



Tool Record Rates:  
 EcoScope Res, Density & Neutron @ 2 sec  
 sonicVISION Delta T @ 10 sec

Tool Software Version:  
 TeleScope: 9.0\_C03 EcoScope: 11  
 sonicVISION: 6.4\_B10  
 Crew: L. Loh and D. Buster

## EQUIPMENT DESCRIPTION

RUN1

RUN

RUN

### DOWNHOLE EQUIPMENT

proVISION 39.72  
 MRLC 611  
 MRUC 611  
 MRPS 5050  
 OD 6.90

ROP 33.72

Antenna 1 30.56  
 System 30.23  
 Antenna 2 29.90

TeleScope 28.44  
 PMEA 003  
 MDC 516  
 MDI 1580  
 OD 6.89

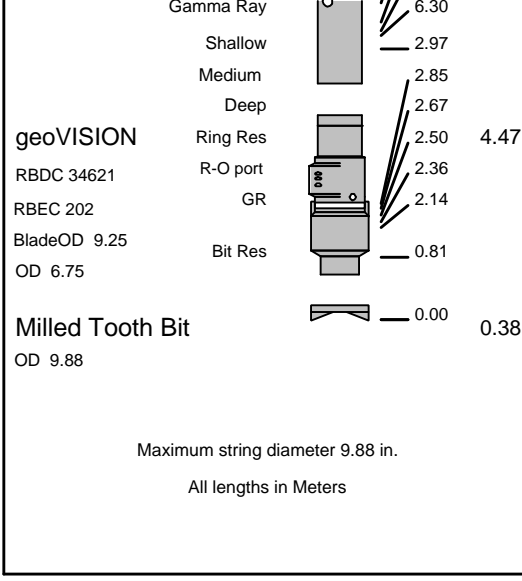
D&I 24.26

sonicVISION 20.05  
 ROP TF 19.62  
 SWDC 656  
 SWDE 636  
 OD 6.75

RX array 17.07  
 R-O port 16.67  
 Xmitter 13.63  
 PNG Monit 10.09  
 Neutron N 9.81  
 Spectrosc 9.64  
 Neutron F 9.40

EcoScope 12.52  
 Collar 736  
 EC 736  
 GSRJ A2381  
 BladeOD 9.38  
 OD 6.89

Receiver 9.34  
 Neutron D 9.22  
 Ultrasoni 7.92  
 Density S 7.53  
 Density L 7.32  
 Continuou 6.82  
 R-O Port 6.60  
 Pressure 6.46



Variable Name	Variable Description	Run Name & Value
Run Number		1
<b>General Information</b>		
BHT_RM	Bottom Hole Temperature (RM)	43.000000
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)	12.700000
TD_RM	Total Measured Depth (RM)	3904.189941
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
<b>ISONIC</b>		
FP_SD	First Sample delay	600.00
STC_CF	Center frequency of Filter	13.00
STC_BW	Bandwidth (kHz)	3.125 kHz
STC_RWI	Receiver waveform ignored	None
PM_TOFF	Tool Time offset from surface system	0.00
DT_COH	Delta-T Coherence Cutoff Value	0.70
PPC_PF	Porosity Formula	Raymer-Hunt
PPC_PS	Sonic Porosity Source	DTRA
PPC_MDT	Matrix Delta-T	55.50
PPC_FDT	Fluid Delta-T	189.00
<b>DVD</b>		
LWD_RM/STATION_FILE/PARAMETER	Station Time-frame file name	Station
-----Density Parameter-----	-----Density	
-----Neutron Parameter-----	-----Neutron	
-----Interpretation Parameter-----	-----Interpretation	
-----Sigma Parameter-----	-----Sigma	
A12A	ARC Air Cal Attenuation From T1 at 2 MHz	8.096470
A14A	ARC Air Cal Attenuation From T1 at 400 KHz	8.154540
A22A	ARC Air Cal Attenuation From T2 at 2 MHz	6.357980
A24A	ARC Air Cal Attenuation From T2 at 400 KHz	6.313930
A32A	ARC Air Cal Attenuation From T3 at 2 MHz	4.697780
A34A	ARC Air Cal Attenuation From T3 at 400 KHz	4.754960
A42A	ARC Air Cal Attenuation From T4 at 2 MHz	4.759350
A44A	ARC Air Cal Attenuation From T4 at 400 KHz	4.713040
A52A	ARC Air Cal Attenuation From T5 at 2 MHz	3.258230
A54A	ARC Air Cal Attenuation From T5 at 400 KHz	3.315620
ABNT	Abnormal Transmitter Indicator	No_Tx_Failed
ALPHA_DEN	Density Enhanced Vertical Resolution Processing Switch	YES
ANISO_COMP	Anisotropy Computation Option	YES

