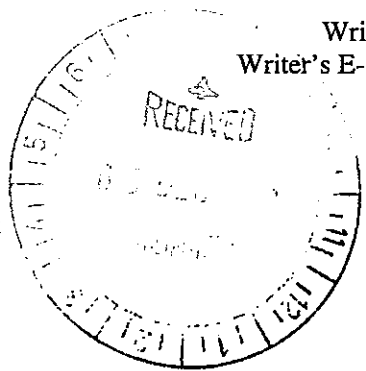


3 December 2008

Nelson Regional Sewerage Business Unit
C/- Donna Hills
Opus International Consultants Limited
Private Bag 36
Nelson 7042



Dear Madam

DECISION ON APPLICATION TO CHANGE CONDITIONS FOR RESOURCE CONSENT NO. NN940379V3 - DISCHARGE OF BIOSOLIDS TO LAND (FORESTRY BLOCKS) AT RABBIT ISLAND

Pursuant to Section 114 of the Resource Management Act 1991 ("the Act"), please find enclosed a copy of the Council's decision on your application to change consent conditions of the resource consent referred to above.

Section 357A of the Act provides you with the right to lodge an objection with the Council in respect of this decision and/or any associated conditions. Any such objection must be made in writing setting out the reasons for the objection and must be lodged with the Council, together with a fixed fee of \$175.00 (GST inclusive), within 15 working days of receiving this letter.

At this stage the Council has not calculated the final costs of processing your application. Should the final costs exceed the deposit already paid, then as previously advised, you will be invoiced separately for these costs. Should the final costs be less than the deposit already paid, then you will receive a refund. Where the costs are equal to the deposit already paid, no further action is required. You will receive a letter shortly regarding the final costs of processing your application.

The changes to your consent take effect immediately unless you lodge an objection to this decision.

Please feel free to contact me if you have any questions regarding any aspect of your consent or its conditions. My contact details are listed at the top of this letter.

Yours faithfully

Michael Durand
Co-ordinator Natural Resources Consents



DECISION ON APPLICATION TO CHANGE CONSENT CONDITIONS

Resource Consent Being Changed: RMNN940379V2
 New Resource Consent Number: RMNN940379V3
 Consent Holder: Nelson Regional Sewerage Business Unit

Pursuant to Section 104B of the Resource Management Act 1991 ("the Act"), the Tasman District Council ("the Council") hereby authorises changes to Resource Consent RMNN940379V2. The changes authorised are as follows:

Advice Note: Only those consent conditions which are changed are presented below and the changes are shown either as underlined for additions or ~~striketrough~~ for deletions. For the purposes of clarity, a complete amended set of conditions for the consent is attached at the end of this decision. The revised set of conditions is hereinafter referred to as Resource Consent RMNN940379V3.

4.6 ~~Biosolids shall not be discharged to any given forestry block in a single application more frequently than set out in Tables 1 and 2:~~ shall be limited to the following:

(a) ~~Table 1: Biosolids discharge regime after planting~~

Time	Maximum biosolids application rate (kg N/ha)
Following harvest and before planting	see Table 2
<u>3 years after planting</u>	<u>0</u>
<u>6 years after planting</u>	<u>450</u>
<u>9 years after planting</u>	<u>450</u>
<u>12 years after planting to 3 years prior to harvest, at 3 year intervals</u>	<u>300</u>

~~Table 2: Biosolid discharge after harvest and before planting shall be restricted to a single application as follows:~~

Number of years since last 300kgN/ha biosolids application	Maximum biosolids application rate (kg N/ha)
<u>1</u>	<u>150</u>
<u>2</u>	<u>300</u>
<u>3</u>	<u>450</u>

~~And~~

(b) ~~as provided for in Condition 13.~~

(a) During the time period from the last prior-to-harvest biosolid application to 12 years after replanting, biosolids shall be discharged at an average rate of no more than 150 kilograms of nitrogen per hectare per year, calculated using a three year rolling average, and no single discharge shall exceed 450 kilograms nitrogen per hectare per year.

