

Submission to **MINISTRY FOR THE ENVIRONMENT** and **MINISTRY OF PRIMARY INDUSTRIES** on

“CLEAN WATER” (APRIL 2017)

INTRODUCTION

1. Straterra¹ welcomes the opportunity to submit on the Ministry for the Environment and Ministry of Primary Industries consultation paper “Clean Water”², released on 23 February 2017. As always, we do so in the interests of achieving benefits for the minerals sector, and for the New Zealand economy as a whole, consistent with the Resource Management Act 1991. The submission deadline of 28 April is noted.
2. In preparing this submission, Straterra has consulted interested members, including mining and quarrying companies, scientific research providers, legal and planning practitioners and environmental consultants. The Land and Water Forum submission is supported.
3. Straterra would welcome further engagement with officials on the issues raised, if that would be useful.

CONTENTS

INTRODUCTION.....	1
EXECUTIVE SUMMARY	1
RECOMMENDATIONS	2
DISCUSSION.....	3
General.....	3
Mining / quarrying operations and lakes.....	3
Definition of large lakes	4
APPENDIX 1: INDICATIVE CONSIDERATIONS FOR AMENDING THE NPS-FM	5

EXECUTIVE SUMMARY

4. Straterra generally supports the Clean Water package of proposals on freshwater.
5. The focus of this submission is the proposed amendments to the National Policy Statement for Freshwater Management 2014 (NPS-FM). Straterra’s indicative considerations for amending the NPS-FM are presented in Appendix 1.
6. We draw attention to the connection between “large lakes” and mining / quarrying operations.

¹ <http://www.straterra.co.nz/>

² <http://www.mfe.govt.nz/fresh-water/freshwater-management-reforms/clean-water-package-2017>

7. At issue is that in defining “large lakes”, the NPS-FM does not take into account the various types of lake with a perimeter of more than 1.5km that could and do arise in mining and quarrying operations. They are in summary (with more detail in para. 14 of this submission):
- tailings storage facilities, which are managed as landfills, also under the Hazardous Substances and New Organisms Act 1996;
 - water pooling in operations, e.g., open pits, which are “dewatered”;
 - settling ponds and the like used in freshwater management at mine and quarry sites;
 - pit lakes that form in former open pits or depressions after mines and quarries close; and
 - lakes that form as a result of temporary physical disturbance of natural water flow patterns during operations.
8. The above situations require a blanket exemption from the NPS-FM, subject to para. 9 below. Grounds for exemption are that: there is no public access to these places during operations; in many cases, water quality would be affected by contaminants, and managed under resource consents; and in many cases these lakes would be temporary.
9. The corollary is that after mines and quarries close, some of these lakes might remain as a permanent fixture in the landscape, as part of the catchment, amenable to safe public access, on private or public land, and where there is a reasonable public expectation of swimmability or immersion in water. In such cases, grounds for exemption would lapse over time, as water quality is managed consistent with resource consent conditions, and with the NPS-FM.
10. Alternatively, a different definition of “large lake” could eliminate the issue, if that were practicable.

RECOMMENDATIONS

11. Straterra recommends the Ministry for the Environment, and the Ministry of Primary Industries to:
- a) Note Straterra’s general support for Clean Water;
 - b) Note the focus for this submission, which is the proposed amendments to the National Policy Statement for Freshwater Management 2014 (NPS-FM);
 - c) Note Straterra’s explanation of the five types of lake that may arise during and after mining and quarrying operations (para. 14 of Straterra’s submission);
 - d) In relation to Rec. (c), agree to provide a blanket exemption from the NPS-FM for all lakes that arise during mining and quarrying operations, for both existing and future operations;
 - e) In relation to Recs. (c) and (d), agree to provide for the above exemptions to lapse over time in the case of lakes that meet the following additive conditions: they become permanent post mine or quarry closure; they are connected to the catchments in which they sit; safely accessible to the public; and where swimmability or immersion is a reasonable expectation of the public for that lake;

- f) Agree to consider Straterra’s indicative considerations for amending the NPS-FM to reflect Recs. (c) – (e), as set out in Appendix 1 of this submission; alternatively
- g) Agree to amend the definition of large lakes to eliminate lakes connected with mining and quarrying operations from contention.

DISCUSSION

General

- 12. Straterra generally supports the Ministry for the Environment and Ministry of Primary Industries consultation package “Clean Water”.
- 13. Straterra’s area of focus in this submission is: *“proposed amendments to the National Policy Statement for Freshwater Management 2014”*.

Mining / quarrying operations and lakes

- 14. Mining / quarrying operations are often associated with the formation or creation of artificial water bodies or lakes, temporary or permanent, in the following ways:
 - **Tailings storage facility** – Processed ore is stored in engineered earthworks, managed as a landfill, to contain contaminants. Where there is open water, any overflow into natural waterways is managed as a discharge, with or without treatment, as necessary. Post mine closure, TSFs would ordinarily become ponds or wetlands, and water quality could be managed to be swimmable over time, where they are of interest for swimming or immersion in water.
 - **Open pit during mining** – Water often pools in the bottom of mining operations, as seepage from groundwater. This water may be contaminated, especially in mineralised geology. This is water take that no one wants, is not authorised, and is usually collected and treated, either for discharge into waterways or for use in the mining operation. This process is termed “dewatering”.
 - **Settling ponds / reactors / water management wetlands** – Run-off from mining operations will eventually enter waterways draining the mine site or located within the catchment within which the mine is situated. In many cases, this run-off needs to be managed for contaminants. One mechanism is via artificial settling ponds, which may have a passive chemical reactor in it, acting as a filter and to restore water quality. Sediment or acidity could be managed in this way.
 - **Pit lake** – After the closure of a mining operation, the remaining open pit may be partially re-contoured, and may fill with water or be filled with water, fully or partially. The result will be a lake to which there may or may not be public access, depending on location and the terrain. Where the public can gain safe access, the water would be managed over time to be swimmable or suitable for immersion.