ATMP_ARC	ARC Select Temperature Channel		Annulus_Temp
AZMF	Formation DIP Azimuth	0.000000	
BH_COMPUTE	Borehole Inversion Computation Option		YES
CALG	DVDM Gamma Ray Cal Gain Factor	-1.000000	
CDPTH_ARC	Process Start Depth	100.000000	
DEVI	Well Section Deviation	0.100000	
DIELEC_COM	Dielectric Computation Option		YES
DIPF	Formation DIP Angle	0.000000	
DVDM DHS	DVDM Down Hole Software Version		0.000000
DYN_IMAGE	Generate Dynamic Normalized Image?		YES
EDPTH	Wizard Process Stop Depth	50000	
EN_WIZARD	Enable ARC Wizard Processing		NO
ERRCT	Percentage Error Cutoff	4.500000	
EVRL	SURFACE PROCESSING		49
FWVN	Firmware Version Number	1.100000	
GCSE	Generalized Caliper Selection		BS
GRBC	RM: DVDM Gamma Ray Blanket (CPS)		75.000000
GRSH	GR Shale (Invasion Computation Cutoff)	1000.000000	
GR_CF	Gamma Ray Correction Factor	2.250000	
HIGH_BLEND	High Resistivity Threshold for Blending	2.000000	
IDQT	Image Derived Quality Threshold	1.000000	
IMAGE_MAX	Image Density Caliper Right Scale	8.000000	
IMAGE_MAX	Image Density Quality Right Scale	1.000000	
IMAGE_MAX	Image PEF(Segment) Right Scale	6.000000	
IMAGE_MAX	Image RHOB(Segment) Right Scale	2.650000	
IMAGE_MIN	Image Density Caliper Left Scale	2.000000	
IMAGE_MIN	Image Density Quality Left Scale	0.000000	
IMAGE_MIN	Image PEF(Segment) Left Scale	2.000000	
IMAGE_MIN	Image RHOB(Segment) Left Scale	2.050000	
IMAGE_ORIE	Image Orientation Options, e.g. Top of Hole or True North		NORTH
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	Acquisition start date	YES	
JSD_ARC	ARC Acquisition start date	YES	
LOW_BLEND	Low Resistivity Threshold for Blending	1.000000	
MATR	Rock Matrix for Neutron Porosity Corrections		SANDSTONE
MSWS	ARC Wizard Model Switch Window	5.000000	
MULTIEFFEC	Multi Effect Option	YES	
NEU_DCOR_O	Density Correction Source for Neutron Processing		Average
NEU_FTUBE	Far Thermal Tube Selection		Both
NTIK_SEL	Neutron Tick Channel Name		FAZ1
OACF	O2 Activation Correction Factor (RM)	0.000000	
P12A	ARC Air Cal Phase-Shift From T1 at 2 MHz	1.143270	
P14A	ARC Air Cal Phase-Shift From T1 at 400 KHz	1.838910	
P22A	ARC Air Cal Phase-Shift From T2 at 2 MHz	-1.152680	
P24A	ARC Air Cal Phase-Shift From T2 at 400 KHz	-1.826430	
P32A	ARC Air Cal Phase-Shift From T3 at 2 MHz	1.064520	
P34A	ARC Air Cal Phase-Shift From T3 at 400 KHz	1.835500	
P42A	ARC Air Cal Phase-Shift From T4 at 2 MHz	-1.202580	
P44A	ARC Air Cal Phase-Shift From T4 at 400 KHz	-1.845070	
P52A	ARC Air Cal Phase-Shift From T5 at 2 MHz	1.092880	
P54A	ARC Air Cal Phase-Shift From T5 at 400 KHz	1.844270	
PMUD	Potassium Concentration in Mud	0.000000	
POFFSET	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	
SDPTH	Wizard Process Start Depth	100	
SIG_PCOR_O	Porosity Correction Source for Sigma Processing		Best
SPEC_CSG_D	Casing Depth for Spectroscopy Processing	100.000000	
SPL_CLAY_M	SpectroLith Clay Model		ARENITE
SPL_COAL_O	SpectroLith Coal Processing Option		NONE
SPL_SULFUR	SpectroLith Sulfur Mineral Option		ANHYDRITE
STAB_SIZE	Stabilizer Size	9.375000	
STOH	Density Top of Hole Sector (Left Boundary)		SECTOR_0
TRNO	Tool Run Number	3904.189941	
TSIZ_ARC	ARC Tool Size	6.900000	
TSNO	Tool Serial Number	6.900000	
UNIFORM_CO	Uniform Rock Option		YES
VERS_ARC	ARC Down hole software version Number		1.100000
WRK	Way to Report Potassium Concentration		K_by_Wgt_%
WSDI	Window Size of Dynamic Normalization Image		50.000000

Run number	1									
Bit size	in.	9.875								
Bit start depth	m	970								
Bit end depth	m	1190								
Top interval logged	m	970								
Bottom interval logged	m	1184								
Begin log: time		15:00								
Begin log: date		25-Sep-05								
End log: time		20:25								
End log: date		26-Sep-05								
Mud data										
Depth	m	970								
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	6								
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								

IDEAL Version: ID10\_2B\_08  
IDF

Format: 5 MD ARC/SONIC      Vertical Scale: 1:240      Graphics File Created: 05-Oct-2005 14:46

