



NOVOPOLTAVSKE field (mine Pivdenne, mine Pivniche)

Mineral: apatite, tantalum, niobium, strontium, rare earth, uranium, fluorine, magnetite concentrate, carbonate raw materials

Type, period of subsoil use: production, 20 years.

Location: Pologiv and Berdyansk districts of Zaporizhzhia region, 1 km north of Chernihiv. Near the field there are villages: Novopoltavka, Novokazankuvate, Grigorivka, Stulneve and others.

Block area: 938,10 ha

Geological summary

Precambrian and Meso-Cenozoic deposits take part in the geological structure of the region. Two industrial types of ores have been discovered at the deposit: weathering crust ores and primary deposits ores. According to the complexity of the geological structure, the field belongs to 2nd group of complexity.

The main rock-forming minerals of carbonatites are calcite (50 - 90%) or dolomite (up to 70% and more), biotite or phlogopite (3 - 40%), olivine (0 - 30%), apatite (3 - 30%), magnetite 0 -15%), accessory - pyrochlor, gatchettolite, fergusonite, badeleite, columbite, which determine the associated ore of apatite ores, as well as rutile, sphe, monazite, orthite, zircon. In weathering crusts, all niobates, with the exception of columbite, are destroyed and transformed into earthy species and are concentrated in sludge. The main phosphate-bearing mineral is apatite, which is well preserved in weathering crusts. The content of phosphoric anhydrite in carbonatites is 2 - 6%, decreases in the zones of dolomitization by 0.2 - 2%, especially in the zones of development of monazite on apatite. Related minerals associated with the complex of alkaline rocks and substandard apatite ores: zirconium and niobium-tantalum-rare-earth mineralization. A minimum content of useful component of ZrO_2 at 0.3%, one large body of poor zirconium ores with an average content of 0.52% ZrO_2 and seven small ones were identified. Ores in the weathering crust and unweathered syenites are technological. Zirconium concentrates contain 64% ZrO_2 with 1% HfO_2 , explored by category C_1 and C_2 . Referred to off-balance sheet for economic reasons. Along with zirconium, ores contain niobium-tantalum-rare earth elements associated with the same minerals as carbonate. The latter also form low-power bodies in substandard apatite ores - only 19 bodies. The nature of the distribution is similar to carbonate. The average content of Nb_2O_5 in the weathering crust in category C_1 - 0.206%, in category C_2 - 0.152%, in dense ores in category C_2 - 0.13%. Non-technological ores. In weathering crusts, rare elements are excreted in the sludge, and from dense ores a collective concentrate is obtained, which contains 22.6% Nb_2O_5 with a recovery of 36.18%. Ores are classified as off-balance for technological reasons. There are 6 aquifers on the territory of the deposit: Quaternary, Poltava, Upper Cretaceous, Lower Cretaceous, weathering crust of crystalline rocks, fractured zone of Precambrian crystalline rocks. The most water-saturated are Upper Cretaceous and Lower Cretaceous. Aquifers are hydraulically interconnected to varying degrees. The expected forecast water inflows during the construction period are 500-600 m^3 / h, during the operation of the field - 100-200 m^3 / h. It is proposed to provide water supply (drinking and technical) at the expense of the Kaniv field. For normal mining operations it is necessary to drain the aquifers of the weathering crust and the fractured zone of crystalline rocks by underground advanced wells. Hydrogeological and mining conditions of the field are relatively difficult. Factors that complicate the development of the field are the following: clay rocks of sedimentary strata and clay varieties of weathering crust can swell, soak and become fluid; sedimentary rocks are unstable, waterlogged; productive strata flooded; aquifers at the field are interconnected; above the productive stratum there are hydrostatic pressures up to 100 m and more; when drilling in fractured rocks, landslides and groundwater breakthroughs are possible. An underground method of field development is envisaged. Ore mining is proposed from the bottom up with the tab of the produced space, so a shift on the earth's surface is not expected. Drainage of aquifers will not lead to deterioration of the hydrogeological situation.

Available geological information: The field was discovered in 1970. Its preliminary exploration was carried out in 1978-1985, detailed one in 1982-1991.

