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Composition and Quality of Coal Layer M_4^1 of Lozivska Promising Region, and Main Areas of Its Rational Use

Introduction. In view of severization of requirements setting to coal quality as to chemical and technological raw material it is required to reevaluate previously prospected deposits to identify their suitability as for chemical-recovery industry, ability to develop coal oil etc.

The work objective is to give overall description of both composition and quality of industrial coal layers of Lozivska promising region. Namely, m_4^1 layer is meant. It is required to identify its grade composition according to operating standards and main areas of its rational use.

Layer m_4^1 is a part of suite C_2^7 . It is placed 45 to 50 m higher than indicator chalkstone of the suite. Industrial area of the layer is in the southern share of the zone; it occupies 18.6 km². Within industrial area the layer depth varies from 0.60 m to 1.18 m. The layer structure is irregular. Stratification depth varies from 632.6 m to 1009.7 m deeping from south-west to north-west adipping. Below sea levels vary from -472.3 m to -882.7 m. Its roof consists of argillites and, in part, aleurolites. Its bottom consists of argillites; aleurolites are less common.

Megascopically, the layer consists of semibright banded sometimes scratched humite coal. Megascopically, coal is glance; fusain is in small (5×6-2 mm) lenses, and sometimes in large (5×20×10 mm) ones. Generally, mineral inclusions are iron sulphides, calcite, and kaolinite. Iron sulphides occur as small dispersed-scattered flakes in organic part or in a form of small lenses. Sometimes pyrite fills in fusain vesicles. Calcite fills in vertical coal fissures, and kaolinite occurs only on fissures in vitrit.

Maceral group of vitrinite (Vt) is the most commonly encountered in petrographic composition of the layer (82%). Semivitrinite group (Sv) is 2%, and shares of internite (I) and ta leuptinite (L) groups are alike – 8.5% and 7.5 %. Level of fast components is 9.8 %. On its petrographic composition, the layer coal belongs to helitolite class. Generally, it is represented by lipid-fusinite-helite type. By the procedure of I.V. Yeriomin, the layer coal belongs to weakly regenerated group. On the data of petrographic research, the layer coal mainly belongs to strongly regenerated group. On the level of coal regeneration, it belongs to “b” type.

Wet analytical (W^a) varies from 3.7 % to 12.75 % under mean value 8.3 %. Ash content of plies ($A_{BYT.II}^d$) varies from 5.5 % to 27.7 % being 13.2 % on an average. Coal is mesotrophic. Mainly, mineral inclusions are represented by quarts, iron sulphides, clay minerals, and carbonates. Ash composition is greatly varies depending seriously on ash quantity. On its composition, the coal ash belongs to ferrous type. Such oxides as SiO₂ (33.4 %), Fe₂O₃ (23.2 %), Al₂O₃ (16.6 %), CaO (8.3 %), SO₃