PIP SUMMARY

Density Ticks, 0.1-ft

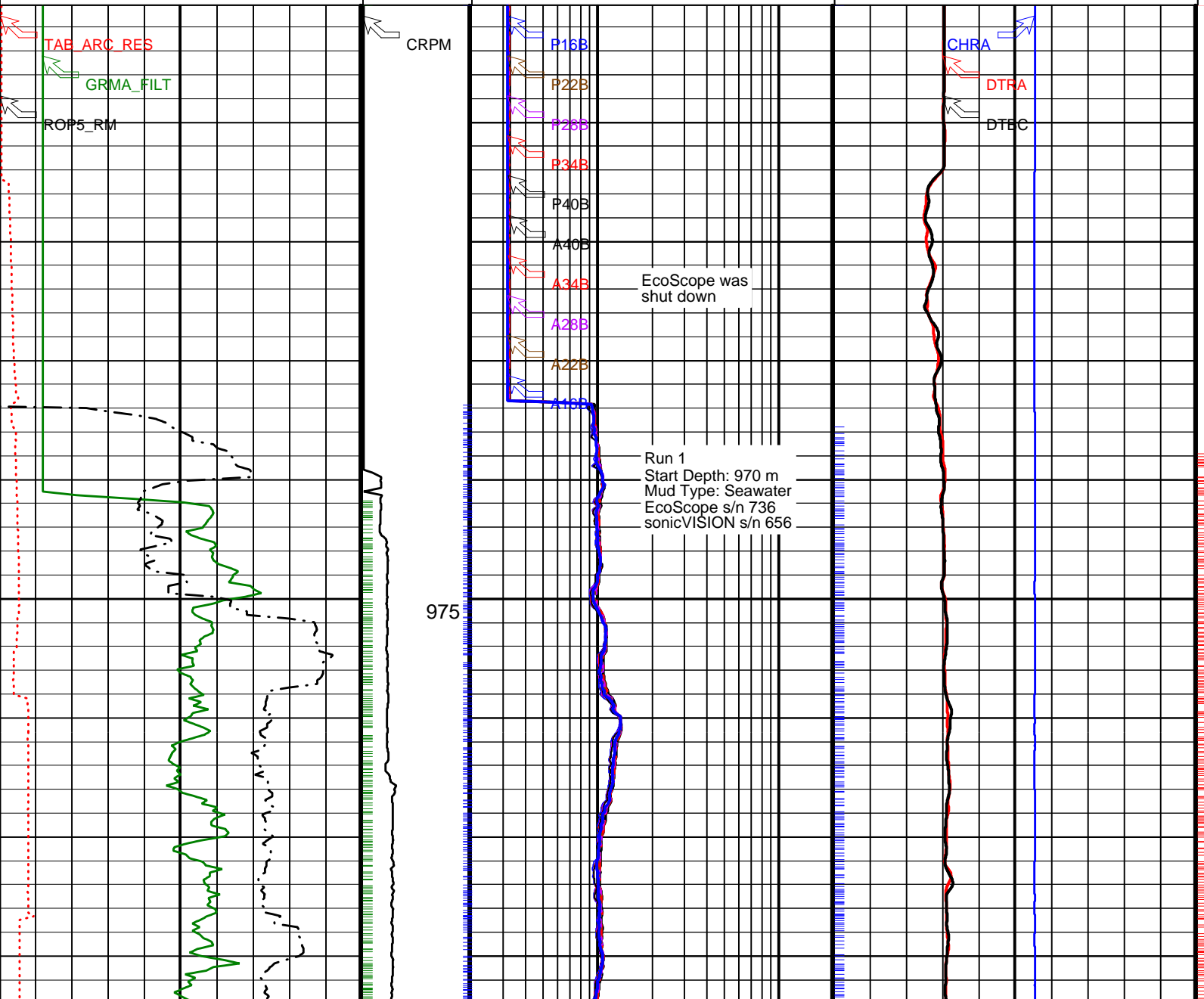
┆ ARC Resistivity Samples

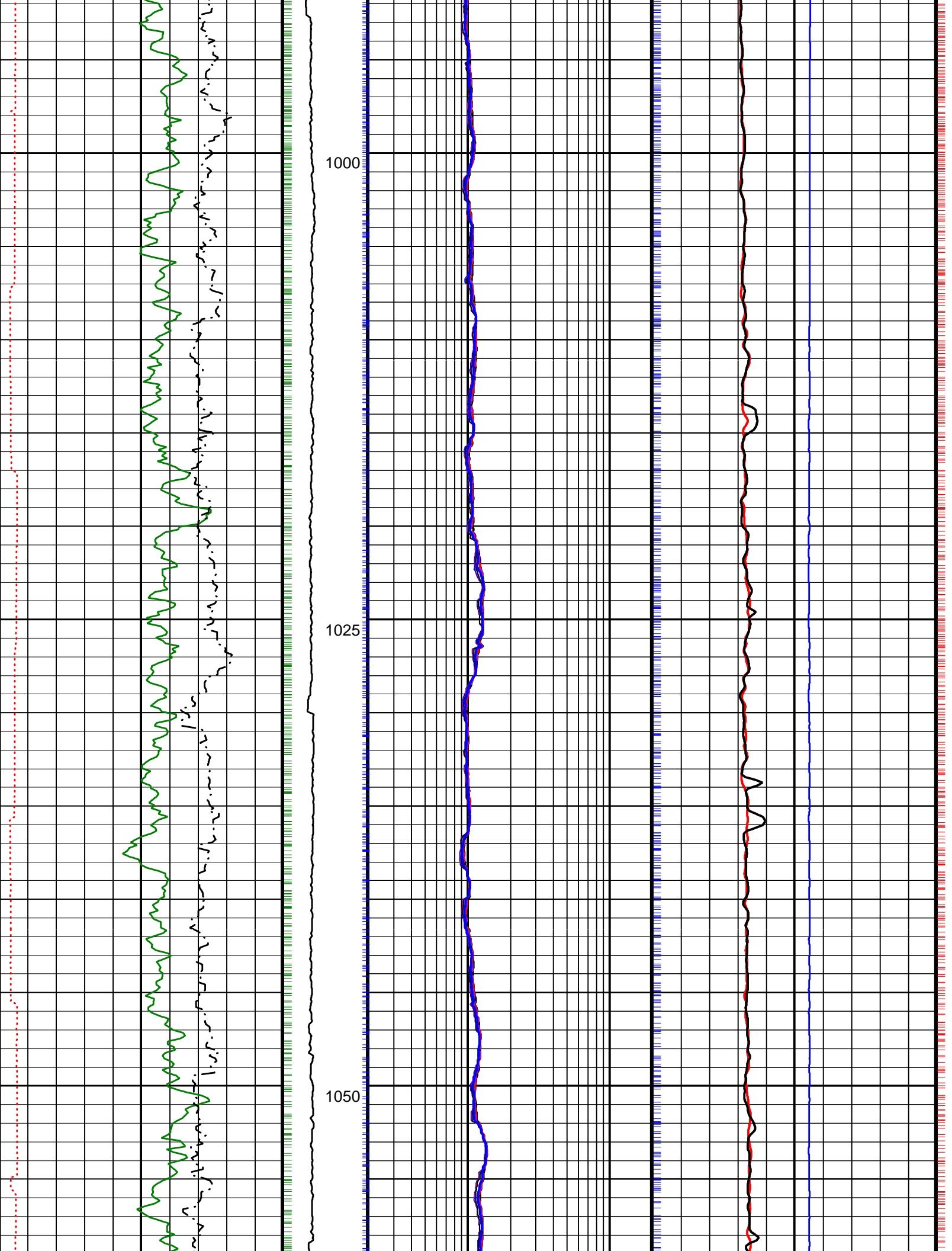
Neutron Ticks, 0.1 ft

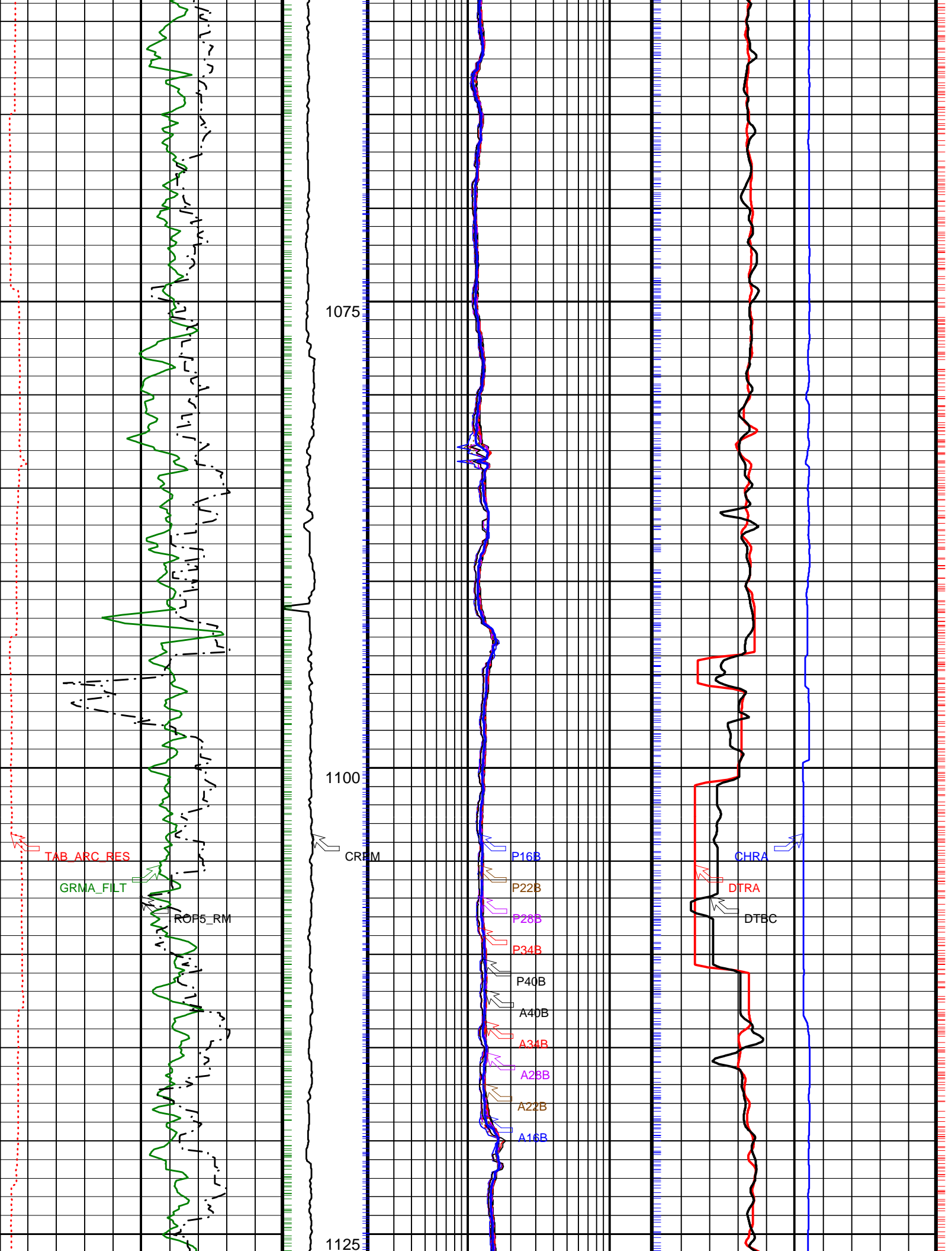
┆ DVDM Gamma Ray Samples

ARC Blended Attenuation Resistivity		
16-in. (A16B)		
0.2	(OHMM)	20
ARC Blended Attenuation Resistivity		
22-in. (A22B)		
0.2	(OHMM)	20
ARC Blended Attenuation Resistivity		
28-in. (A28B)		
0.2	(OHMM)	20
ARC Blended Attenuation Resistivity		
34-in. (A34B)		
