

# Greenpeace Aotearoa submission on Taumata Arowai Proposed Drinking Water Standards 2022

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## Contents

<b>Contents</b>	<b>1</b>
<b>Introduction</b>	<b>1</b>
<b>Comment on specific substances</b>	<b>3</b>
Nitrate (NO <sub>3</sub> )	3
Nitrite (NO <sub>2</sub> )	3
Atrazine	3
PFOS, PFHxS and PFOA	4
<b>Response to each proposed MAV</b>	<b>4</b>

## Introduction

This submission is not an exhaustive evaluation of each of the contaminants listed for review as such an exercise is beyond the capacity of our organization to undertake in the limited timeframe.

While we support the inclusion of new maximum acceptable values (MAVs) for some substances Greenpeace is very concerned that so many of the MAVs are being raised with questionable rationale.

There has been no risk assessment provided of any substances. Despite this the MAV has been raised or eliminated for 17 substances.

There is no justification for the responses outlined in the proposal.

The new MAV is most often based on World Health Organisation WHO assessments which are inferior to European Union and other nation state levels and even a number of our existing New Zealand standards.

WHO MAVs are notoriously weak and suffer a long lag time from the advent of new evidence showing potential hazard to adjustment. Nitrate - with its links to colorectal cancer and preterm birth - being a case in point.

If the Government is serious about offering the highest standards of protection for our water then we should take the European Union levels as the minimum. The EU drinking water default limit is 0.1 µg/l which is equivalent to = 0.0001mg/l.<sup>1</sup>

Therefore the default level for drinking water should be 0.1µg/l except where a risk assessment or hazard assessment show that a lower level is needed (e.g. PFOS and PFOA).

The basis for the weight formula of a healthy adult male at 70kgs being the justification for increasing the already liberal WHO metric (based on a 60kg adult) is not acceptable and not supported. There is no explanation given for raising the MAV based on increased body weight. Such a formula discriminates against women and children.

The Taumata Arowai approach is not protective of human health or the environment. Again, where a common standard is adopted, the European Union standard should be used, because, although it is not perfect, it is more protective of people's drinking water and therefore their health.

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<sup>1</sup> DIRECTIVE (EU) 2020/2184 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2020 on the quality of water intended for human consumption:

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020L2184&from=EN>

## Comment on specific substances

### Nitrate (NO<sub>3</sub>)

Nitrate is our most widespread water contaminant. It is bewildering as to why there is no assessment of the MAV for nitrate given the high level of public interest in New Zealand due to the extensive volume of emergent scientific evidence indicating chronic risks such as colorectal cancer and acute risks such as neural tube impacts in the foetus' of pregnant people at concentrations of nitrate significantly below the current MAV. For precautionary reasons there should be a lower MAV for nitrate of under 1 mg/L and we support calls by New Zealand scientists for a chronic limit on nitrate.

### Nitrite (NO<sub>2</sub>)

The MAV for nitrate should certainly not be eliminated. Nitrite is linked to creation of carcinogenic compounds.

If the MAV for nitrite is eliminated then what will become of the sum of the ratio for nitrate and nitrite which presently should not exceed 1?

Presumably this will be gotten rid of also. We oppose this.

### Atrazine

Atrazine has numerous adverse effects on health including tumors, breast, ovarian, and uterine cancers as well as leukemia and lymphoma. It is an endocrine disrupting chemical interrupting regular hormone function and causing birth defects, reproductive tumors, and weight loss in amphibians as well as humans. Research has linked atrazine to birth defects and cancer in people, and even miniscule doses can chemically castrate frogs.

It is a banned substance in all 27 European Union countries and in some US states and, in all, has been banned or is being phased out in 41 countries.<sup>2</sup> While rates of contamination may be decreasing in those areas - It is still used in New Zealand so risks of water contamination - particularly in rural areas - remain. There is no sound justification for increasing the MAV for Atrazine.

The proposal is to increase it by a massive 50 times or 5000% (from 0.002 mg/L to 0.1mg/L). The MAV should not be raised at all.

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<sup>2</sup> <https://pan-international.org/pan-international-consolidated-list-of-banned-pesticides/>

## PFOS, PFHxs and PFOA

There is no safe level of these substances. It is appropriate to set a very low MAV. We support this part of the proposal.

## Response to each proposed MAV

Each of the substances has been coloured to indicate Greenpeace's response to the proposed Standards - red for oppose; green for support; orange for partial support. There are notes for each substance in the "Greenpeace Recommendation" column.

Maximum acceptable values (MAV) for inorganic determinands of health significance

Name	Existing Standards MAV	Proposed Standards MAV	TA Remarks	Greenpeace Recommendation
Aluminium	No MAV listed	1 (mg/L)	WHO does not provide a guideline value (GV). The MAV is based on the WHO health-based value	We support a MAV of 0.1 ug/L, based on the EU default value.
Barium	0.7 (mg/L)	1.5 (mg/L)	MAV is based on WHO GV of 1.3mg/L for 60kg adult but adjusted for a 70kg adult	We do not support raising the MAV and neither do we support the adjusted weight formula. We support a MAV of 0.1 ug/L, based on the EU default value.
Boron	1.4 (mg/L)	2.4 (mg/L)	Adjusted to be the same as the revised WHO GV	We do not support raising the MAV. We support a MAV of 0.1 ug/L, based on the EU default value.
Molybdenum	0.07 (mg/L)	No MAV is proposed	Removed from MAVs as WHO does not provide a GV	We oppose elimination of the MAV on the grounds provided
Nitrite, long term	0.2 (mg/L)	No MAV is proposed	WHO had a provisional MAV but have suspended this due to uncertainty about its accuracy	We oppose elimination of the MAV on the grounds of uncertainty. Uncertainty should not be grounds for zero precaution. We support a MAV of 0.1

