

### Managing risk during expansion at Cuiabá

The Cuiabá expansion project, approved by the AngloGold Ashanti board in January 2005, is intended to increase production from Cuiabá mine in Brazil from 830,000 tonnes per annum to 1.3 million tonnes per annum. The project, which was commissioned in February 2007, will reach full production by the end of the second quarter of 2007, involves the deepening of the mine from 11 level to 21 level and is expected to increase the life-of-mine average production from 190,000 ounces to 260,000 ounces per year.

The project has involved extensive mining development and construction work, both on surface and underground. Underground activities included the opening of two ventilation raises, opening new development faces and the construction of an underground chamber for the assembly of primary crushing at level 11. Surface activities have included the construction of a new hydrometallurgical plant, a tailings storage facility and a new backfill plant.

The project has involved the recruitment of 209 permanent staff and 1,819 temporary contractors.

Managing an operation outside the normal production cycle, whether through expansion or downsizing, also involves managing an altered risk profile (*see also case study: Managing a changing risk profile at Savuka, at [www.aga-reports.com/06/risk-savuka.htm](http://www.aga-reports.com/06/risk-savuka.htm)*).

"Principal risks associated with this project involved the recruitment of large numbers of new employees – both permanent and contract – and the increased necessity for training," says general manager Denis Dinardi.

"The most significant risk areas underground were rockfalls (associated with the construction of the underground chamber for primary crushing), the opening of the ventilation raises and equipping the deepened shaft with new pipelines and electrical cables. Surface risks included construction workers having to work at considerable heights (in building the new plant), the risk of accidents during road transport of ore and the danger of injury during grinding and welding."

Measures taken to mitigate these risks included in-depth safety training, with comprehensive daily briefing sessions, for all employees including contractors. A 'permission for special works' was obtained. This involved an in-depth expert evaluation by external risk management consultants to identify the risks involved and define the controls that needed to be put in place. Contract employees were recruited from a specialised company that operates in the mining field, ensuring that basic safety training was already in place. Detailed operating procedures were prepared and briefed covering all aspects of new activities. Vehicle drivers also received thorough training, and hazard identification and risk assessment (HIRA) and hazard and operability (HAZOP) procedures were developed.

The results of these interventions can be seen in the mine's improved safety profile.

The lost time injury frequency rate decreased from 2.95 in 2005 to 2.33 in 2006. Total man hours worked increased from 1,861,589 in 2005 to 3,409,657 in 2006.

