

4.2.3.2 Receiving Environment Monitoring

No receiving environment results are available for BOD, however dissolved oxygen has been monitored in the receiving environment and this can be used as an indication of BOD effects. The nine monitoring results completed by NRC between August 2001 and March 2005 show that the median dissolved oxygen concentration upstream of the tributary discharge (NRC Site 5939) is 2.8mg/l and that the median dissolved oxygen concentration downstream of the tributary discharge (NRC Site 5941) is 4.8mg/l.

Therefore these results show that the discharge of treated wastewater is having a positive effect on the low dissolved oxygen values present upstream of the discharge.

4.2.4 Summary of Monitoring Data

The East Coast Bays Wastewater Treatment Plant produces an effluent of good quality in terms of bacterial indicators such as faecal coliforms and pollutant indicators such as Biological Oxygen Demand.

However further upgrading work will be required to achieve an acceptable standard of ammonia reduction. It is proposed that the renewed consent apply the ANZECC 2000 guidelines for Ammonia with an acceptable lead in time to enable the Far North District Council to implement upgrading of the system to achieve these standards.

4.3 Assessment of the Effects of the Discharge to Ground from the East Coast Bays WWTP

Due to the nature of the oxidation ponds and wetlands there will be some seepage to ground from them. This seepage will be of a minor nature and as such any effect on the environment will also be minor.

4.4 Assessment of the Effects of the Discharge to Air from the East Coast Bays WWTP

The Far North District Council's aim is to operate the East Coast Bays WWTP to ensure that there is no discharge of contaminants to air 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 at or beyond the wastewater treatment system boundary.

NRC was requested to supply details of odour complaints for this system and a search of the records showed no complaints.

Section 5

5. Assessment of Alternatives Best Practicable Disposal Option

Section 17.4 (b) of the Regional Policy Statement for Northland³ requires the following with regard to discharges associated with wastewater treatment and disposal schemes:

- "1. To require that all new discharges of organic contaminants, particularly sewage and animal wastes, either be onto or into land, or be the best practicable option when compared to land disposal. Discharges shall be considered to have been disposed onto land or into land where they have been passed through soil, or a constructed wetland where there is no discharge to surface water."*
- "2. To require that all existing discharges with high organic content, particularly sewage and animal wastes, be upgraded to meet the requirements in policy 17.4 (b) 1, based on the actual and potential effects of the discharge by the year 2004, or according to an upgrading programme established as part of the conditions of a discharge permit."*

Policies 17.4(b) (1) and (2) above outline that discharges shall *"either be onto or into land, or be the best practicable option when compared to land disposal"*. It does not express a preference for land disposal and understands that the *"best practicable option"* may not be land disposal, and that alternative disposal options are appropriate and acceptable.

This section investigates the potential for land disposal from the East Coast Bays WWTP and compares this to the existing discharge location for the WWTP to determine the best practicable disposal option. This assessment is a desktop assessment without detailed site investigations, but has been carried out at a level sufficient to demonstrate the best practicable option in terms of the definition within Section 2 of the Resource Management Act.

5.1 Land Characteristics within Area of Interest

Investigations were carried out using a desktop based method. This consisted of identifying suitable areas based on the factors described below, including: proximity to the East Coast Bays WWTP, land use and zoning, soils, and topography.

5.1.1 Proximity to the East Coast Bays Wastewater Treatment Plant

To ensure that land disposal of treated wastewater is feasible it is desirable for the disposal site to be located reasonably close to the ECB WWTP in order to reduce pumping and piping costs. For the purposes of this investigation, the region of interest is within a 5 kilometre radius of the ECB WWTP. Figure 5.1 shows the region of interest for land disposal sites.

5.1.2 Zoning

The Far North District Plan⁸ outlines the relevant zonings for the area investigated. These zones are shown on FNDC Planning Map 15 included as Appendix E. The land is predominantly zoned "Coastal Living", "Rural Living" and "Rural Production".

Of these zones, only "Rural Production" would be appropriate for land disposal as the other two zones are living zones.

Further zones (Residential, Commercial, Recreational Activities and Conservation) are also present within the East Coast Bays townships of Cable Bay and Taipa however the townships have been excluded from this investigation due to the inability to irrigate to land within residentially zoned areas.

5.1.3 Sites of Significance

The Far North District Plan outlines outstanding landscapes, outstanding natural features and sites of significance to Maori. These are shown on Resource Map 15 which has been included in Appendix E. It also shows archaeological sites and the Zone Map shows historic sites.

Within the area of interest there are two sites of significance to Maori. These are described in the District Plan as:

- MS05 – 41 – Taipa – Karipori Marae and Recreational Reserve
- MS05 – 42 – Taipa – Putangarau – Waahi Tapu.

These two sites have been excluded from the investigation.

There is also an historic Maori Pa to the south of Cable Bay which is indicated on the topographical maps¹⁰ but not on the FNDC District Planning Maps.

