Schlumberger

Company: Lamont-Doherty Borehole Research

Well: IODP Expedition 311 CAS-02C
Field: Cascadia Margin
Rig: JOIDES Resolution State: Pacific Ocean

Company: Lamont-Doherty Borehole Research
Well: IODP Expedition 311 CAS-02C
Location: Vancouver Island
Field: Cascadia Margin
Rig: JOIDES Resolution

GeoVISION Service
1:240 Measured Depth
Recorded Mode Log

Location

Total depth:	2562 m
Spud date:	20-Sep-2005
Runs:	1 To 1

Elevation

K.B.	10.06 m
G.L.	-2202 m
D.F.	9.60 m

Permanent datum: MEAN SEA LEVEL Elev.: 0 m
Log measured from: Kelly Bushing 10.06 m above Perm. datum
Depth reference: Driller's Depth

Service Order no.	NAD 27	Longitude	Latitude
40012416	UTM Zone 10 N	W 126.98322	N 48.64480

Depth logged: 2212 m To 2561 m
Date logged: 20-Sep-05 To 21-Sep-05

Mag decl: 18.83 deg.
Mag dip: 69.17 deg.

Other services:
EcoScope, sonicVISION, proVISION

Bore hole record

Hole size	from	to
9.875 in.	2212 m	2562 m

Casing record

Size	Density	from	to

Mud record

Type	from	to
Seawater	2212 m	2562 m

Borehole deviation record

Min	Max	from	to

Surface equipment

Unit	TWIS
Depth system	Geograph

Software record

IDEAL Wis	ID10_2C_01		
SPM	hspm10_1c_05		
LWD	See Remarks		
MWD	9.0_C03		

OTHER SERVICES FOR RUN 1
Real Time STC Projection
Annular Pressure While Drilling

OTHER SERVICES FOR RUN

OTHER SERVICES FOR RUN

REMARKS: RUN NUMBER

REMARKS: RUN NUMBER

REMARKS: RUN NUMBER 1
Run Objective: Drill and log sites CAS-02C to select the coring point.
Source of data: Recorded Mode
Reason POOH: To change batteries before start drilling the next sites.
geoVISION gamma ray is corrected for mud weight and bit size.
geoVISION resistivity is environmentally corrected for mud resistivity.
Neutron Porosity was computed using a sandstone matrix of 2.65 g/cc and was corrected for bit size, temperature, borehole salinity and mud hydrogen index.
Barite was not present in the mud

Tool Record Rates:

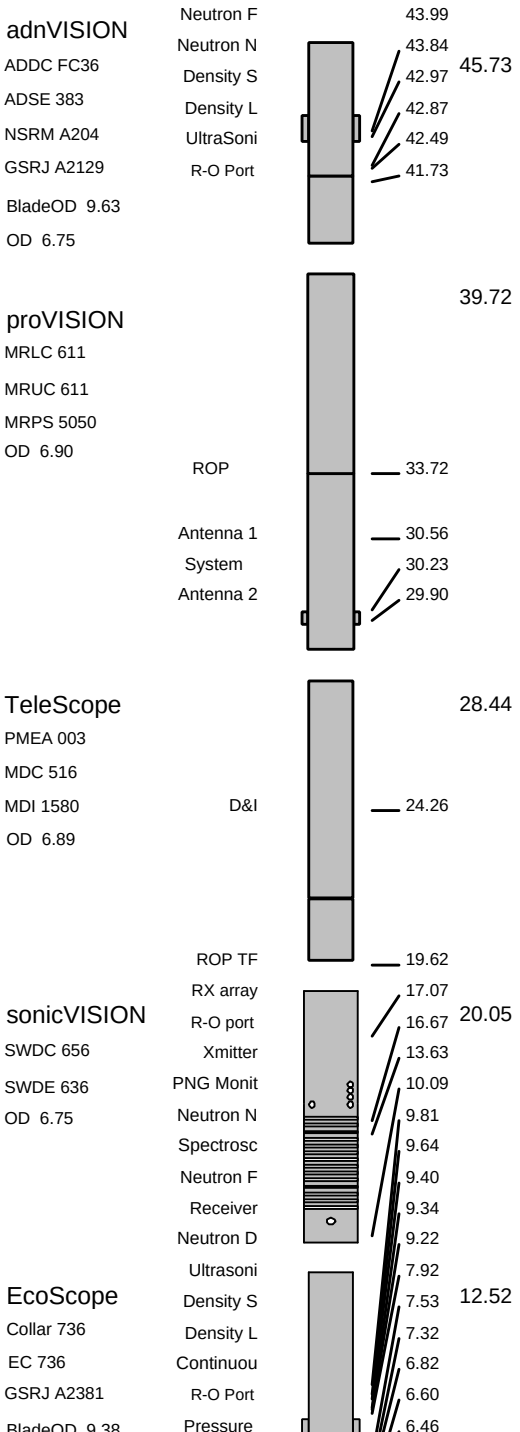
adnVISION Density & Neutron @ 10 sec
geoVISION Res @ 5 sec, GR @ 10 sec

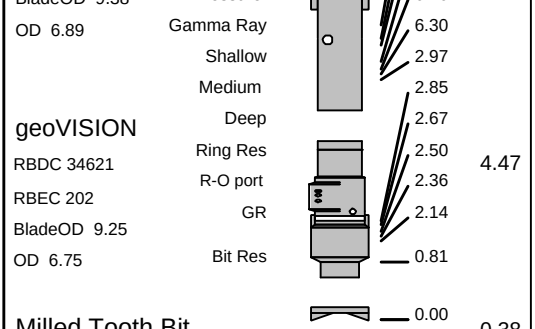
Tool Software Version:
TeleScope: 9.0_C03 adnVISION: 8.3_A02
geoVISION: 6.2_B01
Crew: L. Loh and D. Buster

EQUIPMENT DESCRIPTION

RUN1	RUN	RUN

DOWNHOLE EQUIPMENT





Bit Run Summary

Run number		1									
Bit size	in.	9.875									
Bit start depth	m	2212									
Bit end depth	m	2562									
Top interval logged	m	2212									
Bottom interval logged	m	2561									
Begin log: time		23:08									
Begin log: date		20-Sep-05									
End log: time		19:28									
End log: date		21-Sep-05									
Mud data											
Depth	m	2212									
Type		Seawater									
Mud weight	ppg	8.5									
Solids	%	n/a									
Chlorides	mg/L	Seawater									
Rm	ohmmdegF	Seawater									
Rmf	ohmmdegF	Seawater									
Rmc	ohmmdegF	Seawater									
Potassium	ppm	n/a									
Environmental data											
GR											
Mud weight	ppg	8.5									
Bit size	in.	9.875									
Resistivity											
Neutron porosity											
Hole Size	in.	9.875									
Mud weight	ppg	8.5									
Temperature	degC	4									
Mud salinity	ppm	Seawater									
Formation salinity	ppm	n/a									
Recording rate 1	SEC	5 sec									
Recording rate 2	SEC	10 sec									
Filtering GR		3 points									
Filtering density		3 points									
Filtering Neutron		3 points									
Company representative		G. Myers									
Schlumberger D&M Personnel		L. Loh									