				ug/L, based on the EU default value.
Perchlorate	No MAV listed	0.08 (mg/L)	Based on WHO GV but adjusted for a 70kg adult	We support a MAV but it should be 0.1 ug/L, based on the EU default value. We do not support the adjusted weight formula.
Selenium	0.01 (mg/L)	0.04 (mg/L)	Now the same as the WHO GV	We do not support raising the MAV. We support a MAV of 0.1 ug/L, based on the EU default value.
Uranium	0.02 (mg/L)	0.03 (mg/L)	Now the same as the WHO GV	We do not support raising the MAV. We support a MAV of 0.1 ug/L, based on the EU default value.

Maximum acceptable values (MAV) for organic determinands of health significance

Name	Existing Standards MAV	Proposed Standards MAV	TA Remarks	Greenpeace Recommendation
Anatoxins - a	0.006 (mg/L)	MAV is proposed for Anatoxins as a group	Anatoxins now combined	We question the reasons for combining Anatoxins and why the highest figure was chosen as the new MAV? We oppose this change
Anatoxins – a(s)	0.001 (mg/L)	MAV is proposed for Anatoxins as a group	Anatoxins now combined	We question the reasons for combining Anatoxins and why the highest figure was chosen as the new MAV? We oppose this change
Anatoxins	No MAV listed	0.006 (m/L)	Anatoxins now combined after advice from	We question the reasons for combining Anatoxins and why the highest figure

			Cawthron Institute	was chosen as the new MAV? We oppose this change
Atrazine	0.002 (mg/L)	0.1 (mg/L)	Based on WHO GV	We strongly oppose raising the MAV, and by 50 times. We support a MAV of 0.1 ug/L, based on the EU default value.
Azinphos methyl	0.004 (mg/L)	0.1 (mg/L)	No WHO GV. ESR determined the MAV in 2000 and has updated their advice on the level	We do not support raising the MAV as there is no risk assessment provided to prove that this level would be safe. This pesticide is banned in 107 countries and should be banned in Aotearoa too. We support a MAV of 0.1 ug/L, based on the EU default value.
Cylindrospermopsins	0.001 (mg/L)	0.0008 (mg/L)	Adjusted on advice from Cawthron Institute	We support lowering the MAV
Homoanatoxin-a	0.002 (mg/L)	No MAV is proposed	Removed on advice from Cawthron Institute	We oppose elimination of the MAV on the grounds provided
Hydroxytriazine	No MAV listed	0.3 (mg/L)	Atrazine metabolite, based on WHO GV but adjusted for 70kg bodyweight	We support a MAV of 0.1 ug/L, based on the EU default value. We do not support the adjusted body weight formula.
MCPA	0.002 (mg/L)	0.8 (mg/L)	Based on WHO GV but adjusted for 70kg bodyweight	We do not support raising the MAV and neither do we support the adjusted weight formula. We support a MAV of 0.1 ug/L, based on the EU default value.

<b>Metalaxyl</b>	0.1 (mg/L)	0.3 (mg/L)	No WHO GV. ESR determined the provisional MAV in 2000 and has updated their advice on the level	We do not support raising the MAV. We support a MAV of 0.1 ug/L, based on the EU default value.
<b>N-nitrosodimethylamine (NDMA)</b>	No MAV listed	0.0001 (mg/L)	Based on WHO GV	We support a MAV
<b>PFHxS + PFOS</b>	No MAV listed	0.00007 (mg/L)	No WHO GV. MAV has been adopted from the Australian Drinking Water Guidelines	We support a MAV
<b>PFOA</b>	No MAV listed	0.00056 (mg/L)	No WHO GV. MAV has been adopted from the	We support a MAV

Name	Existing Standards MAV	Proposed Standards MAV	TA Remarks	Greenpeace Recommendation
			Australian Drinking Water Guidelines	
<b>Sodium dichloroisocyanurate (as cyanuric acid)</b>	No MAV listed	40 (mg/L)	Based on WHO GV	We support a MAV
<b>Trichloroethene</b>	0.02 (mg/L)	0.03 (mg/L)	Based on WHO GV but adjusted for 70 kg bodyweight	We do not support raising the MAV and neither do we support the adjusted weight formula. We support a MAV of 0.1 ug/L, based on the EU default value.
<b>1080</b>	Long term MAV of 0.0035 (mg/L) retained	0.035 (mg/L) short term MAV	Short term MAV added	We support retention of long term MAV and addition of short term MAV

Maximum acceptable values (MAV) for radiological determinands

Name	Existing Standards MAV	Proposed Standards MAV	TA Remarks	Greenpeace Recommendation
Total alpha activity	0.1 (Bq/L excluding radon)	0.5 (Bq/L excluding radon)	Adjusted to be the same as the revised WHO GV	We do not support raising the MAV
Total beta activity	0.5 (Bq/L excluding potassium-40)	1 (Bq/L excluding potassium-40)	Adjusted to be the same as the revised WHO GV	We do not support raising the MAV

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