

## **MOSCOW METROPOLITAN AREA: ECOLOGICAL ASSESSMENT BY GEOCHEMICAL DATA**

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The usage of applied geochemistry methods in environmental assessment started in 1976 from the researches of the Moscow Metropolitan Area under the leadership of Drs. Yuliy Saet and Eduard Burenkov. Since then, the multi-scale envirogeochemical surveys have been conducted in the Moscow Metropolitan Area hosting the largest industrial enterprises and almost 10% of population of Russia. Moscow Metropolitan Area is located at the Russian Platform in the forest zone. The main land use type is agricultural and industrial, with subordinate mining. Multi-scale envirogeochemical mapping (1:1,000,000; 1:200,000; 1:50,000) was carried out allowing to reveal pollution sources and sinks in soil, surface water, stream sediments, snow cover, and vegetation. A vast range of toxic chemical elements, pesticides, and radionuclides were found in the environment. Polluted area covers from 10 to 40% of the territory studied. Envirogeochemical monitoring of Moscow City made in 1977, 1987, and 1993 showed that sharp production recession in 1993 resulted in the ecological state improvement. All the data collected was integrated into GIS (on the basis of ArcView 3). Its thematic and predictional maps, data bases reflect the content, character, intensity, ecological risk and dynamics of environment pollution in the Moscow Metropolitan Area. Envirogeochemical mapping enables to solve the following ecological problems: ? guiding of mass flow migration regularities in the environment; ? environmental state assessment caused by toxic metals pollution; ? technogenic pollution sources revealing; ? ecogeosystems changes predicting; ? developing of rational nature management measures.