

IN THE MATTER of the Resource
Management Act 1991

AND

IN THE MATTER of a submission in respect
of the **PROPOSED
WAIKATO DISTRICT
PLAN** by **AMBURY
PROPERTIES LIMITED**
pursuant to Clause 6 of
Schedule 1 of the Act to
rezone 178ha of land at
Ohinewai

STATEMENT OF REBUTTAL EVIDENCE OF CAMERON JOHN LINES

1. INTRODUCTION

1.1 My name is Cameron John Lines. I am a Principal and Director of Baseline Geotechnical Limited a company I founded in July 2018 which provides mine/quarry development and geotechnical advice to the extractives sector. I spent the previous 15 years working at Tonkin & Taylor Ltd.

1.2 I have outlined my qualifications, experience and commitment to comply with the Environment Court Expert Witness Code of Conduct in my evidence in chief ("EIC").

1.3 I have read the statements of evidence of the following witnesses filed on behalf of the Ralph Estates:

(a) Mr Dean Fergusson; and

(b) Mr Gary Gray.

Purpose and scope of rebuttal evidence

1.4 This statement of rebuttal evidence does not restate matters addressed in my EIC but rather new issues raised in the evidence of

the further submission by Ralph Estates which relates to the coal resource at Ohinewai which opposes the rezoning on the basis it will result in "sterilisation" of the coal resource owned by the estate.

1.5 I address the following issues raised in the evidence of Mr Fergusson and Mr Gray:

(a) Coal demand in the context of the potential future extraction of the Ohinewai coal resource, in response to the evidence of Mr Fergusson (Section 2); and

(b) Potential pit slope stability issues arising from an opencast method of extraction including anticipated environmental effects, in response to the evidence of Mr Fergusson and Mr Gray (Section 3).

1.6 A summary of my rebuttal evidence is set out Section 4.

1.7 My evidence should be read alongside the evidence of:

(a) Mr Nicholas Speight, who addresses engineering issues relevant to the potential for extracting coal at Ohinewai; and

(b) Mr David Stafford who addresses groundwater issues in that regard.

2. **COAL MARKETS/COAL DEMAND**

2.1 Mr Fergusson and I appear to agree on the major users of the sub-bituminous coal that would be produced by a mine at Ohinewai¹, namely Huntly power station, Glenbrook steel mill and industrial heat raising (primarily dairy).

2.2 Our views of the overall market conditions for thermal coal (i.e., that it is declining) also appear to be aligned.², to the extent that we both see a general future decline in demand for thermal coal in line with low or zero carbon government policies.

2.3 However, Mr Fergusson is of the opinion that the significant tonnage used annually by New Zealand Steel ("NZS") in its steel making

¹ Paragraph 6.2 of my EIC and paragraph 6.10 of Mr Fergusson's evidence.

² Paragraph 6.8 of my EIC and paragraph 6.13 of Mr Fergusson's evidence.

process at Glenbrook Steel Mill presents the potential for a long term coal supply agreement well into the future³, that would underpin the economic viability of an opencast mine at Ohinewai⁴.

- 2.4 Mr Fergusson sets out a broad timeline, by which consenting and early stage development at Ohinewai could take place over the next 10 years,⁵ bringing an opencast mine into full production as supply falls away from existing North Waikato mines. According to Mr Fergusson's thesis, Ohinewai would then be capable of providing a supply for approximately 20 years at up to 1 million tonnes per annum.⁶
- 2.5 The demand for coal in the North Waikato as assessed by Mr Fergusson has been largely predicated on up to 750,000t per annum being required by NZS as part of its steel making at Glenbrook. This assessment of demand is heavily reliant on the current steel making process at Glenbrook continuing into the future (20-30 years), including the availability of iron sand supplied from the nearby Waikato North Head Mine ("WNHM").
- 2.6 I have undertaken geotechnical assessment at WNHM for the last ten years. I am familiar with the WNHM site, the mining undertaken there and a range of long term mine plans for the site. My understanding is that a range of "life of mine" scenarios for the WNHM exist that are as short as 10 years and as long as 20 years.
- 2.7 The life of mine at WNHM is dependent on a range of factors such as production of sand concentrate, grade, maintaining economic mining costs per tonne and rate of consumption by the mill.
- 2.8 Scenarios clearly exist in which WNHM is no longer supplying Glenbrook, or ceases supply shortly after an Ohinewai mine becomes operational, based on a 10-year consenting and development timeframe for Ohinewai.
- 2.9 If WNHM were no longer used to supply Glenbrook then alternatives to the status quo production of steel using iron sand and coal would be required. These could include:

3 Paragraphs 6.14 and 11.1 of Mr Fergusson's evidence.

4 At paragraphs 11.27 and 13.7.

5 At paragraph 8.2.

6 At paragraphs 8.5 and 8.6.

- (a) using an electric arc furnace production model where steel is produced from scrap, or
- (b) importing hot rolled steel coil as the basis for local products.

Neither of these alternative methods has any significant requirement for coal.

