IN THE MATTER of the Resource Management Act 1991 (the Act)

AND

IN THE MATTER of a submission to Horizons Regional Council on its Proposed One Plan by CPG New Zealand Ltd.

STATEMENT OF EVIDENCE OF KATIE JANE BEECROFT

Qualifications and Experience

1. My name is Katie Jane Beecroft. I am an environmental scientist with CPG NZ Limited in Palmerston North. I hold the qualification of Master of Science with Honours from the University of Waikato.

2. I have 10 years post graduate experience in soil chemistry, analytical chemistry, site investigation, land application of wastewater and biosolids, and contaminated land management. I am a member of the New Zealand Society of Soil Science, Water NZ and WasteMINZ.

3. I have read and agreed to comply with, the current code of practice for expert witnesses in the Environment Court. Except where I state that I am relying on the specified evidence of another person, my evidence in this statement is within my area of expertise. I have not omitted to consider material facts known to me that might detract from or alter the opinions that I express in this statement.

Background to Submission

4. In 2007 CPG (then Duffill Watts) lodged a submission in support of the proposed One Plan provision for the application of biosolids to land, Rule 13-4 with amendment. Following recent discussions with Horizons Regional Council staff, CPG have provided comment and suggestions for the amendment of Rule 13-4.

Biosolids Definition

5. The term biosolids refers to sewage sludges which may or may not be mixed with other materials and that have undergone treatment and/or stabilisation to enable the safe application to land for the purpose of fertilisation through addition of macro and micronutirents, and soil conditioning through organic matter addition.

6. Under the “Guidelines for the Safe Application of Biosolids to Land in New Zealand” biosolids are graded according to the potential for adverse effects to the receiving environment. The biosolids Given a two letter grading as follows:

- The first, upper case term refers to the count of microbiological indicator species and to the treatment processes the biosolids have undergone. “A” indicates that the product has met rigorous standards for pathogen and vector-attraction reduction, and is regularly tested. A grade biosolids are safe to utilise without control. “B” indicates that the processing of the product has verified quality assurance and includes a recognised vector-attraction reduction procedure. B grade biosolids are deemed safe to use with controls as proposed by the guidelines (Table 6.3, NZWWA, 2003); and

- The second, lower case term refers to the concentration of trace element and organic contaminants in the biosolids. “a” indicates that the product is safe to utilise without control. “b” indicates that the product is safe to use with appropriate controls on its application to ensure mass loading of contaminants does not cause soil limits as given in the guidelines to be exceeded.

7. Biosolids are defined in the Proposed One Plan as being “a sewage or sewage sludge, derived from a sewage treatment plant, that does not include products derived from industrial wastewater treatment plants and that has been treated or stabilised to the extent that it is able to be safely and beneficially applied to land”.

Biosolid Use

8. New Zealand currently lags behind much of the developed world in the beneficial use of biosolids despite a comparatively low degree of contaminants present in the product. I consider this is predominantly due to the regulatory environment. The Council has the opportunity to promote the use of biosolids through One Plan, rather than imposing restraints that are more restrictive than have been competently established to be necessary.

9. In addition, the Council has an obligation under the provisions of the Waste Minimisation Act (2008) and the Waste Minimisation Strategy (2003), which aims for the redirection of 95 % of sewage sludge from landfill to beneficial use. Biosolids should be welcomed as reducing waste, as a renewable resource with a sustainable supply, and as home-grown substitutes for imported chemicals, none of which can be said to apply to the fertilisers the use of which should be displaced by properly managed biosolids application.

Suitability of the Proposed Rule

10. I believe that Rule 13-4 seems to ignore the hard work and science that was used to develop the National Biosolid Guidelines NZWWA, 2003. It creates a further restriction of an already restrictive prescription for the management of biosolids. The Guidelines were developed with great thought and care. A concern among those involved with their production was that Regional Councils may simply take the work and then restrict it further. Proposed Rule 13-4 takes what is already developed to be best practice, and sets even more stringent requirements, but without any indication or acknowledgement of any improved science behind these more stringent requirements.

