Schlumberger

Company: Integrated Ocean Drilling Program

Well: IODP Exp 308 Hole U1321A
Field: East Breaks Block 691
Rig: Joides Resolution State: Texas

Rig: Joides Resolution
Field: East Breaks Block 691
Location: Brazos Trinity Basin
Well: IODP Exp 308 Hole U1321A
Company: Integrated Ocean Drilling Program

GeoVISION Service
1 : 200 Measured Depth
Recorded Mode Log

Location

Total depth:	1602 m
Spud date:	13-Jun-2005
Runs:	1 To 1

Elevation

K.B.	Top Drive
G.L.	-1451.5 m
D.F.	10.5 m

Permanent datum:	Mean Sea Level	Elev.:	0 m
Log measured from:	Drill Floor	10.5 m	above Perm. datum
Depth reference:	Driller's Depth		

Service Order no.	NAD 27	Longitude	Latitude
40012055	UTM Zone 15N	W94.39892	N27.27568

Depth logged:	1462 m	To	1601 m	Mag decl:	3.52 deg.
Date logged:	13-Jun-05	To	13-Jun-05	Mag dip:	56.98 deg.

Other services:

Bore hole record			Casing record			
Hole size	from	to	Size	Density	from	to
9.875 in.	1462 m	1602 m				

Mud record			Borehole deviation record			
Type	from	to	Min	Max	from	to
Seawater	1462 m	1602 m	1.08 deg.	1.82 deg.	1462 m	1602 m

Surface equipment		Software record			
Unit	TWIS	IDEAL Wis	10_0C_04.1		
Depth system	Geolograph	SPM	10_1C_05		
		LWD	See Remarks		
		MWD	8.0c00		

OTHER SERVICES FOR RUN 1
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 U1320B, U1319B and U1321A.
Source of data: Recorded Mode
Reason POOH: Move to next drill site.

geoVISION gamma ray is corrected for mud weight and bit size.
arcVISION gamma ray is not environmentally corrected
Resistivity is borehole compensated and environmentally corrected for bit size and mud resistivity.
Neutron porosity was computed using a sandstone matrix of 2.65 g/cc and is corrected for bit size, temperature, borehole salinity and mud hydrogen index

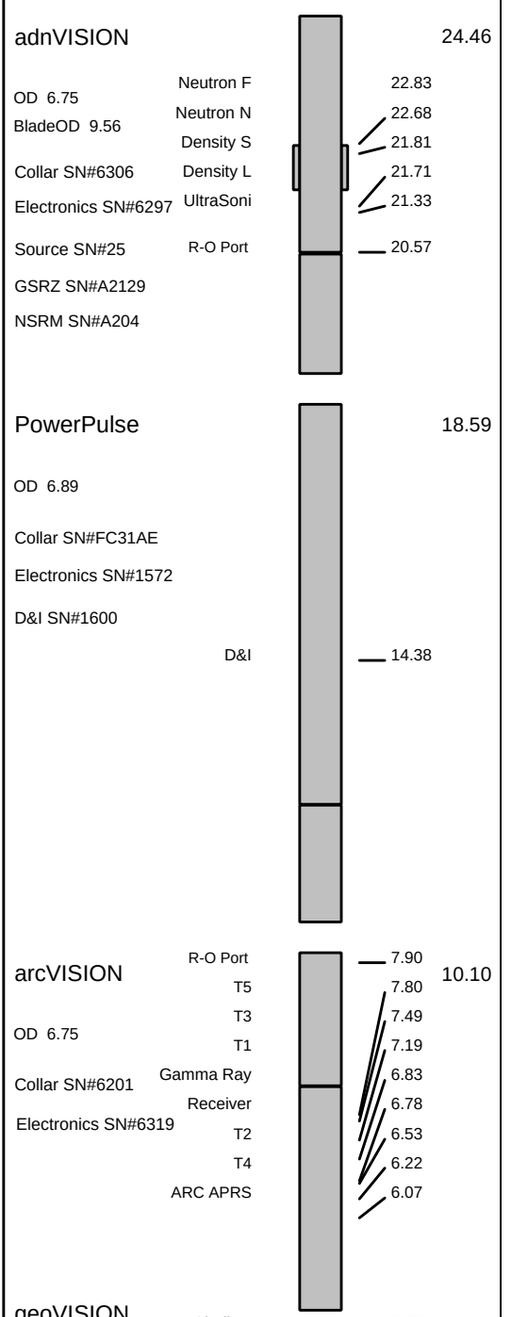
Tool Record Rates:
adnVISION Density & Neutron @ 10 Sec
arcVISION Res & GR @ 6 sec, Pres @ 10 sec
geoVISION Res = 5 sec, GR @ 10 sec

Tools software versions:
PowerPulse (8.0C00) ; adnVISION (8.3A02)
arcVISION (6.4B01) ; geoVISION (6.2B01)
Crew: Hoong, K. & Domalakes, D.

EQUIPMENT DESCRIPTION

RUN1	RUN	RUN

DOWNHOLE EQUIPMENT



Shallow

Collar SN#6163

Medium

Electronics SN#6163

Deep

OD 6.75

Ring Res

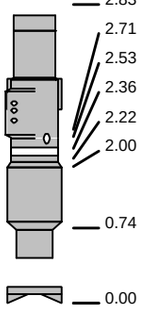
R-O port

GR

Button Sleeve Stab OD 9.13

Near Bit Stab OD 9.38

Bit Res



4.22

Milled Tooth Bit

OD 9.88 SN#M44NF

0.27

Maximum string diameter 9.88 in.

