Section 7

7. Proposed Consent

The following consent conditions and monitoring programme are proposed for this consent. Adhering to these consent conditions as demonstrated by completing the proposed monitoring programme will ensure that the effects on the environment are no more than minor.

7.1 Proposed Conditions

FAR NORTH DISTRICT COUNCIL, PRIVATE BAG 752, KAIKOHE

To carry out the following activities associated with the operation and use of the East Coast Bays wastewater treatment and disposal system:

01 To discharge treated municipal wastewater to an unnamed tributary of the Parapara Stream, at Taipa, at or about Map Reference O04:514-882

02 To discharge contaminants from the wastewater treatment system to ground at two points, in the catchments of an unnamed tributary of the Parapara Stream and an unnamed tributary of Ryders Creek, at or about Map References O04:514-882 & O04:524-889 respectively;

03 To discharge contaminants to air from activities associated with the treatment and disposal of wastewater at two points, at or about Map References O04:514-882 & O04:524-889;

1. The volume of treated wastewater discharged from the wastewater treatment plant to ground shall not, based on a 30 day rolling average of dry weather discharges, exceed 1570 cubic metres per day. Compliance with this condition shall be based on the average of the 30 most recent "dry weather discharge days". For the purposes of this consent, a "dry weather discharge day" is any day on which there is less than 1 millimetre of rainfall, and that day occurs after three consecutive days either without rainfall or with rainfall of less than 1 millimetre on each day.

   Advice Note: The rainfall measurements used to determine a dry weather discharge day shall be based on the nearest appropriate rainfall recorder site. This recorder site shall be selected in consultation with the Northland Regional Council.

2. The Consent Holder shall maintain a flow meter on the outlet of the wastewater treatment plant to measure the volume of treated wastewater discharged.
3. The Consent Holder shall monitor the exercise of these consents in accordance with the Monitoring Programme.

4. The Consent Holder shall provide and maintain easy and safe access to each of the sampling points.

5. The discharge shall not cause the water quality in the unnamed tributary of the Parapara Stream at NRC Sample Site No 5941 (see NRC Plan No. 3078, attached), to fall below the following standards:

   a) The natural pH of the water shall be within the range 6.5 to 9.0 except where due to natural causes.

   b) The visual clarity of the water shall not be reduced by more that 50%.

   c) There shall be no production of significant oil or grease films, scums or foams, floatable or suspended materials, or emissions of objectionable odour

   d) The median concentration of the faecal coliform bacteria in the water shall not exceed 600 per 100 millilitres, and the 80 percentile concentration shall not exceed 2400 per 100 millilitres, based on not fewer than 5 samples taken over any 30 day period.

   e) The dissolved oxygen concentration shall not be reduced below 80% of saturation.

   f) The median concentration of total ammoniacal N shall not exceed the following: (this condition shall not take effect until 3 years after the issue of the consent to allow for upgrading).

ANZECC (2000) 95% protection guideline for slightly to moderately disturbed freshwater systems.

pH of water at the time sampling	Total Ammoniacal Nitrogen ($[NH_3 + NH_4]$-N) (grams per cubic metre)
6.0	2.57
6.1	2.56
6.2	2.54
6.3	2.52
6.4	2.49
6.5	2.46
6.6	2.43
6.7	2.38
6.8	2.33
6.9	2.26
7.0	2.18
7.1	2.09
7.2	1.99
7.3	1.88
7.4	1.75

7.5	1.61
7.6	1.47
7.7	1.32
7.8	1.18
7.9	1.03
8.0	0.90
8.1	0.78
8.2	0.66
8.3	0.56
8.4	0.48
8.5	0.40
8.6	0.34
8.7	0.29
8.8	0.24
8.9	0.21
9.0	0.18

6. The Consent Holder's operations shall not give rise to any discharge of contaminants to the air at or beyond the wastewater treatment site boundary which is deemed by a suitably trained and experienced Enforcement Officer of the Northland Regional Council to be noxious, dangerous, offensive or objectionable to such an extent that it has, or is likely to have, an adverse effect on the environment.

7. The Consent Holder shall prepare and submit a Management Plan covering all aspects of the wastewater treatment system.