Resources / reserves

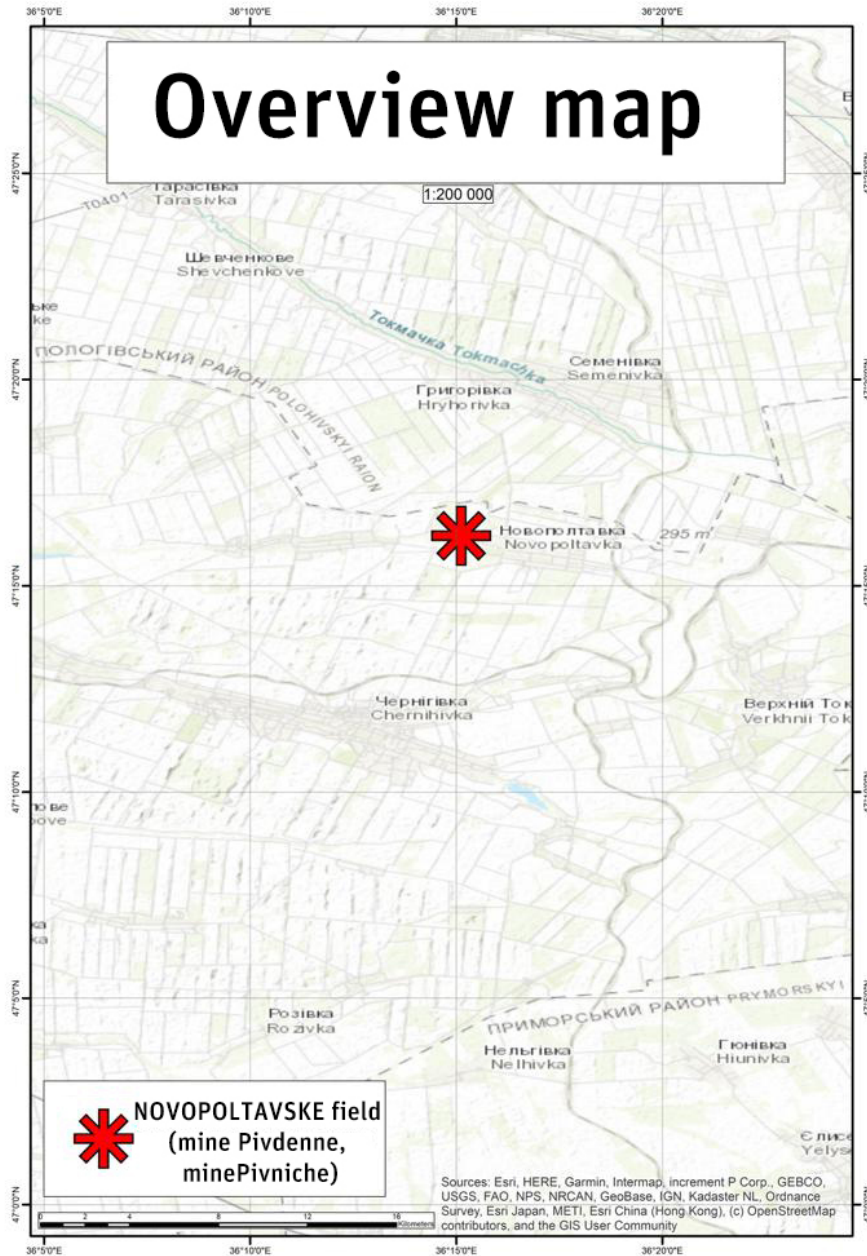
The state balance of mineral reserves of Ukraine as of 01.01.2022 accounts for apatite reserves in the amount of categories, thousand tons: B + C_1 859628/42310, C_2 95858/4268, off-balance 34039/1593; strontium ores B + C_1 859627/865, C_2 95858/87; rare earth ores B + C_1 85962/1938, C_2 95858/274; fluorine B + C_1 859628 / 1911.7, 95858 / 192.7; extractive reserves of magnetite concentrate (Femagn content 66% at 2.4% yield) B + C_1 19452.3, C_2 2158.9; mining reserves of carbonate raw materials GOST 14050-85 (national standard) (with a yield of 39.1% concentrate) B + C_1 357797.6, C_2 44326.6. Information on the amount of reserves of tantalum, niobium and uranium ores is limited.

<http://geoinf.kiev.ua/53716>

Minimum work program: Provided by agreements on terms and conditions of subsoil use and defined in the Work Program appendix.

Sample agreements are available at: <http://www.geo.gov.ua/primirni-ugodi-pro-umovi-koristuvannya-nadrami>

Overview map



Situation plan

