

FINAL REPORT

Outbursting Scoping Study

**C4034
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This is an index of initial desorption rate which defines the amount of gas liberated in the first 30 seconds after the face has been blasted. It is a measure of the gas content of the coal and the rate of gas emission on the assumption that the firing pattern and amount of explosive used remain the same. The underlying assumption is that outbursts manifest themselves when the gas content exceeds 9 m³/t. The percentage of gas in the ventilation current together with the ventilation quality is measured and gas emission over the 30 s from the time of firing is calculated. Fig. 9.14 shows an example of the percentage of gas emitted after firing (Noack et al, 1983).

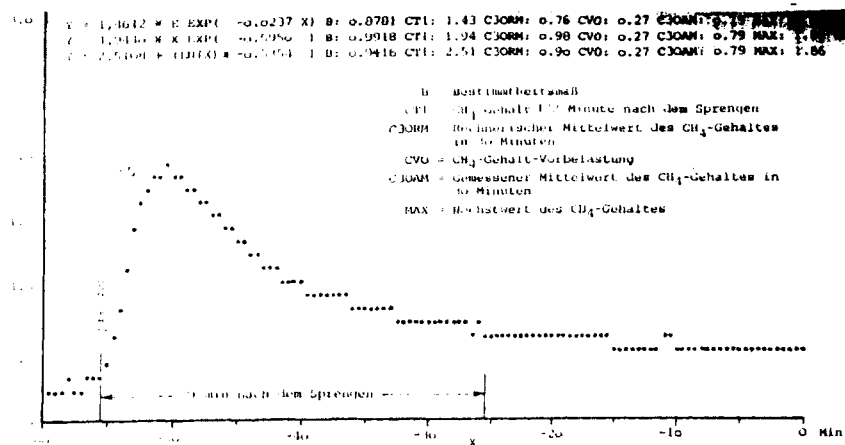


Fig. 9.14. Methane content in the ventilation after a blast (Noack et al, 1983)

x = time, min; y = concentration, %

The criterion used is that if the \dot{V}_{30} value exceeds 3.6 m³/t (i.e. >40% of total), then there is a probability of an outburst. If $\dot{V}_{30} > 5.4$ m³/t (i.e. >60%) then there is a danger of an outburst.

The measurement system is placed at some distance from the face so that it is in the zone where the probability of high methane percentage does not exist. The gas composition at places close to the blast can reach above the upper explosive limit of gas. As such all power equipment close to the face is switched off. The gas monitoring system switches off when the percentage of gas reaches 2.5%.