Summary of Evidence of Report of Rowan V. C. Freeman for SOL Quarries Limited ('*the Applicant*').

3 December 2020

Introduction

1. My name is Rowan V.C. Freeman. I am a contaminated land specialist employed at PDP. Herein, I summarise key points from my statement of evidence (SoE) dated 19 November 2020. My background and experience are laid out in my SoE, as is my statement of commitment to compliance with the Environment Court Code of Conduct for Expert Witnesses.

Key Matters

2. I address two matters relating to CRC193773 (discharge of contaminants onto and into land where it may enter water):

   i. Proposed cleanfill waste acceptance criteria (WAC); and

   ii. Cleanfill source material selection.

   I have also supplemented aspects of my SoE, relating to the above topics, where necessary.

Proposed Cleanfill Waste Acceptance Criteria

3. The Applicant proposes to undertake cleanfill operations as guided by MfE 2002[1] (MfE 2002) and in accordance with relevant rules of the Canterbury Land and Water Regional Plan (Rule 5.177). In addition, the Applicant will not accept concrete slurry, hydro-excavation wastes, and coal tar wastes (as per proposed Plan Change 7 of the Canterbury Land and Water Regional Plan) (LWRP).

4. CRC's Section 42A officer's report suggests that the draft WasteMINZ 2018[2] Class 5 cleanfill waste acceptance criteria should be adopted by the Applicant, as opposed to MfE 2002. I do not think that is appropriate because:

   i. WasteMINZ 2018 is still in draft and not owned or endorsed by the Ministry for the Environment.

   ii. The Canterbury LWRP only refers to MfE 2002 with respect to cleanfill activities.

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[1] A Guide to Management of Cleanfills (Ministry for the Environment, 2002).
[2] Technical Guidelines for Disposal to Land (WasteMINZ, 2018)

5. The cleanfill acceptance criteria published in WasteMINZ 2018, particularly limiting inert material to 5% of cleanfill volume seems arbitrary and unreasonable, especially since it allows organic contaminants which are generally more leachable than inert materials, and contrary to the definition of clean fill in the LWRP. The requirement proposed by CRC in relation to 5% inert material in cleanfill will be difficult for the Applicant to adhere to and for the regulator to monitor.

6. In reviewing WasteMINZ 2018 I found no link between the 5% inert material requirement and any demonstrated risk to the receiving environment should inert material percentages imported to cleanfill exceed 5%. I am mindful that materials being inert does not equate to zero effect, but the literature suggests that effects from genuine inert material would be less than minor.

Cleanfill Source Material Selection

7. CRC wishes to enforce testing of soil from all potential cleanfill source sites. This includes sites which have no history or association with HAIL activities. I question the need for this requirement. In my opinion, if the Applicant undertakes due diligence through review of historical aerial images, review of records held by council, and by seeking available anecdotal information (where available) and finds no evidence of contamination or potential contamination or association with a HAIL activity, then this would generally be acceptable in terms of assessing risk from a cleanfill source site. As a parallel, under the NESCS[3] regulations which are implemental by local authorities, [**and I quote**] "land is considered to be actually or potentially contaminated if any activity or industry on the Hazardous Activities or Industries List (HAIL) has been, is, or is more likely than not to have been, undertaken on that land." [**End of quote**] If it is not deemed more likely than not that a HAIL activity occurred, then no testing is required.

8. With respect to HAIL sites, the Applicant proposes to exclude them as a source of cleanfill to reduce risk. I suggest that not all HAIL sites carry the same level of contamination risk. An adequately characterised HAIL site may differentiate areas where soils are suitable for cleanfill from areas too contaminated to be accepted as cleanfill. As an example, past orchard sites are considered HAIL and many of these (e.g. in Christchurch) have been subdivided and developed for residential land use resulting in large quantities of surplus soil generated. It has been well demonstrated that the extent of contamination on orchard sites is often limited to surface and near surface soils (0.0 to 0.3 metres below natural ground surface) or focused at areas where chemicals were

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[3] Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011.

mixed or stored. If surface and near surface soils were impacted and cleared by the developer, unaffected soil surplus to requirement potentially be accepted as clean fill. The Applicant may limit their options for viable clean fill sources by completely excluding HAIL sites.

9. CRC requires that contaminant concentrations in all imported soil should meet natural contaminant background concentrations at the receiving cleanfill. I consider this to be unreasonable since natural soil contaminant concentrations within the proposed cleanfill site will inherently be very low. It is difficult to speculate where the Applicant would source cleanfill materials to meet those requirements.

10. In my experience, known natural contaminant background concentrations vary throughout Canterbury. During my 10 years working for CRC's contaminated sites team, I do not recall encountering natural contaminant background concentration that raised concern in terms of risk to the receiving environment from leachate generation. Therefore, the suggestion that soil tested at background at a clean fill source site cannot exceed the background of the cleanfill site also seems very unreasonable. The most obvious caveat, with respect to contaminant backgrounds, relates to soils that have been heavily modified by human activities in peri-urban, suburban, and rural areas. The Applicant should exercise due care if sourcing clean fill and inert materials from such sites.

Summary

11. In closing, my evidence addressed the:

    i. Proposed cleanfill waste acceptance criteria (WAC); and

    ii. Cleanfill source material selection.

12. It is my opinion that the Applicant's desire to proceed in accordance with MfE 2002 is reasonable since this document is the only cleanfill guidance referenced by CRC's regional plan and endorsed by MfE. WasteMINZ 2018 waste acceptance criteria for cleanfill are inconsistent and requirements for inert material content appear arbitrary and not based on actual risk to the receiving environment.

13. I proposed that CRC and the Applicant collaborate to develop an approach for the clean fill source material selection. The objective being for CRC and the Applicant to reach agreement on a reasonable and cost-effective approach for sourcing cleanfill. It may be easy to suggest that the onus is on the Applicant to suggest a reasonable and cost-

effective approach; however, if not adequately facilitated, this could lead to a persistent cycle of rebuttal between CRC and the Applicant.

14. Known natural background concentrations for contaminants vary throughout Canterbury but nevertheless, these background values are generally accepted as not harmful to the receiving environment. Heavily modified urban areas are an exception in this case.

Signed: 

Name: Rowan Freeman

Service Leader – Contaminated Land