Variable Name	Variable Description	Run Name & Value

Run Number 1

General Information

BHT_RM	Bottom Hole Temperature (RM)	41.000008
BSAL_RM	Mud Salinity (RM)	0.000000
BS_RM	Bit Size (RM)	9.875000
COEF_M	User Defined FEXP in Clean Sand	1.650000
C_WS	Overpressure correction to Sw and M	1.000000
FEXP	Formation Factor Exponent(RM)	2.000000
FNUM	Formation Factor Enumerator(RM)	1.000000
FPHI_RM	Formation Factor Porosity Source (RM)	XPLOT
MST_RM	Mud Sample temperature (RM)	75.000000
MW_RM	Mud Weight (RM)	8.500000
OBMF_RM	Oil Based Mud (RM)	NO
RHOF_RM	Mud Filtrate Density (RM)	1.000000
RHOM_RM	Matrix density (RM)	2.650000
RMS_RM	Resistivity of Mud Sample (RM)	1.000000
RWA_COMP_M	Rwa computation model	BASIC
RWA_DEN_AD	Rwa Density Input ADN	RHOB
RWA_DEN_CD	Rwa Density Input CDN	RHOB
RWA_DEN_IN	Rwa Density Input	RHOB
RWA_FORM_M	Rwa computation formation model	CLASTIC
RWA_RES_IN	Rwa computation resistivity input	RT
RWS_RM	Resistivity of Connate Water (RM)	1.000000
SHT_RM	Surface Hole Temperature (RM)	15.320000
TD_RM	Total Measured Depth (RM)	8405.500000
TWS_RM	Temperature of Connate Water (RM)	75.000000
VF_ILLI	Fraction of illite in shales	0.500000
VF_KAOL	Fraction of kaolinite in shales	0.500000
VF_MONT	Fraction of montmorillonite in shales	0.000000
XPDM_RM	Cross plot density porosity multiplier	0.675000
XPNM_RM	Cross plot neutron porosity multiplier	0.325000

RAB

LWD_RM/STATION_FILE/PARAMETER	Station Time-frame file name	Station
RAB/BTN_SLV_SIZE/PARAMETER	RAB: Button Sleeve Diameter	RAB6:
RAB/STAB_SIZE/PARAMETER	RAB: Stabilizer Diameter	RAB6:
BDBHCA	RAB: Button Deep Borehole A Factor	-0.025702
BDBHCB	RAB: Button Deep Borehole B Factor	0.000000
BHA_COEF_V	RAB: BHA Coef Generator Version	62012.000000
BITBHCA	RAB: Bit A Borehole Factor	0.084562
BITBHCB	RAB: Bit B Borehole Factor	0.000000
BIT_K_FACT	RAB: Bit K Factor	3.552125
BMBHCA	RAB: Button Medium Borehole A Factor	0.040313
BMBHCB	RAB: Button Medium Borehole B Factor	0.000000
BSBHCA	RAB: Button Shallow Borehole A Factor	0.072884
BSBHCB	RAB: Button Shallow Borehole B Factor	0.000000
BUT_KIMP_A	RAB: Button Impedance Coeff A	0.000000
BUT_KIMP_B	RAB: Button Impedance Coeff B	0.000000
DBUTTON_K_	RAB: Button Deep K factor	0.004559
DHS_VERSIO	RAB: DownHole Software Version	6.200100
GR_BHC_TOO	RAB: Gamma-Ray Borehole Coeff 1	6.750000
HI_CSDEPTH	RAB: Allow Hi-Resolution CS_DEPTH Image Data Output	YES
HI_DLIS_OU	RAB: Allow Hi-Resolution DLIS Image Data Output	YES
HI_RIVER_O	RAB: Allow Hi-Resolution River for Image Data Output	YES
IMAGE_MAX_	RAB: GR Image Maximum Scale Value	120.000000
IMAGE_MAX_	RAB: Image Maximum Resistivity Value	100.000000
IMAGE_MIN_	RAB: GR Image Minimum Scale Value	20.000000
IMAGE_MIN_	RAB: Image Minimum Resistivity Value	1.000000
JSD_RAB	RAB Acquisition start date	1.000000
MAG_DECL_R	RAB: Magnetic Declination	18.829971
MAG_INCL_R	RAB: Magnetic Dip	69.169991
MBUTTON_K_	RAB: Button Medium K Factor	0.004827
OBM	RAB: Oil base Mud	NO
ORIENTATIO	Rab Image Orientation	NORTH
RABBDA0	RAB: Button Deep A0 Coeff	-0.037426
RABBDA1	RAB: Button Deep A1 Coeff	0.021246
RABBDA2	RAB: Button Deep A2 Coeff	-0.005687
RABBDA3	RAB: Button Deep A3 Coeff	0.000650
RABBDA4	RAB: Button Deep A4 Coeff	-0.000026
RABBDA5	RAB: Button Deep A5 Coeff	0.000000
RABBDMIN	RAB: Button Deep Minimum Value	0.050597
RABBITA0	RAB: Bit A0 Coeff	0.494524
RABBITA1	RAB: Bit A1 Coeff	-0.369180
RABBITA2	RAB: Bit A2 Coeff	0.168689
RABBITA3	RAB: Bit A3 Coeff	-0.034240
RABBITA4	RAB: Bit A4 Coeff	0.002516
RABBITA5	RAB: Bit A5 Coeff	0.000000
RABBITMIN	RAB: Bit Minimum Value	18.934801
RABBMA0	RAB: Button Medium A0 Coeff	-0.050768
RABBMA1	RAB: Button Medium A1 Coeff	0.028592
RABBMA2	RAB: Button Medium A2 Coeff	-0.007598
RABBMA3	RAB: Button Medium A3 Coeff	0.000860
RABBMA4	RAB: Button Medium A4 Coeff	-0.000034
RABBMA5	RAB: Button Medium A5 Coeff	0.000000
RABBMMIN	RAB: Button Medium Minimum Value	0.056611
RABBSA0	RAB: Button Shallow A0 Coeff	-0.067409
RABBSA1	RAB: Button Shallow A1 Coeff	0.035666
RABBSA2	RAB: Button Shallow A2 Coeff	-0.009049
RABBSA3	RAB: Button Shallow A3 Coeff	0.000985