Suggested Amendments

Point 1: Discharge to waterbody

11. Rule 13-4 (a) currently specifies that there shall be no direct discharge into any water body. I concur with this.

Point 2: Ponding of material

12. Rule 13-4 (b) currently specifies that there shall be no ponding of material on the soil surface for more than 5 hours following application. By their very nature, biosolids are solid, and even the lightest of applications can reasonably be expected to reside on the surface until it breaks down and is incorporated into the soil. The provision of the rest of this Condition, requiring no run-off into a surface water body, is supported. An alternative wording of the provision is given in Annex A

Point 3: Biosolids pathogen content

13. Rule 13-4 (c) currently specifies that the material shall not contain any human or animal pathogens. Biosolids, by their very nature, contain human or animal pathogens. Even the highest Aa standard specifies a limit to pathogens which is endorsed by the Ministry of Health, rather than a complete exclusion. To exclude “any” pathogens is, we submit, unnecessarily conservative, and has the effect of making all biosolid applications a discretionary activity. An alternative wording of the condition is given in Annex A

Point 4: Separation distances

14. Rule 13-4 (d) (i), (ii), and (iii) currently specifies separation distances. 150 meters from residences etc puts biosolids in the same category as piggery effluent in Rule 13-6, whereas the same Rule enables dairy shed effluent to be discharged within 20 meters of residences. Rule 13-6 imposes no requirement, and reserves no control, in respect of dairy shed effluent distances from property boundaries, but Rule 13-4 requires biosolids not to be discharged within 50 meters of property boundaries.

15. I am of the opinion that Aa standard biosolids are less noxious than many dairy shed or poultry effluent discharges, and that a separation from property boundaries should not be required. Similarly, I am of the view that the requirement to separate these discharges from habitats that are rare, threatened or at risk is unnecessarily cautious. If said habitat is a wetland, then of course the requirements to avoid discharge into a water body and to avoid run-off into a water body would apply. But for other habitats that are not wetlands, soil conditioners could be used to beneficially aid them. I suggest the removal of the existing condition (d).

Point 5: Nitrogen Loading

16. No specification is currently given for the loading of nitrogen in Rule 13-4. It is recommended that nitrogen limits as specified in the guidelines be included in Rule 13-4. Suggested wording of the condition (given as (d)) is given in Annex A.

Point 6: Record keeping required

17. Rule 13-4 (g) currently requires specified record keeping. The extent of record keeping proposed here is, I suggest, implicit where 13-4 (d) and (e) are complied with (suggested rewording). I therefore suggest it is removed.

Point 7: Comparable activities

18. The rule stipulates that Aa grade biosolids be used. A grade of Aa indicates that the biosolids product poses negligible risk to public or environmental health. The activity that Aa biosolids application most closely resembles is the application of fertilizers as permitted under Rule 13-2 and should be assessed accordingly.

Establishment of an Additional Rule

19. Lower grade (Ab, Ba and Bb) biosolids are deemed to be safe for application to land with appropriate management controls. To encourage the safe use of lower grade biosolids we believe a separate rule should be established to assist users to plan the safe use of lower grade biosolids.

20. A suggested format of a restricted discretionary rule for lower grade biosolids application is attached in Annex A and described as follows:

    (a) There shall be no direct discharge of Grade Ab, Ba or Bb biosolids into any waterbody.

    (b) There shall be no ponding of free water on the soil surface for more than five hours following the application, or any run-off into a surface waterbody.

    (c) The material shall have undergone stabilization processes to achieve at least B grade as given by the Guidelines (NZWWA, 2003) or succeeding publication.

Hazardous substances shall not exceed b grade limits as given by the Guidelines (NZWWA, 2003) or succeeding publication."

(d) The discharge shall comply with the following separation distances:

(i) 150 m from residences, marae, schools, public buildings and public recreation areas

(ii) 50 m from property* boundaries

(iii) 50 m from rare and threatened habitats* and at-risk habitats*

(iv) 20 m from bores, surface waterbodies and the coastal marine area

(v) 50 m from any archaeological site, waahi tapu or koiwi remains identified in any district plan, in the New Zealand Archaeological Association's Site Recording Scheme, or by the Historic Places Trust except where Historic Places Trust approval has been obtained.

