

## 5. GRADING OF SWIMMING BEACHES AND SIGNAGE

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The purpose of this report is to advise the Council of the revised water quality guidelines and the grading of recreational beaches in the City and to recommend the installation of further information signs as required under the guidelines.

### INTRODUCTION

The Ministry for the Environment and Ministry of Health microbiological water quality guidelines have been revised as of June 2003 and create a role for territorial local authorities (TLAs) in regard to their implementation. These guidelines were reported to the Council seminar on the wastewater effluent discharge in September 2002 by the review panel. The guidelines make the point that TLAs have a duty under the Health Act 1956 to "improve, promote and protect public health" in their district and a duty, under the nuisance section (29) to cause "all proper steps to be taken to secure the abatement of the nuisance or the removal of the condition". They say that "all proper steps" includes informing the public. So there are two duties in this regard. Firstly, inspection of the district - in this case examining the Sanitary Inspection Category which may have raised issues of contamination (or nuisance conditions) and secondly, the matter of providing public notices by signs regarding the condition of the beaches. Environment Canterbury, who are responsible for undertaking the water monitoring programme, has done a first cut grading which will soon be on their website. This is based on the following procedure.

*The guidelines presented here move away from the sole use of guideline values of faecal indicator bacteria, and instead use a combination of a qualitative risk grading of the catchment, supported by the direct measurement of appropriate faecal indicators to assess the suitability of a site for recreation. In addition, alert and action guideline levels are used for surveillance throughout the bathing season. The two components to providing a grading for an individual beach are:*

- *the Sanitary Inspection Category (SIC), which generates a measure of the susceptibility of a water body to faecal contamination*
- *historical microbiological results, which generate a Microbiological Assessment Category (MAC), which provides a measurement of the actual water quality over time.*

*These two combined give an overall Suitability for Recreation Grade (SFRG), which describes the general condition of a site at any given time, based on both risk and indicator bacteria counts. This grade helps to determine whether ongoing monitoring is required, and provides the basis for telling people whether or not the water is suitable for recreational use, from a public health perspective.*

The aim of these guidelines is to provide for monitoring and reporting on the general health of beaches. The guidelines were designed to provide guidance to water managers in implementing the Resource Management Act 1991 (RMA), and the Health Act 1956 for shellfish-gathering or contact recreation. A crucial part of this is ensuring that the public are informed of the health risks in time for them to make informed decisions about whether to enter the water. Guidance is provided for three categories of water use:

- marine bathing and other contact recreation activities
- freshwater bathing and other contact recreation activities
- recreational shellfish gathering in marine waters (but not commercial shellfish harvesting).

The Ministry for the Environment is specifically concerned with ensuring that the public has ready access to regional or local authority water quality information on the potential health risks from faecal contamination of recreational waters.

The guidelines have been developed over an extensive period of consultation with regional and local councils and health authorities, and present a preferred approach to monitoring recreational waters. They are not legislated standards that must be adhered to at all times.

Environment Canterbury has undertaken an analysis of the information from past monitoring of the beaches, and the Avon Heathcote Estuary, and examined the Sanitary Inspection Category for each of these sites as set out in the table below. The guidelines provide a method for arriving at a Suitability for Recreation Grade (SFRG) as referred to above. The Guidelines document can be accessed at [www.mfe.govt.nz/publications/water/microbiological-quality-jun03/](http://www.mfe.govt.nz/publications/water/microbiological-quality-jun03/)

A brief summary was also included in the ocean outfall newsletter issue 2-October 2003 available at [www.ccc.govt.nz/HaveYourSay/OceanOutfall/relatedinfo/OceanOutfallNewsletterOctober2003.pdf](http://www.ccc.govt.nz/HaveYourSay/OceanOutfall/relatedinfo/OceanOutfallNewsletterOctober2003.pdf)