RABBSA4	RAB: Button Shallow A4 Coeff	-0.000038
RABBSA5	RAB: Button Shallow A5 Coeff	0.000000
RABBSMIN	RAB: Button Shallow Minimum Value	0.078704
RABDHS	RAB Down Hole Software	4.000000
RABEC	RAB: Resistivity Env-Cor	YES
RABRNGA0	RAB: RING A0 Coeff	-0.032113
RABRNGA1	RAB: RING A1 Coeff	0.019285
RABRNGA2	RAB: RING A2 Coeff	-0.005312
RABRNGA3	RAB: RING A3 Coeff	0.000619
RABRNGA4	RAB: RING A4 Coeff	-0.000025
RABRNGA5	RAB: RING A5 Coeff	0.000000
RABRNGMIN	RAB: Ring Minimum Value	1.600639
RAB_BIT_EC	Bit Resistivity for ECAL_RAB?	YES
RAB_BIT_IN	Input Bit Resistivity for Inversion? (Recommended at the bit)	YES
RAB_CALIPE	Compute ECAL_RAB?	YES
RAB_DEEPBT	Deep Button Resistivity for ECAL_RAB?	YES
RAB_DEEPBT	Input Deep Button Resistivity for Inversion?	YES
RAB_INVERS	Perform Rt Inversion?	NO
RAB_INVERS	RAB Bit Sensor Weight for Inversion[0,1]	1.000000
RAB_INVERS	Ending Depth for GR Cutoff in Zone1 (default through the whole well)	100000.000000
RAB_INVERS	Continuity Multiplier[0,1]	0.500000
RAB_INVERS	RAB Deep Button Sensor Weight for Inversion[0,1]	1.000000
RAB_INVERS	RAB inversion for Dh?	YES
RAB_INVERS	RAB inversion for Di?	YES
RAB_INVERS	GR Cutoff for Shale Formation	75.000000
RAB_INVERS	GR Cutoff for Shale Formation in Zone1(default through the whole well)	75.000000
RAB_INVERS	GR Cutoff in Zone10	75.000000
RAB_INVERS	GR Cutoff in Zone2	75.000000
RAB_INVERS	GR Cutoff in Zone3	75.000000
RAB_INVERS	GR Cutoff in Zone4	75.000000
RAB_INVERS	GR Cutoff in Zone5	75.000000
RAB_INVERS	GR Cutoff in Zone6	75.000000
RAB_INVERS	GR Cutoff in Zone7	75.000000
RAB_INVERS	GR Cutoff in Zone8	75.000000
RAB_INVERS	GR Cutoff in Zone9	75.000000
RAB_INVERS	RAB Medium Button Sensor Weight for Inversion[0,1]	1.000000
RAB_INVERS	Resistivity Cutoff for Shale Formation	2.000000
RAB_INVERS	Resistive Invasion Allowed	NO
RAB_INVERS	RAB Ring Sensor Weight for Inversion[0,1]	1.000000
RAB_INVERS	RAB inversion for Rmud?	NO
RAB_INVERS	RAB inversion for Rt?	YES
RAB_INVERS	Rt to R-deepest separation penalty multiplier[0,1]	0.500000
RAB_INVERS	RAB inversion for Rxo?	YES
RAB_INVERS	RAB Shallow Button Sensor Weight for Inversion[0,1]	1.000000
RAB_INVERS	Inversion Threshold[0, 0.3]	0.010000
RAB_INVERS	Formation Water Resistivity	0.100000
RAB_INVERS	Formation Water Temperature	150.000000
RAB_MEDIUM	Medium Button Resistivity for ECAL_RAB?	YES
RAB_MEDIUM	Input Medium Button Resistivity for Inversion?	YES
RAB_QUAD	RAB: Process Quadrant data ?	YES
RAB_RIGMOD	Bit on Bottom?	YES
RAB_RING_E	Ring Resistivity for ECAL_RAB?	YES
RAB_RING_I	Imput RING Resistivity for Inversion?	YES
RAB_SHALLO	Shallow Button Resistivity for ECAL_RAB?	YES
RAB_SHALLO	Input Shallow Button Resistivity for Inversion?	YES
RAB_TAB	RAB: Compute TAB ?	YES
RAB_TECHLO	RAB: Generate Techlog ?	YES
RAB_TEMP_S	RAB Temperature Selection	MEASURED
RAB_TICKS	RAB: Generate Ticks ?	YES
READOUT_PO	RAB: ROP to Bit Face Distance	7.746063
RINGBHCA	RAB: Ring Borehole A Factor	0.298027
RINGBHCB	RAB: Ring Borehole B Factor	0.000000
RING_KIMP_	RAB: Ring Impedance Coeff A	0.000000
RING_KIMP_	RAB: Ring Impedance Coeff B	0.000000
RING_K_FAC	RAB: Ring K Factor	0.152085
SBUTTON_K_	RAB: Button Shallow K Factor	0.006557
SCALE_IMAG	RAB: Process Image Data	YES
STAB	RAB: Run with Stabilizer	YES
TFF_OFFSET	RAB Time-Frame File Time Offset	0.000000
TIMEFRAME_	RAB: Time Frame File Name	0.000000
TOOLTYPE	RAB: Azimuthal Tool	YES
TS_VERSION	RAB: ToolScope Software Version	0.000000
VRAB6	Rab Tool type (ENP/PILOT)	RAB6_C_SERIES
WIN_SIZE_D	RAB: Window Size for Scaling Dynamic Image	3.000000

ADN

ADN_CHASSI	ADN Chassis Type String	ADN
ADN_COLLAR	ADN Collar Type String	ADN
ADN_STAB_S	ADN Stabilizer Type String	ADN
ALPHA_COMP	Perform Density Enhanced Vertical Resolution process ?	YES
ALPHA_COMP	Perform Neutron Enhanced Vertical Resolution process ?	YES
AVE_ADN	ADN/Array Channels: perform averaging(RM) :	YES
A_DHS	ADN Down Hole Software Version String	YES
CHI_RM	Caliper High limit from BS (RM)	3.000000
CLO_RM	Caliper Low limit from BS (RM)	0.000000
DEVI	Well Section Deviation	1.000000
DTIK_SEL	ADN: Density Tick Channel Name	LSAZ
DTMUD	Delta-T for Mud	190.000000
DYN_IMG_CO	Generate Dynamic Normalized Image?	YES
ECC_CORR_A	Perform Eccentering Correction for TNPH?	YES
ENVCOR	Neutron Quadrant Processing: Environmental Correction?	YES
EVRL	EVR Process averaging number of samples (RM)	49
FCD	Future Casing (Outer) Diameter	0.000000
GCSE	Generalized Caliper Selection	BS
HPS	ADSE-EB (High Pressure Inconel Chassis)?	NO
IBS	Intergal Blade Stabilizer Collar?	NO

IBS	Intergal Blade Stabilizer Collar?	NO
IDQT	Image Derived Quality Threshold	1.000000
IHVS	Integrated Hole Volume Start Value(RM)	0.000000
IMAGE_MAX_	Image SOA (Quadrant) Right Scale	2.500000
IMAGE_MAX_	Image PEF(Segment) Right Scale	6.000000
IMAGE_MAX_	Image RHOB(Segment) Right Scale	2.650000
IMAGE_MIN_	Image SOA (Quadrant) Left Scale	0.000000
IMAGE_MIN_	Image PEF(Segment) Left Scale	2.000000
IMAGE_MIN_	Image RHOB(Segment) Left Scale	2.050000
LITHO_TYPE	Lithology (RM)	SAND
N1FTU_6_RM	ADN: Neutron Bank 1 Far Tubes used :	1-2-3
N2FTU_6_RM	ADN: Neutron Bank 2 Far Tubes used :	1-2-3
NNTU_RM	ADN Neutron Near Banks Used	1-2
NTIK_SEL	ADN: Neutron Tick Channel Name	FR11
SOCNL	Standoff Distance of the CNL Tool	1.000000
SSIZ_ADN	ADN Stabilizer Size	9.500000
STOH	ADN Density Top of Hole Sector (Left Boundary):	SECTOR_0
TRPM_RM	Average Tool Rotational Speed	20.000000
USMIN_RM	ADN:Minimum Ultrasonic standoff (RM)	0.180000
USWF_RM	ADN:Process Ultrasonic Waveform?	YES
VERS_ADN	ADN Downhole Software Version	8.300000
WSDI	Window Size of Dynamic Normalization Image	50.000000

Schlumberger Drilling & Measurements Parameter Insert Header Software version 2.0c

IDEAL Version: ID10_2B_08

IDF

ADN id10_2c_01

Format: GEOVIS_SER_5MD Vertical Scale: 1:240 Graphics File Created: 02-Oct-2005 16:58

