



STAFF REPORT

TO: Environment & Planning Committee

FROM: Trevor James, Resource Scientist

REFERENCE: W416

SUBJECT: **SUMMER 2007/2008 RECREATIONAL WATER QUALITY SAMPLING PROGRAMME - REPORT EP08/05/03-** Report prepared for 29 May Meeting

1. INTRODUCTION

This report outlines the key results of bathing water quality monitoring at Tasman's 23 monitored beaches, swimming holes and water ski areas over the 2007/2008 summer. This is the full suite of sites covering both river and marine areas in Tasman.

2. BACKGROUND

In 2005, in consultation with Nelson Marlborough Public Health, the major camping grounds (Tukurua, Pohara, Kaiteriteri and Mapua) and MfE, TDC made a decision to trial a change to the bathing water quality monitoring programme whereby the frequency of summer sampling of the full suite of bathing water quality sites will be reduced to every second summer. In the intervening year (when not sampling the full suite of sites), only the three most popular sites (Kaiteriteri, Mapua and Rabbit Island) are surveyed and a sanitary survey (intensive sampling at a site with the poorest water quality in order to determine the source of faecal contamination) is conducted with the freed up resources. This enables the programme to stay within its annual budget while still maintaining weekly sampling at the most regularly-used sites. During summers when a site is monitored, the frequency of sampling is almost weekly for the three most popular sites and approximately fortnightly for the rest.

No complaints or concerns have been received in relation to this reduced frequency of sampling in the 2006-2007 summer. No sampling was undertaken at Torrent Bay or Anchorage this season and there are no plans to resume sampling at these sites. This is because there have been no results over the whole record at Torrent Bay above the detection limit (10 Enterococci/100ml) and for Anchorage Beach there were only two results in 2001 that were at or just above detection. This is for all 25 samples taken at each site since 1999.

The 2005-2006 season's sanitary survey was conducted at Pohara Creek, the creek which flows out onto Pohara Beach just to the east of Pohara Campground. That survey successfully isolated three sources of contamination and the Environmental Health Officer (David Lewis) followed this up with the associated landowners.

3. RESULTS AND DISCUSSION

Council results were posted on the Council website within three days of each sampling event (see <http://www.tasman.govt.nz/index.php?Swimmingwaterquality>). Please view this site for further information on individual sites.

A total of 44 exceedences of national guidelines¹ were recorded across the 23 regular bathing water sites for the 2007-2008 season (see Appendix Three for a map of the sites). This was out of 338 samples taken which equates to 13% of samples exceeding guidelines (see Figures 1 and 2). Of these exceedences 24 were of alarm levels (the highest level) with eight at marine sites and 16 at freshwater sites. There were 20 exceedences of alert levels of the national guidelines for the season with 12 at marine sites and eight at freshwater sites.

While the percentage of exceedences was relatively high this summer compared to previous years (see Figure 3), particularly for marine sites, a few 'freshes' (rainfall events occurring after a period of several days or over a week of fine weather) accounted for many of the exceedences. In particular, rainfall events on 19 December, 10 and 22 January accounted for 36 of the exceedences (11, 11 and 14 exceedences for each of these events respectively).

Prior to the 2004-2005 summer, recreational water quality sites were not sampled during rainfall events. However, the national guidelines explicitly state that sampling should occur regardless of rain but in conditions suitable for contact recreation. TDC monitoring methods define unsuitable as not flooded to the point where it is physically unsafe for contact recreation (ie with swift currents) and low water clarity (less than 0.5m) affecting amenity and the willingness to enter the water. This change in policy will have a significant bearing on these results.

The rainfall patterns over the period can be found in Appendix One.

The Roding River, Waimea River, and Motueka River at Alexander Bridge had the highest number of exceedences (three alarms and one alert at each) but only one of these was not related to the above-mentioned rainfall events.