(b) During the time period from 12 years following replanting to the last prior-to-harvest biosolid application, biosolids shall be discharged at an average rate of no more than 100 kilograms of nitrogen per hectare per year, calculated using a three year rolling average, and no single discharge shall exceed 300 kilograms nitrogen per hectare per year.

- (c) No more than one application of biosolids shall occur to any given forestry block during the time period following harvest and prior to replanting.

And

- (d) As provided for in Condition 13.

Advice Notes:

Definition for clarification: "kilograms nitrogen per hectare" describes a proportional rate of discharge that is independent of the actual area of forestry undergoing biosolids application. Example: a biosolids discharge could occur at a rate of 300 kilograms per hectare in an area of 100 square metres. In such a case, 3 kilograms of nitrogen would have been discharged to land. Conversely, if 300 kilograms nitrogen had been applied to that 100 square metres, yet the remainder of that hectare had received no biosolids discharge, then the rate of discharge would be correctly described as 30,000 kilograms per hectare, not 300 kilograms per hectare.

REASONS FOR THE DECISION

Background to the Application and Conditions Requested to be Changed and Reasons

Nelson Regional Sewerage Business Unit (NRSBU) currently holds a resource consent (NN940379V2) for the discharge of biosolids to land, namely forestry blocks, on Rabbit Island. Biosolids are generated as a byproduct of sewage processing at the Bells Island sewage facility and pumped to Rabbit Island where they are stored in holding tanks. Biosolids are subsequently transported by trucks to the appropriate forestry blocks and then discharged via a travelling spray irrigator. Although termed "biosolids", the solid content of the liquid is typically less than 3%, with approximately 97% of the discharge being water. The land onto which the biosolids are discharged is Crown land vested with Tasman District Council (TDC). The land is currently utilised for forestry operations that are owned by TDC and managed by P F Olsen Ltd.

Forestry on the island is arranged into a series of blocks incorporating trees of various ages. Biosolids are discharged to land in these blocks for two purposes: first, to provide for the safe disposal of waste product, and second, for the benefits to tree growth observed as a result of fertilisation with nitrogen (N) contained in the biosolids. The rate of application corresponds to the trees' ability to up take 150kg Nitrogen/ha per year.

Currently, the Consent Holder applies biosolids to land post-harvest and prior to replanting occurring. This has been the common practice because, until recently, it has been thought that spraying of biosolids onto young trees may be detrimental to their growth and survival. However, results from recent trials have shown this is not the case and consequently this application, NN940379V3, seeks to change the conditions of consent NN940379V2 to authorise the following:

- Following harvest, replanting can occur prior to any biosolids application to land in the harvest location. On completion of planting, biosolids application will resume at an average rate of no more than 150 kilograms of nitrogen per hectare per year, calculated using a three year rolling average, and no single discharge exceeding 450 kilograms per hectare per year is authorised until the trees are 12 years in age. From this point in time until harvest, the average maximum rate of discharge is reduced to 100 kilograms of nitrogen per hectare per year calculated using a three year rolling average, and no single application being greater than 300 kilograms of nitrogen per hectare per year. These concentrations are consistent with the previous consent.

The biosolids discharge programme will remain otherwise unchanged.

By allowing the proposed change for planting to occur after harvesting and prior to applying biosolids to the area, the potential health risks to those contractors carrying out planting are reduced by avoiding any

exposure to recently sprayed areas. The change will also provide a wider window of opportunity for biosolids application post-harvest.

Thus, this application has been made pursuant to Section 127 of the Resource Management Act 1991, to change Condition 4.6 of resource consent NN940379V2. The potential adverse environmental effects of these changes are discussed in more detail below.