PIP SUMMARY

Density Ticks, 0.1-ft

Neutron Ticks, 0.1 ft

Ring Samples

Gamma Ray Samples

Ring Resistivity Time After Bit (TAB_RAB_RING)
0 (HR) 10

Rate of Penetration, Averaged over Last 5ft (ROP5_RM)
100 (M/HR) 0

Density Caliper, Average (DCAV)
9 (IN) 14

RAB Gamma Ray (GR_RAB)
0 (GAPI) 150

Density Time After Bit (TAB_DEN)
0 (HR) 10

Shallow Button Resistivity (RES_BS)
0.2 (OHMM) 20

Medium Button Resistivity (RES_BM)
0.2 (OHMM) 20

Deep Button Resistivity (RES_BD)
0.2 (OHMM) 20

Bit Resistivity (RES_BIT)
0.2 (OHMM) 20

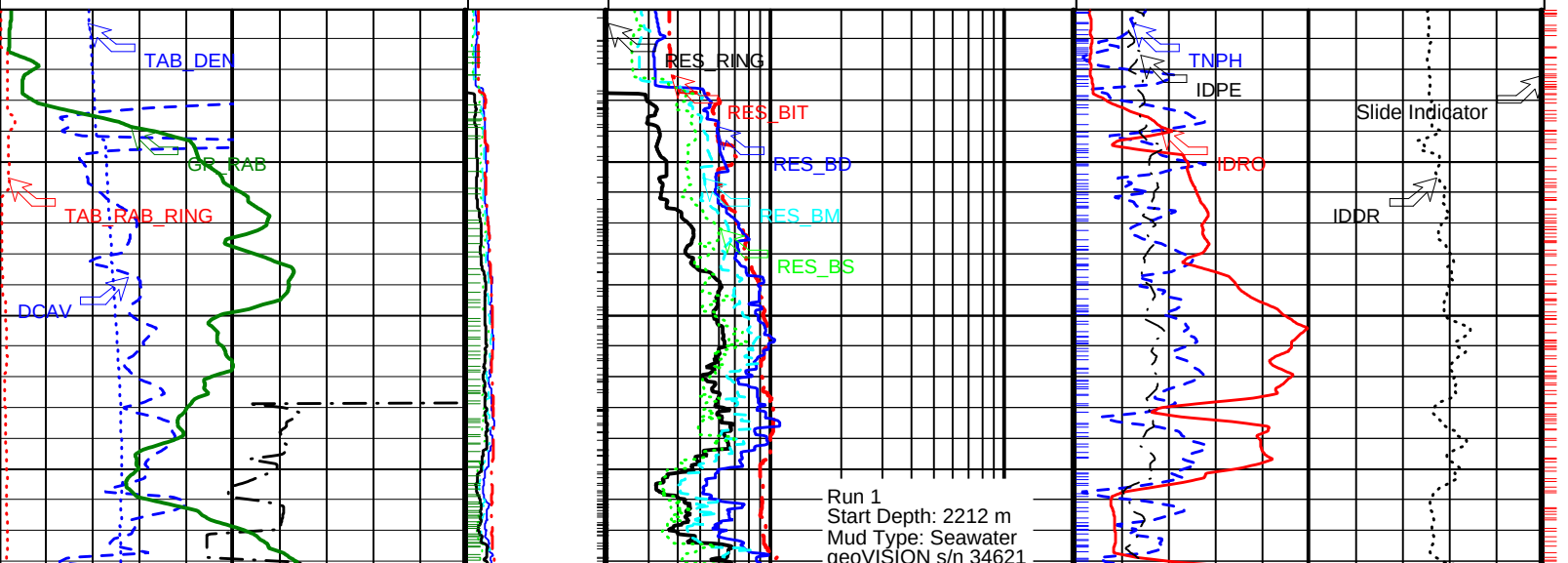
Ring Resistivity (RES_RING)
0.2 (OHMM) 20

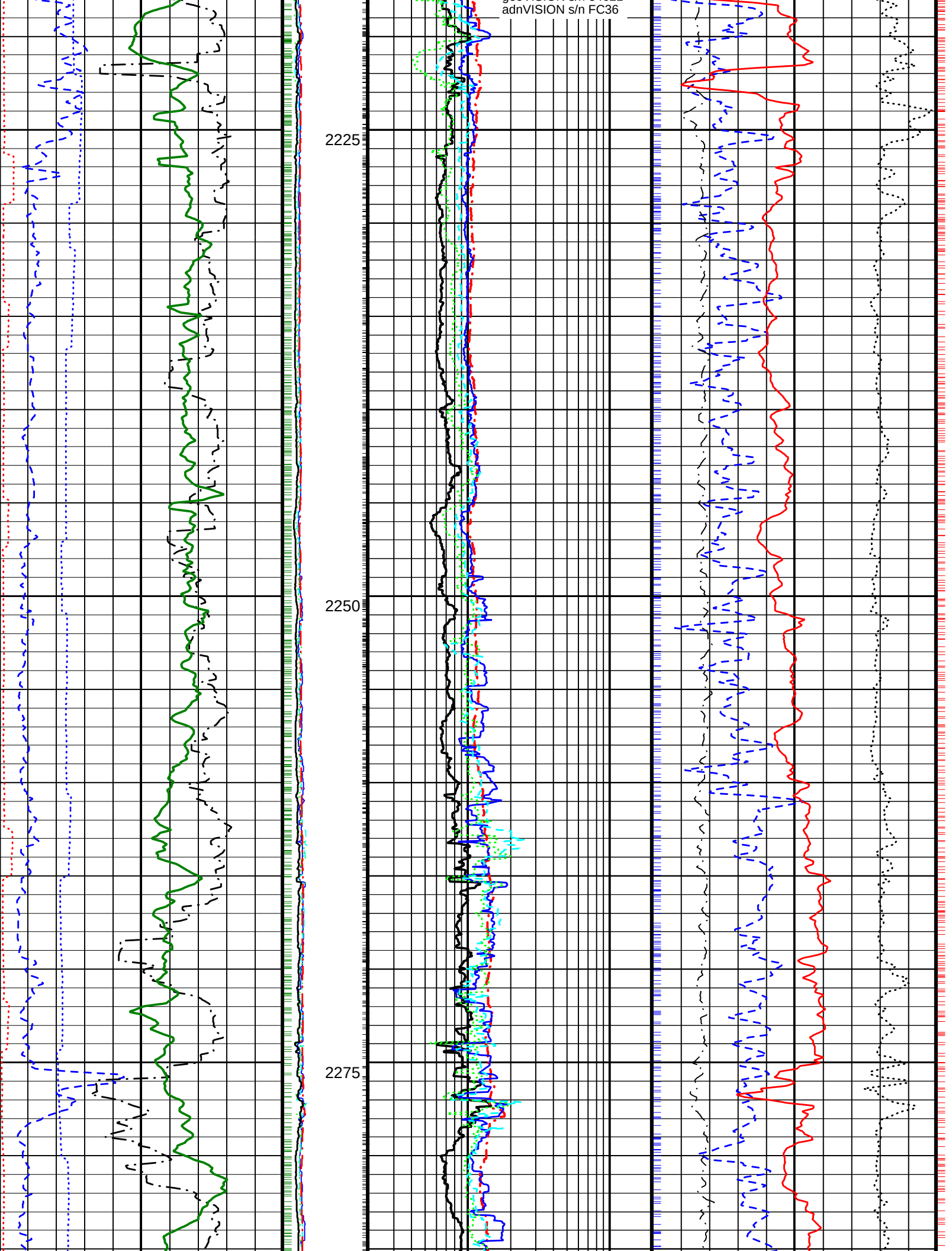
Image Derived Photoelectric Factor (IDPE)
0 (----) 10

