

Managing Community Relations and ensuring Environmental Compliance in Trenching

Auckland City Council, New Zealand

The Situation

Auckland city council instigated a multi-million dollar stormwater upgrade scheme which involved the placement of large diameter pipes laid in trenches right down the middle of the road in a busy suburb. Auckland is generally sitting on basalt rock and this location was no exception. The question was asked “How can we possibly fragment and remove the solid rock at reasonable cost, particularly without disruption to road users?”

Mining Issues

Mechanical rock breaking was considered but recognised as being too slow and expensive in this undisturbed massive rock. The nuisance and discomfort to the community caused by this method would have extended for an unacceptably long period. Blasting was considered by some to be the best solution, providing benefits of convenience, flexibility, speed and cost-effectiveness but project managers were uneasy.

Technical Solutions

After presentations by the Orica specialised blasting team, environmental constraints were placed on the job and tentative approval given for Orica to demonstrate that our new breed of blasting professionals were capable of safely and effectively executing this type of suburban blasting. Orica played a key role in community awareness programs that explained the techniques employed to protect homes and neighbours in the area.

The Result

In the end, theory must give way to actual performance. In Auckland this was impressive. Although not detectable to the naked eye, video showed that the blast lifted the road surface briefly then dropped it back into place. There was no permanent disruption to the road surface. Vibration levels achieved with the latest technology i-kon™ Digital Energy Control System produced vibration values only one third of previous results, an exciting outcome for all stakeholders including the Orica New Zealand Quarry Services Team.

As a result of the outstanding performance of the well-trained Orica shotfiring crew and the effect of the digital blasting technology, Orica New Zealand want to adopt the i-kon™ System for all trench blasting and other suitable blasting projects in order to maintain good results coupled with environmental compliance.



Figure 1: i-kon™ trench at Marua Road, Auckland.

Acknowledgements

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