Principal Issues (Actual and Potential Effects on the Environment)

The principal issue(s) associated with the application to change the conditions of consent involve the actual and potential effects on the environment associated with the change. The Council considers that the adverse effects on the environment as a result of the changes will be no more than minor for the following reasons:

- (a) the effective use of Nitrogen (N) by trees growing in the disposal area.

In this regard N in the biosolids is effectively a fertiliser that aids tree growth. While there is evidence to suggest that trees benefit from the nitrogen within the biosolids discharge, it can alter the density of the timber and therefore the income upon harvest. There is always a risk of N and other nutrients leaching to groundwater. Additionally, the N in biosolids tends to largely be organic N, which is not immediately available as a nutrient in soil or water. This means that by applying more nitrogen in the form of biosolids than what the plants can up take within one year, the remainder will still be readily available for plant uptake in the following years.

The proposed change to allow planting to occur post harvest prior to biosolids being discharged to land will not cause any increases in the adverse effects on the environment. The volumes of Nitrogen being applied have not changed and are reflective of the trees ability to uptake nitrogen at a rate of 150kgN/ha per year.

Tasman Resource Management Plan ("TRMP") Area and Rules affected

According to the PTRMP the following apply to the application site:

Area(s): Rural 2; Coastal Environment Area

Section 127(3)(a) of the Act states that any application to change consent conditions is deemed to be a discretionary activity.

In considering this application, the Council has had regard to the matters outlined in Section 104 of the Act. In particular, the Council has had regard to the relevant provisions of the following planning documents:

- (a) the Tasman Regional Policy Statement (TRPS);
- (b) the Tasman Resource Management Plan (TRMP).

How the activity relates to the objectives and policies contained within the TRPS and TRMP were covered in the original decision. It is considered that the changes being sought by the Consent Holder do not change these considerations.

Part II Matters

The Council has taken into account the relevant principles outlined in Sections 6, 7 and 8 of the Act and it is considered that granting these changes to the conditions achieves the purpose of the Act as presented in Section 5.

Notification and Affected Parties

The adverse environmental effects of the changes being sought are considered to be no more than minor. The Council's Principal Resource Consents Adviser has, under the authority delegated to him, decided that the provisions of Section 94(2) of the Act have been met and therefore the application has been processed without notification. In making this determination the Resource Consents Manager has considered the matters outlined in Section 127(4) of the Act.

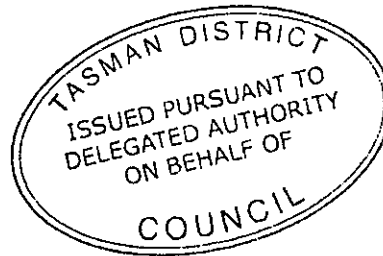
Duration of the Consent

No change to the duration of consent is being sought and in any case cannot be changed under Section 127 of the Act.

This consent is granted on **3 December 2008** under delegated authority from the Tasman District Council by:



Michael Durand
Co-ordinator Natural Resources Consents



FULL SET OF AMENDED CONSENT CONDITIONS FOR RMNN940379V3

1.0 Records to be Kept

- 1.1 The Permit Holder shall keep such records as may be reasonably required by Council and shall, if so requested, supply this information to the Council. If it is necessary to install measuring devices to enable satisfactory records to be kept, the Permit Holder shall, at his or her own expense, install, operate and maintain suitable devices.
- 1.2 A flowmeter of an accuracy to within $\pm 5\%$ shall be installed between the pumps on Bells Island and the receiving facilities on Rabbit Island and the daily volume of biosolids transferred recorded.

2.0 Access for Council Staff and Agents

Access by Council staff or its officers or agents to the land subject to this discharge permit is reserved pursuant to Section 332 of the Resource Management Act.