Three sites remained within guidelines for the whole season: Little Kaiteriteri, Kina Ski Lanes, Rabbit Island Main Beach. Although the two results Motupiko at Quinneys Bush were within guidelines, this number of samples is too few to make any conclusion².

Mapua and Kaiteriteri Beaches, the most popular beaches along with Rabbit Island Main Beach, only had one exceedence each and this was related to the 22 January rainfall event.

¹ Microbiological Water Quality Guidelines for Marine and Freshwater Recreational Areas, Ministry for the Environment and Ministry of Health, June 2003. ISBN: 0-478-24091-0

² Motupiko at Quinneys Bush is a site that try to collect samples when staff are passing. This is because it is out on it own and over an hours drive out of the way and it is not as popular as some of the other sampling sites.

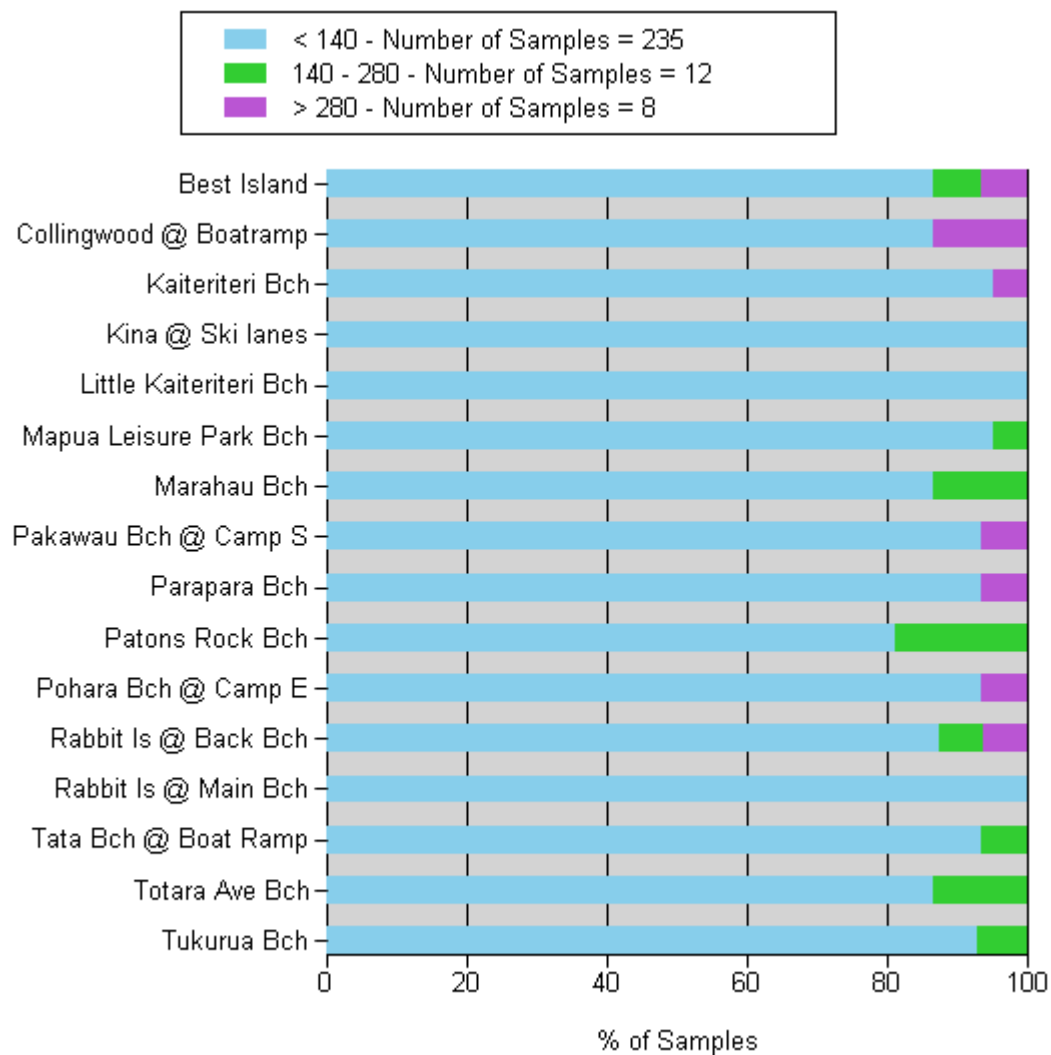


Figure 1: Percentage of samples exceeding national guidelines for contact recreation water quality at marine beaches for the 2007-2008 season.

