

Environmental Consultants

Ground Floor, 25 Anzac Street, Takapuna
PO Box 33 1642, Takapuna
Auckland 0740, New Zealand
Tel: +64 9 486 5773
Fax: +64 9 486 6711

By Email

16 November 2015

Our Ref: SGL4161

Stevenson Mining Limited
Private Bag 94000
Manukau City
AUCKLAND 2241

Attention: Anne Brewster

Dear Anne

RE: REVISED PROPOSED ACCESS ROUTE AT TE KUHA

1. INTRODUCTION

As part of developing their proposal to construct an open cast coal mine at Te Kuha, Stevenson Mining Limited have been involved in ongoing discussions with Department of Conservation staff in relation to the applications for an access arrangement to allow construction of the road and a concession to allow construction of a small part of the mine itself. Most recently the parties have proposed a variation to the access road (the so called “**upper route**”) which they consider might avoid most public conservation land whilst not significantly increasing overall impacts.

You have asked Mitchell Partnerships Limited to investigate the vegetation within the upper route and also re-calculate our estimates of the amount of each habitat affected by the proposal so as to account for the latest changes in the mine plan and the revised access road route. This letter serves to provide our findings in relation to both of these matters based on a visit to the site undertaken on 4 November 2015.

2. VEGETATION WITHIN THE UPPER ROUTE

The location of the upper route is shown in Figure 1. Note that no track has yet been cut and for that reason we were unable to exactly follow the route during our visit because in some places it was impenetrable due to tree falls or especially dense vegetation. The

Also in Tauranga and Dunedin:

PO Box 4653, Mt Maunganui South
Mt Maunganui 3149
New Zealand
Tel +64 7 577 1261

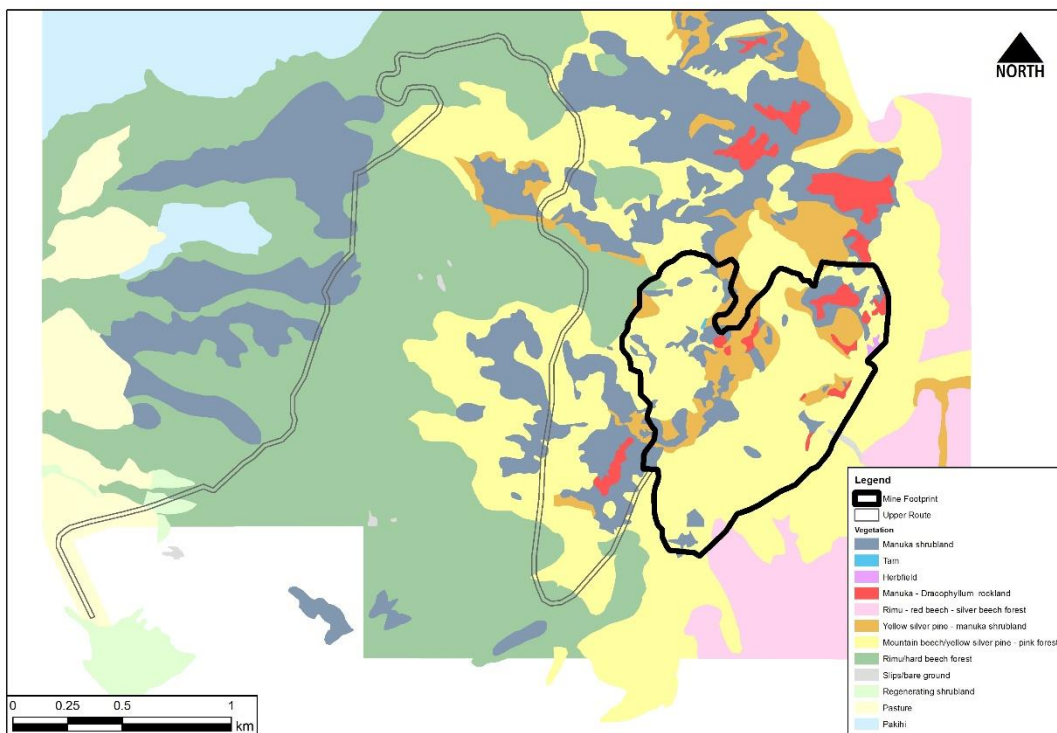
PO Box 489, Dunedin 9054
New Zealand
Tel: +64 3 477 7884
Fax: +64 3 477 7691

route provided was the proposed centre line and the road would be located on both sides of that line, so I do not consider this deviation detracts materially from our assessment.

Figure 1: Location of the proposed upper route access road and mine footprint at Te Kuha.

The indigenous vegetation within the upper route includes manuka shrubland, rimu/hard beech forest, regenerating shrubland nearest Te Kuha Farms and pasture, as shown in Figure 1. The vegetation along the earlier proposed road route, which traverses the public conservation land, was described in more detail in Nichol (2015).