3.0 Review of Conditions

- 3.1 Council may at any time over the duration of this consent review its conditions pursuant to Section 128 of the Resource Management Act, for any of the purposes stated in the Act, to require additional remedial works following monitoring of effects, to modify the exercise of the consent to reduce potential effects on the environment, or to review the monitoring requirements placed on this consent.
- 3.2 On every sixth anniversary of the granting of this consent, the Permit Holder shall provide the Council with a written assessment of all monitoring, identifying any trends and problems so that the need for a review of conditions can be determined by Council. Copies of this report shall be made available to all organisations who made submissions.

4.0 Application of Biosolids

- 4.1 Biosolids shall be applied at an average depth of no greater than 40mm per application.
- 4.2 Biosolids shall not be applied within 24 hrs of a 10 mm rainfall event occurring in a 24 hr period.
- 4.3 Biosolids shall not be applied if a rainfall of more than 50mm is forecast within the following 24 hrs by a recognised meteorological forecasting service.
- 4.4 If even application of biosolids is not possible due to wind, then application shall cease in the area affected.
- 4.5 Soil pH shall be maintained at pH 5 or greater at all times during biosolid application.
- 4.6 Biosolids application to any given forestry block shall be limited to the following:
- (a) During the time period from the last prior-to-harvest biosolid application to 12 years after replanting, biosolids shall be discharged at an average rate of no more than 150 kilograms of nitrogen per hectare per year, calculated using a three year rolling average, and no single discharge shall exceed 450 kilograms nitrogen per hectare per year.
 - (b) During the time period from 12 years following replanting to the last prior-to-harvest biosolid application, biosolids shall be discharged at an average rate of no more than

100 kilograms of nitrogen per hectare per year, calculated using a three year rolling average, and no single discharge shall exceed 300 kilograms nitrogen per hectare per year.

- (c) No more than one application of biosolids shall occur to any given forestry block during the period following harvest and prior to replanting.

And

- (d) As provided for in Condition 13.

Advice Notes:

Definition for clarification: "kilograms nitrogen per hectare" describes a proportional rate of discharge that is independent of the actual area of forestry undergoing biosolids application. Example: a biosolids discharge could occur at a rate of 300 kilograms per hectare in an area of 100 square metres. In such a case, 3 kilograms of nitrogen would have been discharged to land. Conversely, if 300 kilograms nitrogen had been applied to that 100 square metres, yet the remainder of that hectare had received no biosolids discharge, then the rate of discharge would be correctly described as 30,000 kilograms per hectare, not 300 kilograms per hectare.

4.7 [Repealed]

5.0 Exclusion Zones

5.1 Exclusion zones (no spray areas) shown in the attached Figure 1 shall be marked clearly by use of wire, or other means as approved by Council so that the biosolids contractor is quite clear which areas are not to be sprayed.

5.2 An archaeological survey is to be undertaken in construction areas before works begin. Any archaeological sites in addition to those already excluded that are discovered during this survey or during subsequent biosolids operations are to be brought to the immediate attention of a representative nominated by tangata whenua and the Historic Places Trust for assessment and advice. Council shall also be notified. Works in the immediate vicinity of any such site are to cease until advice is offered. Such sites may be excluded from the biosolids operation.

5.3 Council may exclude such further areas from the biosolids consent area as are considered necessary should further areas of ecological significance be subsequently identified. Operations in such areas shall cease upon Council's request to allow for further assessment and shall not continue without Council's agreement.

5.4 Gravel lenses identified pursuant to Condition 8 are excluded from biosolid disposal, and shall be marked in the same manner as 5.1.

6.0 Buffer Zones

6.1 If biosolids meet Class A sludge standards, the following buffer zones (no spray areas) shall be observed:

- (a) Around the entire coastal edge of Rabbit Island a buffer zone of 15 metres in from the edge of the forest, or 50 metres from Mean High Water Springs, whichever is the greater, is to be maintained. No biosolids disposal is to take place in this buffer zone.

- (b) A buffer zone of 15 metres in from the edge of the forest shall be maintained around all areas to which the public have unrestricted access.

