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## **FINE-DISPERSED STONE PROCESSING WASTE IN ZHYTOMYR REGION: ENVIRONMENTAL CHALLENGES AND SOLUTIONS**

The relevance of the problem stems from the unique geological potential of the Zhytomyr region, which has 156 deposits of facing and decorative stone within the Ukrainian Shield with shallow occurrence of Precambrian crystalline rocks.

The primary sources of fine-dispersed waste (slurry) are enterprises engaged in extracting and processing facing stone. The scale of the problem is confirmed by 84 special permits for subsoil use and a total development area of about 660 hectares, which creates significant environmental pressure [1, p. 40].

Environmental consequences manifest in the complex degradation of natural systems through waste heap formation, changes in the hydrogeological regime of the territory, and negative impact on public health due to crystalline silica content in the waste [2, p. 31].

In Zhytomyr region, a systematic approach is being implemented through the creation of "Eco-Service" municipal enterprise (15.5 hectares near Korostyshiv) for comprehensive waste processing: production of crushed stone (up to 40,000 thousand tons annually) and manufacturing thermal blocks from a slurry.

Economic losses include land resource losses and reduced investment attractiveness of the region. The solution requires implementing international experience through technological modernization, economic incentives, and strengthened environmental control using circular economy principles.

Comprehensive intervention at state, regional, and enterprise levels, including technological modernization, strengthening the regulatory framework, and raising environmental awareness among all process participants is needed to solve the mentioned above multifaceted problem effectively.

## **REFERENCES**

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