The upper route enters regenerating shrubland from Te Kuha farms and crosses public conservation land for approximately 160 m before diverging from the previous route. Chris J. Coll Surveying Limited have recorded the chainage of the route beginning at the point where the upper route diverges from the previously proposed route and those distances have been used here.



After diverging from the previously proposed route at Chainage 0, the upper route continues within public conservation land for a further approximately 100 m before entering the Westport Water Conservation Reserve. Thus the upper route would traverse public conservation land for approximately 260 m in total. The vegetation within the conservation land comprised a fringe of regenerating shrubland followed by rimu/hard beech forest. The first approximately 100 m showed signs of earlier logging (Nichol 2015), but beyond that point the forest became largely unmodified with a diverse range of species and a full complement of forest layers. Examples of this forest vegetation from along the upper route are shown in Plates 1 - 3.



Plate 1: Rimu/hard beech forest near Te Kuha.



Plate 2: Rimu/hard beech forest near Te Kuha.



Plate 3: Understorey of rimu/hard beech forest near Te Kuha.

Beyond the public conservation land, the upper route continued within rimu/hard beech forest until approximately chainage 1 265, shortly after crossing the middle branch of Coal Creek. The understorey throughout much of this forest was particularly dense comprising mostly mapere (*Gahnia xanthocarpa*), kiekie (*Freycinetia banksii*) and supplejack (*Rhipogonum scandens*) but with locally variable crown fern (*Blechnum discolor*) which was occasionally dominant as shown in Plate 3. The other beech species (mountain beech (*Fuscospora cliffortioides*), silver beech (*Lophozonia menziesii*) and red beech (*Fuscospora fusca*)) were occasionally encountered and the forest was as described by Nichol (2015) for the forested parts of the previously proposed route.

Both nikau (*Rhopalostylis sapida*) and *Blechnum fraseri* reported by Nichol (2015) as occurring within the public conservation land were noted within the forest along the upper route, although nikau were only occasionally encountered.

South of the middle branch of Coal Creek (near Chainage 1 160) two large rimu trees (with diameters at breast height exceeding 80 cm) were recorded. It should be possible to avoid these notably large trees by shifting the road slightly down the slope.

Between approximately Chainage 1 265 and Chainage 1 550 (before the northern branch of Coal Creek) the vegetation comprised tall manuka (*Leptospermum scoparium* agg.) shrubland to approximately 5 – 6 m in height with dominated by open canopy manuka with rimu, kamahi (*Weinmannia racemosa*), quintinia (*Quintinia serrata*), lancewood

(*Pseudopanax crassifolius*) and toro (*Myrsine salicina*) with occasional hupiro (*Coprosma foetidissima*), yellow-silver pine (*Lepidothamnus intermedius*), southern rata (*Metrosideros umbellata*) and Hall's totara (*Podocarpus laetus*). Ground cover was locally variable with the species recorded including tangle fern (*Gleichenia dicarpa*), *Baumea teretifolia*, bracken (*Pteridium esculentum*), *Gahnia xanthocarpa*, *Blechnum procerum*, *Schoenus tendo*, kiokio (*Blechnum novae-zelandiae*) and seedlings of canopy species. Examples of this vegetation are shown in Plates 4 – 6.



Plate 4: Manuka shrubland near Te Kuha



Plate 5: Manuka shrubland near Te Kuha



Plate 6: Manuka shrubland at Te Kuha.

Between approximately Chainage 1 600 (after crossing the north branch of Coal Creek) and Chainage 1 900 (where the upper route rejoins the earlier proposed route), the vegetation includes a small amount of rimu/hard beech forest (located at approximately Chainage 1 800) and two small sections of manuka shrubland similar to that described above. Within the tall forest near Chainage 1 600 (just after crossing the north branch of Coal creek) was a canopy tree which resembled silver pine (*Manoao colensoi*). Silver pine has a patchy distribution within the Buller District¹ and has been recorded at Te Kuha (Overmars *et al.* 1988) but is not common there. After crossing the north branch of Coal Creek the route ascended a steep face on which the tree was located. Unfortunately no specimens could be collected to verify the tree's identity, but it was located just outside the likely road footprint. If necessary that tree could be specifically identified for protection.

Near Chainage 1 860 vegetation recovery on a natural slip provided an indication of how vegetation succession might proceed on newly disturbed sites in the area. Vegetation there is shown in Plate 7 and was dominated by manuka with common bare ground, moss and *Lycopodiella diffusa*. Other common species included *Gunnera monoica*, kiokio, *Isolepis prolifera*, rautahi (*Carex geminata*) and *Gahnia procera*. Herbaceous weeds such as hawkbit (*Hypochoeris radicata*) and *Lotus pedunculatus* were also present occasionally.



