INCREASING THE BIOGENICITY OF TECHNICAL SOILS WHEN CREATING VEGETATION COVER AS A METHOD OF CONSERVATION TAILING DUMPS FOR MINING WASTE

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The article reviews the domestic and international practice of using municipal wastewater as an unconventional chemical meliorant with a fertilizing effect on irrigation fields, in hydroponic systems, as well as overburden dumps and ore enrichment waste during reclamation activities. The object of research was ore enrichment waste ("tailings") of the apatite-nepheline factory ANOF-2 of the Apatite CF JSC with a predominance of nepheline sands in their composition. The tailing dump is included in the list of objects of accumulated environmental damage in the region, but due to its rich mineral composition, it is recognized as a man-made Deposit that is subject to conservation in order to obtain Apatite, nepheline, sphene, aegirine and titanomagnetite concentrates in the future. The purpose of this work was to evaluate the effectiveness and prolonged effect of chemical reclamation of nepheline sands by clarified municipal wastewater (CMWW) to increase the biogenicity (NPK status) of technical soil when creating vegetation cover as a method of preserving the tailings dump. The article uses the method of phytotesting of soil irrigated by the CMWW of a regional enterprise of the agricultural sector on a single-species seed material recommended for recultivation of disturbed territories in the Northern regions. During the formation of seeded phytocenosis from meadow Timothy (Phleum pratense L.) on nepheline sands the stimulating effect of CMWW on the soil nutrient regime was confirmed. After phytoextraction (at the end of the experiment), it retains a high residual level of the main nutrient elements (N, P, K), which indicates a prolonged effect of CMWW. To confirm the effect obtained in the laboratory, a field experiment was launched at the ANOF-2 reserve tailings storage facility in 2019, and observations are continuing. Irrigation of nepheline sands with clarified municipal wastewater at a total rate of 380 t/ha, subject to the conditions of multiple uniform distribution of irrigation water over the area, has a prolonged effect on the nutrient regime of the soil and is sufficient to create a stable vegetation cover from Timothy meadow on ore enrichment waste without land use.

Keywords: apatite-nepheline ore processing waste, nitrogen, phosphorus, potassium, clarified municipal effluents, unconventional ameliorant, citric acid, mobile forms, availability for plants, meadow Timothy *Phlum pratense* L.

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