Site name	Year	n	MAC %ile	MAC Grade	SIC Source*	SIC Grade	SFRG Grade
Spencerville	1998-03	67	52	B		Very Low	Very good
Waimairi Beach	1998-03	67	140	B	3, 8?	Moderate	Good
New Brighton	1998-03	66	54	B	3, 8?	Moderate	Good
Sth Brighton Beach	2000-03	44	77	B	3, 8?	Moderate	Good
Capsian St	2000-03	44	60	B	3, 8?	Moderate	Good
Pleasant Pt Yacht Club	1998-03	74	158	B	3,6,8	High	Poor
South Shore	2000-03	43	400	C	3,6,8	High	Poor
South Spit	2000-03	44	203	C	3,6,8	High	Poor
Humphries Drive	1998-03	74	974	D	3,6,8	High	Very poor
Mt Pleasant Yacht Club	2000-03	43	421	C	3,6,8,11	High	Poor
Beachville Road	1998-03	71	139	B	3,6,8	High	Poor
Moncks Bay	1998-03	71	56	B	3,6,8	High	Poor
Sumner Beach	2000-03	43	137	B	3,6,8	High	Poor
Scarborough Beach	1998-03	69	230	C	3,6,8	High	Poor
Taylor's Mistake	1998-03	66	33	A	14	Low	Very Good

Source: Lesley Bolton-Ritchie, Environment Canterbury, 3 November 2003

\* Note: SIC Source numbers are as follows.

3 = urban stormwater protected from sewage (Moderate)

6 = communal sewage tertiary treated

8 = high incidence of bird life (Moderate)

11 = Stormwater stream (sewage overflow?) (Moderate)

14 = low intensity agricultural stormwater (Low)

## DISCUSSION

As noted from the table above a number of sites are in the "poor" category and in the case of those within the Avon-Heathcote Estuary appropriate signage, as is recommended under the guidelines, is in place. A number of actions being undertaken by the Council, in relation to the wastewater treatment plant, should improve the contribution from this source in the relatively near future. The effects of bird-life contribution to microbiological loadings in the estuarine waters are, however, largely outside the control of the Council. In the case of the beaches north of the Estuary outlet they have a "good" grading with influences only of possible bird life and urban stormwater discharges. The two beaches outside the Estuary, which appear to be influenced by the tertiary treated effluent, are Sumner and Scarborough and consequently are graded as "poor". Once the enhanced oxidation ponds are operating, in April 2004 on current projections, the primary impact on these two beaches will be urban stormwater and it is expected the SFRG will be "good" for both beaches. <sup>1</sup> For the coming summer, however, these two beaches will be graded as "poor"

The effects of the various SFRG grades, as applying to the sites above, are set out below:

- "Very Good" Considered satisfactory for swimming at all times
- "Good" Satisfactory for swimming most of the time. Monitored regularly throughout the summer season and warning signs erected if water quality deteriorates.
- "Poor" Generally not satisfactory for swimming particularly for the very young, the very old, and those with compromised immunity. Permanent signs may be erected at these sites although with weekly monitoring temporary warnings may be used.
- "Very Poor" Avoid swimming as there are usually permanent discharges of faecal material. Permanent signage erected at the beach stating swimming is not recommended.

<sup>1</sup> environment, *Report on the effect of wastewater treatment plant upgrades on selected recreational sites in the Avon-Heathcote Estuary and the open coast*, Johnsonville, 10 September 2002

The Guidelines also contain a process of indicating, from the weekly microbiological sampling being undertaken by Environment Canterbury, short-term exceedences which trigger “alert” or “action” activities. These are as follows<sup>2</sup>;

**Alert/Amber Mode:** Comes into action when a single sample greater than 140 enterococci/100 mL is measured. Action to be taken includes increase sampling to daily (initial samples will be used to confirm if a problem exists). Consult the Catchment Assessment Checklist to assist in identifying possible sources. Undertake a sanitary survey, and identify sources of contamination.

**Action/Red Mode:** Comes into action when two consecutive single samples (resample within 24 hours of receiving the first sample results, or as soon as is practicable) greater than 280 enterococci/100 mL is measured. Action to be taken includes increase sampling to daily (initial samples will be used to confirm if a problem exists). Consult the Catchment Assessment Checklist to assist in identifying possible sources. Undertake a sanitary survey, and identify sources of contamination. Erect warning signs. Inform public through the media that a public health problem exists.

As noted above the Guidelines suggest that those beaches that are designated “Poor” or “Very Poor” should be provided with signs indicating that there is some risk to health from swimming in the water. The Council has already provided such signs in the Estuary area where the majority of “Poor” or “Very Poor” sites exist. It is also noted that these sites would generally fail to meet the recreational shellfish-gathering bacteriological guidelines values. The current signs in the Estuary also indicate that health risk exists in those areas.

