

**Before the Decision Makers appointed by the  
Canterbury Regional Council**

**IN THE MATTER OF** The Resource  
Management Act 1991

**AND**

**IN THE MATTER OF** Resource Consent  
Application CRC193563,  
CRC193564 and  
CRC193773 by Sol  
Quarries Limited for a  
land-use consent to  
undertake quarrying  
activities (extraction and  
cleanfilling); discharge  
permit to discharge  
contaminants to air; and a  
discharge permit to  
discharge contaminants  
(cleanfill) onto and into  
land where they may  
enter water.

**Section 42A Officer's Report – Summary and Supplementary Report  
Report of Samantha Jane Iles and Michael Stanley Massey**

**Date of Hearing: 7 to 9 December 2020**

**INTRODUCTION**

1. My full name is Michael Stanley Massey and I am Principal Science Advisor for Contaminated Land at Environment Canterbury. My full evidential report outlines my experience and qualifications. With me is Samantha Iles, a Senior Scientist also from the Contaminated Land team. The full officers report and this summary were jointly authored by myself and Ms Iles.
2. The Section 42a Officer's Reports for SOL Quarries Ltd's consent applications were circulated on 11 November 2020, and I will briefly summarise ours.
3. Following the circulation of the Officer's Reports, further evidence was provided by the applicant and submitters. Primarily I will respond to the provided evidence.
4. It is also notable, for context, that I have in recent months provided technical advice on a number of occasions regarding issues related to non-compliant material being deposited at sensitive cleanfill sites around Christchurch. These experiences inform my understanding of current and historical cleanfilling and waste disposal practices in Canterbury.

**SUMMARY OF S42A OFFICERS REPORT**

5. The Preliminary Site Investigation (PSI) by Pattle Delamore Partners (2020) identified a number of areas of potential soil contamination on 93 Conservators Road. We are satisfied that the PSI has been completed in accordance with best

practice and has identified the main areas of concern with regard to soil contamination.

6. Our recommendations regarding waste acceptance criteria are aligned, to the extent practicable, with both the MfE 2002 guidelines and the WasteMINZ 2018 technical guidelines. The intent of such alignment is to support best practice in cleanfill deposition activities.
7. For cleanfill sites, the waste acceptance criteria are the sole mitigation mechanism for avoiding contaminant discharges to the environment (chiefly groundwater), minimising human health risks, and for ensuring unrestricted, unencumbered use of the site after completion of cleanfilling activities and rehabilitation.
8. The proposal relies heavily on the Environment Canterbury Listed Land Use Register (LLUR) to determine whether material is suitable for use as cleanfill. However, the LLUR is not a complete database and should not be relied on as the primary source of information regarding whether material is suitable for disposal at the proposed cleanfill. The absence of a LLUR entry for a source site does not mean material sourced from that site is cleanfill at the receiving site. For example, a source site with elevated ambient or naturally occurring contaminant concentrations, would not necessarily be captured on the LLUR.
9. The proposal also relies heavily on repeated visual inspection of material, but we note that many chemical contaminants are not visible to the eye, and so cannot be distinguished by visual inspection. Many chemical contaminants are also odourless. That is, contaminated soil, bricks, and other material often look and smell just like their uncontaminated counterparts.
10. Since the receiving site is within the Christchurch Groundwater Protection Zone, it is advisable to have test results for deposited cleanfill material. This will help ensure (and document) that the material used to backfill the site complies with applicable waste acceptance criteria, including that contaminant concentrations in the fill material are at or below the background levels for the cleanfill site.

## **COMMENTARY ON EVIDENCE SUPPLIED**

11. A key point raised by Mr Freeman in his evidence is the incongruities between WasteMINZ 2018 and MfE 2002 cleanfill guidance. It is important for us to acknowledge the “in-between state” of the guidance, as both Mr Freeman has, and as we have, in the evidence thus far. But it is equally important for us to highlight that, actually, the guidance is not drastically different in many of its key technical points.
12. The points of contention seem to be:
  - a. The proposed acceptance of “inert” human-made construction and demolition waste such as concrete, brick, and tile; and
  - b. The required level of certainty or evidence that the accepted wastes do not contain contaminant concentrations greater than the regulatory background levels and whether these values are reasonable or achievable.
13. The WasteMINZ 2018 guidelines are the origin of the recommended maximum of 5% by volume of “inert” human-made materials for a class 5 cleanfill. In contrast, the MfE 2002 cleanfill guidelines do not have a similar limitation. In the WasteMINZ 2018 guidelines, a class 4 controlled fill relaxes the limitation on deposition of “inert” human-made materials.

