



# FACT SHEET 8: THE BIOSOLIDS GUIDELINES

## NATIONAL AND REGIONAL REGULATIONS

The use of sludge and biosolids for land application is regulated through the Resource Management Act (RMA, 1991). The RMA, including relevant national and regional policies is given effect through rules set down by Regional Councils that frequently reference the “Guidelines for the Safe Application of Biosolids to Land in New Zealand”<sup>1,2</sup>.

## NATIONAL BIOSOLIDS GUIDELINES

The guidelines<sup>1</sup> is the most widely adopted guidance document for biosolids management in New Zealand at present. These guidelines contain information and recommendations to assist producers, dischargers and regulators (Regional Councils) to plan and assess the discharge of biosolids. The current biosolids guidelines have no legal status, despite this the guidelines are referenced in many Regional Plans.

The biosolids guidelines include standard criteria for monitoring the contaminant loading of sludges, biosolids and receiving soils. The guidelines use a grading system whereby biosolids are assigned a stabilisation (microbiological and vector attraction reduction (VAR)) grade ‘A’ or ‘B’, and a chemical contaminant grade ‘a’ or ‘b’. Biosolids are classified according to their stabilisation and contaminant grades as per the tables overleaf.

The quality (or grade) of a biosolids product determines its potential end-uses based on the outlined restrictions for use. If a material does not meet the requirements for grades Aa, Ba or Bb then it is considered a sludge and not suitable for beneficial use in its present form.

## UPDATE OF THE BIOSOLIDS GUIDELINES

Led by WaterNZ and involving research bodies and central government ministry, a new technical guide is being drafted that recognises the commonalities of all organic waste and describes quality criteria for beneficial use. This guideline will supersede, update and reference existing guidelines and standards, including the NZ Biosolids Guidelines and the NZS4454 Composting Standards.

## PRIMARY POINTS OF DIFFERENCE

The main differences between the existing and proposed new guidelines are:

- The proposed new guidelines focus on a range of organic materials rather than just biosolids;
- In some instances, the limits for trace metals are higher, and in turn less restrictive to use;
- The new guideline allows for the application of 150 kg mineral N/ha to rebuild degraded soil;
- There are changes to the organic contaminants of focus, with emerging organic contaminants replacing those that are considered less relevant (i.e. dioxins); and
- Changes have been made to the listed pathogens to be tested and the limit levels.

Both guidelines contain limits for stabilisation (pathogens and vector-attracting compounds) and contaminants (trace metals and organic contaminants) that determine the ‘grading’ of the biosolids product.

CURRENT GUIDELINES				PROPOSED GUIDELINES			
Type	Stabilisation grade	Contaminant grade	Class	Type	Stabilisation grade	Contaminant grade	Class
Grade Aa	A	a	Unrestricted use	A1	A	Compliant	Permitted Activity
Grade Ab	A	b	Restricted use	B1	B	Compliant	Controlled Activity
Grade Ba	B	a	Restricted use	A2	A	Non-compliant	Specific discretionary
Grade Bb	B	b	Restricted use	B2	B	Non-compliant	Specific discretionary

## STABILISATION GRADING

Under both guidelines, achieving a 'Grade A' for stabilisation requires the product to have documented quality assurance, undergone one of the outlined pathogen reduction processes and vector attraction reduction methods and meet outlined pathogen standards.

If the product does not meet pathogen reduction processes or standards but meets the other criteria it is classed as a grade B for stabilisation.

Pathogens	Current Guidelines (Grade A)	Proposed Guidelines (Grade A)
<i>E. coli</i>	< 100 MPN/g	< 100 MPN/g
<i>Campylobacter</i>	< 1/25 g	< 1/25 g
<i>Salmonella</i>	< 1/25 g	< 2 MPN/g
Enteric Viruses	< 1 PFU/4g	-
Human Adenovirus	-	< 1 PFU/0.25 g
Helminth ova	< 1/4 g	< 1/4 g

## CONTAMINANT GRADING

Trace metal contaminants are controlled according to set limits in both guidelines. Current guidelines contain limits for 'Grade a' (unrestricted use) and 'Grade b' (restricted use) biosolids. If metals are above the 'Grade b' limits, then the solids

Trace Metals	Current Guidelines		Proposed Guidelines
	Grade a (mg/kg)	Grade b (mg/kg)	Compliance limit (mg/kg)
Upper Limit			
Arsenic (As)	20	30	30
Cadmium (Cd)	1	10	10
Chromium (Cr)	600	1500	1500
Copper (Cu)	100	1250	1250
Lead (Pb)	300	300	300
Mercury (Hg)	1	7.5	7.5
Nickel (Ni)	60	135	135
Zinc (Zn)	300	1500	1500

require blending with a co-product to reduce the contaminants to below 'Grade b' limits, or they must be disposed of as a contaminated sludge.

Under the new proposed guidelines only one limit is set. If this is exceeded a sludge is considered 'non-compliant' and can only be used under a Controlled Activity status or safely disposed.

## BACKGROUND

The Regional Biosolids Strategy – Lower North Island is a collaborative project funded by the Waste Minimisation Fund. Ten lower North Island Councils have worked in partnership with Lowe Environmental Impact and research partners to develop a biosolids strategy that includes the potential collective management of sludge, with a focus on beneficial use.



This project was undertaken with the support of the Ministry for the Environment waste minimisation fund, however, the Ministry does not necessarily endorse or support the content of this publication in any way.

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1. NZWWA. (2003). Guidelines for the safe application of biosolids to land in New Zealand. Ministry for the Environment (New Zealand Water and Wastes Association).
2. Fact Sheet 7 of the Regional Biosolids Strategy: Regulation and Consenting