8. The Northland Regional Council may, in accordance with Section 128 of the Resource Management Act 1991, serve notice on the Consent Holder of its intention to review the conditions of these consents. Such notice may be served annually during the month of May. The review may be initiated for any one or more of the following purposes:

   (a) To deal with any adverse effects on the environment that may arise from the exercise of these consents and which it is appropriate to deal with at a later stage, or to deal with any such effects following assessment of the results of the monitoring of these consents and/or as a result of the Northland Regional Council's monitoring of the state of the environment in the area.

   (b) To require the adoption of the best practicable option to remove or reduce any adverse effect on the environment.

   (c) To provide for compliance with rules in any regional plan that has been made operative since the commencement of these consents.

   (d) To deal with any inadequacies or inconsistencies the Northland Regional Council considers there to be in the conditions of these consents, following the establishment of the activities the subject of these consents.

(e) To deal with any material inaccuracies that may in future be found in the information made available with the application. (Notice may be served at any time for this reason.)

(f) To change existing conditions relating to, or impose new limits on, the quality of the discharges and/or the receiving waters.

The Consent Holder shall meet all reasonable costs of each review.

EXPIRY DATE: 30 NOVEMBER 2033

7.2 Proposed Monitoring

Schedule A

The Consent Holder (or its authorised agent) shall monitor the Resource Consent in accordance with the following monitoring programme.

Final Discharge Volume

The daily wastewater discharge volume shall be recorded together with the local daily rainfall over the same 24-hour period, in accordance with Condition 1.

Discharge and Receiving Water Monitoring

Sites

Triplicate water samples are to be taken of the wastewater at the following sites:

- Discharge from the Constructed Wetland (NRC Site 1687)
- Tributary of the Parapara Stream upstream of the discharge channel (NRC Site 5939)
- Tributary of the Parapara Stream downstream of the discharge channel (NRC Site 5941)

Discharge Monitoring

One sample of discharged wastewater (NRC monitoring site 1687) shall be taken every three months. All samples shall be analysed for the following determinands:

- Temperature
- pH
- Dissolved oxygen concentration and percentage saturation
- Total ammoniacal nitrogen

- 5 day biochemical oxygen demand
- Total suspended solids
- Faecal Coliforms

Receiving Water Monitoring

One sample of water from NRC monitoring sites 5939 and 5941 shall be taken every three months. All samples shall be analysed for the following determinands:

- Temperature
- pH
- Dissolved oxygen concentration and percentage saturation
- Total ammoniacal nitrogen
- 5 day biochemical oxygen demand
- Total suspended solids
- Faecal Coliforms

Prior to monitoring of the receiving environment, visual observations shall be made for any changes in colour and clarity at NRC site 5941. If a conspicuous change is apparent, then a standard Black Disk shall be used to measure differences in clarity between the background waters and the waters downstream of the discharge.

Compliance shall be determined for each sampling occasion.

Record of Significant Odours

A record shall be kept of any significant odours at or outside the site boundary. The record shall identify the source and cause of any significant odour, duration of the odour, wind strength and direction, remedial action undertaken, and the degree of success of the remedial action.

Sample Collection, Sample Containers and Transport, and Analytical Methods

All samples shall be collected using standard procedures and in appropriate laboratory supplied containers.

All samples collected as part of this monitoring programme shall be transported in accordance with standard procedures and under chain of custody to the laboratory.

All samples collected shall be analysed at a laboratory with registered quality assurance procedures[#], and all analyses shall be undertaken using standard methods, where applicable.

[#] Registered Quality Assurance Procedures are procedures which ensure that the laboratory meets recognised management practices as would include registrations such as NZS/ISO/ISC 17025:2005 General Requirements for Competence of Testing and Calibration Laboratories.

Section 8

8. Conclusions

The resource consent for the East Coast Bays Wastewater Treatment Plant (4007) was renewed in August 2001. The current consent expires on 30 November 2008. Thus an application for renewal of this consent is necessary.

