

Master (Time Frame File): 04:11:41 23-Nov-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Button Deep at T1 Calibration Coefficient		Master	0.00067	0.00057	0.00066	0.00077

BDM2 - Resistivity

Master (Time Frame File): 04:11:41 23-Nov-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Button Deep at T2 Calibration Coefficient		Master	0.00067	0.00057	0.00066	0.00077

BMM1 - Resistivity

Master (Time Frame File): 04:11:41 23-Nov-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Button Medium at T1 Calibration Coefficient		Master	0.00067	0.00057	0.00069	0.00077

BMM2 - Resistivity

Master (Time Frame File): 04:11:41 23-Nov-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Button Medium at T2 Calibration Coefficient		Master	0.00067	0.00057	0.00069	0.00077

BSM1 - Resistivity

Master (Time Frame File): 04:11:41 23-Nov-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Button Shallow at T1 Calibration Coefficient		Master	0.00067	0.00057	0.00067	0.00077

BSM2 - Resistivity

Master (Time Frame File): 04:11:41 23-Nov-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Button Shallow at T2 Calibration Coefficient		Master	0.00067	0.00057	0.00067	0.00077

PGR - Gamma Ray: Blanket

Master (Time Frame File): 02:46:22 23-Nov-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Gamma Ray API Conversion Factor		Master	8.5500	6.5000	10.2700	10.6000

Company: JAMSTEC

Well: C0021A

Field: Nankai Trough - Kumano Basin

Rig Name: Chikyu

Prefecture: Wakayama

Country: Japan

Schlumberger

geoVISION - APWD

Gamma Ray - Resistivity - Image - APWD

12.25in Recorded Mode Log, Measured Depth 1:500