

BEFORE THE CANTERBURY REGIONAL COUNCIL

UNDER THE

Resource Management Act 1991

AND

IN THE MATTER

of application CRC190445 by the Christchurch City Council for a comprehensive resource consent to discharge stormwater from within the Christchurch City area and Banks Peninsula settlements on or into land, into water and into coastal environments

EVIDENCE SUMMARY

MARK JAMES TIPPER FOR CHRISTCHURCH CITY COUNCIL

5 November 2018

TABLED AT HEARING

Application: CRC190445

Date: 6 Nov. 2018

CHRISTCHURCH CITY COUNCIL
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INTRODUCTION

1. My name is Mark James Tipper. I here summarise key points of my evidence, highlighting areas of agreement and disagreement between my opinion and that expressed by or on behalf of submitters and in the s42A report.

KEY POINTS OF MY EVIDENCE

2. The key points in my evidence relate to the measures that Christchurch City Council (**Council**) has implemented, or is working toward, to improve its ability to manage erosion and sediment control measures on construction sites that (have the potential to) discharge sediment laden stormwater into the stormwater network. These measures include:
 - a) Development and implementation of the Risk Assessment and Management Plan template.
 - b) Provision of erosion and sediment control training to relevant Council staff, course content developed to relate specifically to Council interests, processes and needs.
 - c) Develop processes to better implement (and/or amend) the Council's Water Supply, Wastewater and Stormwater Bylaw 2014 (the **Bylaw**).
 - d) Seek the necessary delegations and authorities to enable Council staff to issue, monitor and enforce permits relating to construction phase stormwater discharges.
 - e) Advise industry and the community of the changes made and the increase in expectation for provision of erosion and sediment control plans (**E&SCPs**), and implantation of those plans on site.
 - f) Develop a risk matrix to identify sites that pose an increased risk of erosion and sediment discharges to the stormwater network.
 - g) Add an additional site visit to the Schedule of Building Inspections to enable Council Building Inspectors to monitor installation of erosion and sediment control measures prior to earthworks commencing.
 - h) Develop an agreed process with Environment Canterbury to enable Environment Canterbury to issue a warrant to Council Officers.

- i) Review funding and resourcing requirements to better facilitate proactive management of erosion and sediment control where it falls within Council's responsibilities.
3. The first two measures above have already been implemented, the remainder are in various stages of progress.
4. Of all the measures I identify, the only one questioned or contested by submitters was my recommendation to set a total suspended sediment (**TSS**) limit of 100g/m³ (henceforth parts per million (**ppm**) for consistency between submitter evidence, my Evidence in Chief, and my Rebuttal Evidence).
5. For this issue I am referring to discharges into the Council's stormwater network where it has the potential to enter a surface waterbody. I do not believe that a TSS limit is required for sediment discharges to ground soakage, unless there is a risk that the discharge may resurface via a spring or affect a drinking water supply bore.
6. In paragraph 268 of his s42A report Nick Reuter recommended inclusion of a Risk Matrix and a TSS limit to help manage construction phase sediment discharges. I largely agree with Mr. Reuter, the key difference of note being that I recommend Council has the ability/requirement to impose TSS limits on the permits it issues, as opposed to there being a fixed limit on Council included as a condition of the CSNDC.
7. Trent Sunich and Mark Laurenson (on behalf of Z Energy Limited, BP Oil NZ Limited, and Mobil Oil NZ Limited (**Oil Companies**)) both oppose a TSS limit and instead recommend reliance upon 'best practice' erosion and sediment control measures. Mr. Sunich and Mr. Laurenson both reference the *Environmental Guidelines for Water Discharges from Petroleum Industry Sites in New Zealand* (**Guidelines**). This Guideline sets a TSS limit on stormwater discharges of 100ppm, which aligns with my Evidence in Chief, but neither Mr. Sunich nor Mr. Laurenson reference this Guideline limit.
8. Mr. Sunich advocates for adoption of best practice to ensure construction phase stormwater discharges are adequately managed (instead of a prescribed TSS limit). Mr. Laurenson proposes a TSS limit of 100ppm for stormwater discharges

from established facilities, but rejects setting any TSS limit on construction phase discharges in favour of a method-based specification. I have long experience of the limitations of relying on a 'best practice' condition in relation to setting a standard for erosion and sediment control, and explain this in paragraph 19 of my Rebuttal Evidence. I do not agree with the approach proposed by Mr. Laurenson or Mr. Sunich, and instead discuss Council's proposed condition to manage construction phase stormwater discharges in the final paragraphs of this summary of evidence. In response to paragraphs 25 to 28 of my evidence in chief, where I describe the limitations and risks associated with generically worded Erosion and Sediment Control Plans (**E&SCPs**), proposed condition 39 of the application has been amended to require provision of site specific E&SCPs. I support this approach as I consider it will assist Council Building and Resource Consent Planners in requiring detailed E&SCP's, and also assist Building Inspectors and monitoring officers in assessing compliance with the accepted plans.

