

SOLUTION MINING RESEARCH INSTITUTE

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**MEETING
PAPER**



New Developments in Solution Mining Technology

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Abstract

In recent years, numerous developments in solution mining technology have been made worldwide.

This paper describes some of the developments in which KBB has been involved.

The developments have been stimulated by:

- the desire to increase salt production per cavern or to utilise salt deposits previously considered unsuitable
- the need for increased environmental protection and cost reduction
- the re-leaching of caverns with natural gas blankets
- improved cavern control systems
- improved computer simulation programs.

Undercut caverns and horizontal drilling technology have opened up new possibilities for using flat-bedded salt layers for brine production or product storage.

The application of hydrocarbon blankets is becoming more and more expensive because of more stringent safety and environmental stipulations. As an alternative, air and nitrogen blankets are being used in cavern projects.

In some cases, natural gas caverns were enlarged at the base while the top of the cavern remained gas filled.

The neutron-lifetime-log is being increasingly used for blanket level measurement. On the other hand, special tools have been developed for continuous blanket level control. The quality of sonar surveys has been considerably improved in recent years, and there are now tools available for taking oriented measurements through two casings.

Rapid developments in computer soft and hardware are also influencing solution mining, in particular, the improvement in cavern simulation programs.