

**BEFORE THE INDEPENDENT HEARING PANEL APPOINTED BY THE
QUEENSTOWN LAKES DISTRICT COUNCIL**

UNDER the Resource Management Act 1991 (RMA)
IN THE MATTER of the Te Pūtahi Ladies Mile Plan Variation in accordance
with section 80B and 80C, and Part 5 of Schedule 1 of the
Resource Management Act 1991.

**STATEMENT OF EVIDENCE OF SIMON DAVID BEARDMORE
29 September 2023**

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Introduction

- 1 My name is Simon David Beardmore.
- 2 I am the Technical Director for Contaminated Land at E3Scientific Limited (**E3Scientific**). I have been in this position since March 2021, having started with E3Scientific as a Senior Environmental Scientist in June 2019. I am responsible for overseeing a team of contaminated land specialists who complete a wide range of services including preliminary and detailed site investigations, human health and environmental risk assessment and remediation projects.
- 3 I have been asked to provide evidence by Queenstown Lakes District Council (**QLDC** or **Council**).
- 4 In June 2020, E3Scientific were engaged by Candor3 Limited to undertake a Preliminary Site Investigation (**PSI**) of the Ladies Mile study area to identify and assess potential risks to human health from soil contamination as part of the development of Te Pūtahi Ladies Mile Masterplan. I co-authored this report (**PSI Report**), which was completed in June 2021 and has since been considered in the Te Pūtahi Ladies Mile Plan Variation (**TPLM Variation**).

Qualifications and experience

- 5 My qualifications include a BSc (Honours First Class) in Environmental Science (Chemistry) from Simon Fraser University, British Columbia and an MSc with Distinction in Environmental Sustainability from the University of Edinburgh, Scotland. I am member of the Waste Management Institute of New Zealand and the Australasian Land and Groundwater Forum. I have participated in technical working groups and served on various committees for these organisations since 2010.
- 6 I have worked as an environmental professional in laboratory, regulatory and consulting settings for 15 years, including nearly 10 years at the Otago Regional Council (**ORC**) where I was primarily responsible for managing ORC's contaminated land regulatory functions. Key responsibilities at ORC included developing contaminated land management strategy, undertaking site investigations, reviewing preliminary and detailed site investigations, developing and maintaining a register of contaminated land data, providing technical advice to

consenting and policy teams, and managing remediation projects awarded central government funding.

Code of conduct

- 7 I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2023. Accordingly, I have complied with the Code in the preparation of this evidence, and will follow it when presenting evidence at the hearing. Unless I state otherwise, this assessment is within my area of expertise, and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

Scope of Evidence

- 8 My evidence addresses the following:
- (a) The identification of potentially contaminated land within the proposed Te Pūtahi Ladies Mile Zone (**TPLM Zone**).
 - (b) The assessment of risks to human health associated with the development of potentially contaminated land within the TPLM Zone.
- 9 In preparing my evidence, I have reviewed the following documents:
- (a) The TPLM Variation (and associated documents);
 - (b) PSI Report;
 - (c) The Hazardous Activities and Industries List (**HAIL**);
 - (d) National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health;
 - (e) Contaminated Land Management Guidelines No 1: Reporting on Contaminated Sites in New Zealand

Identification of Potentially Contaminated Land

- 10 As part of the PSI Report, E3Scientific conducted a systematic, broadscale review of contemporary and historic site information to identify areas of potential soil contamination within the Ladies Mile Masterplan study area, which includes the area notified as the proposed TPLM Zone. This review was based on the Ministry for the Environment's HAIL.

- 11 The HAIL is a compilation of activities and industries that are considered more likely to use or store hazardous substances and therefore have a greater likelihood of being contaminated than other uses or activities. The HAIL is intended to identify most situations in New Zealand where hazardous substances could cause, and in many cases have caused, land contamination.
- 12 Land use history within the proposed TPLM Zone was established through a review of:
- (a) Historic aerial imagery;
 - (b) Historic maps and cartography;
 - (c) Online databases and registers managed by QLDC;
 - (d) Historic newspaper articles;
 - (e) Information published by the Queenstown Historical Society;
 - (f) Archaeological assessments prepared for the site;
 - (g) The ORC HAIL Register;
 - (h) Previous contaminated land investigation reports; and
 - (i) Site inspection records.
- 13 While the investigation for the PSI Report involved an assessment of the Ladies Mile study area (shown in Attachment 1), the notified TPLM Zone area is only a subset of the study area. Accordingly, my evidence only addresses the findings of the PSI Report that relate to the TPLM Zone.
- 14 The PSI identified 13 discrete pieces of land in the TPLM Zone where it is considered more likely than not that activities described in the HAIL have taken place, and therefore potential soil contamination may be present (see Attachment 1).
- 15 Current or historic hazardous activities include livestock dip and spray race operations, landfills, small-scale fuel storage, and operation of electrical transformers.
- 16 Cumulatively, these pieces of land occupy approximately 2.1 hectares (or 2.1%) of the proposed TPLM Zone.
- 17 Additionally, the PSI identified 10 buildings within the TPLM Zone, which due to their age of construction, may have been constructed with

asbestos and/or lead-based paint. Although the use of asbestos and lead-based paint is not explicitly included on the HAIL, there is some likelihood that soils in the immediate vicinity of these buildings could be impacted by these contaminants.