The Guidelines document contains a section that outlines an approach for clarifying roles and responsibilities at the regional level by way of protocols, agreed to by the different agencies that have a role in monitoring and reporting recreational water quality. A draft of such a protocol, prepared by Community and Public Health on behalf of the Medical Officer of Health, is being examined for possible adoption. The Guidelines also presents a recommended framework for the roles regional councils, territorial local authorities, unitary councils and health agencies will have with respect to recreational water-quality monitoring and reporting. This is set out below.

*The Ministry for the Environment and Ministry of Health have agreed on the following recommended framework for roles and responsibilities in relation to recreational waters:*

- i The regional council co-ordinates the monitoring and reporting strategy.*
- ii The regional council implements surveillance and alert-level monitoring.*
- iii The Medical Officer of Health reviews the effectiveness of the monitoring and reporting strategy.*
- iv The regional council informs the Medical Officer of Health and territorial authority if alert or action levels are reached.*
- v The Medical Officer of Health will ensure that the territorial authority is informed.*
- vi The territorial authority will inform the public when the action level is exceeded – the Medical Officer of Health will ensure the public is informed within agreed timeframes.*
- vii If the action level is reached, the territorial authority will undertake nuisance monitoring and cause all proper steps to be taken to abate or remove the nuisance. On occasion it may be more appropriate for the regional council to undertake this duty. The Medical Officer of Health will provide advice and ensure that proper steps are taken by the territorial local authorities and/or regional councils.*
- viii It is the responsibility of the Medical Officer of Health to ensure that sites with modified grades are audited in accordance with these guidelines.*
- ix The regional council will collate the information for state of the environment reporting and a review of management policies.*

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<sup>2</sup> Ministry for the Environment and Ministry of Health, *Microbiological Water Quality Guidelines for Marine and Freshwater Recreational Areas*, Ministry for the Environment, Wellington, June 2002

## CONCLUSIONS

Most of the sea beach areas, from Spencerville to Caspian Street, fall within the "Good" SFRG category, as does Taylors Mistake beach which is graded "Very Good" but the two beaches at Sumner and Scarborough are graded "Poor". The recreational areas within the Estuary are graded either "Poor" or in one case "Very Poor" and there is signage already in place for those areas. In the case of Sumner and Scarborough beaches the Guidelines would suggest that these do not necessarily require permanent signage, although they will require weekly monitoring of microbiological quality. In the past season they did reach the "Alert" trigger level on one occasion each during the summer season. This would, if complying with the Guidelines, require sampling frequency to be increased to daily and possible sources of the contamination to be identified and where possible managed. It is only when the "Action" mode occurs that the erection of warning signs is seen to be needed and the public advised through the media that a public health problem exists.

It is considered that there are two main options for dealing with this matter at present.

Option 1. Accept that there is a raised risk of health effects from swimming at both Sumner and Scarborough beaches and provide signage on a permanent basis indicating that such a risk exists. This would have the benefit that there would be no need for any temporary signs should the "Action" level be reached, although on past history at these sites this was likely to be rare. As noted above it is likely that, following the enhancement of the ponds, these beaches may be graded as "good" in future years. A further benefit could be that there could be no criticism of the Council should some person become unwell which may be associated with undertaking recreational activities at these beaches. However, there are already signs in place regarding the health risk from eating shellfish from the area and a large number of signs for other purposes, including those regarding dogs. Additional signs on a permanent basis may have little long-term effect. Another major disbenefit could be the view that an extremely popular Christchurch beach was not suitable for swimming at any time.

Option 2. While accepting there is some raised risk of health effects from swimming at both Sumner and Scarborough beaches, do not provide permanent signage but be prepared to place temporary signage advising of the health risk once the "Action" level occurs, and undertake extensive media advertising both when the signs go up and when they are taken down. The benefit of this approach would be that there would be no permanent signage, although the increased risk could be present prior to signage being put in place. As noted above on past history the "Action" level being reached appears rare. The major disbenefit could be the need to have temporary signage available for placement at any time, and the need for staff to place this whenever the "Action" level was reached. The need for wide media advertising would also add to costs of this option. Parks and Waterways staff have indicated they would be able to undertake the placement of temporary signs if those were required during the period.

The projected improvements to the Oxidation Ponds early in 2004 are expected to mean that both the Sumner and Scarborough beaches would be graded "good" by the time of the 2004/05 summer.

**Recommendation:** That subject to supporting legal advice, the Council adopt Option 2 above for the 2003/04 summer and the matter be reviewed once the sampling programme for that period has been examined.