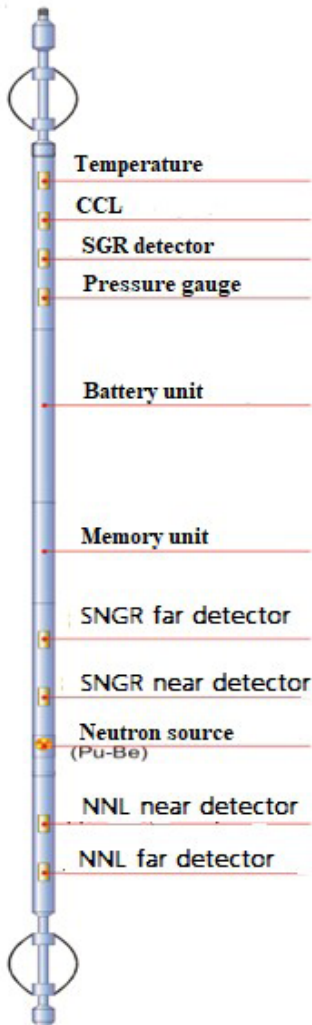


Cased hole

## Complex evaluation of near-wellbore medium properties with KPSNGK-Sh-A Memory Multiparameter Neutron tool



### SCOPE OF APPLICATION

- Oil and gas wells, with/without tubing
- Operating or killed wells
- Any lithology
- Heavy or light cement
- Well filling - gas/water/oil

### FEATURES

- autonomous operation in the borehole with data recording in non-volatile memory and possibility of tool multiple switching on/off during logging to save battery power
- Multiparametric studies realized in one trip:
  - Compensated Neutron Log to determine water saturated porosity, neutron parameters of the environment
  - Three-probe spectral neutron gamma-ray logging for radial (3 logging depths) determination of elemental composition, nuclear parameters of the medium
  - Spectral gamma-ray logging to determine K, U, Th concentrations
  - Pressure survey and high-sensitivity temperature log

### ADVANTAGES

- Express quality evaluation of cement filling behind two pipes (including accumulation of gas, water)
- Formation evaluation: saturation, porosity; by indirect parameters: density, permeability
- Evaluation of formation lithology

Cased hole

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### SPECIFICATIONS

Number of probes:	
NNkt	2
SNGK-Sh	2 (1024 channels)
SGR	1 (512 channels)
Ranges of gamma ray energies, MeV	
SNGK	0,1–8,0
SGR	0,1–3,5
Energy resolution of the <sup>137</sup> Cs peak spectra, %	Max. 15
Integral nonlinearity of the energy scale of spectra, %	Max. ±3
Instability of the energy scale, %	Max. 1
Maximum operating pressure, MPa	80
Maximum operating temperature, °C	120
Tool dimensions, mm:	
diameter	48
tool length with centralizers	6200
Tool weight, kg	Max. 55
Continuous logging time, hr	20 (40–60)*

\* increased battery capacity