All lengths in Meters

Bit Run Summary

Run number		1									
Bit size	in.	9.875									
Bit start depth	m	1462									
Bit end depth	m	1602									
Top interval logged	m	1462									
Bottom interval logged	m	1601									
Begin log: time		02:04									
Begin log: date		13-Jun-05									
End log: time		09:00									
End log: date		13-Jun-05									
Mud data											
Depth	m	1602									
Type		seawater									
Mud weight	ppg	8.57									
Solids	%	-									
Chlorides	ppk	seawater									
Rm	ohm-m@degF	0.205@67.9									
Rmf	ohm-m@degF	seawater									
Rmc	ohm-m@degF	seawater									
Potassium	-	-									
Environmental data											
GR											
Mud weight	ppg	8.57									
Bit size	in.	9.875									
Resistivity											
Neutron porosity											
Hole Size	in.	9.875									
Mud weight	ppg	8.57									
Temperature	deg F	42.8									
Mud salinity	ppk	seawater									
Formation salinity	ppk	-									
Recording rate 1	SEC	GVR-5,10									
Recording rate 2	SEC	ARC-6,ADN-10									
Filtering GR		3 pt									
Filtering density		3 pt									
Filtering Neutron		3 pt									
Company representative		Ron Grout									
Schlumberger D&M Personnel		Hoong, K.									

Variable Name	Variable Description	Run Name & Value
Run Number		1
General Information		
BHT_RM	Bottom Hole Temperature (RM)	42.799999
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)	67.900002
MW_RM	Mud Weight (RM)	8.570000
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)	0.205000
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)	-5.000000
TD_RM	Total Measured Depth (RM)	5252.620117
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
ADN		
LWD_RM/STATION_FILE/PARAMETERStation	Time-frame file name	Station
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	0.100000
DTIK_SEL	ADN: Density Tick Channel Name	LSAZ
DTMUD	Delta-T for Mud	196.000000
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
GCSE	Generalized Caliper Selection	BS
HPS	ADSE-EB (High Pressure Inconel Chassis)?	NO
IBS	Intergal Blade Stabilizer Collar?	NO
IDQT	Image Derived Quality Threshold	0.500000
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	9.625000
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	15.000000
RAB		
RAB/BTN_SLV_SIZE/PARAMETERRAB	Button Sleeve Diameter	RAB6:
RAB/STAB_SIZE/PARAMETERRAB	Stabilizer Diameter	RAB6:
BDBHCA	RAB: Button Deep Borehole A Factor	-0.027121
BDBHCB	RAB: Button Deep Borehole B Factor	0.000000
BHA_COEF_V	RAB: BHA Coef Generator Version	2.000000
BITBHCA	RAB: Bit A Borehole Factor	0.082395
BITBHCB	RAB: Bit B Borehole Factor	0.000000
BIT_K_FACT	RAB: Bit K Factor	3.347454
BMBHCA	RAB: Button Medium Borehole A Factor	0.038730
BMBHCB	RAB: Button Medium Borehole B Factor	0.000000
BSBHCA	RAB: Button Shallow Borehole A Factor	0.070726
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 0.004579
GR_BHC_TOO RAB: Gamma-Ray Borehole Coeff 1 6.750000
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 3.520024
MAG_INCL_R RAB: Magnetic Dip 56.979965
MBUTTON_K_ RAB: Button Medium K Factor 0.004846
OBM RAB: Oil base Mud NO
ORIENTATIO Rab Image Orientation NORTH
RABBDA0 RAB: Button Deep A0 Coeff -0.030961
RABBDA1 RAB: Button Deep A1 Coeff 0.016394
RABBDA2 RAB: Button Deep A2 Coeff -0.004267
RABBDA3 RAB: Button Deep A3 Coeff 0.000480
RABBDA4 RAB: Button Deep A4 Coeff -0.000019
RABBDA5 RAB: Button Deep A5 Coeff 0.000000
RABBDMIN RAB: Button Deep Minimum Value 0.050743
RABBITA0 RAB: Bit A0 Coeff 0.482820
RABBITA1 RAB: Bit A1 Coeff -0.370526
RABBITA2 RAB: Bit A2 Coeff 0.168749
RABBITA3 RAB: Bit A3 Coeff -0.033883
RABBITA4 RAB: Bit A4 Coeff 0.002445
RABBITA5 RAB: Bit A5 Coeff 0.000000
RABBITMIN RAB: Bit Minimum Value 18.398317
RABBMA0 RAB: Button Medium A0 Coeff -0.043972
RABBMA1 RAB: Button Medium A1 Coeff 0.023308
RABBMA2 RAB: Button Medium A2 Coeff -0.006046
RABBMA3 RAB: Button Medium A3 Coeff 0.000675
RABBMA4 RAB: Button Medium A4 Coeff -0.000027
RABBMA5 RAB: Button Medium A5 Coeff 0.000000
RABBMMIN RAB: Button Medium Minimum Value 0.056764
RABBSA0 RAB: Button Shallow A0 Coeff -0.062402
RABBSA1 RAB: Button Shallow A1 Coeff 0.032476
RABBSA2 RAB: Button Shallow A2 Coeff -0.008229
RABBSA3 RAB: Button Shallow A3 Coeff 0.000898
RABBSA4 RAB: Button Shallow A4 Coeff -0.000034
RABBSA5 RAB: Button Shallow A5 Coeff 0.000000
RABBSMIN RAB: Button Shallow Minimum Value 0.078912
RABDHS RAB Down Hole Software 4.000000
RABEC RAB: Resistivity Env-Cor YES
RABRNGA0 RAB: RING A0 Coeff -0.025738
RABRNGA1 RAB: RING A1 Coeff 0.014539
RABRNGA2 RAB: RING A2 Coeff -0.003917
RABRNGA3 RAB: RING A3 Coeff 0.000451
RABRNGA4 RAB: RING A4 Coeff -0.000018
RABRNGA5 RAB: RING A5 Coeff 0.000000
RABRNGMIN RAB: Ring Minimum Value 1.605737
RAB_BIT_EC Bit Resistivity for ECAL_RAB? YES
RAB_BIT_IN Input Bit Resistivity for Inversion? (Recommended at the bit) NO
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] 0.000000
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? NO
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] 0.000000
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? NO
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_TEMP_S	RAB Temperature Selection	MEASURED
RAB_TICKS	RAB: Generate Ticks ?	YES
READOUT_PO	RAB: ROP to Bit Face Distance	7.286745
RINGBHCA	RAB: Ring Borehole A Factor	0.296258
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	0.152829
SBUTTON_K_	RAB: Button Shallow K Factor	0.006581
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
VRAB6	Rab Tool type (ENP/PILOT)	RAB6_C_SERIES
WIN_SIZE_D	RAB: Window Size for Scaling Dynamic Image	5.000000

