

APPENDIX G

John Heilig Response to Mrs Gentil



- Tunnelling
- Construction
- Open Pit Mining
- Quarrying
- Underground Mining
- Blast Design
- Blast Permitting
- Vibration Monitoring
- Vibration Analysis
- Expert Witness

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vibration management software

Monday, November 19, 2018

Mr. Stephen Christensen
Project Barrister
PO Box 1251
Dunedin Metro. 9504
New Zealand

Ref:jhh:Project Martha Gold FM.docx

RE: GoldFM assessment

Dear Stephen,

In her evidence, Mrs. Gentil raised concerns about effects I've described relating to the MediaWorks sound studio and the City Rail Link Project. While Mrs. Gentil's concerns are understandable, there are several important differences between the two situations.

- Regenerated noise occurs because of the vibration inducing momentary deflections in building elements, such as walls, floors and ceilings. Just as the vibrating skin of drum creates audible noise, so too under some situations can the vibrating surfaces of a building emit an audible rumbling sound. The source of the vibration is typically mechanically induced (e.g. by tunnel boring machines, road headers, hydraulic hammers etc.) because the activity can be much closer to the building than where blasting might occur and secondly, occurs as a result of a vibration source that persists for tens of minutes rather than seconds as is the case with blasting.
- The MediaWorks studio is positioned approximately 10 to 15 metres directly above the planned rail tunnels which will be excavated using mechanical methods. The distance between the GoldFM studio and the underground location of any activity is more than 100 metres;
- The MediaWorks facility is a TV broadcast studio with presenters using omnidirectional lapel microphones which can detect and retransmit very low levels of background noise. Compared to the microphones used for radio broadcasts which minimise the pick-up of background noise. It is understood that GoldFM can on occasions broadcast with open windows because of the limited microphone pick up of external noise;
- The MediaWorks Studio is a basement studio with a concrete floor directly coupled to the underlying basalt rock mass. This configuration minimises vibration influences from other areas within the building, however the configuration efficiently allows the transfer of vibration from external activities. The potentially elevated vibration leads to possible higher levels of regenerated noise. The GoldFM is located on the second floor of the Seddon Street building and therefore decoupled from the basement and underlying rock mass;
- The MediaWorks broadcast studio has an expansive concrete floor which is effective in reradiating regenerated noise. The GoldFM is a carpeted floor which dampens the levels of transmitted noise.

Therefore, while both GoldFM and MediaWorks are broadcast facilities, the MediaWorks facility is particularly sensitive. In addition, due to the differences listed above, it is fully expected that regenerated noise will not impact on the GoldFM broadcast quality.

Yours truly,

John Heilig

Dr. John Heilig

Principal - Heilig & Partners Pty Ltd