Image Derived Density Correction (IDDR)
-0.8 (G/C3) 0.2

Image Derived Density (IDRO)
1 (G/C3) 2.65

Thermal Neutron Porosity (TNPH)
100 (PU) 0

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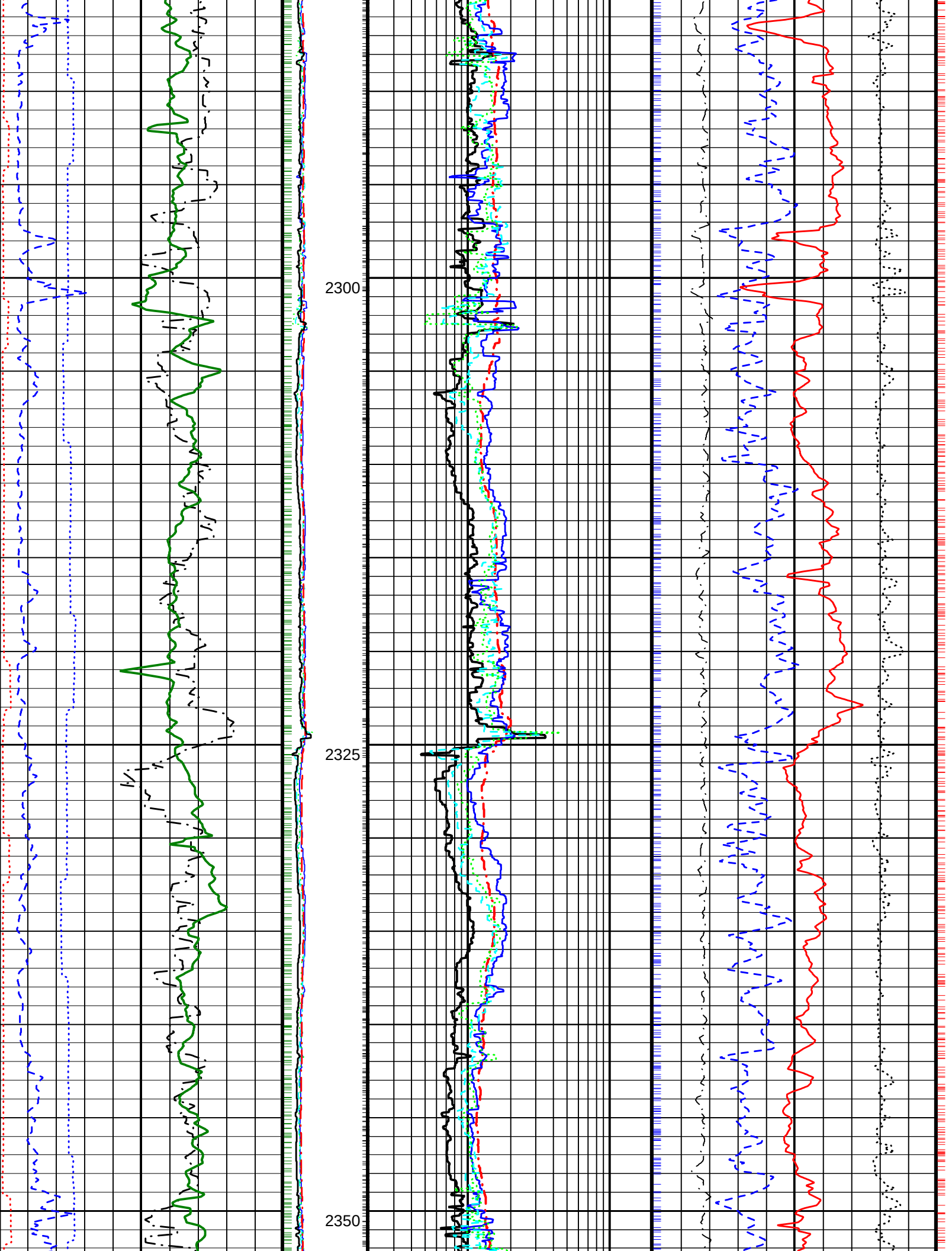
2250
2275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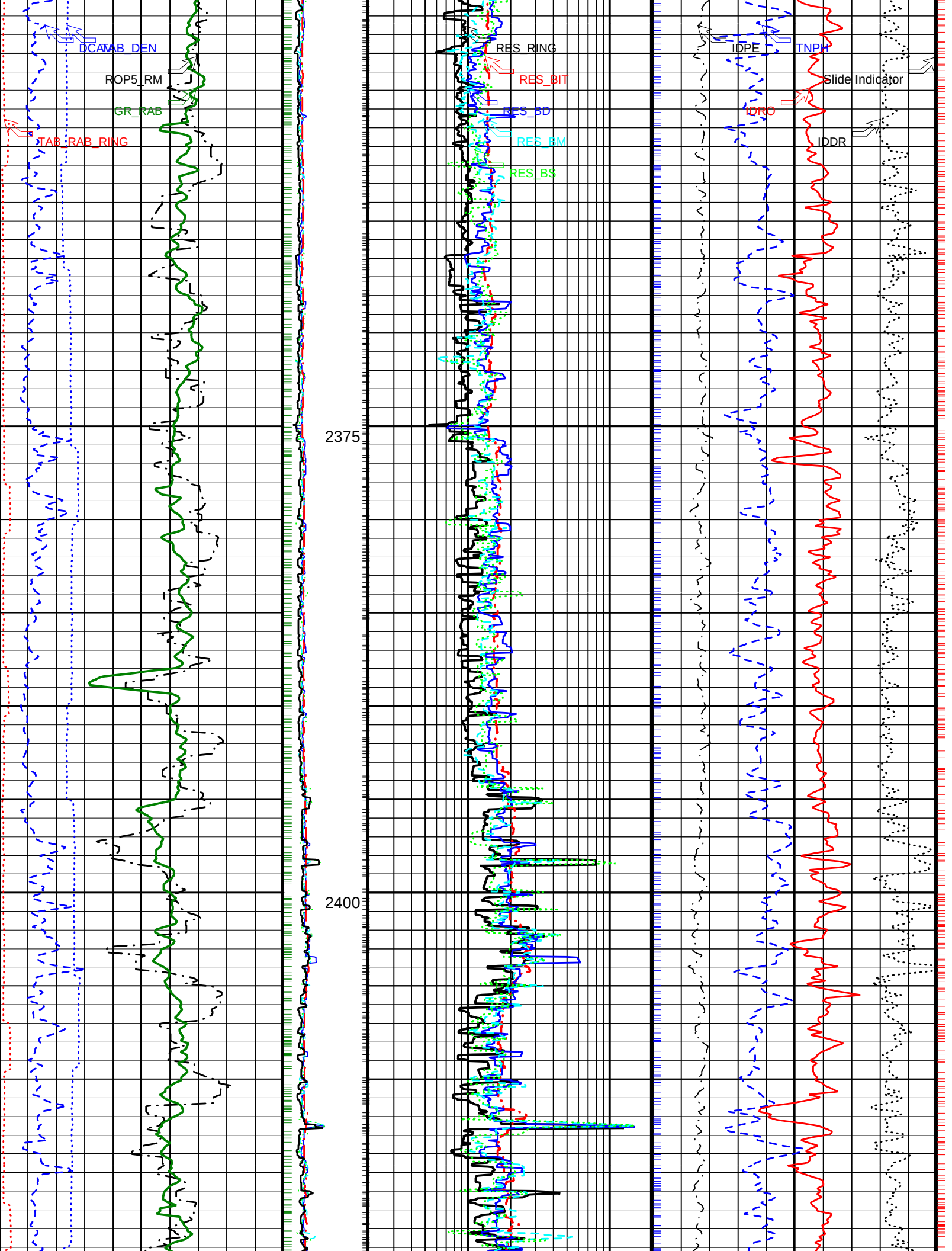
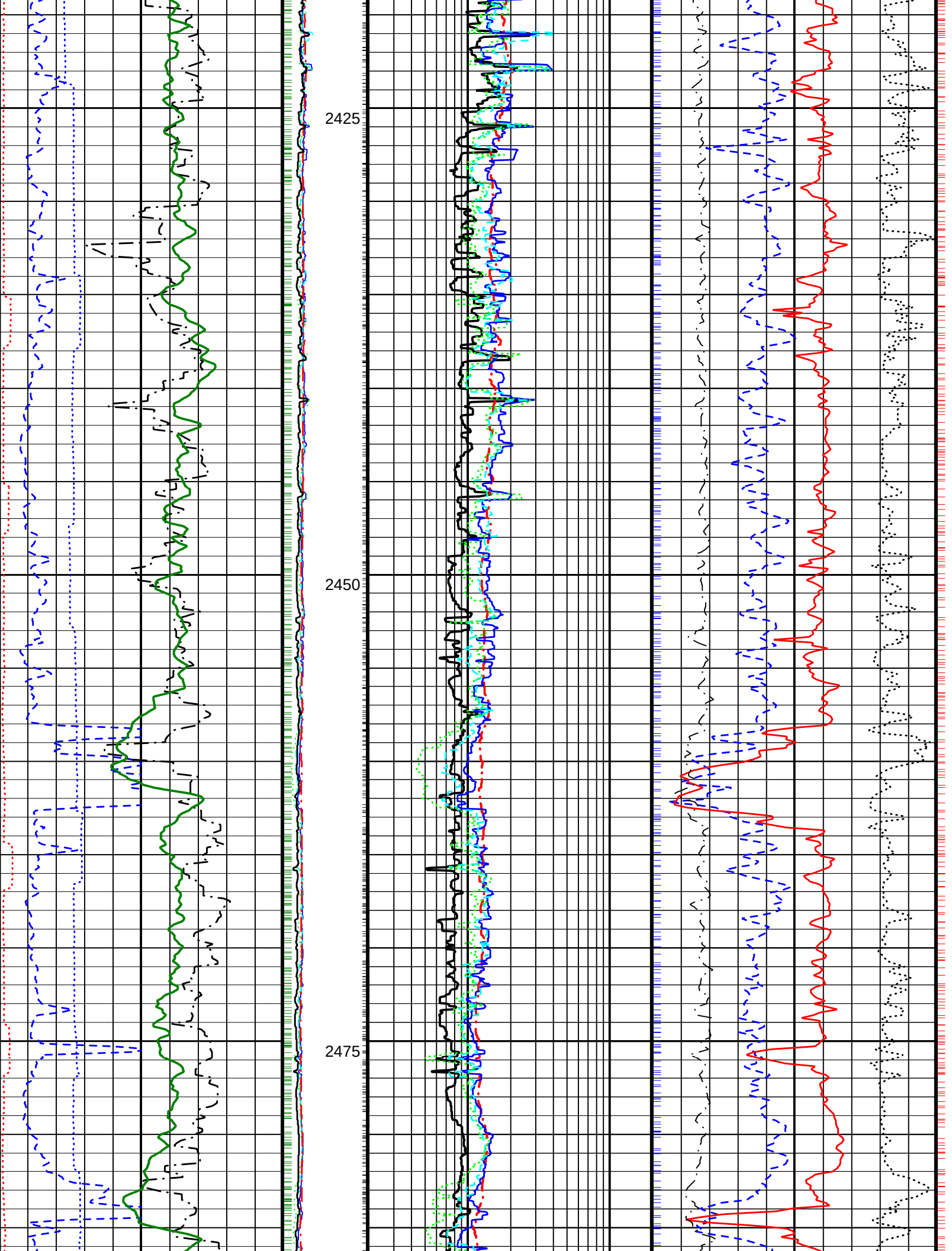