0.2	(OHMM)	20

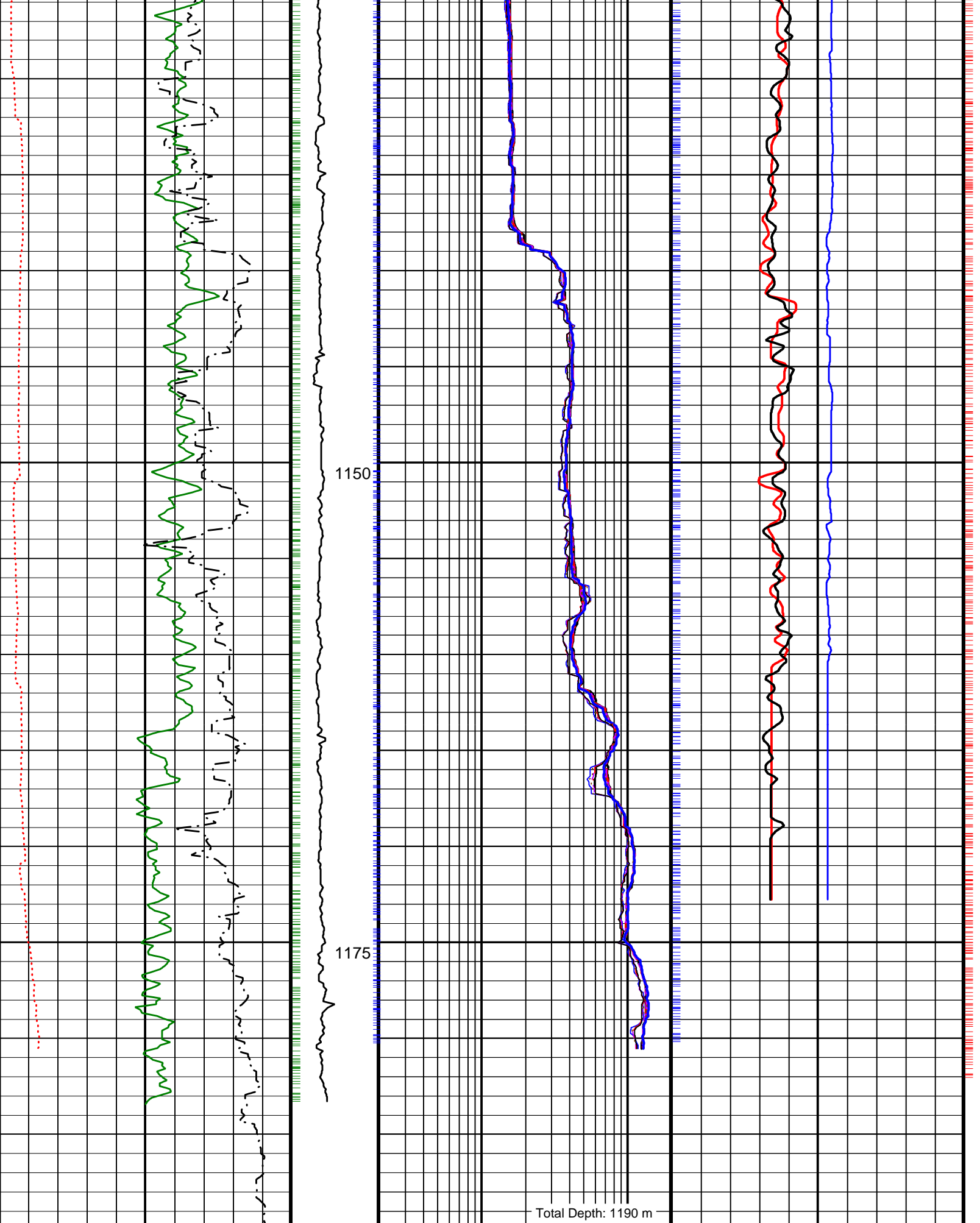
		ARC Blended Attenuation Resistivity 40-in. (A40B)						
		0.2	(OHMM)	20				
		ARC Blended Phase-Shift Resistivity 40-in. (P40B)						
		0.2	(OHMM)	20				
		ARC Blended Phase-Shift Resistivity 34-in. (P34B)						
		0.2	(OHMM)	20				
Rate of Penetration, Averaged over Last 5ft (ROP5_RM)		ARC Blended Phase-Shift Resistivity 28-in. (P28B)		Delta-T Compressional Borehole Compensated (Depth Derived) (DTBC)				
100	(M/HR)	0	0.2	(OHMM)	20	240	(US/F)	140
DVDM Calibrated, Filtered Gamma Ray (GRMA_FILT)		ARC Blended Phase-Shift Resistivity 22-in. (P22B)		Delta-T Compressional from Receiver Array (DTRA)				
0	(GAPI)	150	0.2	(OHMM)	20	240	(US/F)	140
ARC Resistivity Time After Bit (TAB_ ARC_RES)		ARC Blended Phase-Shift Resistivity 16-in. (P16B)		Coherence at Compressional Peak for the Receiver Array (CHRA)				
0	(HR)	10	0.2	(OHMM)	20	-10	(----	10
		Collar Rotational Speed (CRPM) (RPM)						
		0	200					











