

Under the Resource Management Act 1991 (**RMA**)

In the matter of an application by **Dunedin City Council** for resource consents for the operation, closure and aftercare of the Green Island Landfill, Dunedin.

Statement of evidence of Dr Tanya Jillaine Blakely

4 March 2025

Applicant's solicitors:

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Qualifications and experience

- 1 My name is Dr Tanya Jillaine Blakely.
- 2 I am an Ecologist, Senior Principal and Technical Leader – Sciences with Boffa Miskell Limited. I have been employed as an Ecologist with Boffa Miskell since April 2012.
- 3 I hold a Bachelor of Science (First Class Honours) in Zoology (2002) and a Doctor of Philosophy in Ecology (2008) both from the University of Canterbury. I am a Certified Environmental Practitioner, Ecology Specialist, with the Environment Institute of Australia and New Zealand (EIANZ). I am also a full member of the New Zealand Freshwater Sciences Society and the EIANZ. I am currently (since 2018) the Chair of the New Zealand Fish Passage Advisory Group.
- 4 I have nearly 20 years' professional experience in ecological surveying, monitoring, applied scientific research and advising on ecological matters. I have published eleven peer-reviewed scientific papers, a technical guidebook on freshwater macroinvertebrates, and numerous technical ecological reports, ecological impact assessments and other publications on topics in my areas of expertise. I have prepared evidence on ecological matters for Council hearings.
- 5 My core work area as an Ecologist at Boffa Miskell is in freshwater ecology. I am experienced in assessing ecological values and conducting ecological impact assessments, rehabilitation and restoration, and on-the-ground management of construction activities on freshwater fauna and habitats. I have worked on a number of major infrastructure projects and commercial and residential developments throughout New Zealand. I have worked on several major projects where freshwater restoration and loss of, or modification to, freshwater habitat were key challenges.

Scope of evidence

- 6 I have been asked to prepare evidence in relation to effects of the proposal on freshwater ecology.
- 7 As per the directions set out in the Commissioner's minute¹, this evidence focusses only on potential areas of contention in relation to freshwater ecology.

¹ RM23.185 Directions of the Commissioner, Minute 1. 21 January 2025.

- 8 As such, my evidence is limited to:
- (a) Responses to the Otago Regional Council (ORC) Section 42A report and matters raised by ORC's technical reviewer (ecology), Ms Elizabeth Morrison.
 - (b) Responses to matters raised in submissions relevant to freshwater ecology.
 - (c) Comments on proposed conditions.

Matters raised by ORC technical review

- 9 I have reviewed the ORC notification report (prepared by Ms Shay McDonald) and associated technical evidence, and particularly that of Ms Elizabeth Morrison.
- 10 As agreed by Ms Morrison, there are no natural freshwater streams or waterways within the landfill site. However, the landfill is located adjacent to the Kaikorai Stream and estuary, which are identified as a Regionally Significant Wetland in the Regional Plan for Otago: Water and an Area of Significant Biodiversity in the Partially Operative Dunedin City District Plan.
- 11 The Kaikorai Stream catchment has a long history of heavy industrialisation dating back over 100 years, and this is reflected by the current poor water quality, as also noted by Ms Morrison and in the evidence of Dr Peter Wilson.
- 12 As presented in my ecological impact assessment and also as concluded by Ms Morrison and the s42A report, it is unlikely that the continuation of the landfill will result in direct impacts on freshwater ecology, and it is unlikely that ecological health of Kaikorai Stream and estuary will be adversely affected. It appears that the consensus is that no ecological monitoring is required.
- 13 Ms Morrison and Dr Wilson have raised concerns about the potential for unaccounted-for leachate loss from the landfill and the potential for cumulative effects on the ecological values of Kaikorai Stream and estuary.
- 14 No substantive evidence has been observed from GHD monitoring (I refer to Ms Mains' evidence), or from ecological surveys I conducted, to indicate leachate contaminants entering Kaikorai Stream and estuary.
- 15 The leachate collection system will continue to be in place during the ongoing landfilling and will continue to operate post closure. The ongoing operation of the landfill is expected to result in a no-change situation.

- 16 However, following a precautionary approach continued groundwater and surface water monitoring is proposed, as discussed in the evidence of Ms Dusk Mains and Ms Mary Wood.
- 17 There are no matters of contention, nor areas of significant disagreement.

Matters raised by submitters

- 18 I have read the submissions of Otago Fish and Game Council and Te Rūnanga o Ōtakou (Aukaha) on the application. Both submitters have raised concerns in relation to potential leachate loss to Kaikorai Stream and estuary, and share aspirations for enhanced water and habitat quality in these receiving environments.
- 19 As discussed in paragraph 14, it is unlikely that the continuation of the landfill will result in direct impacts on freshwater ecology. Further, as stated in paragraph 11, Kaikorai Stream catchment has a long history of heavy industrialisation, and this is reflected by the current poor water quality.
- 20 There is no substantive evidence to indicate that leachate contaminants are entering Kaikorai Stream and estuary (see paragraph 14 and the evidence of Ms Mains). I am in agreement that ongoing surface water and groundwater monitoring is required to ensure the leachate collection system continues to adequately contain and remove leachate from the landfill.

Conditions of consent

- 21 I have reviewed the proposed conditions of consent and particularly that of proposed General Condition 54.
- 22 I am in agreement that an adaptive management plan is developed and implemented in the event that additional groundwater and surface water monitoring (as required under proposed General Conditions 44-52) indicates adverse effects on water quality directly attributable to landfill leachate from the landfill entering Kaikorai Stream and estuary.
- 23 I also consider it appropriate to include ecotoxicology investigations in this adaptive management plan, if additional groundwater and surface water monitoring confirms leachate migration is occurring, as recommended by Dr Wilson and Ms Morrison. The purpose of these ecotoxicology investigations is to establish the chemical characteristics of the leachate and test the toxicity of these contaminants in the receiving environment on aquatic fauna. If ecotoxicology investigations establish that the leachate

contaminants in the receiving environment are toxic to aquatic life, additional and targeted ecological investigations may be required.

Tanya Blakely

4 March 2025