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Waste Water Treatment in Dnipropetrovsk Region

A present environmental state and tendency in the development of ecological situation on the territory of Dnipropetrovsk region is critical. High level of industrial and agricultural development of the area is the most typical feature for the region. Contamination of water objects creates a real concern about environmental issues and public health.

The main sources of water contamination in Dnipropetrovsk region are the following: industrial production (65%), public utilities (25.6%) and agriculture (9.2%). Additionally, drainage waters of irrigation system, which are contaminated with pesticides, herbicides and mineral salts, get into natural water. More than 80 % of the discharge facilities do not meet the requirements of technological and environmental cleaning. A significant amount of unfavourable substances enters the water objects from urban territories, which are not equipped with waste water treatment facilities.

The development of national economic complex in the condition of extremely uneven distribution of water resources has caused an acute problem of drinking and industrial water supply. This deficit is partly covered by Dnipro River's drain transfers through the channels of Dnipro-Donbass, Dnipro-Kryvy Rig, Dnipro-Ingulets, supply conduit of Dnipro-Zahidny Donbass, as well as by water supply systems of regional significance.

The analysis showed that small rivers in Dnipropetrovsk region are 10 times more contaminated than large rivers. This is due not only to their low water content, but also not sufficient protection system. The level of water treatment is extremely low. Existing treatment facilities even with biological treatment remove only 10-40 % of inorganic substances and do not remove the heavy metals. 370 million cubic meters of contaminated waste water, or 14 % of their volume in the country, are discharged into Dnipro annually.

In order to protect water from contamination, it is proposed to implement the following measures: (i) to limit industrial discharges of sewage water into the rivers, lakes and other natural water objects; (ii) to clean the stream canals of water objects from rubbish; (iii) to re-new and innovate industrial technologies and technologies for waste recycling; (iv) to implement in practice a strong control for fertilizer and pesticide dumpings; (v) to enhance the sanitary control for sewage dumpings; (vi) to raise public awareness on the environmental issues and understanding among population about the importance of environmental problem.