ARC

A12A	ARC Air Cal Attenuation From T1 at 2 MHz	8.232080
A14A	ARC Air Cal Attenuation From T1 at 400 KHz	8.256890
A22A	ARC Air Cal Attenuation From T2 at 2 MHz	6.810180
A24A	ARC Air Cal Attenuation From T2 at 400 KHz	6.791850
A32A	ARC Air Cal Attenuation From T3 at 2 MHz	4.826260
A34A	ARC Air Cal Attenuation From T3 at 400 KHz	4.843570
A42A	ARC Air Cal Attenuation From T4 at 2 MHz	4.708000
A44A	ARC Air Cal Attenuation From T4 at 400 KHz	4.687440
A52A	ARC Air Cal Attenuation From T5 at 2 MHz	3.381080
A54A	ARC Air Cal Attenuation From T5 at 400 KHz	3.408180
ABNT	Abnormal Transmitter Indicator	No_Tx_Failed
ADHS	ARC Down Hole Software Version	No_Tx_Failed
ANISO_COMP	Anisotropy Computation Option	YES
APICG	ARC5 Gamma Ray Gain Factor	1.038700
APIG	ARC Gamma Ray API Gain Factor	-1.000000
ATMP_ARC	ARC Select Temperature Channel	Annulus_Temp
ATRN	ARC Tool Run Number	Annulus_Temp
ATSN	ARC Tool Serial Number	Annulus_Temp
AZMF	Formation DIP Azimuth	0.000000
BH_COMPUTE	Borehole Inversion Computation Option	YES
CALG	ARC Gamma Ray Cal Gain Factor	1.038700
CALI_SLCT_	ARC Caliper Selection	BITSIZE
CDPTH_ARC	Process Start Depth	100.000000
DIELEC_COM	Dielectric Computation Option	YES
DIPF	Formation DIP Angle	0.000000
ERRCT	Percentage Error Cutoff	4.500000
GRSH	GR Shale (Invasion Computation Cutoff)	1000.000000
HIGH_BLEND	High Resistivity Threshold for Blending	2.000000
INCLIN_B0	ARC Bias Constant (mg)	0.000000
INCLIN_B1	ARC Bias First-order Coefficient (mg/degC)	0.000000
INCLIN_B2	ARC Bias Secod-order Coeeficient (mg/degC)	0.000000
INCLIN_B3	ARC Bias Third-order Coeeficient (mg/degC)	0.000000
INCLIN_C0	ARC Current Scale Factor Constant (mA/g)	1.000000
INCLIN_C1	ARC Scale First-order Coeeficient (mA/g/degC)	0.000000
INCLIN_C2	ARC Scale Second-order Coeeficient (mA/g/degC)	0.000000
INCLIN_C3	ARC Scale Third-order Coeeficient (mA/g/degC)	0.000000
INVAS_COMP	Invasion Computation Option	YES
JSD_ARC	ARC Acquisition start date	YES
KPER	Potassium Concentration (RM)	0.000000
LOW_BLEND	Low Resistivity Threshold for Blending	1.000000
MSWS	ARC Wizard Model Switch Window	5.000000
MULTIEFFEC	Multi Effect Option	YES
P12A	ARC Air Cal Phase-Shift From T1 at 2 MHz	0.742475
P14A	ARC Air Cal Phase-Shift From T1 at 400 KHz	-0.688361
P22A	ARC Air Cal Phase-Shift From T2 at 2 MHz	-0.644164
P24A	ARC Air Cal Phase-Shift From T2 at 400 KHz	0.624656
P32A	ARC Air Cal Phase-Shift From T3 at 2 MHz	0.656164
P34A	ARC Air Cal Phase-Shift From T3 at 400 KHz	-0.680148
P42A	ARC Air Cal Phase-Shift From T4 at 2 MHz	-0.707656
P44A	ARC Air Cal Phase-Shift From T4 at 400 KHz	0.588475
P52A	ARC Air Cal Phase-Shift From T5 at 2 MHz	0.629033
P54A	ARC Air Cal Phase-Shift From T5 at 400 KHz	-0.684902
POFFSET_AR	ARC: Pressure Offset	0.000000
PRTD	Preferred Resistivity Log for Rt Display while Multi-Effects	P34B
PSOF_ADJ_T	ARC: User Input Phase offset	0.000000
RESTIK	ARC resistivity tick source	Phase
SHIG	ARC High Shock Risk Level	0.500000
SMED	ARC Medium Shock Risk Level	0.330000
SMIN	ARC Minimum Shock Risk Level	0.160000
SUPD	ARC Real Time Shock Update Rate	30.000000
TCODE_ARC	ARC Tool File Code	30.000000
TSIZ_ARC	ARC Tool Size	6.750000
UNIFORM_CO	Uniform Rock Option	YES
VERS_ARC	ARC Down hole software version Number	6.400000
WRK	Way to Report Potassium Concentration (RM)	K_by_Wgt_%

IDEAL Version: ID10_0C_04

IDF

Format: GEOVIS_SER_5MD Vertical Scale: 1:200 Graphics File Created: 01-Jul-2005 00:22

