

## "Grodziec" Mine

### History

The mine operating in the Będzin district called Grodziec, in 1899-1998 conducting mining of hard coal. Mine liquidation was performed in the years 1999-2011. Formerly old mines of Barbara, Maria (Grodziec I), Bory were operating in this area (years 1823–1917).

### Geology

Quaternary, Triassic and Carboniferous deposits are involved in the geological structure. The area is characterized by complex tectonics. Carboniferous deposits generally fall towards SW. They are cut by four main faults with the stratigraphic throw of over 150 m, accompanied by significant number of faults with smaller throws. The main faults are:

- Wojkowicko-Będziński extending NW - SE and dividing the Mine area on the north and south regions. The amplitude of throw changes from about 30 m (NW part) up to 200 m (SE part). Layers throw have SW direction. North of the fault the subsurface group of deposits consist of Quaternary and Carboniferous strata. In the south direction deposits of the Triassic or Quaternary and Triassic strata are present.
- Grodziecki - strike N - S. Drop of layers towards W. Amplitude of throw approximately 250 m.
- Przełajka - strike N - S. Drop of layers towards W. Amplitude of throw about 180 m.
- Antoni - strike W - E in the northern part of the mine area. Layers are thrown in the S direction. Amplitude of throw probably reaches 200-250 m.

The faults were the cause for dividing the coal deposits in mining parts A, B, C and D making natural tectonic blocks. Depth of coal deposits in individual batches depends on their location in relation to tectonic dislocations.

### Mining

In the mining area of the mine and north of it (previous mines) the following seams were exploited: 501, 504, 510, 615, 616, 620, 621,622, 805, 816, 833 at a depths from 0 to about 300m. The thickness of the seams and coal exploitation varies from approx. 1.5 m to 9 m (seam 510).

### Sinkhole threat

Exists on the surface in the areas where the coal was extracted in the depth raging from 0 to 100 m. Such exploitation was carried out in seams 805, 816, 833 (Gruszowskie layers), 615, 616, 620, 621, 622 (Porebskie layers) and 501, 504, 510 (Siodłowe layers) in the area on the northern side of the Będziński Fault. The threat is highest in the area of shallow exploitation of seam 510 due to the significant thickness of the coal seam taken.