

Large-scale collapse of permafrost waste dump at Kumtor gold mine in Kyrgyz republic

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Large-scale collapse of mine waste dump occurred at the Kumtor gold mine in Kyrgyz Republic on 1 December 2019 and killed two mine workers. The Kumtor gold mine (4000m) is located in Ak-Shiyrak massif of inner Tien Shan. This area is permafrost and active glacier zone. In the Kumtor gold mine, mine dumps are composed of permafrost and glacier ice. The mine dumps are made on permafrost slope, moraine-complex including permafrost and glacier ice, and glacier. Before this collapse, unstable flows are reported in the terminus of the dump in 2013 (Jamieson et al., 2015). In this study, we investigated the collapse of the mine dump at the Kumtor gold mine using satellite image analysis. Furthermore, we compared three dumps in the Kumtor gold mine to consider the factor of the collapse.

Keywords: collapse, permafrost, satellite image