

## Before Hawkes Bay Regional Council and Hastings District Council

In the matter of            the Resource Management Act 1991

And

In the matter of            Applications by Hastings District Council and Napier City Council  
(**Applicants**) for approvals relating to Area B at Ōmarunui Landfill  
(**Landfill**)

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### Joint Response to Commissioner Questions dated 21 October 2021

Dated 28 October 2021

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1. The following is a joint response by Tony Bryce (questions 1-3), Dean Miller (questions 4-5) and Rob Van de Munckhof (question 6) to the questions posed by Commissioner Mark-Brown dated 21 October 2021. A copy of the questions is at **Attachment A** for ease of reference.

#### Response from Tony Bryce

##### *Question 1*

2. As per Paragraph 23 of my supplementary evidence, the USLE calculations show the discharge of a total 45 tonnes of sediment per annum from the stormwater treatment pond at full development of the stockpile and assuming 75% treatment efficiency in the pond. This will vary depending on the portion of the stockpile that is open at any time.
3. I had commented in my supplementary evidence that sediment would be further removed as the discharge from the ponds flows overland between the pond and the HDC property boundary. If this flow is likened to a vegetated swale it could conservatively be expected that a further 75 % of the sediment could be removed prior to discharge off site. Therefore, the 45 tonnes of sediment per annum discharged from the sediment pond would reduce to 11 tonnes per annum at the property boundary.

4. From the description of the operation of the stockpiles I have given in my supplementary evidence I expect Stockpile 1 to be used as shown in the Table below, which also shows the expected sediment load from the stockpile over the defined periods. As we expect construction for Stage 1 to commence over 3 construction seasons, year 1 in the table is approximately 2 to 3 years prior to commencement of operation of Stage 1.

<b>Year</b>	<b>Percent open</b>	<b>Comment</b>	<b>Total sediment runoff to stream (property boundary)</b>
1	0	Deposition on stockpiles 2, 3 and Stage 2	0
2	25 %	Surplus to Stockpiles 2, 3 and Stage 5 for construction season only	1.6 t
3	10 %	Only minor earthworks expected for construction season only.	0.6 t
4	0	Operation of Stage 1, cover soil obtained from Stage 5 Stockpile	0
5 - 6	100 %	Construction of Stage 2 over two years. All surplus soil to Stockpile 1.	12.8 t
6 - 21	0	Operation of Stages 2 – 4. Minor surplus soil for construction of Stages 3 and 4 to Stage 5 Stockpile. All cover material obtained from Stage 5 Stockpile.	0
21 – 35	Perhaps 5%	Stockpile may be needed as source for cover material – assumed an open area of about 2,000 m <sup>2</sup> at any time.	7.7 t
35 – 36	Perhaps up to 100%	Soils may be required for final cover construction, unless sourced elsewhere. Operating for construction season only.	0 to 12.8 t

5. In years 5/6 and 35/36 when the stockpile is being used for construction activities it would be expected that the stockpile would be open from approximately October to the end of April (7 months) and then stabilised over the winter. When small areas are open to obtain cover soils, these would be needed all year round.
6. Total sediment loads from open areas of the stockpile over the full duration of Area B operation would thus be in the order of 35.5 t, or as little as 22.7 t if Stockpile 1 was not used for final cover. This calculation is for the open areas only and doesn't allow for contributions from the vegetated portions of the stockpile.

7. The USLE calculations show that a total of 2 tonnes of sediment would be discharged per annum for the same area of land as occupied by the stockpile if it were in an undeveloped state. Over a 36 year period this would equate to a total of 72 tonnes.

### ***Question 2***

8. As outlined in Section 7.2 of the Engineering Report, all stormwater discharged from the proposed Area B development, which will include Stockpile 1, will be designed to the requirements of the “Hawkes Bay Waterway Guidelines – Erosion and Sediment Control”, Hawkes Bay Regional Council, April 2009.

### ***Question 3***

9. I would agree that, for completeness, condition 59 c the reference to sampling from the discharge from the stormwater treatment system could be modified to specifically require sampling from both the Area B pond and the Stockpile 1 pond. However, to account for possible sediment removal between the Stockpile 1 pond discharge and the property boundary, it would be my preference that a single monitoring point be established for sampling from where the two discharges combine at the property boundary.
10. I note that the main monitoring is in the stream itself where monitoring will be undertaken both upstream and downstream to evaluate the potential level of effects and provide the feedback for whether additional mitigation measures are required.

