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STUDY OF TREATMENT EFFICIENCY OF WASTEWATER COLLECTED FROM THE SURFACE OF ROADS BY NATURAL ZEOLITE

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One of the main tasks of raising the technical level of highways, safety and environmental performance is timely and targeted collection and removal of water from the surface of roads and subsequent cleaning of pollution [1, 2].

If there are regulations available on the design of roads, grounding of the purpose of flowsheets for removal and cleaning of the runoff from roads is not paid due attention [3, 6].

The system of surface water drainage from the road consists of several buildings and planning activities intended for interception and diversion of water from the road. The system includes: planning of the roadway and roadsides, culverts, side, interception and other ditches.

The issues concerning the application of sewage treatment plants need to be addressed on the basis of a set of indicators of construction conditions, and the selected drainage system, reliability of connection of treatment plants with it and the efficiency of functioning of both the drainage and water treatment structures.

Given the factors that influence the formation of surface waste water, nature and degree of contamination of mineral and organic components of various origins, the priority indexes that one should be guided with in choosing the technological scheme of runoff treatment collected from roads, necessary and sufficient are such composite indexes of water quality as the content of suspended solids and oil products. More viscous oil products adsorb on the adsorbent surface much more effectively compared with the lighter ones [7].

The specific polluting components in the composition of runoff from roads that have to be removed during the cleaning process (such as detergents, salt of heavy metals, nutrients) are, as a rule, the result of man-made pollution or poor sanitary condition of the surface watershed. They should therefore be included in the list of priority indexes only according to the field research after studying the reasons that precondition their presence.

Concentrations of contaminants in the surface runoff collected from roads, that are disposed to treatment plants or into the water bodies, are recommended to be taken according to field and laboratory investigations. However, determination of average values of indexes is performed by means of statistical processing of data of chemical analysis, assuming normal (or log-normal) distribution of random changes in quality of the water.

Diversion of the runoff from roads into water bodies should be in accordance with the regulations, as well as the specific conditions of its formation: sporadic atmospheric precipitation, intensity of snowmelt, abrupt changes in the cost and concentration of waste.

Typical solutions for organization of drainage, which represent strictly regulated uniform structures and sizes of both road edge and angle shoots for all types of roads and conditions of use do not meet the requirements of regulatory support of transport and operational performance of modern multi-speed roads [4, 5].

In modern technologies of water purification processes of water filtering and filtering materials occupy the dominant position. The progressive environmental degradation of water bodies requires constant updating of filter elements, which include higher technological and environmental requirements. The new generation of modern filter materials include zeolites. In order to use the sorbents for the removal of oil, they are to be hydrophobic and, at the same time, absorbing oil well

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ПОКРАЩЕННЯ ТРІБОЛОГІЧНИХ ВЛАСТИВОСТЕЙ ОЛИВ ТРАНСПОРТНИХ ЗАСОБІВ ШЛЯХОМ ДОДАВАННЯ РІДКОКРИСТАЛІЧНИХ ПРИСАДОК

LIGUID-CTYSTAL ADDITIVES FOR IMPROVED TRIBOLOGIKAL PROPERTIES OF LUBRICANTS FOR TRANSPORT MEANS

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Останнім часом спостерігається тенденція використання рідкокристалічних сполук в якості присадок до мастильних матеріалів.