

THE SPONTANEOUS COMBUSTION OF COAL FIELDS AND THE COUNTERMEASURES TO CONTROL IT IN CHINA

TAN Yongjie, China National Administration of Coal Geology (CNACG), Zhuozhou, Hebei, China

The coal burning in the field before the man to mine it is called spontaneous combustion of coal fields or coal fires for short. The coal fires are distributed in the northern part of China widely. Coal fires not only make the coal resources lost, but also cause a series of geological hazards and environmental impacts. By using Remote sensing techniques, GPS and GIS, 56 coal fires are found in the north part of China, and the amount of coal resources lost is determined in 13 million tons each year, and the geological hazards and environmental impacts are determined. On the basis of coal fires investigation with 3S, a set of methods to survey and monitoring the coal fires has been developed in this paper. NOAA data is used to find the points of coal fires by thermal anomaly in a large scale region; TM data is used to make a coal fire survey at a small scale; And the airborne thermal IR scanning data is used to make a coal fire survey at a large scale. In the process of coal fires surveying, GPS is used to determine the position of coal fires, and GIS is used to manage the data surveyed and to make an analysis on the surveying and monitoring data. In China, the methods to cover coal fires with soil and sand, to take out the burning coal and to pour water into coal fires are used to put coal fires out. On the study above mentioned, seven countermeasures have been developed and submitted to Chinese Government to control the coal fires.