ARC Resistivity Time After Bit (TAB\_ ARC\_RES)

Collar Rotational Speed

ARC Blended Phase-Shift Resistivity 16-in. (P16B)

Coherence at Compressional Peak for the Receiver Array (CHRA)

0	(HR)	10	(CRPM) (RPM)	0.2	(OHMM)	20	-10	(----	10
			0	200					
DVDM Calibrated, Filtered Gamma Ray (GRMA_FILT)			ARC Blended Phase-Shift Resistivity 22-in. (P22B)			Delta-T Compressional from Receiver Array (DTRA)			
0	(GAPI)	150	0.2 (OHMM) 20			240 (US/F) 140			
Rate of Penetration, Averaged over Last 5ft (ROP5_RM)			ARC Blended Phase-Shift Resistivity 28-in. (P28B)			Delta-T Compressional Borehole Compensated (Depth Derived) (DTBC)			
100	(M/HR)	0	0.2 (OHMM) 20			240 (US/F) 140			
			ARC Blended Phase-Shift Resistivity 34-in. (P34B)						
			0.2 (OHMM) 20						
			ARC Blended Phase-Shift Resistivity 40-in. (P40B)						
			0.2 (OHMM) 20						
			ARC Blended Attenuation Resistivity 40-in. (A40B)						
			0.2 (OHMM) 20						
			ARC Blended Attenuation Resistivity 34-in. (A34B)						
			0.2 (OHMM) 20						
			ARC Blended Attenuation Resistivity 28-in. (A28B)						
			0.2 (OHMM) 20						
			ARC Blended Attenuation Resistivity 22-in. (A22B)						
			0.2 (OHMM) 20						
			ARC Blended Attenuation Resistivity 16-in. (A16B)						
			0.2 (OHMM) 20						

PIP SUMMARY

+ ARC Resistivity Samples

Neutron Ticks, 0.1 ft +

Density Ticks, 0.1-ft +

+ DVDM Gamma Ray Samples

IDEAL Version: ID10\_2B\_08

IDF

EcoScope Integrated Logging-While-Drilling Tool - 6.75 inch / Equipment Identification

Primary Equipment:

Tool Name and Serial Number  
 Calibration Status  
 Collar Type and Serial Number  
 Chassis Type and Serial Number  
 Stabilizer Type and Serial Number  
 Neutron Logging Source  
 Density Logging Source  
 Stabilizer Size

ECO - 675 736  
 ADDC - AA  
 ADSE - EA  
 ADCS - CA  
 NSR - M  
 GSR - JZ  
 9.38 - in.