PIP SUMMARY

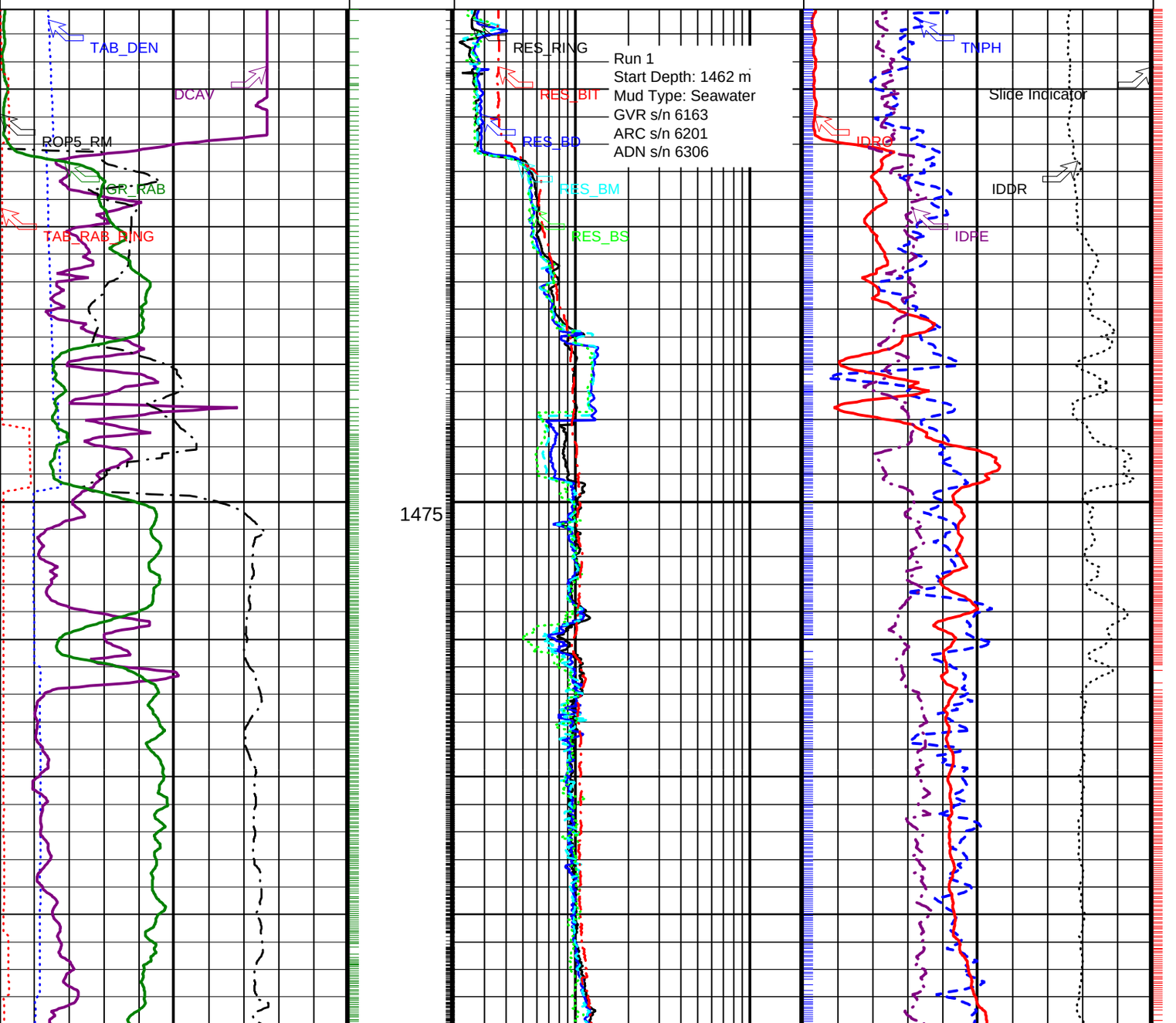
Density Ticks, 0.1-ft

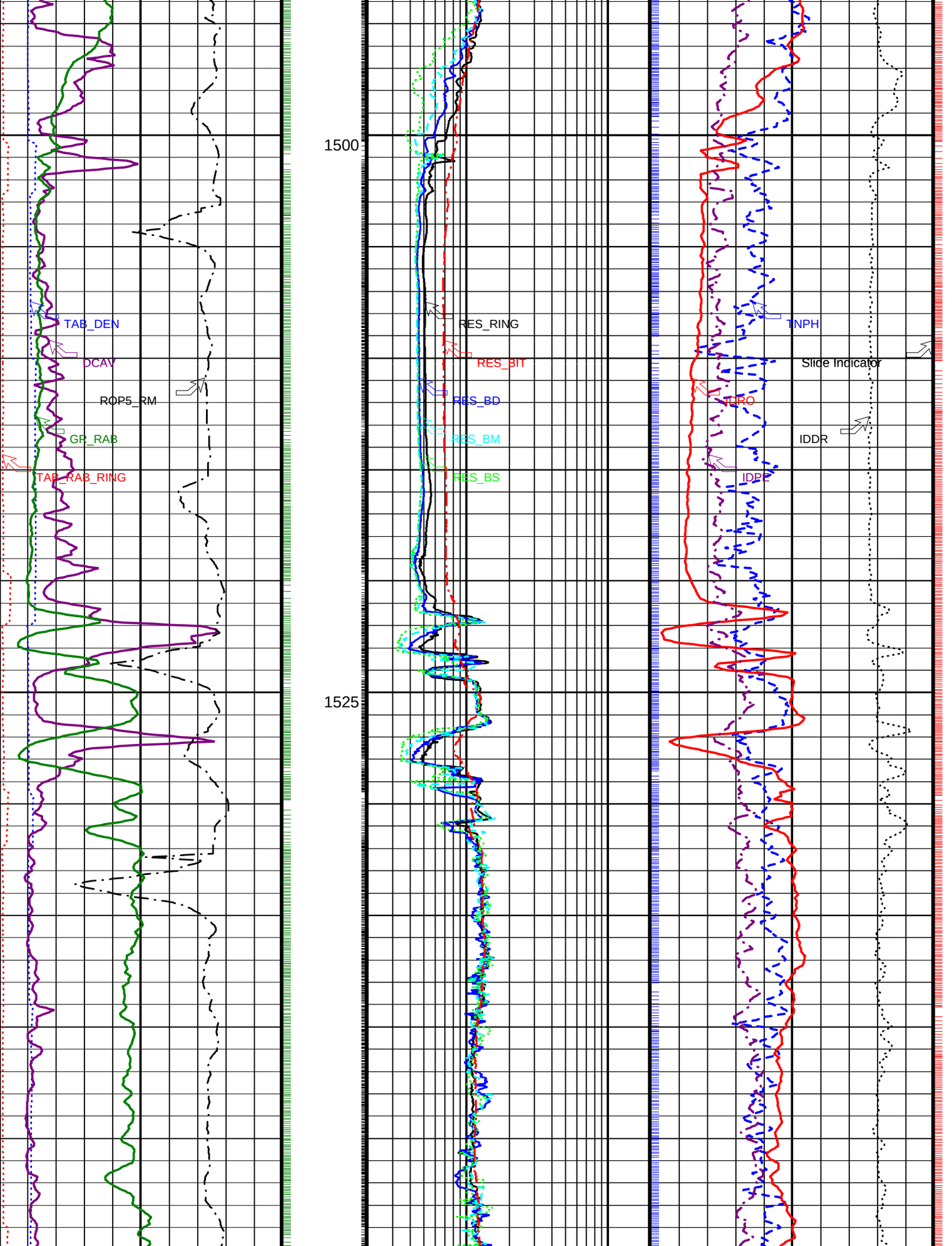
Neutron Ticks, 0.1 ft

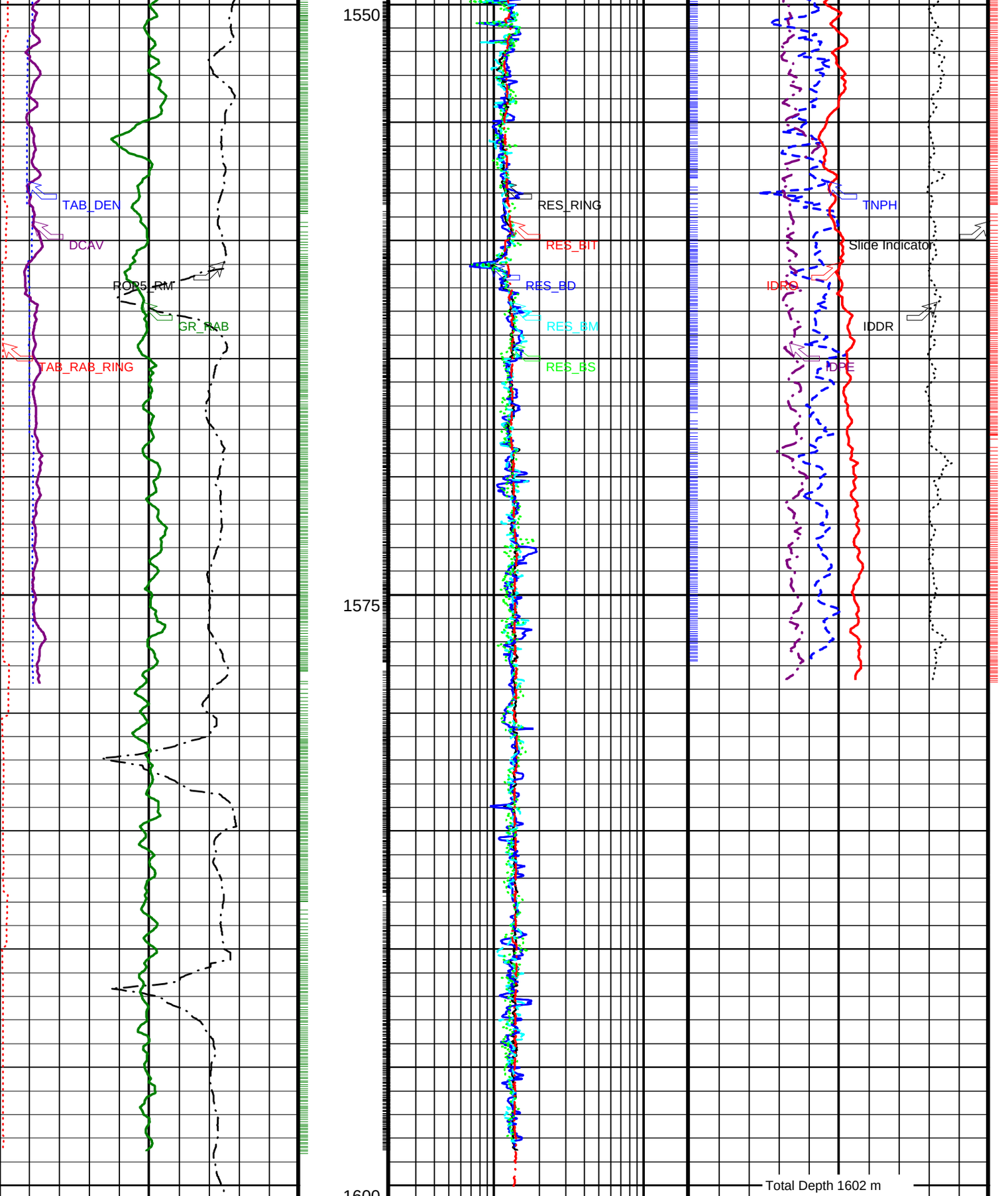
Ring Samples

Gamma Ray Samples

Ring Resistivity Time After Bit (TAB_RAB_RING) 0 (HR) 10	Shallow Button Resistivity (RES_BS) 0.2 (OHMM) 20	
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
RAB Gamma Ray (GR_RAB) 0 (GAPI) 150	Deep Button Resistivity (RES_BD) 0.2 (OHMM) 20	Image Derived Density Correction (IDDR) -0.8 (G/C3) 0.2
Density Caliper, Average (DCAV) 9 (IN) 19	Bit Resistivity (RES_BIT) 0.2 (OHMM) 20	Image Derived Density (IDRO) 1 (G/C3) 2.65
Density Time After Bit (TAB_DEN) 0 (HR) 10	Ring Resistivity (RES_RING) 0.2 (OHMM) 20	Thermal Neutron Porosity (TNPH) 100 (PU) 0




1500
1525
TAB_DEN
DCAV
ROP5_RM
GR_RAB
TAB_RAB_RING
RES_RING
RES_BIT
RES_BD
RES_BM
RES_BS
TNPH
Slide Indicator
TORQ
IDDR
IDPE



Density Time After Bit (TAB_DEN)	Ring Resistivity (RES_RING)	Thermal Neutron Porosity (TNPH)
0 (HR) 10	0.2 (OHMM) 20	100 (PU) 0
Density Caliper, Average (DCAV)	**Bit Resistivity (RES_BIT)**	**Image Derived Density (IDRO)**
9 (IN) 19	0.2 (OHMM) 20	1 (G/C3) 2.65