5.1.4 Soil Types

Soil map⁹ NZMS 290 Sheet O04/05 indicates that the predominant soil types within the area of interest are:



Far
North
District
Council

Figure 5.1 – Region of Interest for
Land Disposal

Date
April
2008

Original Size: A4

Revisions

Init.	Date					
0	Draft for Review	SK	03/08			
1	Final	SK	04/08			



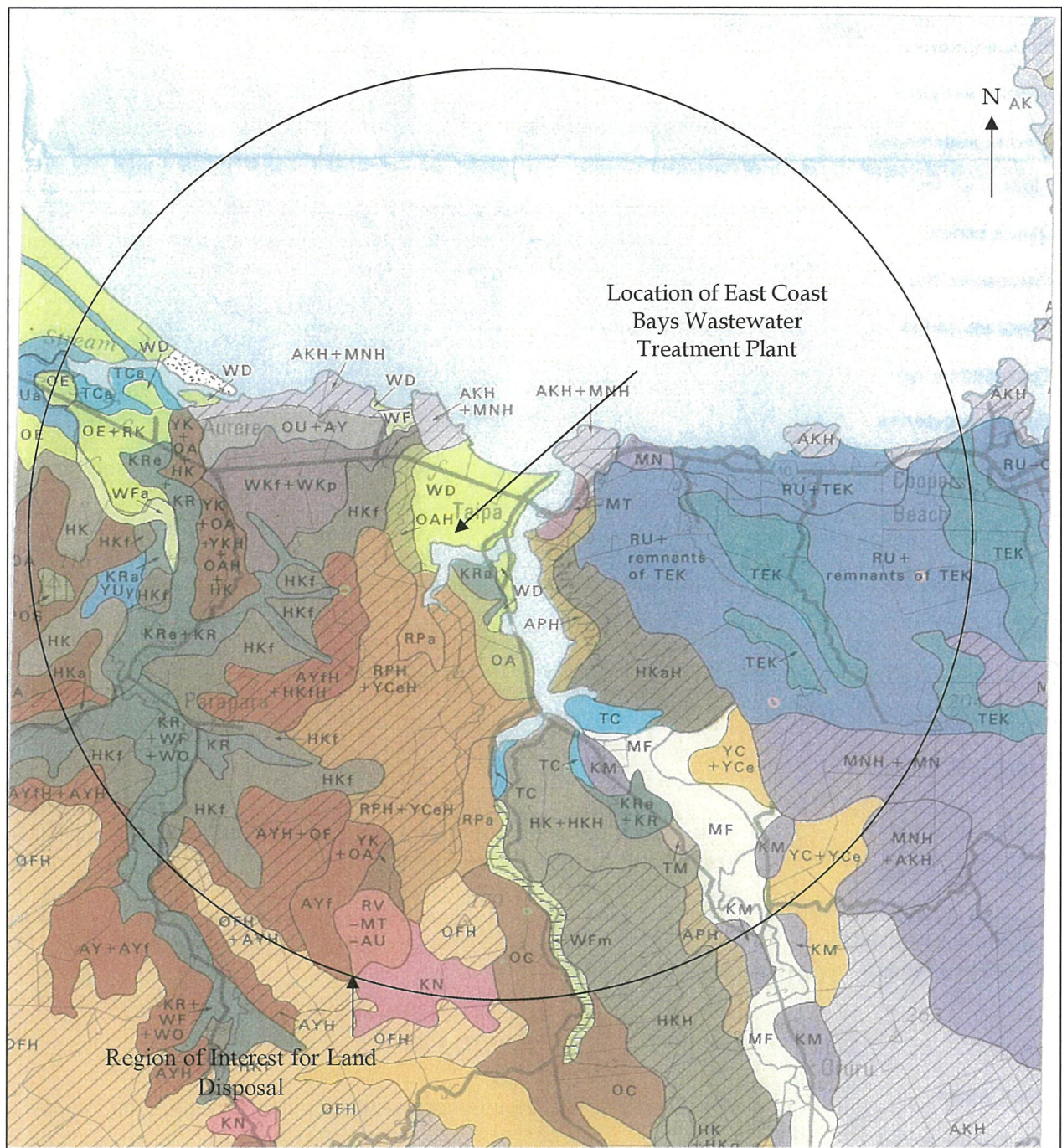
P.O. Box 10022, Te Maori Whangarei 0143, New Zealand
Telephone: 09 438 6460, Fax: 09 438 3963
Email: mail@vkenviro.co.nz
www.vkenvironmental.co.nz

- RPH Riponui Clay and Sandy Clay
Imperfectly to very poorly drained.
- YCeH Waiotira Clay
Imperfectly to very poorly drained.
- MNH+MN Mangonui Clay
Well to moderately well drained
- RU Rangiuru Clay
Well to moderately well drained
- TEK Te Kopuru Sand
Imperfectly to very poorly drained.
- HKa Hukerenui Sandy Loam
Imperfectly to very poorly drained.
- HKf Hukerenui Fine Sandy Loam
Imperfectly to very poorly drained.
- HK Hukerenui Silt Loam
Imperfectly to very poorly drained.
- AYH Awanui Clay and Sandy Clay
Imperfectly to very poorly drained.
- AYfH Awanui Fine Sandy Loam and Sandy Clay
Imperfectly to very poorly drained.
- WD Wharanaki Sand
Excessively to somewhat excessively well drained.

Of these soil types MNH+MN, RU and WD would be suitable for disposal as these are the only soil types described as “well to moderately well drained” or better. However the soil types present further problems as they are located in either the Cable Bay (RU) or Taipa (WD) townships. There may be some potential for land disposal at the south eastern edge of the study boundary (RU) and (MNH+MN).

The other soil types present are all described as “imperfectly to very poorly drained” and as such the potential for land disposal is limited on these soils.

Soils distribution is shown on Figure 5.2.



Far
North
District
Council

Figure 5.2 – Soil Types within
Region of Interest

Date

April 2008

Original Size: A4

Revisions

	Init.	Date	0	Draft for Review	SK	03/08
Drawn	SK	03/08	1	Final	SK	04/08

**VK CONSULTING
ENVIRONMENTAL
ENGINEERS LTD.**

P.O. Box 10022, Te Mairi Whangarei 0143, New Zealand
Telephone: 09-438 6460, Fax: 09-438 3969
Email: mail@vkenviro.co.nz
www.vkenvironmental.co.nz