- **Other lakes or water management structures or sumps** – The physical lay-out of the mining operation may be such that the normal pattern of flow of water in any adjacent water bodies may be altered. It is possible that a lake may form during operations where, ordinarily, there would be a stretch of river. Where there is flow-through of water, the quality of that water would be maintained or improved, under resource consents. After mining, the normal water flow would be restored.
15. It is essential that the nature of water bodies in mining / quarrying operations is recognised and appropriately provided for under the NPS-FM. These will all be managed under resource consents. Regional and unitary plans will need to provide for a continuation of current approaches.
 16. The common factor is that these water bodies arise as a result of earthworks and / or infrastructure. Were it not for the mining or quarrying operation, they would not exist. One way of dealing with these lakes would be to provide a blanket exemption under the NPS-FM, e.g., all lakes arising as a result of mining and quarrying operations.
 17. In situations of mine / quarry closure and afterwards, where there is safe public access to stabilised and permanent water bodies, that become connected to the catchments in which they sit, and where swimmability or immersion in water is a reasonable expectation on the part of the public, then the NPS-FM would apply.
 18. The NPS-FM as written does not provide for this idea; it envisages exemptions for existing infrastructure, and not for new infrastructure.

Definition of large lakes

19. Any body of open water having a perimeter exceeding 1.5km is deemed to be a “large lake” for the purposes of improving *“the quality of fresh water in large rivers and lakes so the human health risk is reduced and they are suitable for immersion more often”*.
20. Some tailings storage facilities at mine sites, for example, would meet this definition, e.g., because they have a more complex shape than a circle. Where that is the case, the implication is that mining companies would be obliged to provide for swimming in their TSFs, which makes no sense, and is unlikely, we think, to be the intent of policy-makers.
21. We suggest amending the definition of large lakes to provide an exemption for the types of lake that could and do arise in mining and quarrying operations, and which may arise in the course of other activities in New Zealand, e.g., water storage for irrigation.
22. Alternatively, a different approach to defining lakes could be taken, e.g., to address the issue of irregular perimeters, and to eliminate all lakes arising in mining / quarrying operations from contention.

APPENDIX 1: INDICATIVE CONSIDERATIONS FOR AMENDING THE NPS-FM

Preamble

23. A statement is needed to explain that industry, e.g., mining and quarrying, can lead to the formation of artificial waterbodies or lakes with a perimeter exceeding 1.5km. These may contain contaminants, and would be managed in the context of operations, to meet resource consent conditions. The public would not have access to these lakes during operations.
24. After mining / quarrying operations are completed, sites would be rehabilitated. Some of the artificial lakes would disappear in the normal course of this work. Others would retain the character of a landfill, or settling pond, i.e., water treatment infrastructure, at least for a time, and, in some cases, for the longer term. Still others would turn into wetlands or ponds or lakes of good water quality over time, and would become part of the catchment in which they sit. These would be managed as if they were natural waterbodies.

Interpretation

25. A definition is needed for “artificial water body” associated with earthworks and civil infrastructure, e.g., for mining and quarrying operations, both existing and new operations. All of these water bodies should qualify for a blanket exemption during operations.
26. A further definition is needed for waterbodies that were artificially created as part of earthworks and civil infrastructure, e.g., in mines and quarries, and have subsequently become a permanent part of the catchment, post mine or quarry closure, where there is safe public access, and where swimmability or immersion is a reasonable expectation on the part of the public. Such lakes would no longer qualify for a blanket exemption, beyond a period of time, and would become managed as if they were natural water bodies.
27. Alternatively, the definition of large lakes could be amended to eliminate mines and quarries from contention, during operations and during the post-closure active management period.

Objective A3

28. The wording for lakes may need to be modified to provide an exemption for artificial water bodies, as discussed above.

Policy A1

29. Wording is needed to refer to the transition from an artificial waterbody or lake (which qualifies for an exemption) becoming stabilised in such a way that it becomes part of the catchment in which it sits, is available for safe public access, where swimmability or immersion is a reasonable expectation on the part of the public, and which then behaves as though it were a natural waterbody (and the exemption would no longer apply).

Policy A2

30. A reference will be needed in relation to the exemption for artificial waterbodies, and the limits or boundaries to that exemption, as above.

Policy A5

31. A reference will be needed in relation to the exemption for artificial waterbodies, and the limits or boundaries to that exemption, as above.

Objective C1

32. A note that integrated management includes the rehabilitation of mine and quarry sites, and the transition, in some instances, of artificial lakes into natural lakes, as per the earlier discussion.

Policy C2

33. This policy should reflect the proposed addition to Objective C1.

Objective CA1

34. The objective should also recognise artificial lakes associated with industry, e.g., mining and quarrying operations, and how some of these lakes may transition into natural lakes over time, in some circumstances, as discussed above.

Policy CA2

35. This policy should reflect the proposed addition to Objective CA1.

Policy CA3

36. This policy needs to be expanded to include an exemption on artificial lakes, e.g., associated with mining and quarrying operations, and the circumstances, as discussed above, in which the exemption would lapse.