RAB Gamma Ray (GR_RAB)			Deep Button Resistivity (RES_BD)			Image Derived Density Correction (IDDR)		
0	(GAPI)	150	0.2	(OHMM)	20	-0.8	(G/C3)	0.2
Rate of Penetration, Averaged over Last 5ft (ROP5_RM)			Medium Button Resistivity (RES_BM)			Image Derived Photoelectric Factor (IDPE)		
100	(M/HR)	0	0.2	(OHMM)	20	0	(----)	10
Ring Resistivity Time After Bit (TAB_RAB_RING)			Shallow Button Resistivity (RES_BS)					
0	(HR)	10	0.2	(OHMM)	20			

PIP SUMMARY

Density Ticks, 0.1-ft

Neutron Ticks, 0.1 ft

Ring Samples

Gamma Ray Samples

IDEAL Version: ID10_0C_04

IDF

6.75-in. Azimuthal Density Neutron / Equipment Identification

Primary Equipment:		
Tool Name and Serial Number	ADN6 - CA	6306
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	9.63 - in.	
Calibration Status	Auto	

Master: 8-Jun-2005 18:38

6.75-in. Azimuthal Density Neutron Calibration

Density: Magnesium Block

Phase	LS window 3 - Mg CPS	Value	Phase	SS window 1 - Mg CPS	Value	Phase	SS window 3 - Mg CPS	Value
Master		758.6	Master		2063	Master		5381
	250.0 (Minimum) 4125 (Nominal) 8000 (Maximum)			700.0 (Minimum) 9350 (Nominal) 18000 (Maximum)			2500 (Minimum) 23750 (Nominal) 45000 (Maximum)	

Master: 8-Jun-2005 18:38

6.75-in. Azimuthal Density Neutron Calibration

Density: Aluminum Block

Phase	LS window 3 - Al CPS	Value	Phase	SS window 1 - Al CPS	Value	Phase	SS window 3 - Al CPS	Value
Master		124.0	Master		1229	Master		3832
	50.00 (Minimum) 725.0 (Nominal) 1400 (Maximum)			500.0 (Minimum) 4250 (Nominal) 8000 (Maximum)			1500 (Minimum) 15750 (Nominal) 30000 (Maximum)	

Master: 8-Jun-2005 18:38

6.75-in. Azimuthal Density Neutron Calibration

Density: Background

Phase	LS window 3 - Background CPS	Value	Phase	SS window 1 - Background CPS	Value	Phase	SS window 3 - Background CPS	Value
Master		54.19	Master		118.2	Master		508.0
	15.00 (Minimum) 82.50 (Nominal) 150.0 (Maximum)			40.00 (Minimum) 220.0 (Nominal) 400.0 (Maximum)			150.0 (Minimum) 825.0 (Nominal) 1500 (Maximum)	

Master: 8-Jun-2005 18:38

6.75-in. Azimuthal Density Neutron Calibration

Density: Water Block Check

Phase	Long spacing water density G/C3	Value	Phase	Short spacing water density G/C3	Value
Master		1.022	Master		1.119
	1.001 (Minimum) 1.016 (Nominal) 1.031 (Maximum)			1.079 (Minimum) 1.109 (Nominal) 1.139 (Maximum)	

Master: 8-Jun-2005 18:38

6.75-in. Azimuthal Density Neutron Calibration

Neutron: 3-Point Calibration

Phase	Far 1 tube 1 Air Point Measure CPS	Value	Phase	Far 1 tube 1 Rod Point Measure CPS	Value	Phase	Far 1 tube 1 H2O Point Measure CPS	Value

Phase	Far 1 tube 1 Air Point Measure	CPS	Value
Master			17.91
15.00 (Minimum)	19.05 (Nominal)	21.00 (Maximum)	

Phase	Far 1 tube 1 Rod Point Measure	CPS	Value
Master			4.522
4.000 (Minimum)	4.857 (Nominal)	5.500 (Maximum)	

Phase	Far 1 tube 1 H2O Point Measure	CPS	Value
Master			2.181
1.900 (Minimum)	2.363 (Nominal)	2.700 (Maximum)	

Phase	Far 1 tube 2 Air Point Measure	CPS	Value
Master			18.87
16.00 (Minimum)	19.05 (Nominal)	22.00 (Maximum)	

Phase	Far 1 tube 2 Rod Point Measure	CPS	Value
Master			4.699
4.000 (Minimum)	4.857 (Nominal)	5.500 (Maximum)	

Phase	Far 1 tube 2 H2O Point Measure	CPS	Value
Master			2.231
1.900 (Minimum)	2.363 (Nominal)	2.800 (Maximum)	

Phase	Far 1 tube 3 Air Point Measure	CPS	Value
Master			18.34
15.00 (Minimum)	19.05 (Nominal)	21.00 (Maximum)	

Phase	Far 1 tube 3 Rod Point Measure	CPS	Value
Master			4.639
4.000 (Minimum)	4.857 (Nominal)	5.500 (Maximum)	

Phase	Far 1 tube 3 H2O Point Measure	CPS	Value
Master			2.232
1.900 (Minimum)	2.363 (Nominal)	2.700 (Maximum)	

Phase	Far 2 tube 1 Air Point Measure	CPS	Value
Master			18.52
15.00 (Minimum)	19.05 (Nominal)	21.00 (Maximum)	

Phase	Far 2 tube 1 Rod Point Measure	CPS	Value
Master			4.630
4.000 (Minimum)	4.857 (Nominal)	5.500 (Maximum)	

Phase	Far 2 tube 1 H2O Point Measure	CPS	Value
Master			2.249
1.900 (Minimum)	2.363 (Nominal)	2.700 (Maximum)	

Phase	Far 2 tube 2 Air Point Measure	CPS	Value
Master			18.74
16.00 (Minimum)	19.05 (Nominal)	22.00 (Maximum)	