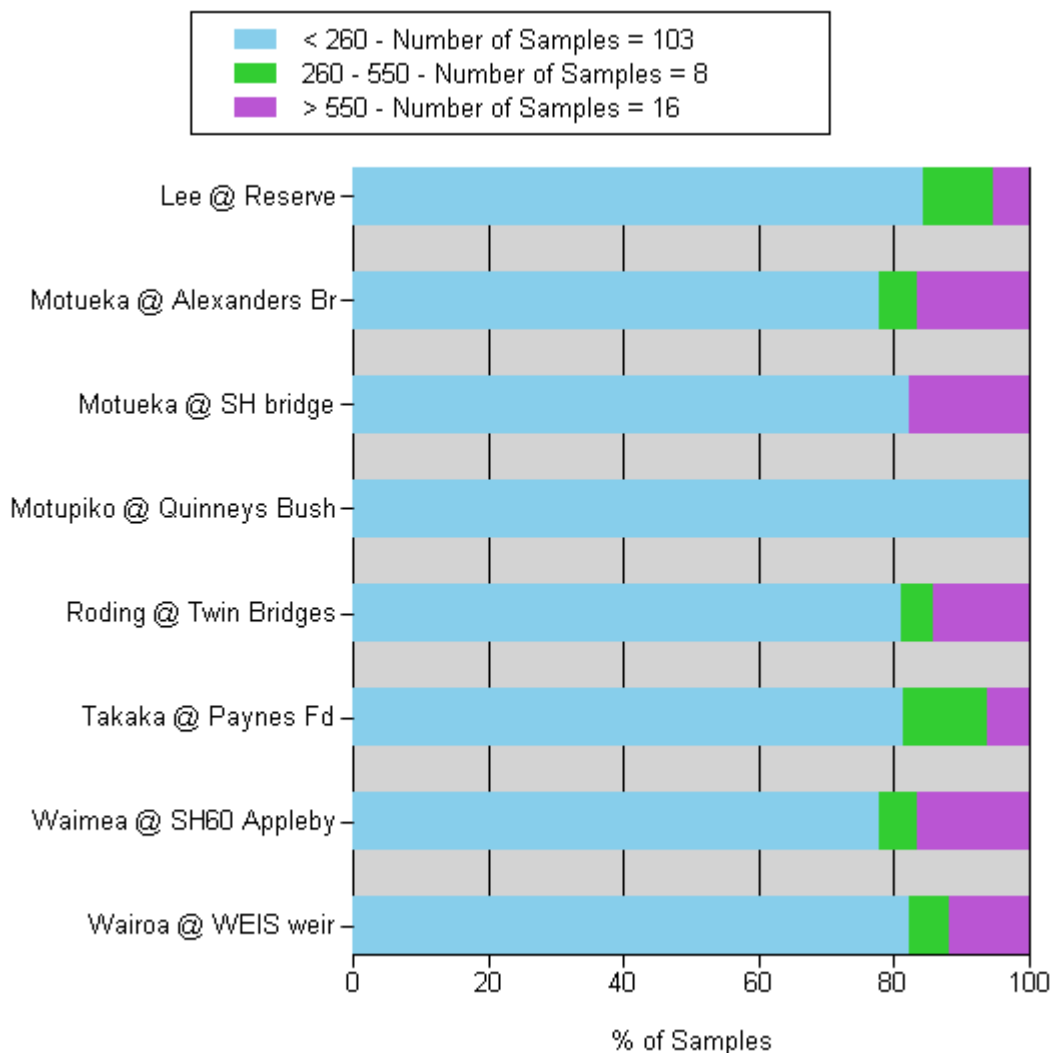


Figure 2: Percentage of samples exceeding national guidelines for contact recreation water quality at freshwater sites for the 2007-2008 season.

