



Avalon consulting

high / difficult access
a division of avalon industrial services ltd

P.O. Box 5187
Frankton
Hamilton, N.Z.
ph: 07 846 1686
fax: 07 846 1016
www.avalonltd.co.nz

Tauranga District Council
91 Willow Street
Tauranga

For the attention of [redacted] s 7(2)(f)(ii)

16th January 2004

Mauao Camp Bluff; Zone 4 Boulder Scaling Works 15 January 2004

On 13 January [redacted] s 7(2)(f)(ii) contacted [redacted] s 7(2)(a) - Privacy [redacted] s 7(2)(a) - Privacy with Avalon regarding an unstable looking boulder which had been spotted on the northern slopes Mauao and which required removal as soon as possible. This letter reports the work carried out.

It was arranged that Avalon would send a three person scaling team on Thursday 15th January. TDC was to arrange for security guards to isolate the affected walking tracks whilst the boulders were scaled.

The boulder was approximately 1.5 x 1.0 x 0.75m in size and as such was a weight of approximately 3t. The boulder was partly supported by a smaller boulder (approx 0.5 x 0.5 x 1.0m) below, which also required removal.

The boulder was located in Zone 4 (see Avalon's 12/7/03 Report*) approximately 15m down from the head of gully 4d.

The following photographs show the location and general appearance.





The boulder has moved forward recently by 150 to 200mm, as can be seen in the following photograph.



The boulder and surrounding areas showed signs of impacts indicating it may have been struck by a rock falling (pushed?) from above. The boulder was in a marginal position and may have already moved forward due to the supporting loose sand having been eroded by wind and rain.

The position was marginally stable and the boulder certainly presented a very real hazard to track users.

This was confirmed by the ease of scaling (the boulder was dislodged by 2 men using 1.5m steel bars).

The boulders did not split whilst falling and came to rest on the shoreline having crossed travelled down gully 4c and over both the Oruahine and Base Tracks.

After the scaling we accessed the gully below, checking the falling boulders had not destabilised any other rock and clearing off the worst of the other loose surface rocks.

A quick inspection of other slopes on Mauao revealed sand scour had become quite widespread on the slopes burned of in the January 2003 (and since the March 2003 scaling work carried out by Avalon). This was anticipated due to the loss of the binding effect of the grass roots on this loose sandy soil. The northern slopes were the most affected as would be expected due to their prevailing weather exposure.

It is recommended that all slopes should be lightly scaled after this summer season. Once the vegetation becomes re-established the scouring should reduce significantly.

s 7(2)(a) - Privacy

* Avalon Consulting Report No 0314, for Tauranga District Council; Mauao Rock Slopes and Rockfall Hazards.