Phase	Far 2 tube 2 Rod Point Measure	CPS	Value
Master			4.528
4.000 (Minimum)	4.857 (Nominal)	5.500 (Maximum)	

Phase	Far 2 tube 2 H2O Point Measure	CPS	Value
Master			2.236
1.900 (Minimum)	2.363 (Nominal)	2.800 (Maximum)	

Phase	Far 2 tube 3 Air Point Measure	CPS	Value
Master			18.03
15.00 (Minimum)	19.05 (Nominal)	21.00 (Maximum)	

Phase	Far 2 tube 3 Rod Point Measure	CPS	Value
Master			4.589
4.000 (Minimum)	4.857 (Nominal)	5.500 (Maximum)	

Phase	Far 2 tube 3 H2O Point Measure	CPS	Value
Master			2.264
1.900 (Minimum)	2.363 (Nominal)	2.700 (Maximum)	

Phase	Near 1 tube 1 Air Point Measure	CPS	Value
Master			471.4
400.0 (Minimum)	487.5 (Nominal)	540.0 (Maximum)	

Phase	Near 1 tube 1 Rod Point Measure	CPS	Value
Master			749.5
610.0 (Minimum)	768.8 (Nominal)	850.0 (Maximum)	

Phase	Near 1 tube 1 H2O Point Measure	CPS	Value
Master			333.7
270.0 (Minimum)	343.7 (Nominal)	390.0 (Maximum)	

Phase	Near 2 tube 1 Air Point Measure	CPS	Value
Master			478.2
400.0 (Minimum)	487.5 (Nominal)	540.0 (Maximum)	

Phase	Near 2 tube 1 Rod Point Measure	CPS	Value
Master			748.8
610.0 (Minimum)	768.8 (Nominal)	850.0 (Maximum)	

Phase	Near 2 tube 1 H2O Point Measure	CPS	Value
Master			333.1
270.0 (Minimum)	343.7 (Nominal)	390.0 (Maximum)	

Master: 8-Jun-2005 18:38

6.75-in. Azimuthal Density Neutron Calibration

Neutron: Water Block Check

Phase	Far Neutron water porosity PU	Value
Master		97.10
90.00 (Minimum)	100.0 (Nominal)	125.0 (Maximum)

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

Primary Equipment:

Tool Name and Serial Number	RAB6 - CA	6163
Calibration Status	Auto	

Master: 7-Jun-2005 16:13

6.75-in. Resistivity At-the-Bit Calibration

Resistivity: Fixture

Phase	Ring/T1 factor	Value
Master		1.012
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		1.010
0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)

Phase	M0/T2 factor	Value
Master		1.002
0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)

Phase	M2/T1 factor	Value
Master		1.008
0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)

Phase	M2/T2 factor	Value
Master		1.000
0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)

Phase	BTN shallow/T1 factor	Value
Master		1.008
0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)

Phase	BTN shallow/T2 factor	Value
Master		1.001
0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)

Phase	BTN medium/T1 factor	Value
Master		1.012
0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)

Phase	BTN medium/T2 factor	Value
Master		1.004
	0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)	

Phase	BTN deep/T1 factor	Value
Master		1.018
	0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)	

Phase	BTN deep/T2 factor	Value
Master		1.011
	0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)	

Master: 7-Jun-2005 16:13

6.75-in. Resistivity At-the-Bit Calibration

Gamma Ray: Blanket

Phase	Gamma ray factor	Value
Master		0.9430
	0.7500 (Minimum) 1.000 (Nominal) 1.250 (Maximum)	

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Survey report 28-Jun-2005 22:42:37 Page 1 of 2

Client.....: Integrated Ocean Drilling Program
Field.....: East Breaks Block 691

Well.....: IODP Exp 308 Hole U1321A Spud date.....: 13-Jun-05
Site.....: Brazos Trinity Basin Last survey date.....: 13-Jun-05
Engineer.....: Hoong, K. Total accepted surveys...: 4
MD of first survey.....: 1462.00 m
Rig:.....: Joides Resolution MD of last survey.....: 1602.00 m
State:.....: Texas

----- Survey calculation methods----------
Method for positions.....: Minimum curvature
Method for DLS.....: Mason & Taylor
----- Depth reference ----------
Permanent datum.....: Mean Sea Level
Depth reference.....: Drill Floor
GL above permanent.....: -1451.50 m
KB above permanent.....: 10.50 m
DF above permanent.....: 10.50 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 Vsect Origin to target: 0.00 degrees
----- Coordinate System----------
Geodetic Datum.....: NAD 27
Projection Identification: UTM Zone 15 N

----- Geomagnetic data ----------
Magnetic model.....: BGGM version 2004
Magnetic date.....: 13-Jun-2005
Magnetic field strength..: 937.50 HCNT
Magnetic dec (+E/W-).....: 3.52 degrees
Magnetic dip.....: 56.98 degrees
----- MWD survey Reference Criteria ---------
Reference G.....: 999.11 mGal
Reference H.....: 937.50 HCNT
Reference Dip.....: 56.98 degrees
Tolerance of G.....: (+/-) 2.50 mGal
Tolerance of H.....: (+/-) 6.00 HCNT
Tolerance of Dip.....: (+/-) 0.45 degrees

----- Corrections ----------
Magnetic dec (+E/W-).....: 3.52 degrees
Grid convergence (+E/W-).: -0.64 degrees
Total az corr (+E/W-)....: 4.16 degrees
(Total az corr = magnetic dec - grid conv)
Survey Correction Type ...:
I=Sag Corrected Inclination
M=Schlumberger Magnetic Correction
S=Shell Magnetic Correction
F=Failed Axis Correction
R=Magnetic Resonance Tool Correction
D=Dmag Magnetic Correction

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 Corr (deg)
1	1462.00	0.00	0.00	0.00	1462.00	0.00	0.00	0.00	0.00	0.00	0.00	TIP	None
2	1534.00	1.82	193.82	72.00	1533.99	-1.11	-1.11	-0.27	1.14	193.82	0.25	MWD_M	None
3	1585.00	1.08	189.64	51.00	1584.97	-2.37	-2.37	-0.55	2.43	192.99	0.15	MWD_M	None
4	1602.00	1.08	189.64	17.00	1601.97	-2.69	-2.69	-0.60	2.75	192.60	0.00	Proj to TD	

Company: Integrated Ocean Drilling Program

Schlumberger

Well: IODP Exp 308 Hole U1321A

Field: East Breaks Block 691

Rig: Joides Resolution

State: Texas

GeoVISION Service
1 : 200 Measured Depth
Recorded Mode Log

Geomarket NGC
Job Date 19-Jun-05
Rig Joides Resolution
Engineer Hoong, K.

