**OIL WELL PRODUCTION RATE IMPROVED MEASUREMENT METHOD**

**Background**
Problem of process control for oil well production rate is a very complex task. The ideal solution to the problem of process control of an oil well production is a reception of continuous information on the amount of all the components in the composition of well production, namely, gas, oil and water, and their characteristics – temperature, pressure, viscosity, and density. Measuring unit that allows to measure the quantitative composition of each constituent component of the oil-water mixture, as well as viscosity, density, temperature and pressure, is a complex measuring system.

**Aims and Objectives:**
- direct dynamic measurement of batch quantity (flowrate) of crude oil, including the formation water and associated petroleum gas, produced from oil and gas wells;
- measurement and recording of measurements in terms of volume and mass;
- formation and development of signals «accident», «block» and the transmission of information about them on the upper level of automated management system of oilfield.

**Methods**
Measurement of the mass of crude oil (mass flow rate) and the mass of gas released from the crude oil in the separator is conducted using mass flowmeters of different manufacturers.

The method of calculation based on the measured density of the gas is used in order to determine the amount of gas released from the crude oil in the separator and derive it to the volume at the default (normal) conditions.

The data of the mass flow rate of the fluid and its water content, measured by moisture meter, is used to calculate the weight of the oil.

**Conclusion**
One of the methods of measuring the flow rate of oil wells is based on continuous separation of oil-water mixture from the well into two phases (separated products): liquified oil-water mixture and gas; then constantly repeated measurement cycle consistently perform the following operations: the gas phase is discharged into a common line, and the liquid phase is accumulated until it reaches a specified level, then the discharge of the gas phase is closed in order to accumulate it to create a given pressure difference between the gas phase in the gas separator and the medium in a common line and then the liquid phase portion is dropped through the product sampler into a common line being measured by the flowmeter, finally the gas phase is discharged.

**Key words:** well production rate, automatic group measuring units, oil-water mixture, gas separator, flowmeter

**References**


The author
Safarov Yan R.
Engineering and Production Enterprise «Novyye Tekhnologii» OOO
General Director
office 903, 9, Ufa, R. Zorge str., Ufa, Russian Federation
tel: (347) 293-93-33
e-mail: nt@tech-new.ru
Post-graduate Student of Institute of Energy Resources Transportation GUP
(Correspondence Form of Education)