
IMPACT OF BLASTING FUMES

INCIDENT

A number of contract employees at an underground gold mine were affected by fumes, with some being rendered unconscious, following their re-entry into the mine after a production blast.

FINDINGS

A significant production firing was conducted in an area above the effected working area. Following the blast the routine "clearance" procedure was conducted, which included gas testing on both the firing level and levels below the blast location, and the mine was cleared for re-entry.

Shortly after commencing work a cable grouting crew on the level immediately below the firing were overcome by fumes, with later medical tests indicating CO poisoning.

The level on which the firing took place and the lower level were connected by a backfilled stope, several capped slot rises and a number of production drill holes (these being in place for planned subsequent production).

Both levels were subject to secondary ventilation from the main decline.

COMMENTS

Preliminary investigations indicated that the blasting sequence has "pressurised" the immediate area and preferentially forced the blasting fumes through the existing pathways to the lower level, rather than along the firing level and into the return airway.

The impact of the fumes in the lower level has been exacerbated by the shortening of the secondary ventilation duct bag to facilitate cable bolting activities.

RECOMMENDATIONS & PREVENTATIVE ACTION

All blasting activities should be subject to appropriate planning and design by competent persons, with such planning to include a thorough consideration of the potential impacts which may result. Post-blast clearances should be undertaken by competent persons in accordance with documented procedures which consider working conditions and ventilation arrangements.

In accordance with the requirements of the *Occupational Health and Safety Regulations 2007*, the air in all workplaces is to be maintained at a safe level and free from harmful levels of contaminants or impurities.

FURTHER GUIDANCE CAN BE OBTAINED FROM

- *Occupational Health and Safety Act 2004* and *Occupational Health and Safety Regulations 2007*
- *Minerals Industry Safety Handbook (Available from the Department)*

PHIL ROBERTS

Director, Minerals and Petroleum Regulation