### **Response from Dean Miller**

### ***Question 4***

11. Deposited sediment monitoring is not proposed. Upokohino Stream is soft bottomed with a deep layer of mud and decomposing macrophyte material in the vicinity of the site, including the proposed monitoring locations specified in the draft consent conditions. There is no robust method for monitoring sediment deposition in soft bottomed stream environments such as the Upokohino Stream that could be used to clearly attribute deposited sediment to a specific source in a quantitative way. Inspection based monitoring for any gross sedimentation can be undertaken at the time that monitoring under Conditions 59.c. and 59.d and based on

observational comparisons of upstream control and downstream impact monitoring sites.

#### ***Question 5***

12. The construction and operational phase monitoring conditions (59.c. and 59.d respectively) require that discharge and receiving environment sampling occurs while a discharge is occurring. Condition 59.b. includes the development of receiving environment water quality trigger values that can be used to initiate a response as part of the SREMP should triggers be exceeded.
13. The response actions for a trigger exceedance can be set out in the SREMP. This would typically include an audit of all erosion and sediment controls and assessment of the potential for ecological effects as a result of the exceedance. The assessment of ecological effects may involve reviewing the existing water quality and ecological monitoring data, repeat water quality monitoring, collection of supplementary ecological monitoring and feedback to the Erosion and Sediment Control Plan as appropriate.

#### **Response from Rob van der Munckhof**

#### ***Question 6***

14. As outlined in the response to Question 4 above, set trigger levels will be developed based on the baseline monitoring results. The Erosion and Sediment Control Plan will include contingency measures in the event that the trigger levels are exceeded. This could include undertaking additional stabilisation, limiting open areas, increasing ponding within the works area to reduce the load on the ponds or changes to or implementation of chemical dosing.

# Attachment A

Omaranui landfill hearing suggested questions for the applicant 21/10/21

1. Discharge of sediment from Stockpile 1

Can the applicant please use the USLE to estimate the total amount in tonnes of sediment runoff from Stockpile 1, after the assumed 75% treatment efficiency in the pond, that is likely to enter the Upokohino Stream from Stockpile 1. This estimate is to be for the duration of time that Stockpile 1 is actively used for deposition or re use of soil for landfill operations and take into account times for re establishment of grass. We would like the estimate to include use of a nominated factor or factors to account for the applicant's assessment of the likely fraction of deposition of sediment from Stockpile 1 that occurs between the Stockpile and the Upokohino Stream, i.e. which does not reach the stream.

We would also like a USLE estimate of the total amount of sediment that would run off from the area of Stockpile 1 and reach the Upokohino Stream over the relevant duration if it remained with its current cover and slope (the current or before scenario).

2. Proposed consent condition 17-revision per Mr Bryce's supplementary evidence – the Stockpile 1 stormwater pond shall be designed to remove at least 75% of suspended solids for the inflows from at least 50% AEP design rainfall event. Please advise the expected methodology for this design, e.g. using the HBRC Sediment Control guidelines or a more bespoke design taking into account pond layout, depth and settleability of the sediment etc...
3. As part of ensuring compliance with the intent of Condition 17 can and/or should the proposed SREMP in condition 59(c) include monitoring of discharge from the Stockpile 1 pond?
4. Can and /or should Condition 59 include a requirement for assessment of sediment deposition in the Upokohino Stream downstream of the Area B and Stockpile 1 stormwater ponds that can be attributed to runoff from the ponds (through comparison with baseline monitoring)?
5. Condition 59(f) "...should the monitoring identify adverse effects.." appears somewhat vague. Can and/or should the SREMP include a requirement to develop criteria for determining when adverse effects occur e.g. in relation to suspended sediment concentrations in water discharged from the ponds, sediment deposition, discolouration of water in the Upokohino Stream?
6. Can Condition 59(f) include examples of what adaptive management practices could be implemented should there be adverse effects in the Upokohino Stream?