DCAVAB_DEN
ROP5_RM
GR_RAB
TAB_RAB_RING
RES_RING
RES_BIT
RES_BD
RES_BM
RES_BS
IDPE
TNPH
Slide Indicator
IDRO
IDDR
2375
2400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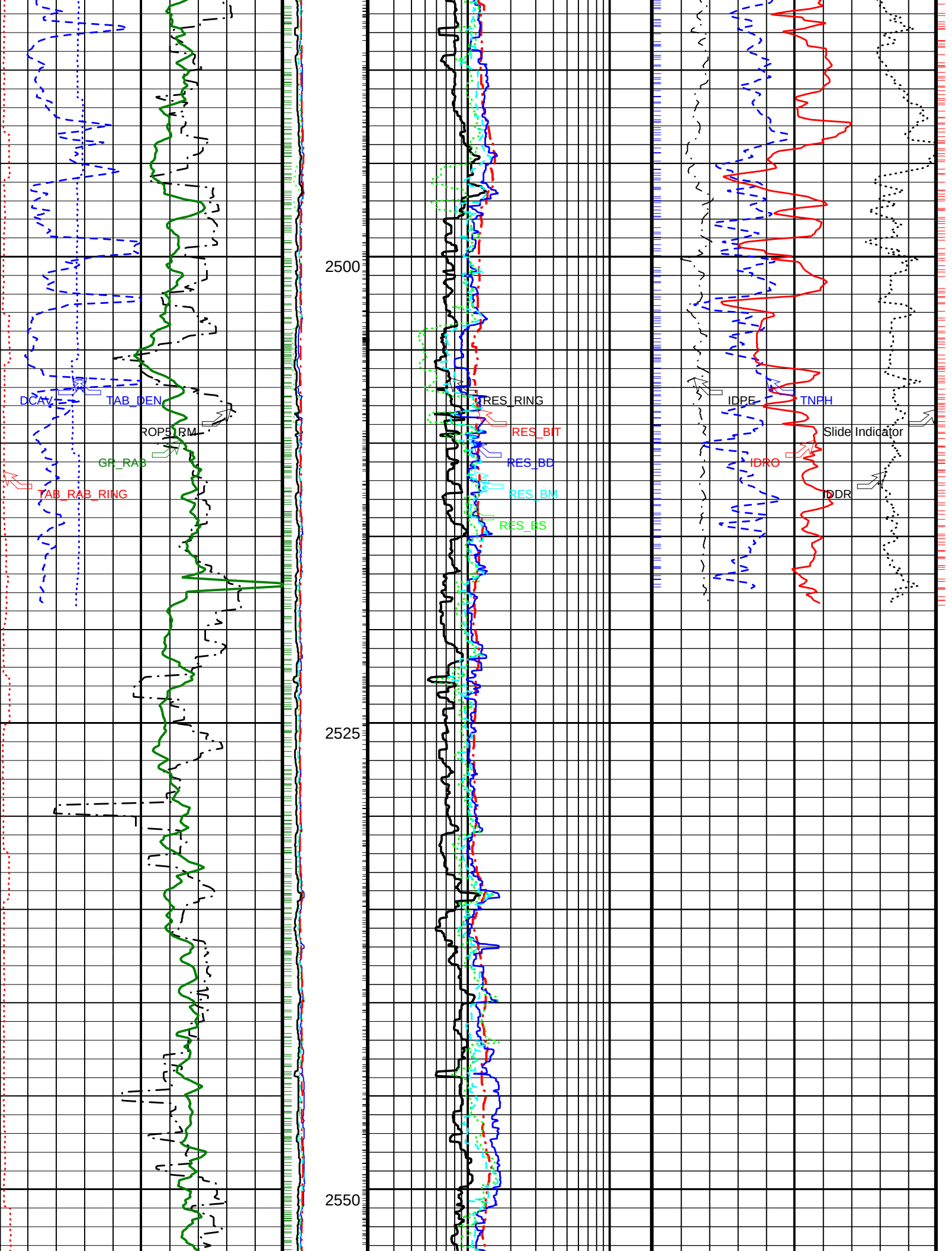
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DCAV
TAB_DEN
ROPS_RM
GR_RAB
TAB_RAB_RING
RES_RING
RES_BIT
RES_BD
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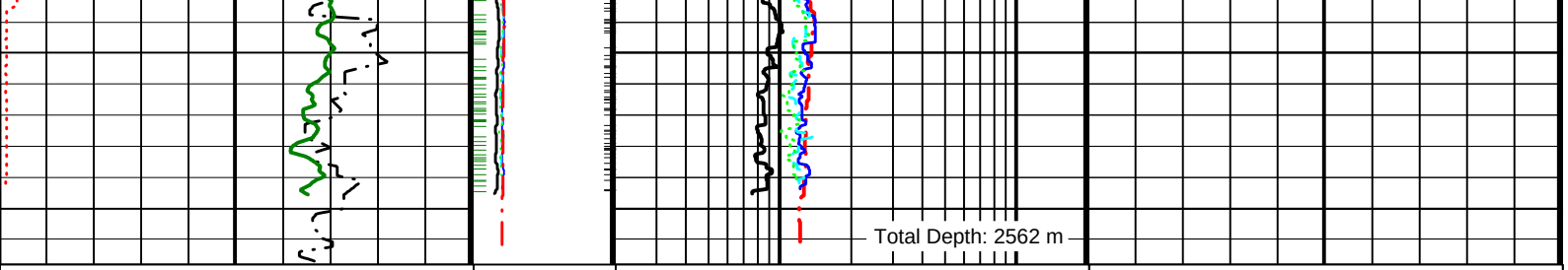
RES_BS
IDPE
TNPH
Slide Indicator
IDRO
IDDR



Density Time After Bit (TAB_DEN) 0 (HR) 10	Ring Resistivity (RES_RING) 0.2 (OHMM) 20	Thermal Neutron Porosity (TNPH) 100 (PU) 0
RAB Gamma Ray (GR_RAB) 0 (GAPI) 150	Bit Resistivity (RES_BIT) 0.2 (OHMM) 20	Image Derived Density (IDRO) 1 (G/C3) 2.65
Density Caliper, Average (DCAV) 9 (IN) 14	Deep Button Resistivity (RES_BD) 0.2 (OHMM) 20	Image Derived Density Correction (IDDR) -0.8 (G/C3) 0.2
Rate of Penetration, Averaged over Last 5ft (ROP5_RM) 100 (M/HR) 0	Medium Button Resistivity (RES_BM) 0.2 (OHMM) 20	Image Derived Photoelectric Factor (IDPE) 0 (----) 10
Ring Resistivity Time After Bit (TAB_RAB_RING) 0 (HR) 10	Shallow Button Resistivity (RES_BS) 0.2 (OHMM) 20	