(e) A nutrient budget, which takes into account all other sources of nitrogen and which is designed to minimise nitrogen leaching rates, shall be used to plan and carry out the biosolids* or soil conditioner* application.

(f) The discharge shall not result in any objectionable odour, dust or spray drift or any spray drift beyond the property* boundary.

(g) The discharger shall maintain a management plan for any site receiving biosolids which shall include:

(i) a daily record of the discharge volume and location

(ii) a monthly (or more frequent) analysis of the nitrogen concentration of a discharge sample and make these records available to the Regional Council upon request.

SUMMARY

21. The Councils desire to encourage the beneficial use of biosolids is commendable. However, the present provision for biosolids application to land through Rule 13-4 is unworkable due to the wording of the Rule.

22. It is my intention that the suggesting reworking of the existing Rule will assist to clarify the Councils position with regard to land application of Aa grade biosolids and to encourage the production of a high quality soil amendment for beneficial use. In addition, the suggested rewording recognises that biosolids application is an equivalent activity to the application of fertiliser.

23. I hope the inclusion of a suggested format for a Rule detailing the application of biosolids of grade Ab, Ba and Bb will assist in the both the preparation and processing of resource consent applications for biosolids of these grades by detailing the areas

over which the Council intends to exercise discretion, while recognising the treatment processes that the material has undergone and differentiating them from sewage sludges.

24. I would like to conclude that our submission is in support and I would like to hope that what the Council has prepared forms the basis of workable rules going forward.

Katie Beecroft
23 February 2010

23 November 2009 – Track changes as a result of the supplementary officers' reports for Water – Pink version

Notes for track changes. Recommendations made by the Historic Heritage officer are shown in Blue. Recommendations made by the Water officer are shown in Green. . Recommendations made by the Water officer in the supplementary report are shown in Red. Sentences shown in ~~black~~ strikethrough or are recommended within the officer's report to be relocated to other parts of the document, those sentences that have been relocated are shown in black underline. Words recommended to be added are shown in underline, words recommended to be removed are shown in ~~strike through~~

Terms defined within the Proposed One Plan Glossary are i*talicised* and marked with an asterisk (*) symbol. Terms defined in the Resource Management Act 1991 are i*talicised* and marked with a caret (^) symbol.

Suggested additions and deletions in purple have been made by CPG (24 February 2010).

Annex A: Proposed Rules for Discharge of Biosolids to Land

Rule^	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
13-4 *Biosolids** and *soil conditioners**	The *discharge*^ of *grade Aa biosolids** and *soil conditioners** onto *production land*^ pursuant to ss15(1), 15(2) or 15(2A) RMA, and any consequential *discharge*^ of *contaminants*^ into air pursuant to s15(2) or 15(2A) RMA, except where the *discharge*^ is undertaken in association with a use of *land*^ controlled by Rule 13-1.	Permitted	(a) There shall be no direct *discharge*^of biosolids into any *water_body*^*. (b) ~~There shall be no ponding of material on the soil surface for more than five hours following the application, or any run-off into a surface *water_body*^*~~. There shall be no discharge into any rare or threatened habitat* or at-risk habitat*, except for the purpose of enhancing such habitats. (c) ~~The material shall not contain any human or animal pathogens, or any *hazardous substances*^~~. The material shall comply with the requirements for Aa grade biosolids as given by "The Guidelines for Safe Application of Biosolids to Land in New Zealand (NZWWA, 2003) or succeeding publication. ~~(d) The *discharge*^ shall comply with the following separation distances:~~ ~~(i) 150 m from residences, marae, schools, public buildings and public recreation areas~~ ~~(ii) 50 m from *property** boundaries~~ ~~(iii) 50 m from *rare habitats*,Error! Bookmark not defined. and threatened habitats** and *at-risk*	