- (c) Around the perimeter of the Rabbit Island Domain the buffer zone shall be increased to 20 metres in from the edge of the forest canopy or 30 metres in from the domain perimeter, whichever is the greater.
- (d) In the months, November to March inclusive, the buffer zone around the perimeter of Rabbit Island Domain shall be increased to 100 metres in from the edge of the forest canopy.

6.2 If biosolids do not meet Class A standards then the buffer zones given in Condition 6.1(a), (b), (c) and (d) shall be increased to 400 metres in from the edge of the forest canopy and public access shall be restricted for a period of one year after application.

7.0 Monitoring

Biosolids

7.1 Biosolids shall be sampled and analysed as follows:

- (a) A continuous record of biosolids temperature shall be made and recorded for the duration of the consent and plotted on a continuous record to enable compliance to be readily visible. Biosolids shall be held at 50°C or higher for a minimum duration as determined by the USEPA equation given in the attached schedule.
- (b) Microbial monitoring of biosolids shall be undertaken five times over a two-week period, following the first two weeks of operation for faecal coliforms, E.Coli, salmonella, helminths, protozoa and viruses. If the microbial standards for Class A sludge as defined by the United States Environmental Protection Agency (USEPA) standards are met (refer to the schedule attached to this consent), then the frequency of monitoring may be decreased to fortnightly for a two month period.

If Class A sludge standards are not met at any time, sampling frequency shall return to five times a fortnight for a minimum period of two weeks until compliance is achieved. If Class A standards are met consistently during this two-month period then the frequency and type of bacterial monitoring may be further reviewed in consultation with Public Health Services and the Council's District Resource Analyst.

- (c) At three month intervals dry solids, organic matter, pH, total and ammoniacal nitrogen, phosphorous, potassium and the following heavy metals, arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc shall be measured.
- (d) Screening of the biosolids for persistent synthetic organochlorine and organophosphate compounds shall be carried out five yearly.

Groundwater

7.2 Nine existing shallow piezometers on Rabbit Island and two additional piezometers to be installed at the locations shown in Figure 2 attached to this consent shall be monitored as follows:

Before application commences:

- (a) Representative samples shall be taken from all eleven piezometers, filtered and analysed for the following heavy metals; arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc, aluminium.

After application has commenced:

- (a) At three month intervals groundwater levels shall be measured and recorded at all eleven piezometers.

- (b) At three month intervals representative samples shall be taken from all eleven piezometers for pH, conductivity, nitrate-nitrogen, ammonium-nitrogen and chloride.
- (c) Once a year representative samples shall be taken from all eleven piezometers, filtered and analysed for the following heavy metals; arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc, aluminium.
- (d) If the microbiological standards for Class A sludge are not met at any time then the Council's District Resource Analyst may require the Consent Holder to monitor groundwater for microbial contamination.

Soils

7.3 Soil samples will be taken within the topsoil (0 to 20 cm) and subsoil (20 to 40 cm), on an average basis of two samples every 10 ha in areas where biosolids have been applied as follows:

- (a) Every three years pH, organic matter, total nitrogen, available phosphorous, potassium, calcium, magnesium, sodium and a minimum of the following heavy metals; arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc and aluminium shall be measured.
- (b) Heavy metal annual loadings and cumulative loadings shall be within the limits recommended in the Department Of Health 1992 Guidelines for arable land as follows:

Element	Maximum Annual Loading (kg/ha/yr)	Maximum Cumulative Loading (kg/ha)	Maximum Soil Concentrations (mg/kg dry weight)
Arsenic	0.2	2.5	10
Cadmium	0.2	2.5	3
Chromium	15	125	600
Copper	12	100	140
Lead	15	125	300
Mercury	0.1	1	1
Nickel	3	20	100
Zinc	30	250	300

- (c) Once any maximum cumulative loading limit or maximum soil concentration limit in the above table is reached then the application of biosolids on Rabbit Island must cease in that area.