Only one of 14 samples taken at Pohara exceeded the national guideline. The exceedence at this site (about four times the guideline) was after some heavy rain³ in the Takaka catchment and moderate rainfall⁴ near Pohara. Brown floodwaters from the Takaka River were evident at this site upon sample collection. From this data it appears that the sanitary survey in the Pohara Creek catchment was successful, although more sampling would be needed to confirm this.

According to national guidelines the monitoring authority must resample as soon as possible after becoming aware of an exceedence of Alarm levels. If a consecutive sample also exceeds then warning signs should be erected. At only two sites did this repeat sample also exceed guidelines; these sites were Takaka River and Rabbit Island Back Beach (resampled within two days of the first sample taken). As these exceedences were related to rainfall, and experience has shown that sometimes these sites take longer to clear, it was decided to take a third sample prior to any management response, such as signage. The third sample taken several days after the second sample ended up being well within guidelines so no action was taken.

³ 106mm at Takaka at Harwoods in the 36 hours prior to sampling

⁴ 30mm at Motupipi River at Reillys in the 36 hours prior to sampling

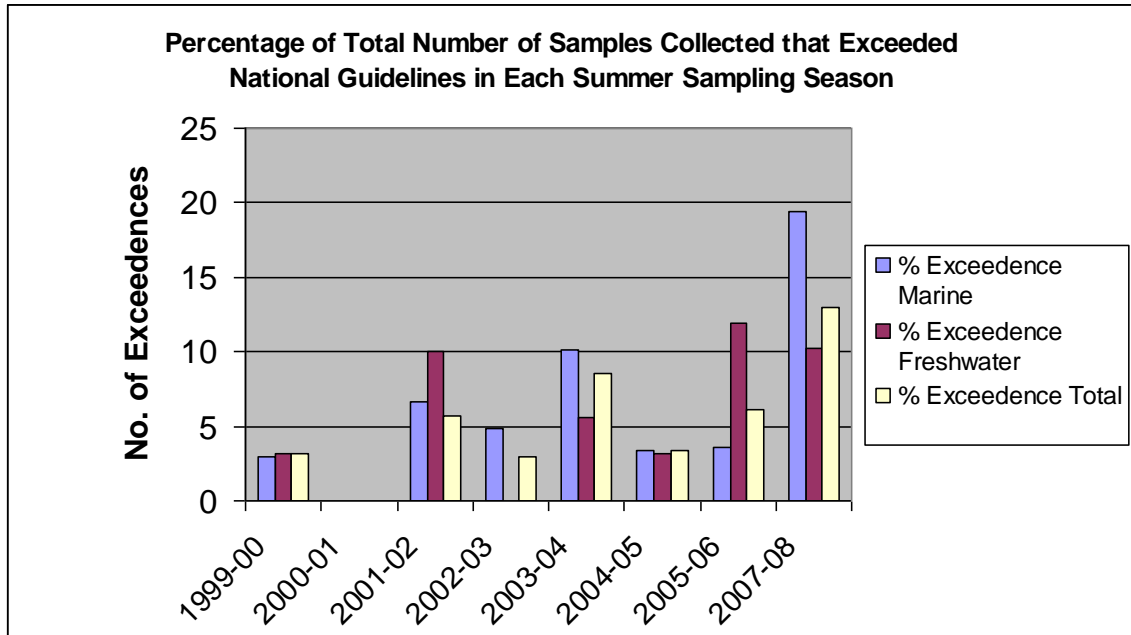


Figure 3: Percentage of Total Number of Samples Collected that Exceeded National Guidelines in Each Summer Sampling Season.