- 18 Although the PSI was completed in accordance with industry best practice and involved a detailed review of available site history information, it is never possible to identify or accurately locate all HAIL activities within a site with absolute certainty. In some cases, there may be no prior record of the existence of contaminated land (e.g., an area of buried waste obscured by from historic aerial images by tree cover).
- 19 Although the risk of encountering unexpected contamination is low, we recommend that contractors and developers implement an 'accidental discovery protocol' during development works to ensure that any unexpected contamination is recognised and appropriately managed.

Assessment of Risks to Human Health

- 20 The risk to human health from contaminants in soil is based on the toxicity and concentrations of the contaminant and the likely routes of exposure to the contaminants.
- 21 Potential contaminants associated with identified HAIL activities include persistent pesticides, heavy metals, petroleum hydrocarbons, polychlorinated biphenyls and waste materials within landfill areas. There is also potential for lead paint and/or asbestos contamination in the vicinity of buildings constructed prior to 1980 and 2000, respectively.
- 22 Most of the HAIL activities identified as having occurred in the TPLM Zone area involve relatively small-scale hazardous substance storage or use, e.g. single transformers or fuel storage tanks, and the likelihood of contamination on a significant scale is low.
- 23 Of the identified activities, Glen Panel Farm sheep dip and the farm landfill on Pt Sec 46 Blk III Shotover SD have the greatest likelihood of causing soil contamination (shown as HAIL sites number 1 and 4 respectively in Attachment 1).
- 24 It is conceivable that contaminants in soil at some of the identified HAIL locations could contain concentrations of contaminants that exceed natural background and pose a risk to human health. The presence of contaminants in soil may also warrant the implementation of specific

earthworks controls to mitigate potential adverse effects associated with short-term soil disturbance.

- 25 Further investigation is recommended to assess the risk to human health and to determine appropriate off-site soil disposal locations prior to development within the areas of identified HAIL activity.
- 26 If further investigation indicates that there is a risk to human health, then remediation or management of contaminants in soil should take place in accordance with the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health.
- 27 There are a range of feasible options for remediating or managing contaminants in soil, depending on the nature of the proposed development.

Response to Submissions

- 28 No submissions relating to contaminated or potentially contaminated land were received.

Overall Conclusion Regarding the Proposal

- 29 Overall, the scale of potentially contaminated land within the proposed TPLM Zone does not present a significant barrier to the change of use associated with the TPLM Variation. Identified areas of likely HAIL activity can be assessed through the consent process, and implementation requirements of the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health and, if necessary, remediated or managed, at the time of development

Simon David Beardmore

27 September 2023

Attachment 1: Identified HAIL Areas within the TPLM Zone



Image source: LINZ Aerial Imagery Coordination Programme, NZ Aerial Imagery Basemap, Creative Commons Attribution 4.0 International.

Identified HAIL Sites inside the TPLM Zone		
1	Glenpanel farm hub	A8. Livestock dip or spray race operations
2	Ladies Mile Pet Lodge	A17. Storage tanks or drums for fuel, chemicals or liquid waste
3	Chestnut Farm	A17. Storage tanks or drums for fuel, chemicals or liquid waste
4	Farm Landfill	G3. Landfill sites
5	Uncontrolled Fill	G3. Landfill sites
6	Transformers	B2. Electrical transformers
7	Small Scale Fuel Storage	A17. Storage tanks or drums for fuel, chemicals or liquid waste
Identified HAIL Sites outside the TPLM Zone		
8	Historic Threepwood Farm Hub	A8. Livestock dip or spray race operations
9	Threepwood Encapsulation Cell	G3. Landfill sites
10	Current Threepwood Farm Hub	A6. Fertiliser manufacture or bulk storage A17. Storage tanks or drums for fuel, chemicals or liquid waste F4. Motor vehicle workshops
11	Lower Shotover Cemetery	G1. Cemeteries
12	Transformers (Outside of TPLM Zone)	B2. Electrical transformers
13	Uncontrolled Fill	G3. Landfill sites