

Case Study

Improved operational efficiencies through Blast Based Services

Newlands – Eastern Creek, Australia

Site Profile

The Newlands operations comprise the Eastern Creek, Suttor Creek Woolombi open-cut pits. The Newlands mine is owned by the NCA Joint Venture whose beneficial owners are Xstrata Coal Queensland Ltd., Sumitomo and Itochu Corporation. The mines are operated by Xstrata Coal Queensland Pty Ltd.

The mine is located 130km west of Mackay. Medium volatile, high energy bituminous thermal coal is mined for export to Japan, Korea, South East Asia and Europe and presently ROM coal production stands at 6.4 Mtpa.

The Situation

In 2005 Orica was asked by Newlands coal to assist in their blast improvement program. The mine was looking to reduce their mining costs by 10%. Additionally a newly constructed Marion 8750 dragline was to begin production at Eastern Creek. Effective blasting was critical to the productivity of this new machine. Cast results had always been respectable, however fragmentation and wall quality had suffered due to the complex and difficult geology.



Picture 1: Marion 8750 Dragline at Newlands Coal Mine.

Technical Solutions

Orica recently launched its new suite of “Blast Based Services” which have been developed to offer customers the opportunity to realise greater operational efficiencies from the application of propriety Orica technology.

Both Newlands and Orica jointly developed an improvement program for the Eastern Creek deposit. The basis of this improvement program was the application of one of Orica’s Blast Based Service offerings; Advanced Blasting Technology (ABT) services to deliver customer value.

ABT is the unique combination of expertise, process management and innovative products.

ABT draws upon the depth of field experience of Orica’s technical services personnel, performance based process management systems and Orica’s suite of unique products including SHOTPlus-i® blast design software, S-o-H mechanistic blasting model and i-kon™ digital energy system.

The Result

Since the introduction of ABT to Eastern Creek, Newlands has seen:

- Reduction of powder factor by 13%
- Increase in dragline productivity by 10%
- Either maintained or improved current cast percentage performance
- Reduction in drill and blast costs at Eastern Creek of 7%
- Reduction in dragline stripping unit rate by 10 cents per bcm
- Annual value of over \$2.8M savings

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Picture 2: Eastern Creek ABT post blast profile

This technology has been successfully and consistently used in firing over 12MBCM of overburden at Eastern Creek. Due to the success, opportunities in other pits at Newlands are being investigated for the application of ABT.

Acknowledgements

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