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MINING SUBSIDENCE – POLISH FORMAL AND LEGAL SOLUTIONS

Mining subsidence caused by mineral activity and change of the site initial use is responsible for many negative effects on the ground surface. Mining has adverse effect on the ground surface, under which it takes place, as well as grounds adjacent to it. It also causes water system disturbances. Subsidence is related to various buildings belonging to different subjects not directly involved in mineral working. Repairing mining subsidence damage is both an economic and a social problem. Generally, it can be said that companies taking part in mineral working have been obliged to make amends to parties whose property has been damaged as result of coal mining operations. This paper refers to the problem solution of mining damage to a flat building situated in the mining area of Jastrzębska Spółka Węglowa S.A. The matter has been presented from both the owner of the property and the company's perspective. This report shows mining subsidence restoration procedures, legal regulations and required documentation.

Проседание грунта, вызываемое добычей полезных ископаемых и изменением первоначального назначения площадки, приводит к многочисленным негативным эффектам на поверхности земли. Горные работы наносят ущерб не только поверхности земли, под которой они проводятся, но и прилегающим территориям. Они также нарушают водные системы. Проседание грунта возможно под строениями, принадлежащими различным владельцам, напрямую не связанными с добычей полезных ископаемых. Устранение ущерба от проседания грунта в результате горных работ является одновременно и экономической, и социальной проблемой. Компании, участвующие в добыче полезных ископаемых, обязаны возместить ущерб сторонам, чье имущество пострадало в результате добычи каменного угля. Рассмотрен вопрос об ущербе от проведения горных работ, причиненного жилым зданиям, расположенным на территории работ горной компании Jastrzębska Spółka Węglowa S.A., как с точки зрения владельцев собственности, так и с точки зрения компании. Рассматриваются мероприятия по восстановлению проседания грунта, правовые положения и требуемая документация.

Hard coal mining plays a significant role in the national economy and constitutes a warranty of the energetic security of Poland. Mining exploitation, however, also adversely impacts the ground surface conditions, bringing about detrimental effects in the form of damage of buildings, roads, bridges, railway tracks, communal facilities, destruction of agricultural crops, forests, disappearance of water, etc. The protection of the ground surface, and various material interests to be found on the ground surface from the negative impact of coal mining operations constitutes a very important task. The exploitation should be designed in a manner allowing for the maximal excavation of a lode, and at the same time minimizing the impact of the coal mining operations on the surface. Such an impact, called mining damages, is manifested in two aspects. The first one is the subsidence of the terrain resulting in the formation of cavities, water inflow in the area, and damages of objects located on the surface in the form of, e.g., wall fractures. The second aspect is the generation of orogen shock, which also results in damages of objects on the surface. The Polish mining school has had indubitable achievements in counteracting such hazards. The precursor for those achievements was a theory presented by professor Witold Budryk, and further developed by professors Antoni Sałustowicz, and Stanisław Knothe.

Typical types of transformations to be found in the mining terrains in the result of subterranean exploitation are:

- damages of construction objects;
- degradation of arable and forest land;
- formation of no-outlet fens;
- disappearance of water;
- loss of water usability;
- loss of advantage due to mining exploitation.



Picture 1. An exemplary mining damage of a building

Polish mining enterprises prefer to repair damages by restoring the previous state. On the other hand, financial reparations are used in a limited degree, only in cases when the restoration to the previous state is impossible, or the costs of such a restoration grossly exceed the height of the incurred damage. The repairs of arable or forest land damages have the form of a reclamation.

The restoration of a given object incurs high costs which are called mining damages costs. In the most general terms, the damages costs should be the sum of the costs incurred for:

- the implementation of the preventive measures in the arrangement plan of the surface objects;
- the repair of the existing damage;
- the compensations for the inconvenience resulting from the damage occurrence;
- the compensations for loss of advantage, if the damage had not occurred.

In practice, mines mainly bear the costs of the preventive measures and reparations. The compensations resulting from the loss of advantage most frequently are not paid, since there are no rules for their determination.