PIP SUMMARY

Density Ticks, 0.1-ft

Neutron Ticks, 0.1 ft

Ring Samples

Gamma Ray Samples

IDEAL Version: ID10_2B_08

IDF

ADN id10_2c_01

6.75-in. Resistivity At-the-Bit / Equipment Identification

Primary Equipment:

Tool Name and Serial Number	RAB6 - CA	202
Calibration Status	-	

Master: 10-Sep-2005 13:31

6.75-in. Resistivity At-the-Bit Calibration

Resistivity: Fixture

Phase	Ring/T1 factor	Value
Master		1.011

0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)

Phase	Ring/T2 factor	Value
Master		1.005

0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)

Phase	M0/T1 factor	Value
Master		0.9991

0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)

Phase	M0/T2 factor	Value
Master		0.9925

0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)

Phase	M2/T1 factor	Value
Master		1.001

0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)

Phase	M2/T2 factor	Value
Master		0.9944

0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)

Phase	BTN shallow/T1 factor	Value
Master		1.013

0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)

Phase	BTN shallow/T2 factor	Value
Master		1.008

0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)

Phase	BTN medium/T1 factor	Value
Master		1.007

0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)

Phase	BTN medium/T2 factor	Value
Master		1.001

0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)

Phase	BTN deep/T1 factor	Value
Master		1.011

0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)

Phase	BTN deep/T2 factor	Value
Master		1.004

0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)

Master: Calibration date not found

6.75-in. Resistivity At-the-Bit Calibration

Gamma Ray: Blanket

Phase	Gamma ray factor			Value
	0.7500 (Minimum)	1.000 (Nominal)	1.250 (Maximum)	
Master				0.9517

6.75-in. Azimuthal Density Neutron / Equipment Identification

Primary Equipment:

Tool Name and Serial Number	ADN6 - CA	383
Collar Type and Serial Number	ADDC - AA	
Chassis Type and Serial Number	ADSE - EA	
Stabilizer Type and Serial Number	-	1
Neutron Logging Source	NSR - M	204
Density Logging Source	GSR - J/Z	2129
Stabilizer Size	9.50 - in.	
Calibration Status	-	

Master: 8-Sep-2005 9:54

6.75-in. Azimuthal Density Neutron Calibration

Density: Magnesium Block

Phase	LS window 3 - Mg CPS			Value
	250.0 (Minimum)	4125 (Nominal)	8000 (Maximum)	
Master				743.7

Phase	SS window 1 - Mg CPS			Value
	700.0 (Minimum)	9350 (Nominal)	18000 (Maximum)	
Master				2004

Phase	SS window 3 - Mg CPS			Value
	2500 (Minimum)	23750 (Nominal)	45000 (Maximum)	
Master				5405

Master: 8-Sep-2005 9:54

6.75-in. Azimuthal Density Neutron Calibration

Density: Aluminum Block

Phase	LS window 3 - Al CPS			Value
	50.00 (Minimum)	725.0 (Nominal)	1400 (Maximum)	
Master				123.6

Phase	SS window 1 - Al CPS			Value
	500.0 (Minimum)	4250 (Nominal)	8000 (Maximum)	
Master				1194

Phase	SS window 3 - Al CPS			Value
	1500 (Minimum)	15750 (Nominal)	30000 (Maximum)	
Master				3842

Master: 8-Sep-2005 9:54

6.75-in. Azimuthal Density Neutron Calibration

Density: Background

Phase	LS window 3 - Background CPS			Value
	15.00 (Minimum)	82.50 (Nominal)	150.0 (Maximum)	
Master				49.10

Phase	SS window 1 - Background CPS			Value
	40.00 (Minimum)	220.0 (Nominal)	400.0 (Maximum)	
Master				128.6

Phase	SS window 3 - Background CPS			Value
	150.0 (Minimum)	825.0 (Nominal)	1500 (Maximum)	
Master				549.5

Master: 8-Sep-2005 9:54

6.75-in. Azimuthal Density Neutron Calibration

Density: Water Block Check

Phase	Long spacing water density G/C3			Value
	1.002 (Minimum)	1.017 (Nominal)	1.032 (Maximum)	
Master				1.021

Phase	Short spacing water density G/C3			Value
	1.080 (Minimum)	1.110 (Nominal)	1.140 (Maximum)	
Master				1.128

Master: 8-Sep-2005 9:54

6.75-in. Azimuthal Density Neutron Calibration

Neutron: 3-Point Calibration

Phase	Far 1 tube 1 Air Point Measure CPS			Value
	15.00 (Minimum)	19.05 (Nominal)	21.00 (Maximum)	
Master				18.05

Phase	Far 1 tube 1 Rod Point Measure CPS			Value
	4.000 (Minimum)	4.857 (Nominal)	5.500 (Maximum)	
Master				4.513

Phase	Far 1 tube 1 H2O Point Measure CPS			Value
	1.900 (Minimum)	2.363 (Nominal)	2.700 (Maximum)	
Master				2.262

Phase	Far 1 tube 2 Air Point Measure CPS			Value
	16.00 (Minimum)	19.05 (Nominal)	22.00 (Maximum)	
Master				18.56

Phase	Far 1 tube 2 Rod Point Measure CPS			Value
	4.000 (Minimum)	4.857 (Nominal)	5.500 (Maximum)	
Master				4.823

Phase	Far 1 tube 2 H2O Point Measure CPS			Value
	1.900 (Minimum)	2.363 (Nominal)	2.800 (Maximum)	
Master				2.314

Phase	Far 1 tube 3 Air Point Measure CPS			Value
	15.00 (Minimum)	19.05 (Nominal)	21.00 (Maximum)	
Master				17.81

Phase	Far 1 tube 3 Rod Point Measure CPS			Value
	4.000 (Minimum)	4.857 (Nominal)	5.500 (Maximum)	
Master				4.630

Phase	Far 1 tube 3 H2O Point Measure CPS			Value
	1.900 (Minimum)	2.363 (Nominal)	2.700 (Maximum)	
Master				2.260

Phase	Far 2 tube 1 Air Point Measure	CPS	Value
Master			17.93
15.00 (Minimum)	19.05 (Nominal)	21.00 (Maximum)	

Phase	Far 2 tube 1 Rod Point Measure	CPS	Value
Master			4.776
4.000 (Minimum)	4.857 (Nominal)	5.500 (Maximum)	

Phase	Far 2 tube 1 H2O Point Measure	CPS	Value
Master			2.277
1.900 (Minimum)	2.363 (Nominal)	2.700 (Maximum)	

Phase	Far 2 tube 2 Air Point Measure	CPS	Value
Master			18.39
16.00 (Minimum)	19.05 (Nominal)	22.00 (Maximum)	

Phase	Far 2 tube 2 Rod Point Measure	CPS	Value
Master			4.673
4.000 (Minimum)	4.857 (Nominal)	5.500 (Maximum)	

Phase	Far 2 tube 2 H2O Point Measure	CPS	Value
Master			2.284
1.900 (Minimum)	2.363 (Nominal)	2.800 (Maximum)	

Phase	Far 2 tube 3 Air Point Measure	CPS	Value
Master			18.00
15.00 (Minimum)	19.05 (Nominal)	21.00 (Maximum)	

Phase	Far 2 tube 3 Rod Point Measure	CPS	Value
Master			4.759
4.000 (Minimum)	4.857 (Nominal)	5.500 (Maximum)	