4. NEXT SAMPLING SEASON

The highest priority for a sanitary survey next summer (2008-2009) would be the Roding catchment as this appears to have seen a deterioration in water quality since 2003-2004 (see Appendix Two). The Lee River downstream of the Roding appears to be affected by faecal contamination in the Roding as shown by the close correlation of the results for the two sites (see Appendix Two).

Another priority is one of the catchments from the "State of the Environment" river water quality monitoring programme: Murchison Creek that runs through Murchison. While this is not a recreation water quality site, it does have potential to affect recreational waters in the Buller River downstream of Murchison and there are adverse ecological effects occurring as a result of impacts in this catchment.

While the Motueka River could be considered a contender, given this season's result, it is such a big catchment that faecal sources will take a very large effort to fully quantify. However, there are on-going efforts already under way in this catchment to reduce the impact of faecal matter entering stream. An example of this is in the Sherry Catchment, a tributary of the Wangapeka. There are other farming areas in the Motueka Catchment such as the Dove River and Kikiwa Stream that warrant some further investigation also.

5. CONCLUSIONS

While results this season showed a high number of exceedences of national recreational water quality guidelines compared to previous years, three rainfall events accounted for over 80% of these. With those results aside, water quality at bathing beaches was very good.

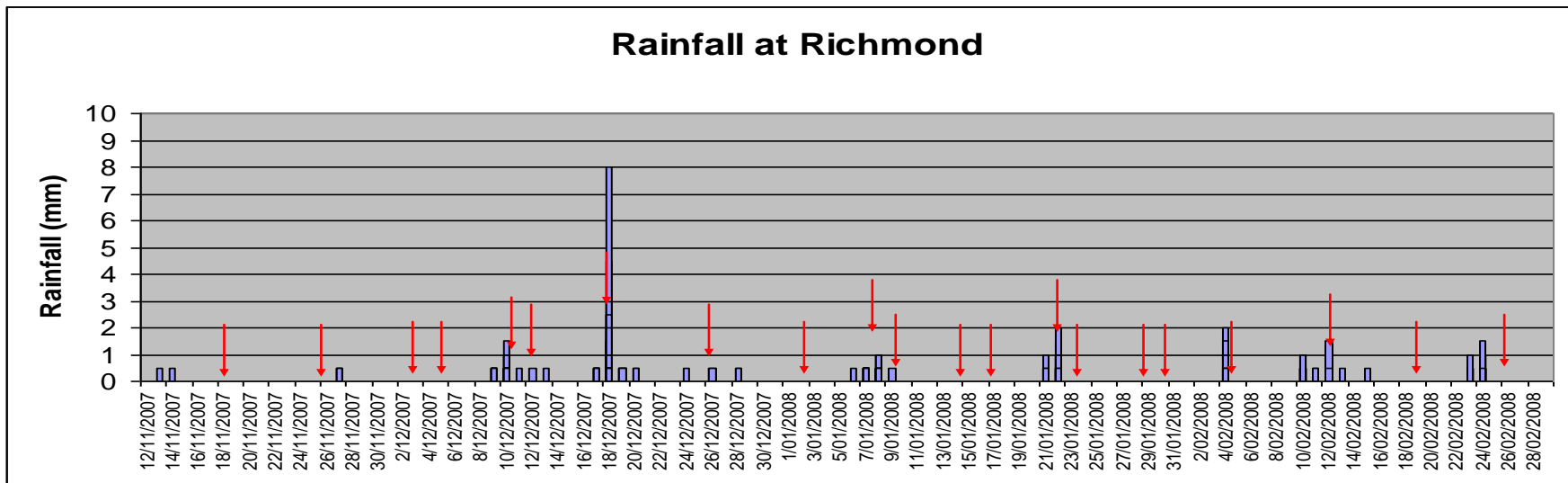
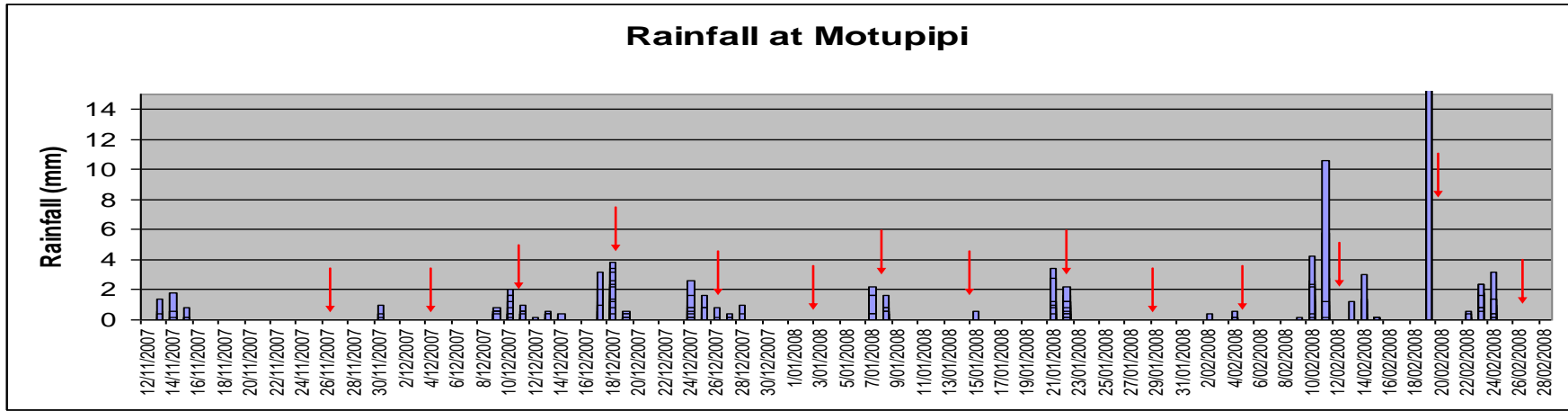
6. RECOMMENDATIONS

