

5 August 2019

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Dear Eloise

MCPHERSON QUARRY

Thank you for a copy of the request for further information on the McPherson Quarry development as set out in the letter from Marshall Day Acoustics dated 29 July 2019 on behalf of the Waikato District Council. The following sets out the questions with our response.

- (i) *Provide the ambient sound levels at the closest dwelling (Dwelling 9 of S92 response 2) (L_{A90} and L_{Aeq}).*

Measurements of the ambient sound levels were undertaken on Thursday 1 August. The weather during the measurements was cool (11°C) and overcast with a 2m/s south westerly wind at the monitoring position. There were passing showers although the measurements were undertaken in fine conditions. Access to the notional boundary of dwelling 9 was not practical so the measurements were undertaken approximately 150m to the north of the notional boundary at a position representative of the noise environment at dwelling 9 during the mid-afternoon period. At this site the L_{Aeq} was 44dB and the L_{A90} 40dB. The level had stabilised within approximately five minutes although measurements were continued for 30 minutes. The controlling noise at this site was from traffic on SH2 although SH1 was also visible from the site and contributed to the measured level.

- (ii) *Assessment of effects for night-time works*

Other than possible emergencies no night work is proposed.

- (iii) *Assessment of overburden and clean fill activities south of the quarry*

Noise from the quarry operating plus the operation of the proposed managed fill has been assessed. There will not be any additional trucks to the site due to the managed fill as only trucks backfilling will import the fill. The fill will be tipped at a tip head and pushed to the fill position using a D6, D8 or the D10 bulldozer, the machine used will be dependent on the material being handled. The assessment has assumed the noisiest machine (D10) pushing the maximum distance to a point closest to the dwellings. At the closest point to the dwellings the managed fill will be lower than further back where there is more height to the fill. The position selected for the assessment is at a height of approximately 5m above ground level although checking has shown there will be line of sight to the closer dwellings at this height. Although the height of the fill increases to a maximum of 30m the increased distance to the dwellings when at this height results in a lower level being experienced at the receiver position.

The predicted noise contours when operating the managed fill, as set out above plus the closer area of the quarry, are shown on Figure 1. As the quarry and fill both progress to the north the noise that will be experienced by the residents will reduce.

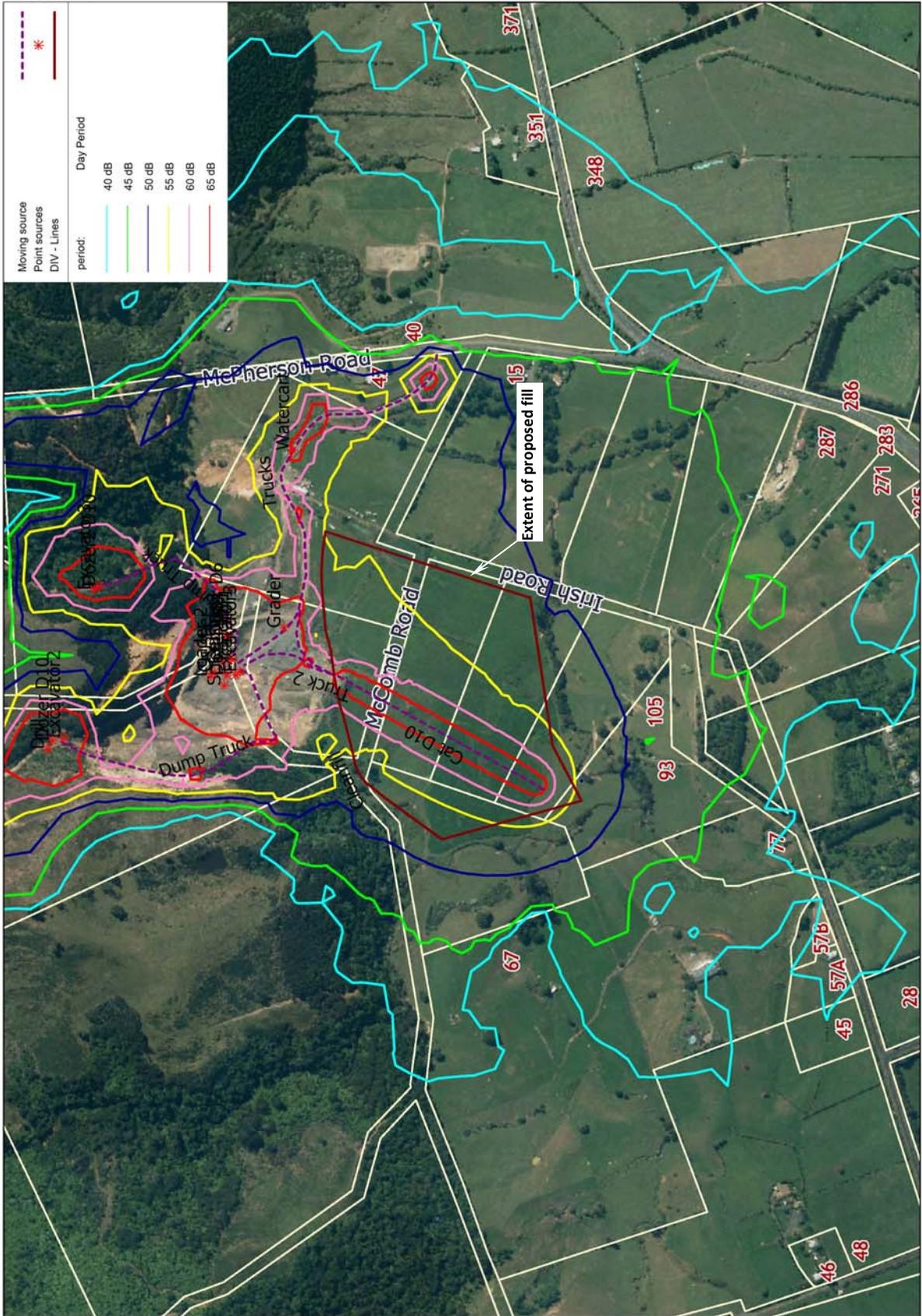


Figure 1. Managed fill + quarry operating, dB L_{Aeq}

In addition to the noise contours the level has been predicted at the most exposed notional boundary of each dwelling shown on Figure 2 with the levels as set in Table 1.



Figure 2. Location of dwellings

Dwelling Site ¹	Noise Level – dB L _{Aeq}	
	Fill + quarry	Quarry only
1	39	37
2	42	39
3	41	39
4	39	38
5	48	45
6	49	48
7	49	48
8	39	39
9	41	41

¹ As shown on Figure 2

Table 1. Predicted Noise Levels at the Notional Boundaries

As can be seen from Table 2 the cumulative noise effects from the managed fill increases the noise by a maximum of 3dB L_{Aeq}, which is a just noticeable increase to the noise.

Should you have any questions regarding the above please do not hesitate to contact me.

Yours sincerely
Hegley Acoustic Consultants

Nevil Hegley