

**EVALUATION OF POTENTIAL ENVIRONMENTAL DANGER OF FILTRATION
WATERS OF SOLID MUNICIPAL WASTE LANDFILLS IN THE LENINGRAD REGION**

S. E. Vitkovskaya^{1,2}, Yu. O. Shilova¹, D. M. Malyuhin³

¹ *Russian State Hydrometeorological University
79, Voronezhskaya St., Saint-Petersburg, 192007, Russia;*

² *Agrophysical Research Institute
14, Grazhdanskiy pr., Saint-Petersburg, 195220, Russia;*

³ *LLC «Pure land»
76 a, lit. R, Obukhovskoy Oborony pr., Saint-Petersburg, 192092, Russia
E-mail: s.vitkovskaya@mail.ru*

The paper presents the results of studies of the elemental composition of filtration waters (FW) of two landfills for municipal solid waste in the Leningrad region. The period of operation of landfills at the time of the study (2017) was 17 years. It has been revealed that the potential risk of impact of FW on water is associated with extremely high content of ammonium nitrogen and high concentrations of heavy metals. The content of Cd, Hg, Pb and Cr in FW of «New Light-ECO» landfill exceeded the hygienic standard for water objects by 97, 4, 7 and 8 times, respectively. The content of ammonium nitrogen in the FW of the tested landfills was 360–1750 times higher than the limits set by the hygienic standard. Using the calculation method, it was established that contamination of the soil with heavy metals was possible only with prolonged contact of the filtrate water with the soil, for example, within a filtration ditch, as well as in the absence of facilities for collecting and draining the filtration water (unauthorized landfills).

Key words: municipal solid waste, waste disposal, filtration waters, environmental impact.

