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**Development of Best Practice Guideline for the management of hot holes in surface coal mines**

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Surface coal operations in which mining activities are conducted above old underground workings experience hot holes after drilling. In a coal mine, hot holes are defined as shot holes, which after being drilled have an in-hole ambient temperature of 40°C or above or show a temperature increase of 3°C or more during monitoring. Hot holes and other cavities, such as cracks, pose health and safety risks to workers, such as exposure to hot air and high concentrations of noxious gases released from these holes. In addition, workers may be exposed to premature detonation of explosives caused by in-hole temperature increases and chemical reactions. To this end, Coaltech Research Association commissioned a project to develop a Best Practice Guideline for the management of hot holes. This paper is a compilation of the activities conducted in the development of the Best Practice Guideline between 2021 and 2022. The activities included a review of standard operating procedures and hot-hole temperature-measuring and -monitoring devices, and the assessment of current hot-hole procedures at selected mines. The results indicated that management of hot holes requires a focus on pre-emptive risk assessment of mining blocks, identification of hot holes using the correct temperature-measuring devices, and continuous monitoring of hot holes from the time of drilling until just before blasting. Hot-hole management accessories, such as polyvinyl chloride sleeves, were found to be effective in insulating the hot-hole emulsion from the rock mass temperature, thus preventing the potential for premature detonation.