Coastal

- 7.4 Prior to commencement of disposal operations, and after a period of rain, the Consent Holder shall map groundwater seepage areas along the Waimea Inlet estuarine perimeter of Rabbit Island.
- 7.5 A survey of benthic micro and macro algal cover shall be undertaken prior to disposal, as agreed with Council's District Resource Analyst or his agent, to provide baseline data. This survey shall be repeated every six years.
- 7.6 Transect surveys along the foreshore are to be undertaken adjacent to the coast, particularly along the Waimea Inlet coastline, prior to disposal of sludge. The survey is to include sediment profile descriptions, sediment nutrient assessment and habitat classification. These surveys shall be repeated every six years.
- 7.7 Visual checks along Rabbit Island foreshore within Waimea Inlet shall be undertaken by a suitably qualified person at six-monthly intervals for the first three years of operation of the consent, after which visual checks will be carried out at three-yearly intervals for the duration of this consent.

Photographic records shall be taken at each inspection. Should this visual inspection indicate any adverse effects on the foreshore, further analysis and tests are to be undertaken at the discretion of the Council's District Resource Analyst or his agent.

8.0 Identification of Gravel Lenses

8.1 As part of the preparation work for biosolids disposal on each new area, identified areas of gravel are to be recorded and mapped on a plan of the Island by a suitably qualified person.

8.2 For gravel lenses which are greater than one hectare in extent a short borehole (or similar) shall be installed and supervised permeability testing shall be performed. Biosolids application rates to the gravel lens shall be reduced as follows, depending on the measured horizontal permeability (K):

$K \leq 10^{-4}$ m/s	7.8 tonnes of dry solids per hectare every three years
$10^{-4} < K \leq 10^{-2}$ m/s	the three-yearly application rate shall be reduced proportionally from 7.8 to 0 tonnes of dry solids per hectare
$K > 10^{-2}$ m/s	no biosolids shall be applied.

8.3 All gravel lenses which are to receive no biosolids at all or biosolids at a reduced application rate shall be clearly marked and identified to the operator applying the biosolids.

9.0 Contingency and Management Plan

9.1 A contingency and management plan for biosolids disposal shall be developed to the satisfaction of the Manager, Environment & Planning Department prior to application of biosolids. This plan shall be reviewed annually and shall include details of:

- (a) records to be kept including time of application, weather conditions, quantities applied, location of application, any operational problems experienced and monitoring results;
- (b) procedures to be followed to ensure compliance with all conditions of this permit;
- (c) how application rates are to be limited to the permitted rates;
- (d) areas to be used each year for biosolids disposal for the following three year period;
- (e) response to equipment failures;
- (f) response to accidental spillages of sludge or biosolids;
- (g) staff responsible for the management of biosolids disposal shall be identified and their specific roles outlined;
- (h) the provision of facilities and protection for employees to satisfy health and safety requirements.

Any contractor involved with biosolids treatment or disposal shall be made fully aware of their responsibilities as set out in the above plan.

10.0 Monitoring Charges

The applicant will be required to meet Council's actual and reasonable charges incurred as a result of monitoring compliance within the terms of this consent.

11.0 Notification of Problems

The Environment & Planning Department of the Tasman District Council is to be notified as soon as possible, and within 24 hours, of any problems which arise during the biosolids disposal which may result in adverse environmental effects.

12.0 Remedial Works

Council's District Resource Analyst or his/her agent may require remedial works to be implemented if monitoring shows unacceptable environmental impacts; such works may include application of biosolids at reduced loading rates, or the addition of lime if soil pH at any soil sampling site falls below 5.0.

13.0 Spray Trials

Biosolids spray trials are permitted near the centre of Rabbit Island with a location and monitoring programme acceptable to the Environment & Planning Manager provided that the trial area shall not exceed 10 hectares and the nitrogen application rate shall not exceed 400 kg/hectare.

14.0 Expiry

This resource consent expires on 8 November 2020.