

Nonconventional ways of carrying out of mountain developments

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During the last 30 years the world's branch science has been created a highly effective technology and support tools to clear coalmining on flat and inclined layers. Loadings on a working face have increased in the tenfold size, and the loading record reaches two hundred thousand tons a month in comparison with a working face of that period. It corresponds as 1:50 and more.

At the same time the preparation of a working face front, realization's rates of openings practically remained at the former level and average make no more than 250-300 items a month .It includes a big scale of polytypic crawler-tracked, loaders, boring machines, telescopic conveyors, hauling equipment and labor saving tools. Basically it is used an old drill and blast tunneling method during the dreading's passingsces.

Actually there is a situation in the coal branch where possibilities of technological links united in one variant are not been realized if preparatory operations bring system's technical possibilities to naught in comparison with former technology. Obviously, the traditional conceptual orientation of perfection as a whole process of preparation of working front is at a deadlock. We need some other approach to solve this problem, some other concepts, other means of maintenance, and other technology for this question. All arsenal of modern equipment of preparatory faces needs to put to a creative modifying, perfection, including a conservatism which participates in a solving this problem.

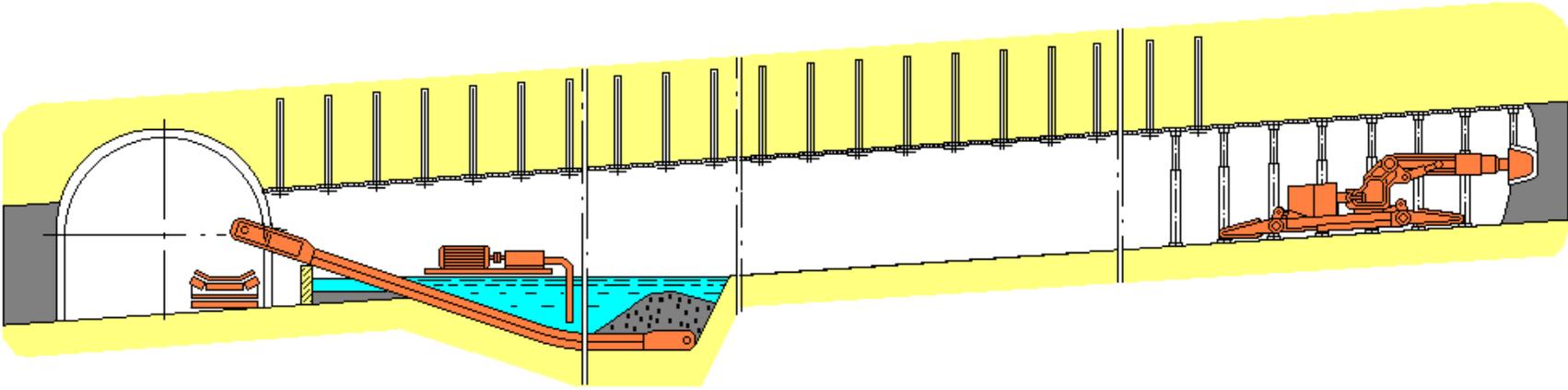
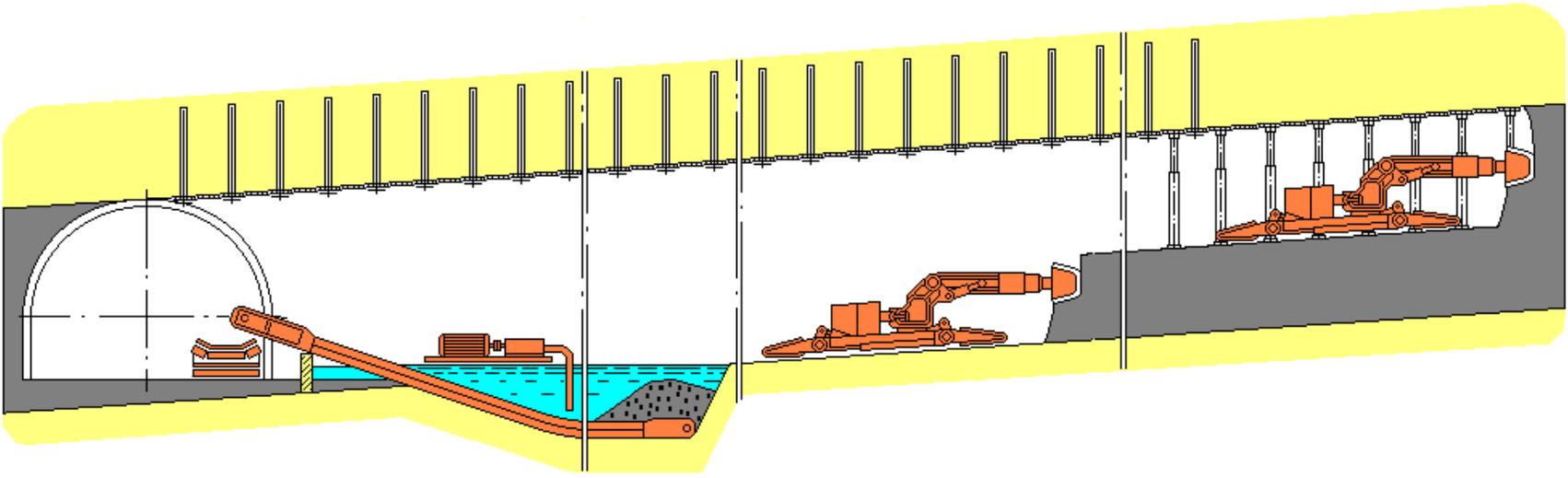
The institute's collective of "Hydrocoal" headed by Atrushkevich O.A., the doctor of Engineering Science, has created this technology. It provides the solving the problems set forth above, on the basis of essentially new concepts in the preparation of a work front.

The basis of essentially new approach consists of a negation as a whole existing technology and mechanization tools beginning from the crawler-tracked ,the conveying equipment , delivery systems, including breast timbering and roof bolting, a replacement them by nonconventional highly effective technologies and support means. The main technological link defining a new scientific and technical level of the working front preparation is a supporting-and-walking machine TMA (tunneling machine by Atrushkevich) -3M(modernized).It replaces tunneling and cleaning machines according to the carrying out of the mining and hard rocks at corners of an inclination from +30 to - 30 degrees. Generally the new preparation's scientific and technical level of a coalmining's working front consists of following nonconventional technological links:

1. Gravity hydraulic transport combined with a nonconventional weight-and-man delivery tooled up by the constant braking system.
2. Closed-cycle of an underground coal-water separation with an underground enrichment and a clarifying process water.
3. Mixing system of water-fines-marsh gas-air environment and a coal dust localization depending on the developments by the way of system humidifying and hydrowashout.
4. Face anchor- pluggable support and unampule roof bolting, and fiber-glass ball-screw racks.
5. Telescopic dehydrator-loader for construction water-cut dipping drifts and inclined trunks.
6. Cascade pump system of process water supplying for development headings and thermal heat-assistance's heating installations.

It is practically the full list of development headings' technological and technical equipment .It provides an increasing more than twice loadings at the development headings and a defining new scientific and technical level of an extraction front's preparation of at the present stage.

The more detailed description of decisions was listed above the problems contained in the standardized documents of the "Hydrocoal" institute. The general view of this technology is on the pic №1.



The technology of mechanical-hydraulic method's workings with a local dewatering.