Mining damages costs are dependant from:

- the cubature of objects, and their resistance to deformation;
- the length of linear objects and their resistance to deformation;
- the area of grounds included in the natural environment and their resistance to deformation;
- the surface deformation intensity resulting from coal mining operations.

The problem of mining damages, and mining damages costs in Poland is regulated by two acts mainly. The first of them is the Geological and Mining Law Act, and the second the Civil Code.

The Geological and Mining Law is the act which came in force on September 2nd, 1994, and with subsequent changes is legally binding up to the present moment.

According to the provisions of the act, the owner of the real estate who suffered mining damages in his property is entitled to demand the reparations.

If the establishment of the entity which caused the damage is impossible, then the entrepreneur who upon the disclosure of the damage is authorised to excavate minerals within the mining area is held responsible for the damage.

If the damage occurred also because of causes others than the mining enterprise traffic, then entrepreneurs take joint responsibility. The regulations of the Civil Code regulate the issue of damage reparation and the issue of prescription.

The specific feature of the Polish system of surface protection against mining deformations is the coordination of the terms for development, and arrangement plan for investments planned on the mining terrain by the mayor. This is the legal side of the issue of mining damages.

In my paper, I would also like to present an example of a specific mining damage in a residential building, which occurred on the mining terrain of Jastrzębska Spółka Węglowa S.A. with its registered seat in Jastrzębie Zdrój. A short presentation of Jastrzębska Spółka Węglowa requires pointing out that it is the largest Polish and European producer of coking coal. The mines of Jastrzębska Spółka Węglowa produce mainly ortho-coke coals (of the quality

corresponding to hard type coals produced in USA, Canada, or Australia) and high-calorie fine coal for energy uses, and small amounts of assortment coal. The main buyers of the coking coal are countries of the European Union (among others: Austria, the Czech Republic, Finland, France, Germany, Slovakia).

After the presentation of the company, I would like to return to the exemplary mining damage. In this case, the damaged object was a residential building. The main damages were cracks and fractures of the plastering of walls, problems with closing doors and windows, the entrance gate out of adjustment, deflection of fence posts, and deformation of a drive in, and pavement.



Picture 2. A crack in the need of repair

The proceedings commenced upon the notification of the damage submitted by the aggrieved party to the mining damages department. The next stage was the so-called on-site inspection conducted with the view of establishing the range of the damage, and formulating the proposals for its reparation. The evaluation of the mining damage was drawn up on the basis of the Material Expenditure Catalogue, a fixed working hour rate, and average domestic prices of materials and equipment used.

The aggrieved party accepted the conditions offered by the Company, however had any doubts arisen, the case would have been directed to a Public Court.

At this stage, the negotiations of the contractors for the reparation works followed, i.e. whether the repairs should be carried out by the aggrieved party in their own extent, or by a subcontractor of the Company. After the completion of the restoration works, the final acceptance protocol of works is drawn up.

In the present case, the repair costs of the damaged object were not too exorbitant. They totalled circa 14.000 PLN. This total included not only the expenses incurred for the purchase of materials used in the course of the restoration works, but also labour, documentation, and expert opinion costs, as well as the cleaning works. In this case, the repair works consisted of plastering of the existing cracks and fractures, painting the rooms, and the front elevation, adjusting the doors, and windows, and also plumbing the fence posts as well as replacement of the cracked drive-in and pavement paving stones. The damage occurred in a relatively small object. The issue of compensations becomes decisively more complicated when bigger objects, e.g. roads, railway tracks, or whole residential estates enter the picture. The reparation of damages of such a scale, undoubtedly requires higher financial expenditures, as well as professional expert opinions, and plans. Decisions in the scope of such problems should best be left to specialists, namely engineers, economists, and lawyers.

My paper constitutes a short introduction only to the vast subject the mining damages are. I hope that I have succeeded in making you familiar with the main provisions of the Polish legal system regulating this issue, and the course of proceedings, should a mining damage occur.