8.1 Existing System

The East Coast Bays WWTP was commissioned in 1990. The treatment process comprises two aerated followed by a facultative pond in series and a constructed wetland. Discharge is to a tributary of the Parapara Stream. The existing consent allows up to 1,005 cubic metres per day of treated wastewater (Average Daily Dry Weather Flow) to be discharged.

8.2 Consents Required

The following consents are required:

- Discretionary activity for discharge of treated wastewater to the unnamed tributary of the Parapara Stream under the Regional Water and Soil Plan for Northland.
- Discretionary activity to discharge contaminants to air (odour) from a wastewater treatment plant under the Regional Air Quality Plan for Northland.
- Discretionary activity to discharge wastewater to ground by way of seepage under the Regional Water and Soil Plan for Northland.

8.3 Assessment of Environmental Effects

An Assessment of Environmental Effects has been completed in accordance with Schedule 4 of the Resource Management Act and Section 36.1 of the Regional Water and Soil Plan for Northland.

This assessment shows that the current treatment plant is not causing detrimental effects in the receiving environment and has consistently complied with the requirements of the existing consent with respect to faecal coliforms. At times the WWTP has exceeded the allowable limits for ammonia and the treatment plant will need to be upgraded to meet the new requirements.

It is proposed to continue to utilise the existing scheme with modifications and upgrades as the flow increases to effectively treat wastewater from the East Coast Bays community.

8.4 Assessment of Alternatives

An assessment of alternatives for the East Coast Bays Wastewater Scheme was completed as required by Schedule 4 of the RMA and Policy 17.4(b)1 of the Regional Policy Statement.

As part of this initial desk top approach potential sites were identified as worthy of further investigation. The sites with the highest potential were those within the townships of Taipa and Cable Bay. These are residential sites and were excluded from the study.

Two further sites were also investigated however these were also excluded based on topography of the land, the need to incorporate buffer zones and insufficient land area.

Therefore it is concluded that the best practicable option is to continue to discharge treated effluent to the tributary of the Parapara Stream.

8.5 Consultation

Consultation has commenced with a number of stakeholders as outlined in Section 6. Consultation will be on-going during the period of the consent renewal.

8.6 Summary

Based on the analysis performed and the monitoring data that has been received, the East Coast Bays Wastewater Treatment Plant does not pose a significant effect on the receiving environment. The plant will need to be upgraded over time to incorporate sufficient capacity to treat additional flow caused by growth and development within the area as well as to reduce the level of ammonia discharged at present.

Therefore this consent should be renewed to allow for the continued operation of this valuable community resource to safely treat the wastewater from the community.

Section 9

9. References

[1] VK Consulting Environmental Engineers Ltd (July 1997) *"Far North District Council – East Coast Bays Sewage Treatment System Resource Consent 4007 – Supporting Information"*

[2] Mara DD, Alabaster GP, Pearson HW, Mills SW, (1992) "*Waste Stabilisation Ponds A Design Manual for East Africa"* (including design notes for New Zealand conditions)

[3] Northland Regional Council (1999) *"Regional Policy Statement for Northland"*

[4] Northland Regional Council (2004) *"Regional Water and Soil Plan for Northland"*

[5] Northland Regional Council (2004) "*Regional Air Quality Plan for Northland"*

[6] Far North District Council Growth Strategy Figures – Supplied by FNDC (2007)

[7] Australia and New Zealand Environment and Conservation Council (ANZECC) (2000) *"Australia and New Zealand Guidelines for Fresh and Marine Water Quality"*

[8] Far North District Council (July 2003) *"Revised Proposed Far North District Plan"*

[9] Department of Lands and Surveys New Zealand (1980) Soil Map NZMS 290 Sheet O04/05 Kaitaia – Rawene

[10] Department of Lands and Surveys New Zealand (1984) New Zealand Topographical Map, NZMS 260 Sheet O04 Kaitaia

[11] MWH (February 2003) *"A Peer Review of the Russell/Tapeka Pt Sewerage Scheme"*

[12] Metcalf & Eddy (1991) *"Wastewater Engineering: Treatment, Disposal, and Reuse"*

[13] DSIR (1990) *"New Zealand Land Resource Inventory Worksheet O04 Kaitaia"*