

## Determination of sanitary zone width at the territory adjacent to water objects

*David Kereselidze, Vazha Trapaidze, Giorgi Bregvadze.*

E-mail: [davit.kereselidze@tsu.ge](mailto:davit.kereselidze@tsu.ge);

<sup>1</sup>Department of Geography, Faculty of Exact and Natural Sciences,  
Iv.Javakishvili Tbilisi State University,  
0179, Tbilisi, I.Chavchavadze #3

Sanitary protection zones are created with the end of protection of the water objects, which are used for drinking, for water supply in domestic purposes, or for medicinal and rehabilitation (resort) needs. Polluting agents penetrate into water objects not only via surface, liquid and solid runoffs, but also from underground waters. Indeed, infiltration of some amount of water along with various chemical and biological elements dissolved in it occurs from agricultural lands and all this penetrates into water objects. Also we should mention that this process is depended on level mode in water objects.

Determination of limits of sanitary protection zone and its belts is a major problem, since it is related to severe restrictions that is expressed in human life and temporary accommodation; arrangement of dwelling and administrative buildings; extraction of inert materials; sewage outfall, swimming, cattle grazing, washing, fishing, application of toxic chemicals etc.

In order to determine sanitary protection zone width we use differential equation of non-stationary water filtration, which includes filtration, velocity and intensity components. Double integration of this equation enables us to establish the condition of non-penetration of polluted filtration waters into water objects and to determine the sanitary zone width at territory adjacent to water object.