*Rule^*	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
			~~*habitats**~~ ~~(iv) 20 m from *bores**, surface *water bodies^** [1] including drains,[1] and the *Coastal Mmarine Aarea^*~~ ~~(v) 50 m from any archaeological site, waahi tapu or koiwi remains *Historic Heritage^* as identified in any District or Regional plan Schedule or database or *proposed plan^*, in the New Zealand Archaeological Association's Site Recording Scheme, or by the Historic Places Trust except where Historic Places Trust approval has been obtained.~~ ~~(vi)~~ The rate of application shall not exceed 200 kg N/ha/yr which may be applied as three yearly dressing of up to 600 kg N/ha, when applied with other fertilisers and soil conditioners. (e) A nutrient budget, which takes into account all other sources of nitrogen and which is designed to minimise nitrogen leaching rates, shall be used to plan and carry out the *grade Aa biosolids** or *soil conditioner** application. (ea) the discharge of grade Aa biosolids shall be undertaken in accordance with the best management practice as described in the Guidelines for the safe application of biosolids to land in New Zealand (New Zealand Water and Waste Association, August 2003) (f) The *discharge^* shall not result in any offensive or [1] objectionable odour, dust or *spray drift** or any *spray drift** beyond the *property** boundary. ~~(g) The discharger shall keep the following records:~~ ~~(i) a daily record of the *discharge^* volume and location~~ ~~(ii) a monthly (or more frequent) analysis of the nitrogen concentration of a *discharge^* sample~~ ~~and make these records available to the Regional Council upon request.~~	

[1] Water officers report - recommendation WTR 84

Rule^	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification

Rule^	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
13-4b *Biosolids** and *soil conditioners** not complying with Rule13-4	The *discharge*^ of *grade Ab, Ba or Bb biosolids** and *soil conditioners** onto *production land*^ pursuant to ss15(1), 15(2) or 15(2A) RMA, and any consequential *discharge*^ of *contaminants*^ into air pursuant to s15(2) or 15(2A) RMA, except where the *discharge*^ is undertaken in association with a use of *land*^ controlled by Rule 13-1.	Restricted Discretionary	(a) There shall be no direct discharge of Grade Ab, Ba or Bb biosolids into any waterbody. (b) There shall be no ponding of free water on the soil surface or any run-off into a surface waterbody for a period of five hours following the application of biosolids. (c) The material shall have undergone stabilization processes to achieve at least B grade as given by the Guidelines (NZWWA, 2003) or succeeding publication. Hazardous substances shall not exceed b grade limits as given by the Guidelines (NZWWA, 2003) or succeeding publication. (d) The *discharge*^ shall comply with the following separation distances: (i) 150 m from residences, marae, schools, public buildings and public recreation areas (ii) 50 m from property* boundaries (iii) 50 m from rare and threatened habitats* and at-risk habitats* (iv) 20 m from bores, surface waterbodies and the coastal marine area (v) 50 m from any archaeological site, waahi tapu or koiwi remains identified in any district plan, in the New Zealand Archaeological Association's Site Recording Scheme, or by the Historic Places Trust except where Historic Places Trust approval has been obtained. (e) A nutrient budget, which takes into account all other sources of nitrogen and which is designed to minimise nitrogen leaching rates, shall be used to plan and carry out the *grade biosolids** or *soil conditioner** application.	Discretion is reserved over: (a) The rate of biosolids per discharge and frequency of discharge to control nutrient and contaminant loading rates (b) *Maintenance** of vegetative cover (c) Odour management (a) Effects on *rare habitats**,***Error! Bookmark not defined.*** *threatened habitats** and *at risk habitats* (b) contingency requirements (c) monitoring and information requirements (d) duration of consent (e) review of consent *conditions*^.

Rule^	Activity	Classification	Conditions/Standards/Terms	Control/Discretion Non-Notification
			(The *discharge*^ shall not result in any offensive or [1] objectionable odour, dust or *spray drift** or any *spray drift** beyond the *property** boundary. (f) The discharger shall maintain a management plan for any site receiving biosolids that shall include: (i) a daily record of the *discharge*^ volume and location (ii) a monthly (or more frequent) analysis of the nitrogen concentration of a *discharge*^ sample and make these records available to the Regional Council upon request.	