

The Environmental Effects from Exploitation of Sulfur-Polymetal Deposits in Datian Area, Fujian Province

TAO YUXIANG, ZHAO YU, XU NAIZHENG. Nanjing Institute of Geology and Mineral Resources, Nanjing, P.R. China

The main negative effect of exploitation of sulfur-polymetal deposits is displayed that: the tailing mineral seizes plough land (fertile farmland), and pollutes soil environment. The growth of plant (include crops, such as rice) is impeded, the regional balance of ecosystem is broken, The water-soil erosion is intensified. The sink of pit and other geological harm are often taken place.

The water of ore district and its peripheral area is polluted. The waste water of picking mineral is basicity (pH, 9.9). The waste water of mining excavation is acidity (pH, 2.9). The pH value, the contents of SO_4^{2-} , the metal elements contents of waste water from mining and picking mineral area exceed the national environment criterion. The content of SO_4^{2-} is 2.2 times of the national environment criterion of 5-type earth surface water. The pH value and the contents of COD, BOD_5 , SO_4^{2-} • DO • $\text{NO}_2\text{-N}$ • $\text{NO}_3\text{-N}$ • TP in mining peripheral water area (river and stream) don't exceed national environment criterion of 3-type earth surface water. The metal elements (Fe • Mn • Cu • Pb • Zn • Cd) contents of mining waste water in sulfur-polymetal deposits exceed the national environment criterion of 5-type earth surface water. The waste water of mining area is the main pollution source of ground water. The contents of metal elements has close relation with the PH value and the contents of SO_4^{2-} . The pH value and the contents of SO_4^{2-} are the main factors which effect the contents of metal elements in water. Therefore, It should be taken as importance and breakthrough point that neutralizes acid with lime and decreases the contents of SO_4^{2-} by Fe-S bacterium in the procession of administrating waste water.