

Geo-ecological Problems In Mining Mineral Raw Material in the Far East of Russia

¹KARSAKOV L.P., ²MAKHINOV A.N. ¹Institute of Tectonics and Geophysics Russian Academy of Sciences, Khabarovsk, Russia;

²Institute of Water and Ecological Problems Russian Academy of Sciences, Khabarovsk, Russia.

The Far East of Russia is one of major and traditional regions of the country concerning extraction of gold, tin, and other non-ferrous and rare metals. Till the recent time, placer deposits are preferably mining here. Their exploitation has led to significant transformation of the environment over the vast territories in valleys of rivers. With an increase of solid runoff of rivers, coastal-marine aquatoriums are also impacted. In the conditions of severe climate of the Far East of Russia and the wide distribution of permafrost rocks the restoration of natural landscapes is extremely slow.

For the last years, there is the transition to mining primary deposits of gold using methods of weathering with the help of chemically dangerous substances. Mining such deposits (Mnogovershinny and others) as the research has shown is ecologically more acceptable in comparison to placer deposits, since the smaller territories are impacted and the influence on river systems is insignificant. Under the conditions of permafrost, dangerous for the human health mining waste is proposed to freeze in special pits, heap them and such a way remove them from a sphere of their interaction with various natural processes reducing their negative impact on the environment to minimum. As to the considerable extending of the number of mining primary deposits planned for the last years (Priokhotiye, Ket-Kap and so on), it occurred to be necessary to control local changes of the environment in the way of organizing effective comprehensive monitoring.