



CRM of Ukraine Database Supplements

Mineral target:	Voskresenivske deposit
Commodity:	Titanium

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Location: western outskirts of the Voskresenivka village, 7 km north of Rozdory railway station, Sinelnikovskiy and Pavlogradskiy districts, Dnipropetrovsk region. Skhidniy body to the northwest of the Voskresenivka village, Zahidniy body to the northwest of the Verbove village.

Research: the deposit was discovered in 1962 by the Novomoskovska Geological Exploration Expedition of the " Dniprogeologiya " Trust. In 1953-1969, prospecting and evaluation works were carried out at the deposit. Estimated reserves were approved by the NTR of the "Dniprogeologiya" Trust, protocol No. 1246, of the Novomoskovska Geological Exploration Expedition No. 27 dated December 11, 1969. In the State Inventory it is recorded since 1966.

Area: Zahidniy body - 17.8 km², Skhidniy body - 16.1 km².

Geological characteristics. Geologically and structurally, the deposit area is located within the Middle Dniptrean Block. The complexes of Precambrian and Paleozoic crystalline rocks, the weathering crust of crystalline rocks of the Paleozoic-Mesozoic age, and the sedimentary pile, which is represented by Paleozoic, Mesozoic, and Cenozoic rocks, are involved in the geological structure. The Voskresenivske deposit consists of two bodies: the Skhidniy one, 5.9 km long, with an average width of 2.5 km, and the Zahidniy one, 8.75 km long, with an average width of 2.0 km. The deposit belongs to the overlain coastal-marine placers. Mineralization is associated with Poltavska Suite sediments, which is divided into three main horizons. The lower horizon is composed of gray and dark gray clayey and carbonaceous sands with layers and lenses of carbonaceous clays and lignite, variously and coarse-grained gray sands with admixtures of pebbles and gravel, ocher sands, sandy kaolinite clays and secondary kaolins. The thickness of the horizon is 0.5-11.0 m. The middle horizon is represented by a sequence of light gray and white, sometimes light yellow, fine- and fine-grained siltstone, kaolinite sandstones with grains of ore minerals, which form large titanium-zirconium placers. In places, layers of gravel sands, nodules of ferruginous-carbonate sandstones, lenses of sandstone and siltstone clays or plastic and sandy secondary kaolins are present in the sequence. The thickness of the horizon is from 2.0 to 25.0 m, reaching in some cases 35.0-40.0 m. The upper horizon is composed of clayey and kaolinite fine- and medium-grained, variegated sands, sometimes kaolinite sands and secondary sandy kaolins. The sedimentary rocks of the Sarmatian layer lie above.

Rutile-zircon-ilmenite sands are a useful mineral commodity in the deposit. Ore sands are fine-grained, relatively well-sorted, weakly clayey, easily enriched by gravity and flotation.

The hypsometry of the top of ore sands is relatively even. Within the limits of the Skhidniy body, the absolute marks of the ore pile range from 78.8 to 91.4 m, within the limits of the Zahidniy body from 86.5 to 96.6 m. But at the same time, the depth of the ore layers varies significantly - from 11.0 to 55.0 m. The average depth of the Skhidniy body is 37.2 m, the Zahidniy body is 45.2 m. The average thickness of the productive pile is 6.9 m, overburden is 37.2-45.2 m. The ratio of overburden to productive is 5:1. The deposit can be mined in an open-cast way. The distribution of ore minerals both by strike and in vertical section is uniform.

The main ore minerals are ilmenite, leucoxene, rutile, zircon, sillimanite, disthene. Quartz, clay minerals (kaolinite), staurolite, and tourmaline are present in significant quantities. The average content of the heavy fraction is 66.4 kg/m³, including ilmenite – 35.9 kg/m³, rutile – 12.2 kg/m³, zircon – 3.7 kg/m³, sillimanite + disthene – 9.2 kg/m³, and conditional ilmenite – 80.2 kg/m³.

The stripping rocks are represented by a sequence of undissected variegated and red-brown clays with a total thickness of up to 65.0 m and Quaternary sediments with a thickness of up to 12 m.

The ores of the Voskresenivske deposit are complex, with their enrichment it is possible to obtain monomineral ilmenite, rutile, zircon, disthene-sillimanite concentrates.

Information about mineral resources and reserves is confidential.