Phase	Far 2 tube 3 H2O Point Measure	CPS	Value
Master			2.322
1.900 (Minimum)	2.363 (Nominal)	2.700 (Maximum)	

Phase	Near 1 tube 1 Air Point Measure	CPS	Value
Master			464.1
400.0 (Minimum)	487.5 (Nominal)	540.0 (Maximum)	

Phase	Near 1 tube 1 Rod Point Measure	CPS	Value
Master			750.1
610.0 (Minimum)	768.8 (Nominal)	850.0 (Maximum)	

Phase	Near 1 tube 1 H2O Point Measure	CPS	Value
Master			339.9
270.0 (Minimum)	343.7 (Nominal)	390.0 (Maximum)	

Phase	Near 2 tube 1 Air Point Measure	CPS	Value
Master			459.0
400.0 (Minimum)	487.5 (Nominal)	540.0 (Maximum)	

Phase	Near 2 tube 1 Rod Point Measure	CPS	Value
Master			743.2
610.0 (Minimum)	768.8 (Nominal)	850.0 (Maximum)	

Phase	Near 2 tube 1 H2O Point Measure	CPS	Value
Master			337.7
270.0 (Minimum)	343.7 (Nominal)	390.0 (Maximum)	

Master: 8-Sep-2005 9:54

6.75-in. Azimuthal Density Neutron Calibration

Neutron: Water Block Check

Phase	Far Neutron water porosity PU	Value
Master		103.0
90.00 (Minimum)	100.0 (Nominal)	125.0 (Maximum)

Company: Lamont-Doherty Borehole Research

Schlumberger

Well: IODP Expedition 311 CAS-02C

Field: Cascadia Margin

Rig: JOIDES Resolution

State: Pacific Ocean

GeoVISION Service

1:240 Measured Depth

Recorded Mode Log

Data Quality Report

Geomarket	NGC	Location	Vancouver Island
Job Date	20-SEP-2005	Customer	Lamont-Doherty Borehole Research
Rig	JOIDES Resolution	Field/Well	Cascadia Margin/CAS-02C
Engineer	Lake Loh	Job Number	40012416

When data does not meet standards, put a number in the colum corresponding to the measurement with a corresponding number and remark below. Use additional pages for remarks
Positive remarks are welcome; do not append them with a number.

Operation	Type of Measurement					
	Res	GR	Neu	Den		
Presentation						
Description of Well - Names, Geometry, Services, Location and References; General Content Header, user of trademarks, directional data, well plot, order of components, spelling and style, units sensor to toolface angle recorded						
Equiment and Software Description Tool sketch, equipment numbers, software versions, data rates, filtering weights						
Processing Traceability and Environment Description Acquisition environment, parameters and key constants for each run or zone, complete and relavant remarks	1		3			
Annotations, Presented Formats, QC Curves, Print Quality Documented splice points; data gap explanations, mud changes, movement indicator, color selection						
Calibration and Verifications						
Calibration / Before survey verification / After survey verification Validity, completeness (includes equipment number), timeliness, unedited, descrepency explained						
Operating Procedures						
Depth Control Comparison with driller's depth, other logs, other bit runs, between RT and RM. Depth summary listing	2	2	2	2		
Logging speed and sampling rates As recommended in reference manual or job planner. No loss of data or spatial resolution						
Data Comparison Between runs and passes, with data from nearby wells, other conveyance, mud log and markers						
Operating Anomalies/Failure/Missing Data/Sensor Orientation/Transmission Losses Absence of noise and spurious variations, anomaly repeated, corrected, reported or explained.						
Digital Delivery						
Digital Products Labeled, verification listing with complete digital record, backup for archival; record matches hard copy.						
Job Quality Rating (JQR) Number of boxes without number X 10	80	90	80	90		

Remarks

1. Correcting the resistivity data by assumming mud resistivity as 1 ohmm @ 75 degF.
2. Depth is not compensated for heave. The heave cause the spikes of ROP and this eventually cause the low data density and distortion on the image. The heave also cause the curves (gamma ray, resistivity, density and neutron porosity) do not correlate to each other very well.
3. Correcting the Neutron Porosity data by assumming borehole salinity as 0 ppk.

Environmental effects						
Irregular Operation Excessive ROP or speed, high deviation, shocks, vibrations, sticking conditions	1, 4	1	1	1		
Borehole Geometry Shape (caves, etc), rugosity, spiralled hole, mud induced fractures. Casing, tubing conditions	2	2	2	2		
Borehole Fluid Barite, KCl, salinity, additives, gas cut, unstable						
Interferences External noise, nearby casing or drillpipe, debris, unusual formation composition						
Operation Outside Tool Specifications GeomarketTemperature, pressure, hole size, hole deviation, dog-leg severity, flow rate, rpm, solids value of parameter	3					
Environmental Quality Rating (EQR) Number of boxes without number X 20	40	60	60	60		

Remarks

1. Excessive ROP is causing low data density.
2. Borehole washouts cause the resistivity curves separation. geoVISION Gamma Ray and adnVISION Neutron Porosity is only corrected for bit size. Large borehole washouts cause low density readings.
3. Low RPM during the early stage of the well reduce the image's resolution.
4. Bit resistivity measurement is highly depends on the contact between formation and the bit.

Cell Manager: Lake Loh FSM: Vijay Moras

DQR Header Utility ver 1.1c

Schlumberger Drilling & Measurements

Revised January 2002

Data Quality Report

Geomarket	NGC	Location	Vancouver Island
Job Date	20-SEP-2005	Customer	Lamont-Doherty Borehole Research
Rig	JOIDES Resolution	Field/Well	Cascadia Margin/CAS-02C
Engineer	Lake Loh	Job Number	40012416

Type of Measurement

When data does not meet standards, put a number in the colum corresponding to the measurement with a corresponding number and remark below. Use additional pages for remarks

Positive remarks are welcome; do not append them with a number.

Operation	Res	GR	Neu	Den		Remarks
Presentation						
Description of Well - Names, Geometry, Services, Location and References; General Content Header, user of trademarks, directional data, well plot, order of components, spelling and style, units sensor to toolface angle recorded						
Equiment and Software Description Tool sketch, equipment numbers, software versions, data rates, filtering weights						
Processing Traceability and Environment Description Acquisition environment, parameters and key constants for each run or zone, complete and relavant remarks						
Annotations, Presented Formats, QC Curves, Print Quality Documented splice points; data gap explanations, mud changes, movement indicator, color selection						
Calibration and Verifications						
Calibration / Before survey verification / After survey verification Validity, completeness (includes equipment number), timeliness, unedited, descrepency explained						
Operating Procedures						
Depth Control Comparison with driller's depth, other logs, other bit runs, between RT and RM. Depth summary listing						
Logging speed and sampling rates As recommended in reference manual or job planner. No loss of data or spatial resolution						
Data Comparison Between runs and passes, with data from nearby wells, other conveyance, mud log and markers						
Operating Anomalies/Failure/Missing Data/Sensor Orientation/Transmission Losses Absence of noise and spurious variations, anomaly repeated, corrected, reported or explained.						
Digital Delivery						
Digital Products Labeled, verification listing with complete digital record, backup for archival; record matches hard copy.						
Job Quality Rating (JQR) Number of boxes without number X 10						
Environmental effects						
Irregular Operation Excessive ROP or speed, high deviation, shocks, vibrations, sticking conditions						
Borehole Geometry Shape (caves, etc), rugosity, spiralled hole, mud induced fractures. Casing, tubing conditions						
Borehole Fluid Barite, KCl, salinity, additives, gas cut, unstable						
Interferences External noise, nearby casing or drillpipe, debris, unusual formation composition						
Operation Outside Tool Specifications GeomarketTemperature, pressure, hole size, hole deviation, dog-leg severity, flow rate, rpm, solids value of parameter						
Environmental Quality Rating (EQR) Number of boxes without number X 20						

Cell Manager: Lake Loh FSM: Vijay Moras

DQR Header Utility ver 1.1c

Schlumberger Drilling & Measurements

Revised January 2002