Site Profile

Lawlers Gold Mine is located 400km North of Kalgoorlie and 30km West of Leinster in Western Australia’s Northern Goldfields. The mine consists of both open cut and underground operations. Annual production is 110,000 oz of gold predominantly from up-hole retreat stoping.

The Situation

As part of Barrick’s Continuous Improvement program, Orica were recently asked to conduct a mass blast in the 118 Stope, underground, to remove a high grade “close out” pillar. Barrick’s decision to use the i-kon™ system revolved around its ability to handle the blast size and to reduce the risk involved in extracting such a high grade pillar.

Technical Solutions

Orica utilised the i-kon™ system to fire this blast as it offers very accurate timing and a high degree of flexibility. The project involved the extraction of 20kt ore tonnes at a grade of 8g/t and involved the firing of 302 i-kon™ detonators.

Orica Technical Services Engineers designed the initiation system to maximise hole interaction and fragmentation. The project involved the firing of 302 i-kon™ detonators.

The real advantages of the i-kon™ system were realised during the blasting process where it was discovered that the front ring in the sequence could not be charged. With this in mind, the sequence of firing had to be reversed completely from the original design. This would have been difficult and time consuming task if the i-kon™ system had not been used and caused considerable delay to the tight production schedule.

The saving for Barrick in the timely completion alone would have more than paid for the extra unit cost of the detonators.

The Result

Lawlers Gold Mine were extremely happy with the results of the blast, and the timely firing ensured production of high grade ore to the mill from an area considered a “high risk”.

By utilising the latest technology and working together, Orica and Barrick have set the foundation for the process of continuous improvement in the area of
production blasting at Lawlers, with the major benefits listed below:

- Ability to Fire Large Stope Blasts:
- Reduction in Vibration Levels
- Flexible Timing
- Maximising Fragmentation
- Inherently Safe System

Acknowledgments
Orica wishes to thank the Lawlers Engineering and Production crew who were involved with the firing of this blast. Orica also wish to thank Barrick Gold, for the opportunity to demonstrate the benefits of these systems on site at Lawlers Gold Mine.

Fragmentation after Firing 118 Stope

Set up & Logging of Detonators