14. Practically speaking, limitations such as “5% by volume” mean “a small proportion.” For example, the difference between 5% by volume and 20% or 50% by volume should be visually discernable, even if it may not be possible to distinguish between, say, 5% and 7%. It seems reasonable to expect some variability around a limitation such as “5% or less,” while still maintaining a degree of both practicality and enforceability.
15. Mr Freeman noted in his original statement of evidence (paragraph 53), and reiterated in his summary, that it is unrealistic to only accept material that meets site background concentrations. However, even the MfE 2002 cleanfill guidance, referred to in the Land and Water Regional Plan, requires contaminants to be at or below receiving site background concentrations in deposited material (this requirement is in Section 4.3.2, “Sources of unacceptable waste” in the MfE 2002 guidance, under the definition of “contaminated soil”). Therefore, if the Applicant accepts material with contaminant concentrations above site background concentrations, they are unlikely to meet the requirements of a cleanfill facility, under either the MfE 2002 or WasteMINZ 2018 definitions.
16. There is some incongruity between Mr Freeman’s position and the proposed conditions, as the Applicant’s proposed conditions do refer to the receiving site background levels with regard to waste acceptance.
17. Under the WasteMINZ guidelines, a disposal facility that accepts material above receiving site background levels is considered, at a minimum, a class 3 (managed landfill) facility, and requires mitigation measures such as an engineered landfill cap, in addition to adherence to waste acceptance criteria. Since the Applicant is proposing no engineered mitigation measures and is proposing acceptance criteria tied to the receiving site background levels of contamination, the proposed facility would not be considered a managed landfill. Designation as either a class 4 controlled fill or class 5 cleanfill will require adherence to site background levels in waste acceptance.
18. Revised evidence presented by Mr Hedley stated, “Material from sites identified on the LLUR will NOT be accepted, unless material (soil) testing and a[n associated report] provides an assurance that the materials will not have an adverse effect on the receiving environment.” While this approach can form part of providing what we would view as an acceptable level of certainty, we recommend specifically that testing should indicate that material complies with receiving site background levels.
19. In Mr Freeman’s evidence on Monday, he proposed what amounts to what we refer to as a Preliminary Site Investigation, which includes a review of the historical aerial photographs and council records for a site before accepting material from the site. Such an investigation also typically includes a site walkover, which was not proposed. Mr Hedley provided revised evidence to this effect on Tuesday. We would be supportive of this approach as a step in the review process for material acceptance, provided the assessment is completed and documented by someone who is suitably qualified. Assessment is not necessarily an easy process, and requires specialised knowledge and practice.
20. For material from source sites that are not listed on the LLUR, a review process such as that proposed by Mr Freeman and Mr Hedley could provide some certainty that accepted material complies with the applicable cleanfill definitions. Such a methodology would not, in itself, address chemical contamination that is not visible, and this limitation is inherent. I presume the Applicant would still be responsible for non-compliance in the unfortunate event of deposition of material containing contamination that was not visible either in photos or by visual inspection, even if acceptance of that material occurred as proposed.

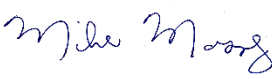
21. We recommend that any finalised acceptance methodology provide a level of certainty in waste acceptance that ensures compliance with the applicable cleanfill definition. In our view, the desired level of certainty is warranted due to the sensitivity of the receiving environment (i.e., within the Christchurch Groundwater Protection Zone).


## **ADDITIONAL POINTS – WASTE LEVY**

22. The technical definitions regarding the landfill classes from the WasteMINZ 2018 document have been adopted as part of the changes to the Waste Levy announced in July 2020 (Beehive, 2020). The levy rates are linked to the classes of landfill from the WasteMINZ 2018 document. No levy is to apply to class 5 (cleanfill) sites, and a class 5 cleanfill is defined as a site that accepts only “virgin excavated materials such as clay, soil and rock” (MfE, 2019). Other materials, such as biodegradable material, “inert” bricks, and unreinforced concrete are allowed as “incidental” constituents in the WasteMINZ guidelines and therefore, the waste levy.
23. The waste levy consultation document also outlines “the need for monitoring to ensure cleanfill sites are only accepting virgin excavated natural materials and that waste is not being disposed of to cleanfills that should be disposed of in a levied landfill” (MfE, 2019). The regulatory body responsible for assigning landfill classes for the purpose of levy collection will need to refer to the WasteMINZ 2018 guidelines (or subsequent, updated versions) to determine the levy that will need to be collected from each site. The Applicant is proposing to collect wastes that would not be acceptable at a class 5 cleanfill, but rather would be accepted at a class 4 (controlled fill) facility. The proposed site would, in that case, become a levied landfill.
24. Certainty regarding contaminant concentrations in accepted material will ensure compliance with the Waste Levy, and will also help to protect the sensitive receiving environment and preserve Christchurch groundwater quality.

## **SUMMARY**

25. The Applicant’s procedures, as proposed, provide insufficient certainty that the accepted materials will necessarily meet either the MfE 2002, or the WasteMINZ 2018 definition of cleanfill.
26. Therefore, our overall conclusions and recommendations have not changed, but we are encouraged by recent changes in the proposal, such as increased rigour in the review of source sites.

Signed:   
Name: Michael Massey Date: 8<sup>th</sup> December 2020  
Principal Science Advisor – Contaminated Land

Signed:   
Name: Samantha Iles Date: 8<sup>th</sup> December 2020  
Senior Scientist – Contaminated Land

## REFERENCES

Beehive. 2020. Government steps up action on waste - funds recycling infrastructure and expands levy scheme. Retrieved from <https://www.beehive.govt.nz/release/government-steps-action-waste-funds-recycling-infrastructure-and-expands-levy-scheme>

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