- 2.10 Setting aside the issue of mine life at WNHM, the economic viability of steel production at Glenbrook also needs to be considered if all factors relevant to the Ralph Estates' position is to be properly assessed.
- 2.11 A recent Investor Presentation⁷ issued by Bluescope Steel (the Australian Owner of NZS) has indicated that if the current strategic review and reconfiguration of the business could not return the mill to required levels of profitability then it could be closed for primary steel making⁸.
- 2.12 It is clear that there are several scenarios related both to the life of the mine at WNHM and steel making profitability at Glenbrook that could result in either a halt to, or change in, steel production process. These scenarios would obviate the need for coal at NZS by the time a mine at Ohinewai began production.
- 2.13 It is my opinion that projecting the current coal use at Glenbrook as a future demand scenario for Ohinewai in 10 to 20 years' time does not account for the significant uncertainties that exist around future steel production at Glenbrook. This would present a significant economic risk to any new mine development reliant on this market.

3. **PIT SLOPE STABILITY**

- 3.1 Mr Fergusson's evidence provides details of a mining scenario prepared by Solid Energy New Zealand ("SENZ") in 2015.
- 3.2 That mining proposal includes limited recovery of coal beneath the APL site, but requires excavation of a large portion of the APL site to

7 Bluescope Steel FY2020 Investor Presentation. <https://www.bluescope.com/investors/investor-news/2020/08/bluescope-fy2020-financial-results/?filter=&page=1&year=>. Retrieved 19 August 2020.

8 <https://www.stuff.co.nz/business/industries/122474810/bluescope-may-cut-jobs-at-lossmaking-glenbrook-otahuhu-steel-mills>

develop pit slopes to access the thicker coal seams at shallow depth at, and to the south of, Tahuna Road.

- 3.3 Key design considerations include very gentle (10-12°) pit slope angles in Tauranga Group sediments and a significant dewatering programme by way of perimeter and in-pit sacrificial wells (Fergusson at 11.18 and 11.17).

Dewatering

- 3.4 Assuming that appropriate levels of dewatering can be achieved by the proposed dewatering programme, acceptable levels of pit slope stability may also be achievable. However, the approach raises several significant environmental issues which are not addressed in Mr Fergusson's evidence:

- (a) The proposed groundwater drawdown would result in a widespread cone of groundwater depression around the mine. The extent of this cone of depression is addressed in the rebuttal evidence of Mr Stafford.
- (b) The anticipated depth of drawdown required could be expected to result in significant widespread surface settlements related to consolidation of the Tauranga Group soils. This is further addressed in the rebuttal evidence of Mr Speight.
- (c) A potential hydraulic connection between the Tauranga Group Sediments and the adjacent Lake Rotokawau and Lake Waikare (Mr Fergusson's evidence is unclear⁹ on whether Lake Ohinewai is to be mined out or not in the proposal). This is further addressed in the rebuttal evidence of Mr Stafford.

Pit slope geometry, APL rezoning and coal sterilisation

- 3.5 In his discussion of the impact of the APL rezoning on changes in the coal winning limit and associated coal sterilization, Mr Fergusson references a 100m offset from Tahuna Road in the constrained pit.¹⁰
- 3.6 An offset or buffer zone is often allowed for between an extractive operation and adjacent property, particularly in areas with a more

9 Figure 4, paragraph 5.3 compared with paragraph 5.5
10 At paragraph 7.11.

suburban or large lot residential character. The reasoning behind the offset is not clearly set out by Mr Fergusson in his evidence, but at paragraph 26 of his evidence, Mr Gray identifies that the offset is to *“provide a buffer against any effects of ground instability”*.

- 3.7 The provision of a buffer of this size and the rationale provided by Mr Gray suggests that the technical risks around performance of proposed pit slopes, even at such gentle slope angles, are still significant.
- 3.8 Otherwise, the size of the 100 m offset from Tahuna Road appears to be arbitrary, but it has a significant direct impact on the calculation of coal volumes that would be sterilized by the proposed rezoning.
- 3.9 Without the detail of Mr Gray and Mr Fergusson’s plans for reference, this buffer appears to account for 1/6 of the 600m crest repositioning to the south referred to as the “constrained pit” and could thus account for 1/6 of the sterilized coal calculated (1.25 Mtonnes). The size of the buffer is therefore significant in the calculation of sterilized coal and its apparent arbitrary size means that the volumes of sterilized coal may have been overstated.

4. **CONCLUSIONS**

- 4.1 Overall, Mr Fergusson and I are in agreement in respect of most issues concerning the mine development matters addressed in our evidence, despite differences in the mining proposals considered. There are, however, some key areas where we disagree, which means we draw different conclusions around the overall feasibility of developing a mine at Ohinewai. In my opinion the key areas of disagreement relate to three issues.

Future demand for coal in the North Waikato

- 4.2 Mr Fergusson holds a more optimistic view of coal demand than I do, based on projected long-term demand from Glenbrook Steel Mill. I consider that there is a high level of uncertainty in this demand as set out above.

The technical feasibility of an opencast

- 4.3 Mr Fergusson quite reasonably indicates that assessment of environmental effects is outside the scope of his expertise. However,

this means he takes a relatively narrow view of the technical feasibility of developing an opencast mine at the site.

- 4.4 It is my view that the dewatering required to achieve acceptable levels of pit slope stability could have pronounced environmental effects and that these must be considered as part of the overall technical feasibility of an opencast mine at Ohinewai. The rebuttal evidence of Mr Stafford and Mr Speight address these effects in more detail.

The extent of the proposed buffer zone and impacts on coal sterilization

- 4.5 This has a significant effect on the calculated volumes of sterilized coal and the basis for it has not been provided. The volume of potentially sterilised coal quoted by Mr Gray and Mr Fergusson may therefore be overstated.

Cameron Lines

20 August 2020