Description of Well - Names, Geometry, Ser... Header, user of trademarks, directional data, sensor to toolface angle recorded
Equipment and Software Description
Tool sketch, equipment numbers, software ve...
Processing Traceability and Environment D... Acquisition environment, parameters and key remarks
Annotations, Presented Formats, QC Curve... Documented splice points; data gap explanat... selection
Calibration / Before survey verification / Aft...
Validity, completeness (includes equipment n...
Depth Control Comparison with driller's depth, other logs, oth... listing
Logging speed and sampling rates
As recommended in reference manual or job...
Data Comparison
Between runs and passes, with data from nea...
Operating Anomalies/Failure/Missing Data/...
Absence of noise and spurious variations, and...
Digital Products Labeled, verification listing with complete digi... hard copy.
Job Quality Rating (JQR... Number of boxes without...
Irregular Operation
Excessive ROP or speed, high deviation, sho...
Borehole Geometry
Shape (caves, etc), rugosity, spiralled hole, n...
Borehole Fluid
Barite, KCl, salinity, additives, gas cut, unstab...
Interferences
External noise, nearby casing or drillpipe, deb...
Operation Outside Tool Specifications GeomarketTemperature, pressure, hole size, ... value of parameter
Environmental Quality... Number of boxes witho...

Data Quality Report

ocation	Brazos Trinity Basin
ustomer	Integrated Ocean Drilling Program
eld/Well	East Breaks Block 691
ob Number	40012055

Geomarket	NGC	Lo	
Job Date	19-Jun-05	C	
Rig	Joides Resolution	Fi	
Engineer	Hoong, K.	Jo	

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.

eration	Type of Measurement					
sentation	Res	GR	APWD	Neu	Den	
rvices, Location and References; General Content well plot, order of components, spelling and style, units						
rsions, data rates, filtering weights						
Description constants for each run or zone, complete and relavant						
es, Print Quality ions, mud changes, movement indicator, color						
and Verifications						
er survey verification umber), timeliness, unedited, descrepency explained						
Procedures						
ner bit runs, between RT and RM. Depth summary	6	6	6	6	6	
planner. No loss of data or spatial resolution						
arby wells, other conveyance, mud log and markers						
Sensor Orientation/Transmission Losses omaly repeated, corrected, reported or explained.						
elivery						
tal record, backup for archival; record matches						
R) number X 10	90	90	90	90	90	
mental effects						
cks, vibrations, sticking conditions	1	1	1	1	1	
ud induced fractures. Casing, tubing conditions	2	2		2	2	
le	5	3,5	4	5	5	
ris, unusual formation composition						
hole deviation, dog-leg severity, flow rate, rpm, solids						
Rating (EQR) ut number X 20	40	40	60	40	40	

Remarks

1. Excessive ROP while extending heave compensator piston after a connection causes low data density.
2. Borehole washouts causes resistivity curve separation. geoVISION gamma ray and adnVISION neutron porosity is only corrected for bit size. Large borehole washouts causes low density readings.
3. Barite in the mud attenuates the formation gamma ray response.
4. ECD measurements are recalculated using seawater density derived annulus pressure measured from the sea floor and actual sea floor depth measured on logs.
5. Zoned parameters were used for processing where borehole fluid changed from seawater to weighted mud. Borehole fluid changes are annotated on logs.
6. 6 meters depth discrepancy between Real-Time and Recorded Mode data is caused by drillers pipe tally error.

Cell Manager: Hoong, K. FSM: Vijay Moras

DQR Header Utility ver 1.1c

Schlumberger Drilling & Measurements

Revised January 2002

Op	
Pres	
Description of Well - Names, Geometry, Ser Header, user of trademarks, directional data, sensor to toolface angle recorded	
Equiment and Software Description	
Tool sketch, equipment numbers, software ve	
Processing Traceability and Environment D Acquisition environment, parameters and key remarks	
Annotations, Presented Formats, QC Curve Documented splice points; data gap explanat selection	
Calibration a	
Calibration / Before survey verification / Aft	
Validity, completeness (includes equipment n	
Operating	
Depth Control Comparison with driller's depth, other logs, oth listing	
Logging speed and sampling rates	
As recommended in reference manual or job	
Data Comparison	
Between runs and passes, with data from nea	
Operating Anomalies/Failure/Missing Data/S	
Absence of noise and spurious variations, and	
Digital D	
Digital Products Labeled, verification listing with complete digi hard copy.	
Job Quality Rating (JQR	
Number of boxes without	
Environ	
Irregular Operation	
Excessive ROP or speed, high deviation, sho	
Borehole Geometry	
Shape (caves, etc), rugosity, spiralled hole, m	
Borehole Fluid	
Barite, KCl, salinity, additives, gas cut, unstab	
Interferences	
External noise, nearby casing or drillpipe, deb	
Operation Outside Tool Specifications GeomarketTemperature, pressure, hole size, value of parameter	
Environmental Quality	
Number of boxes witho	

Data Quality Report

ocation	Brazos Trinity Basin
ustomer	Integrated Ocean Drilling Program
ield/Well	East Breaks Block 691
ob Number	40012055

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.

	Res	GR	APWD	Neu	Den	Remarks
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sentation						
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Description constants for each run or zone, complete and relavant						
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R) number X 10						
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ris, unusual formation composition						
hole deviation, dog-leg severity, flow rate, rpm, solids						
Rating (EQR) ut number X 20						

Cell Manager: Hoong, K. FSM: Vijay Moras

DQR Header Utility ver 1.1c

Schlumberger Drilling & Measurements

Revised January 2002