It is recommended that the Committee notes the contents of the report

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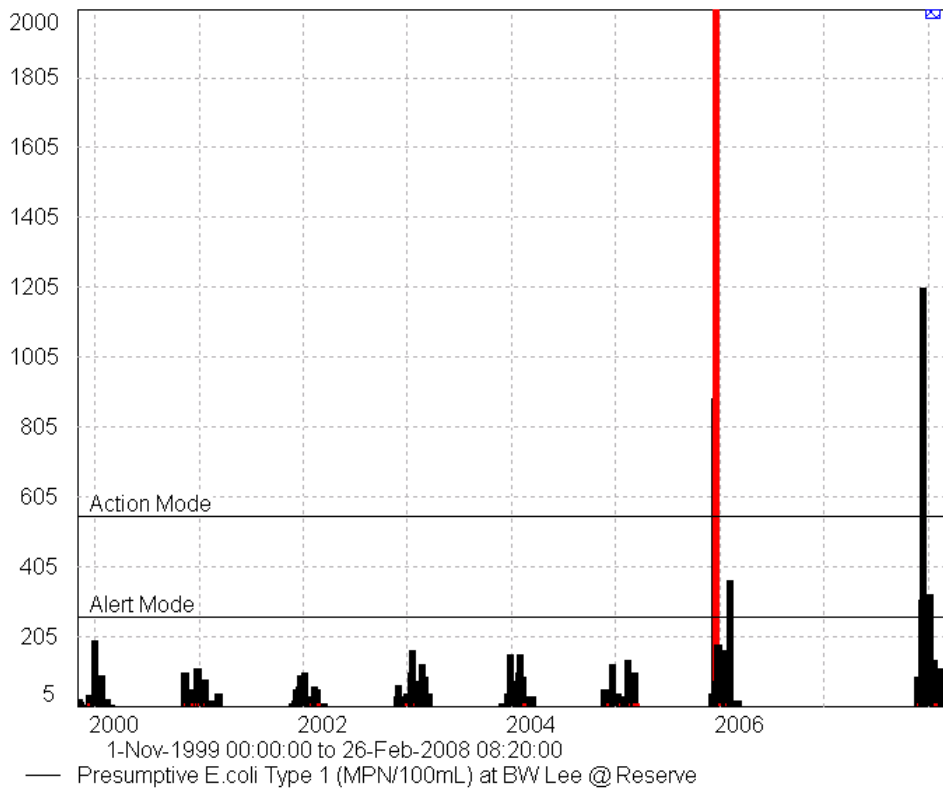
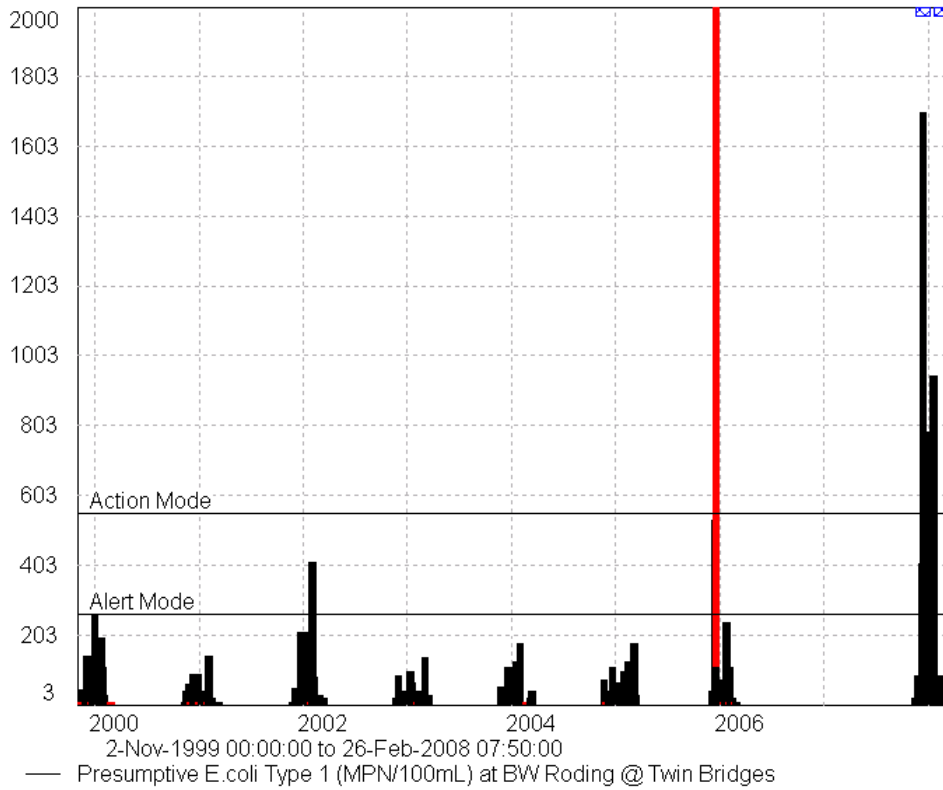
Appendix One:

Rainfall Patterns related to sampling events. Motupipi rainfall is indicative of Golden Bay sites, and Richmond for Tasman Bay sites. Red arrows indicate the sampling day (14 days for Golden Bay sites and 21 days for Kaiteriteri Beach, Mapua Beach, Rabbit Island Main Beach, Lee River Reserve, and Roding River at Twin Bridges).



Appendix Two:

E.coli results for Roding River at Twin Bridges (top graph) and Lee River at Reserve (bottom graph) showing for a second consecutive summer of several exceedences compared to no recorded exceedences prior to 2006-2007.



Appendix Three:

Sampling sites for the Contact Recreation Water Quality Monitoring Programme.



Recreational Bathing Water Monitoring Sites 2005-2006

March 2006