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EcoScope Integrated Logging-While-Drilling Tool - 6.75 inch Calibration





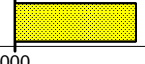

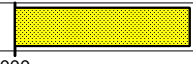

SSn LSn : Water Tank

Phase	SSn Gain	Value	Phase	SSn Offset	Value
Master		1.000	Master		0
	(Minimum) (Nominal) (Maximum)			(Minimum) (Nominal) (Maximum)	
Phase	LSn Gain	Value	Phase	LSn Offset	Value
Master		1.000	Master		0
	(Minimum) (Nominal) (Maximum)			(Minimum) (Nominal) (Maximum)	

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EcoScope Integrated Logging-While-Drilling Tool - 6.75 inch Calibration




Neutron: Water Tank

Phase	Far 2 Gain	Value	Phase	Far 2 Offset	Value
Master		1.056	Master		-0.7620
	0.7000 (Minimum) 1.000 (Nominal) 1.300 (Maximum)			-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
Phase	Far 1 Gain	Value	Phase	Far 1 Offset	Value
Master		1.055	Master		-0.4690
	0.7000 (Minimum) 1.000 (Nominal) 1.300 (Maximum)			-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
Phase	Thermal Near gain	Value	Phase	Thermal Near offset	Value
Master		1.155	Master		-137.6
	0.7000 (Minimum) 1.000 (Nominal) 1.300 (Maximum)			-500.0 (Minimum) 0 (Nominal) 500.0 (Maximum)	
Phase	Epithermal Near gain	Value	Phase	Eptithermal Near offset	Value
Master		1.221	Master		-13.57
	0.7000 (Minimum) 1.000 (Nominal) 1.300 (Maximum)			-300.0 (Minimum) 0 (Nominal) 300.0 (Maximum)	

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EcoScope Integrated Logging-While-Drilling Tool - 6.75 inch Calibration




Gamma 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		2041	Master		5077	Master		11910
	1000 (Minimum) 2000 (Nominal) 3000 (Maximum)			2500 (Minimum) 5250 (Nominal) 8000 (Maximum)			6000 (Minimum) 12000 (Nominal) 18000 (Maximum)	

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EcoScope Integrated Logging-While-Drilling Tool - 6.75 inch Calibration

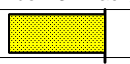
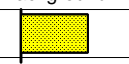
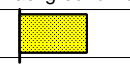
Gamma Density: Aluminum Block

Phase	LS window 3 - Al CPS	Value	Phase	SS window 1 - Al CPS	Value	Phase	SS window 3 - Al CPS	Value
Master		372.3	Master		2692	Master		8750
	200.0 (Minimum) 400.0 (Nominal) 600.0 (Maximum)			1500 (Minimum) 3000 (Nominal) 4500 (Maximum)			4000 (Minimum) 8500 (Nominal) 13000 (Maximum)	

Master: Calibration date not found

EcoScope Integrated Logging-While-Drilling Tool - 6.75 inch Calibration

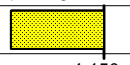
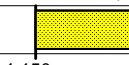
Gamma Density: Background

Phase	LS window 3 - Background CPS	Value	Phase	SS window 1 - Background CPS	Value	Phase	SS window 3 - Background CPS	Value
Master		57.82	Master		85.68	Master		413.0
	50.00 (Minimum) 70.00 (Nominal) 90.00 (Maximum)			50.00 (Minimum) 75.00 (Nominal) 100.0 (Maximum)			270.0 (Minimum) 370.0 (Nominal) 470.0 (Maximum)	

Master: Calibration date not found

EcoScope Integrated Logging-While-Drilling Tool - 6.75 inch Calibration






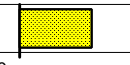
Gamma Density: Water Block Check

Phase	Long spacing water density G/C3	Value	Phase	Short spacing water density G/C3	Value
Master		1.047	Master		1.262
	0.9000 (Minimum) 1.150 (Nominal) 1.400 (Maximum)			0.9000 (Minimum) 1.150 (Nominal) 1.400 (Maximum)	

Master: Calibration date not found

EcoScope Integrated Logging-While-Drilling Tool - 6.75 inch Calibration

Resistivity: Air

Phase	Phase-Shift T1	Value	Phase	Phase-Shift T2	Value	Phase	Phase-Shift T3	Value
Master		1.143	Master		-1.153	Master		1.065
	-4.000 (Minimum) 0 (Nominal) 4.000 (Maximum)			-4.000 (Minimum) 0 (Nominal) 4.000 (Maximum)			-4.000 (Minimum) 0 (Nominal) 4.000 (Maximum)	
Phase	Phase-Shift T4	Value	Phase	Phase-Shift T5	Value	Phase	Phase-Shift T1 at 400KHz	Value
Master		-1.203	Master		1.093	Master		1.839
	-4.000 (Minimum) 0 (Nominal) 4.000 (Maximum)			-4.000 (Minimum) 0 (Nominal) 4.000 (Maximum)			-4.000 (Minimum) 0 (Nominal) 4.000 (Maximum)	
Phase	Phase-Shift T2 at 400KHz	Value	Phase	Phase-Shift T3 at 400KHz	Value	Phase	Phase-Shift T4 at 400KHz	Value

Master		-1.826	Master		1.836	Master		-1.845		
	-4.000 (Minimum)	0 (Nominal)	4.000 (Maximum)	-4.000 (Minimum)	0 (Nominal)	4.000 (Maximum)	-4.000 (Minimum)	0 (Nominal)	4.000 (Maximum)	
Phase	Phase-Shift T5 at 400KHz				Value					
Master		1.844								
	-4.000 (Minimum)	0 (Nominal)	4.000 (Maximum)							