9. Mr. Sunich also questions the ability to measure compliance with a TSS limit in 'real time'. In response I identify in paragraphs 12 and 13 of my rebuttal evidence that there are several tools available to enable compliance with a TSS limit to be determined in 'real time'.
10. In discussion with Brian Norton I understand that he broadly agrees that a TSS limit is an appropriate method for managing construction phase sediment discharges to the stormwater network, but does not believe that a single limit should apply to all sites. Mr. Norton would prefer to develop a risk matrix to determine TSS limits on a case-by-case risk assessment basis. I have discussed this matter with Mr. Norton and acknowledge the potential benefits of Mr. Norton's approach. I would be interested in exploring this option further if there is the opportunity to do so.
11. My primary concerns in relation to developing a matrix are that:
 - a) any risk matrix to determine a TSS limit must intrinsically incorporate a maximum limit that the Council would accept into the stormwater network, and this critical detail has not been determined yet;
 - b) whilst setting a TSS limit higher than 100ppm might make erosion and sediment control measures less costly or onerous for developers, it could

effectively pass the cost onto the Council and the community (either by failure to comply with water quality outcomes and/or increased maintenance costs). For example, if a developer is granted authority to discharge an elevated level of TSS into the Council's stormwater network because there is a treatment device between the point of discharge and a receiving waterway, will the Council increase its maintenance frequency to compensate for the additional sediment loading? If not, the 'trapped' sediment could be flushed through to the receiving environment during subsequent storm events. In this manner the Council's treatment system would simply delay sediment reaching the receiving environment, not prevent it; and

- c) if a TSS limit is set significantly higher than 100ppm, how will this affect the C-CLM and the Council's ability to deliver the water quality outcomes in the Application, as well as its Community Outcomes and Strategic Priorities? These effects are unknowns at this point in time.

12. Other considerations for developing a matrix for determining TSS limits include:

- a) what contributory factors will be included in the matrix?
- b) the extent to which each contributory factor affects the resultant TSS limit.
- c) will the TSS limit start at the highest limit acceptable to Council (and presumably Environment Canterbury) with each element that applies to a proposed discharge reducing that limit by a predetermined factor?
- d) are there any elements that might increase the acceptable limit?
- e) whether the resultant limit can be reasonably and practicably achieved (the lower the limit the harder it will be to achieve);
- f) how and where compliance with the limit will be determined (limits are only useful if compliance can be readily and reliably monitored by both the permit holder and the regulator);
- g) will there be a minimum limit, or would the matrix simply identify sites that are too high risk to be accepted into the network?
- h) will the matrix be made available to applicants, as an applicant would likely need to include sufficient information to enable the Council to determine a TSS limit (or to audit the appropriateness of a proposed limit)?

- i) how and when will the matrix be developed, by whom, and who approves the final product?
 - j) what skill level, training, experience, and/or level of responsibility will be required to operate the matrix to determine an appropriate TSS limit on a case-by-case basis?
 - k) what effect will implementing the matrix have on processing time/cost for applications; could it become a (contentious) bottleneck?
13. Further to my discussions with Mr. Norton, and other experts, the applicant has proposed a condition to develop a risk matrix approach, in conjunction with Environment Canterbury, to determining appropriate site specific TSS limits. I support the approach taken to explore the viability of a risk matrix through proposed condition 40 of the application. This approach may provide the time and resources required to resolve the questions and concerns above, and to develop a robust method for assessing and assigning appropriate TSS limits for individual sites. In my opinion, such a risk matrix could be a significant improvement to current erosion and sediment control practices.
14. However, it is unclear to me what would happen in the event that Council and Environment Canterbury cannot reach agreement on the risk matrix and/or Environment Canterbury are unable to certify that the matrix will meet the purpose. Given the complexities and uncertainties of developing the risk matrix, and that there is general agreement that TSS limits on construction phase discharges are an important management measure, inclusion of an alternative or 'fall back' means for determining/assigning TSS limits may be required if the risk matrix cannot be certified within the specified timeframe.

MARK JAMES TIPPER

5 November 2018