

ABSEIL ACCESS LTD

Reference Project

Geotechnical – Drill and Blast

Location: Evans Pass Rd, Sumner, Christchurch

Date: July & August 2012

Client: Christchurch City Council

Consultant: URS

Evans Pass Road is a vital link between Sumner and Lyttleton harbour. Following the Canterbury earthquakes of 2010 and 2011 the overhanging basalt cliff above Car Crash Corner was showing several tension cracks. The instability of the cliff increased with aftershock activity. A collapse of the cliff involving several thousand tons of rock would severely damage the road.

Abseil Access Ltd were contracted to design and implement a drill and blast plan to safely demolish the buttress over a series of 3 blasts.

Blast 1: Removed the unstable fractured overhanging area. 22 holes up to 6m deep, 1000T rock, 110kg Amex.

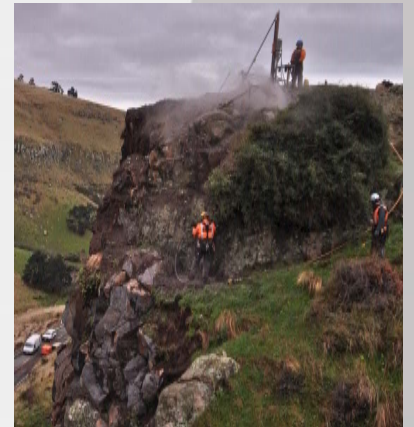
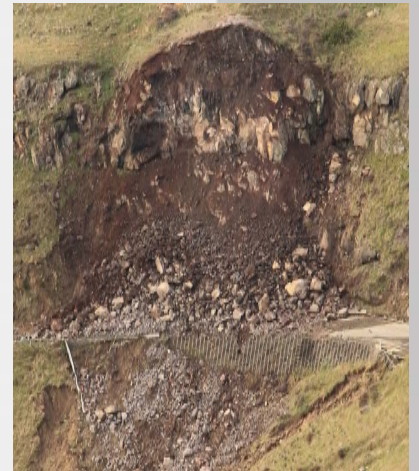
Blast 2: Battered the remaining cliff to 80 degrees. 24 holes up to 10m deep, 3000T of rock with 300kg Amex.

Blast 3: Battered the upper half to 60 degrees. 24 holes up to 6m deep. 1500T rock with 140kg Amex.

As well as stringent health & safety considerations; additional factors included ensuring all block size was less than 1m³, preventing damage to nearby housing and keeping back fracture to a minimum. The staged blasting process proved vital to the successful completion of this project.

Detonation of the Amex in each hole was by non-electric dets which triggered powergel cartridges at the base of each hole. Initiation was electric and separate lines of holes were delayed by 100m/s on each blast. Deep stemming prevented fly rock. Block size and back fracture were optimised with 1.5-2.0m hole spacing.

A safe viewing area set up across the valley allowed slow motion film analysis of each blast and a lookout for local residents and engineers.



ABSEIL ACCESS LTD

15 Bute Street

P.O. Box 10717, Wellington

Phone and Fax: 04 801 5336

www.abseilaccess.co.nz

info@abseilaccess.co.nz

DJ Matheson 0274 449 774

djmatheson@abseilaccess.co.nz

Martin Wilson 0274 495 408

mwilson@abseilaccess.co.nz

