New Well Logging Submittal Requirements

Nuclear Magnetic Resonance Logs

- Previous NTL 2006-G16
  - Did not requite digital LAS data to be submitted
  - Only the image format was required
- New NTL 2010-G02
  - Requires digital curve data
    - Quality Control Curves
    - Computed Curves
    - T2 Bin Distributions

Required Curves

Parameter	Unit
NMR Porosity	V/V or pu
NMR Effective Porosity	V/V or pu
NMR Total Porosity	V/V or pu
NMR Bound Fluid Volume	%
NMR Free Fluid Volume	%
NMR Total Fluid Volume	%
NMR Apparent Clay Bound Water	%
NMR Permeability	MD
NMR Permeability (SLB)	MD
NMR T2 Logarithmic Mean	MS
NMR Cable Tension	
NMR Cable Speed	F/SEC
NMR Downhole Force	LBF
NMR T2 Bins	MSec

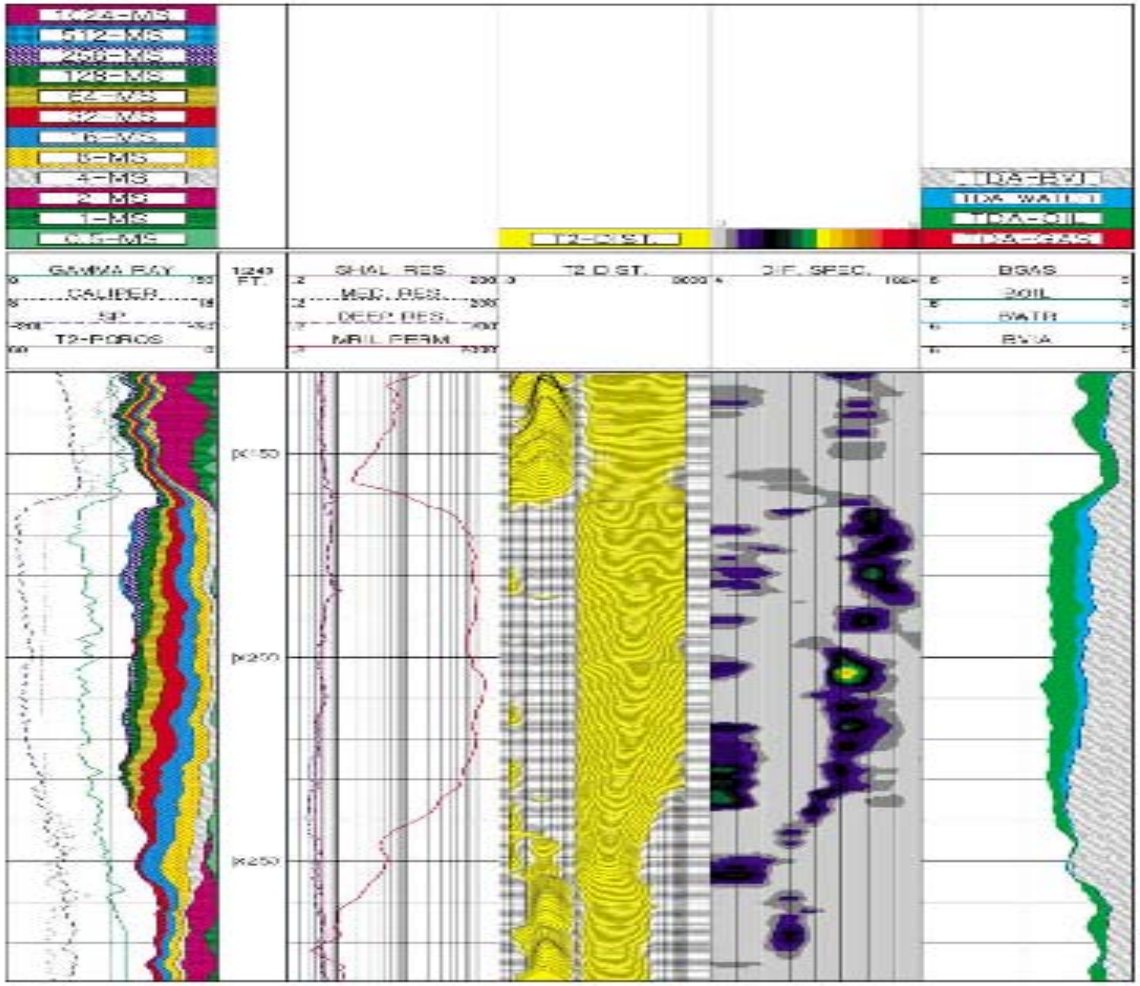

Figure 1.15—Through the subtraction of echo trains obtained at two polarization times, light hydrocarbons can be identified. Track 5 displays the differential spectrum obtained from the subtraction of the two separate T_2-distributions derived from echo trains acquired with short and long polarization times, TW_s = 1 s and TW_L = 8 s. The water signals completely cancel while hydrocarbon signals only partially cancel and remain when the two T_2 distributions are subtracted from one another. Track 6 displays the TDA results. Performed in time domain (as opposed to T_2 domain), TDA can quantify up to three phases (gas, light oil, and water; gas and water; or light oil and water). Mud filtrate that flushed the oil constitutes the movable water shown in Track 6.

TABLE 1– CROSS REFERENCE OF MNEMONICS				
Generic	Baker Atlas	Computalog	Halliburton	Schlumberger
NMR Porosity (NMRPHI)	MPHI	MPHI	MPHI or PHIMD (decimal) TPHI (T2 total phi), TPHI1 (T1 total Phi)	CMRP
NMR Effective Porosity	MPHE	MPHI	MPHI or PHIMD (decimal)	CMRP or CMRP_3MS
NMR Total Porosity	MPHS	MSIG	MSIG	TCMR
NMR Bound Fluid Volume	MBVI	MBVI	MBVI or BVIMD (decimal)	BFV
NMR Free Fluid Volume	MBVM	FFI	MFFI or FFIMD (decimal)	CMFF
NMR Apparent Clay Bound Water	MCBW	MCBW	MCBW	-
NMR Permeability	MPRM (Timur-Coates)	MPERM	MPERM or MPRM (Timur-Coates)	KTIM (Timur-Coates) KSDR (SDR Equation)
T2 “Bins” or T2 Partial Porosities	P01 – P0x (cumulative)	BIN1 – BIN8	BIN1 – BINx or P1 – Px, (P1PR – PxPR for total porosity)	CBP1-CBP8

Submitting Data

- Submit the digital and image NMR data on a separate CD/DVD.
- We encourage direct submittal of log data from the acquiring service company.
- Image files and digital data are due to TGS 30 days after “Date Operations Completed”

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