Master: Calibration date not found											
EcoScope Integrated Logging-While-Drilling Tool - 6.75 inch Calibration											
Resistivity: Air											
Phase	Attenuation T1		Value	Phase	Attenuation T2		Value	Phase	Attenuation T3		Value
Master		8.096	8.096	Master		6.358	6.358	Master		4.698	4.698
	7.000 (Minimum)	9.000 (Nominal)	11.000 (Maximum)		4.000 (Minimum)	6.000 (Nominal)	8.000 (Maximum)		3.500 (Minimum)	5.500 (Nominal)	7.500 (Maximum)
Phase	Attenuation T4		Value	Phase	Attenuation T5		Value	Phase	Attenuation T1 at 400KHz		Value
Master		4.759	4.759	Master		3.258	3.258	Master		8.155	8.155
	2.500 (Minimum)	4.500 (Nominal)	6.500 (Maximum)		2.000 (Minimum)	4.000 (Nominal)	6.000 (Maximum)		7.000 (Minimum)	9.000 (Nominal)	11.000 (Maximum)
Phase	Attenuation T2 at 400KHz		Value	Phase	Attenuation T3 at 400KHz		Value	Phase	Attenuation T4 at 400KHz		Value
Master		6.314	6.314	Master		4.755	4.755	Master		4.713	4.713
	4.000 (Minimum)	6.000 (Nominal)	8.000 (Maximum)		3.500 (Minimum)	5.500 (Nominal)	7.500 (Maximum)		2.500 (Minimum)	4.500 (Nominal)	6.500 (Maximum)
Phase	Attenuation T5 at 400KHz		Value								
Master		3.316	3.316								
	2.000 (Minimum)	4.000 (Nominal)	6.000 (Maximum)								

Master: Calibration date not found			
EcoScope Integrated Logging-While-Drilling Tool - 6.75 inch Calibration			
Gamma Ray: Blanket			
Phase	Gamma ray factor	Value	
Master		2.250	
	2.000 (Minimum)	2.500 (Nominal)	3.000 (Maximum)

Company: Lamont-Doherty Borehole Research


Well: IODP Expedition 311 CAS-05D

Field: Cascadia Margin

Rig: JOIDES Resolution

State: Pacific Ocean

EcoScope Resistivity - sonicVISION (Fluid Arrival)  
1:240 Measured Depth  
Recorded Mode Log



# Data Quality Report

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

Geomarket	NGC	Location	Vancouver Island
Job Date	25-SEP-2005	Customer	Lamont-Doherty Borehole Research
Rig	JOIDES Resolution	Field/Well	Cascadia Margin/CAS-05D
Engineer	Lake Loh	Job Number	40012416

## Type of Measurement

Res	GR	Delta T		
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## Remarks

1. Correcting the resistivity data by assuming 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, and Delta T) do not correlate to each other very well and cause the resistivity curves blocky.

## Operation

Description of Well - Names, Geometry, Services, Location and References; General Content Header, user of rademarks, directional data, well plot, order of components, spelling and style, units sensor to toolface angle recorded	
Equipment and Software Description	
Tool sketch, equipment numbers, software versions, data rates, filtering weights	
Processing Traceability and Environment Description	1
Acquisition environment, parameters and key constants for each run or zone, complete and relevant 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, discrepancy explained	

## Operating Procedures

Depth Control	2
Comparison with driller's depth, other logs, other bit runs, between RT and RM, Depth summary listing	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)	80
Number of boxes without number X 10	90

## Environmental effects

Irregular Operation	1	1	1		
Excessive ROP or speed, high deviation, shocks, vibrations, sticking conditions					
Borehole Geometry	2				
Shape (caves, etc), rugosity, spiralled hole, mud induced fractures. Casing, tubing conditions					
Borehole Fluid			3		
Barite, KCl, salinity, additives, gas cut, unstable					
Interferences					
External noise, nearby casing or drillpipe, debris, unusual formation composition					
Operation Outside Tool Specifications					
Geomarket Temperature, pressure, hole size, hole deviation, dog-leg severity, flow rate, rpm, solids value of parameter					
Environmental Quality Rating (EQR)	60	80	60		
Number of boxes without number X 20					

1. Excessive ROP is causing low data density.
2. Borehole washouts cause the resistivity curves separation.
3. Existing of gas in the borehole attenuate the sonic signal.

Cell Manager: Lake Loh      FSM: Vijay Moras

Geometrical	NGC	Location	Vancouver Island
Job Date	25-SEP-2005	Customer	Lamont-Doherty Borehole Research
Rig	JOIDES Resolution	Field/Well	Cascadia Margin/CAS-05D
Engineer	Lake Loh	Job Number	40012416

Type of Measurement

Res	GR	Delta		
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# Data Quality Report

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

Remarks

Operation 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

Equipment 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 relevant 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, discrepancy 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

Geometrical temperature, 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 FSN: Vijay Moras

Revised January 2002

Schlumberger Drilling & Measurements

DQR Header Utility ver 1.1c



Drilling & Measurements