Plate 7: Vegetation on a naturally occurring slip near Te Kuha.

¹ http://www.nzpcn.org.nz/plant_distribution_results.aspx?Species_Name=Manoao+colensoi

We conclude that the earlier vegetation descriptions undertaken in the area are sufficient to describe the vegetation and that the values ascribed to the particular vegetation types elsewhere are consistent with the values present along the upper route.

3. LENZ ENVIRONMENTS

The upper route traverses LENZ Level IV environments O1.1a and O1.2b. These land environments are both regarded as “less reduced and better protected” (Category 6) of the Threatened Environments Classification.

4. RECALCULATION OF EXTENT OF VEGETATION CLEARANCE

The latest mine plan has increased the proposed footprint by approximately 20% (19.4 ha from 89.1 ha to 108.52 ha). The extent of vegetation removal required to accommodate the revised mine footprint is shown in Table 1 below with the extent of vegetation affected by the Upper Route provided in Table 2.

Table 1: Extent of vegetation types affected by the mine at Te Kuha.

Vegetation Type	Extent Affected by Current Mine Plan (ha)	Extent Affected by Previous Mine Plan
Herbfield	0.28	0.04
Manuka – <i>Dracophyllum</i> rockland	3.81	4.30
Manuka shrubland	15.42	13.47
Mountain beech/yellow silver pine – pink pine forest	72.90	50.57
Rimu – red beech – silver beech forest	0.58	1.81
Slips/bare ground	0.09	0.12
Tarn	0.08	0.002
Yellow silver pine – manuka shrubland	14.87	8.31
Rimu/hard beech forest	0.49	8.28
Pakihi	0	0
Pasture	0	0.36
Regenerating shrubland	0	0.93
Total	108.52	89.14

Of the vegetation types listed in Table 1, four were identified as “high value”. The four “high value” ecosystems were manuka shrubland, yellow-silver pine – manuka shrubland, herbfield and tarns. The amount of “high value” vegetation affected by the increased footprint has increased in all four cases.

With regard to the access road, the proposal is to create a 10 m wide road with passing bays located approximately every 1 km. At passing bays the road width would be 20 m. In the estimates of area provided in Table 2 we have assumed an average width of 20 m to allow for cut and sidecast.

Table 2: Extent of vegetation types affected by the upper route access road at Te Kuha.

Vegetation Type	Extent Affected by Upper Route (ha)	Extent Affected by Previously Proposed Route
Manuka shrubland	1.95	0.93
Yellow silver pine – manuka shrubland	0.045	0.30
Mountain beech – yellow silver pine – pink pine forest	4.20	4.08
Rimu/hard beech forest	8.53 ha	6.90
Pakihi	0	0.72
Pasture	1.67	0.67
Regenerating shrubland	0.23	0.89
Total	16.63	14.49

5. CONCLUSION

Overall the vegetation along the upper route is similar to that described by Mitchell Partnerships Limited (2013) who considered the wider area and Nichol (2015) who specifically considered the vegetation comprising an earlier proposed route within the Ballarat Conservation Area. Some of the notable elements of the vegetation recorded previously such as the presence of nikau and *Blechnum fraseri* were also present within the upper route, but they are not unique to that area and also occur outside the proposed upper route nearby. Although it has a slightly larger overall footprint (16.63 ha vs 14.49 ha for the previous proposed route), the upper route has the advantage of avoiding some of the high value pakihi and also mostly avoids the largest examples of rimu and hard beech in the vicinity. Where it likely would affect either large or otherwise notable trees (such as the silver pine), it is likely these specimens could be easily avoided.

I trust this information will assist in progressing your discussions with the Department of Conservation. Please do not hesitate to contact the writer if anything is unclear or you require further information.

Yours sincerely,
MITCHELL PARTNERSHIPS LIMITED



DR G N BRAMLEY

Email: gary.bramley@mitchellpartnerships.co.nz

REFERENCES

- Mitchell Partnerships Limited 2013. Vegetation and Fauna of the Proposed Te Kuha Mine Site. Unpublished report prepared for Te Kuha Limited Partnership by Mitchell Partnerships Limited, Takapuna, Auckland. October 2013. 113 pp + appendices.
- Nichol, R. 2015. The Proposed Haul Road Route, Ballarat Conservation Area and Stevenson Freehold Parcel. A comparison of values. Unpublished report prepared for Stevenson Mining Limited. July 2015. Published by the author, Richard Nichol, Westport. 21 pp + Appendix.
- Overmars, F.B., Kilvington, M.J, Gibson, R.S., Newell, C.L., and Rhodes, T.J. 1998. Ngakawau Ecological District. Survey Report for the Protected Natural Areas Programme. New Zealand Protected Natural Areas Programme Survey Report No. 11. Department of Conservation, Hokitika. 120 pp + appendices.