Urenui and Onaero Beach Camps Monitoring Programme Annual Report 2016-2017

Technical Report 2017-34

ISSN: 1178-1467 (Online)
Document: 1870501 (Word)
Document: 1910375 (Pdf)

Taranaki Regional Council
Private Bag 713
STRATFORD

November 2017

Executive summary

New Plymouth District Council (NPDC) operates the sewage disposal systems located at Urenui Beach Camp and Onaero Bay Holiday Park. NPDC holds resource consents to allow it to discharge septic tank treated sewage to groundwater via infiltration trenches at each of the motor camps. This report for the period July 2016 to June 2017 describes the monitoring programme implemented by the Taranaki Regional Council (the Council) to assess NPDC's environmental performance during the period under review. The report also details the results of the monitoring undertaken and assesses the environmental effects of NPDC's activities.

NPDC holds one resource consent per beach camp, each of which has five special conditions setting out the requirements that NPDC must satisfy.

During the monitoring period, NPDC demonstrated an overall high level of environmental performance.

The Council's monitoring programme for the year under review included three inspections per motor camp. One of these inspections included routine bacteriological sampling at four sites at Urenui and five sites at Onaero.

An additional two samples were also collected at Onaero, in connection with the elevated faecal indicator bacteria counts recorded in the Onaero River in recent years. The two additional sampling sites were included to differentiate any potential effects of the pump station on the water quality of the river, from the effects of the unnamed tributary and effluent ponds further upstream.

The water samples collected at Urenui failed to indicate any adverse environmental effects caused by the Urenui Beach Camp's sewage treatment system.

Results from the water samples collected at Onaero suggest that the pump station may be adversely affecting water quality in the lower reach of the Onaero River, although further monitoring is required in order to conclusively identify the source of faecal contamination.

During the year, high levels of environmental and administrative performance and compliance were demonstrated by NPDC with regards to the resource consent for the Urenui Beach Camp (2046-3) and Onaero Bay Holiday Park (1389-3), as indicated by site inspections and bacteriological monitoring of coastal and riverine waters.

For reference, in the 2016-2017 year, 74% of consent holders in Taranaki monitored through tailored compliance monitoring programmes achieved a high level of environmental performance and compliance with their consents, while another 21% demonstrated a good level of environmental performance and compliance with their consents.

In terms of overall environmental and compliance performance by the consent holder over the last several years, this report shows that the consent holder's performance remains at a high level.

This report includes recommendations for the 2017-2018 year.

Table of contents

List of tables

List of figures

List of photos

1. Introduction

1.1. Compliance monitoring programme reports and the Resource Management Act 1991

1.1.1. Introduction

This report is for the period July 2016 to June 2017 by the Taranaki Regional Council (the Council) describing the monitoring programme associated with resource consents held by New Plymouth District Council (NPDC) for the disposal of treated sewage at the Urenui and Onaero beach camps. NPDC operates the sewage treatment systems at each of the motor camps.

This report covers the results and findings of the monitoring programme implemented by the Council in respect of the consents held by NPDC that relate to discharges of septic tank treated sewage effluent to groundwater via soakage trenches. This is the 27th report to be prepared by the Council to cover NPDC's water discharges and their effects.

1.1.2. Structure of this report

Section 1 of this report is a background section. It sets out general information about:

- consent compliance monitoring under the *Resource Management Act* 1991 (RMA) and the Council's obligations;
- the Council's approach to monitoring sites though annual programmes;
- the resource consents held by NPDC for the two campgrounds;
- the nature of the monitoring programme in place for the period under review; and
- a description of the activities and operations conducted at the Urenui and Onaero beach camps.

Section 2 presents the results of monitoring during the period under review, including scientific and technical data.

Section 3 discusses the results, their interpretations, and their significance for the environment.

Section 4 presents recommendations to be implemented in the 2016-2017 monitoring year.

A glossary of common abbreviations and scientific terms, and a bibliography, are presented at the end of the report.

1.1.3. The Resource Management Act 1991 and monitoring

The RMA primarily addresses environmental 'effects' which are defined as positive or adverse, temporary or permanent, past, present or future, or cumulative. Effects may arise in relation to:

a. the neighbourhood or the wider community around an activity, and may include cultural and social-economic effects;

b. physical effects on the locality, including landscape, amenity and visual effects;

c. ecosystems, including effects on plants, animals, or habitats, whether aquatic or terrestrial;

d. natural and physical resources having special significance (for example recreational, cultural, or aesthetic); and

e. risks to the neighbourhood or environment.

In drafting and reviewing conditions on discharge permits, and in implementing monitoring programmes, the Council is recognising the comprehensive meaning of 'effects' inasmuch as is appropriate for each activity. Monitoring programmes are not only based on existing permit conditions, but also on the obligations of the RMA to assess the effects of the exercise of consents. In accordance with Section 35 of the RMA, the Council undertakes compliance monitoring for consents and rules in regional plans, and maintains an overview of the performance of resource users and consent holders. Compliance monitoring, including both activity and impact monitoring, enables the Council to continually re-evaluate its approach and that of consent holders to resource management and, ultimately, through the refinement of methods and considered responsible resource utilisation, to move closer to achieving sustainable development of the region's resources.

1.1.4. Evaluation of environmental and administrative performance

Besides discussing the various details of the performance and extent of compliance by NPDC, this report also assigns them a rating for their environmental and administrative performance during the period under review.

Environmental performance is concerned with actual or likely effects on the receiving environment from the activities during the monitoring year. Administrative performance is concerned with NPDC's approach to demonstrating consent compliance in site operations and management including the timely provision of information to Council (such as contingency plans and water take data) in accordance with consent conditions.

Events that were beyond the control of the consent holder and unforeseeable (that is a defence under the provisions of the RMA can be established) may be excluded with regard to the performance rating applied. For example loss of data due to a flood destroying deployed field equipment.

The categories used by the Council for this monitoring period, and their interpretations, are as follows:

Environmental Performance

High: No or inconsequential (short-term duration, less than minor in severity) breaches of consent or regional plan parameters resulting from the activity; no adverse effects of significance noted or likely in the receiving environment. The Council did not record any verified unauthorised incidents involving significant environmental impacts and was not obliged to issue any abatement notices or infringement notices in relation to such impacts.

Good: Likely or actual adverse effects of activities on the receiving environment were negligible or minor at most. There were some such issues noted during monitoring, from self reports, or in response to unauthorised incident reports, but these items were not critical, and follow-up inspections showed they have been dealt with. These minor issues were resolved positively, co-operatively, and quickly. The Council was not obliged to issue any abatement notices or infringement notices in relation to the minor non-compliant effects; however abatement notices may have been issued to mitigate an identified potential for an environmental effect to occur.

For example:

- High suspended solid values recorded in discharge samples, however the discharge was to land or to receiving waters that were in high flow at the time;
- Strong odour beyond boundary but no residential properties or other recipient nearby.

Improvement required: Likely or actual adverse effects of activities on the receiving environment were more than minor, but not substantial. There were some issues noted during monitoring, from self reports, or in response to unauthorised incident reports. Cumulative adverse effects of a persistent

minor non-compliant activity could elevate a minor issue to this level. Abatement notices and infringement notices may have been issued in respect of effects.

Poor: Likely or actual adverse effects of activities on the receiving environment were significant. There were some items noted during monitoring, from self reports, or in response to unauthorised incident reports. Cumulative adverse effects of a persistent moderate non-compliant activity could elevate an 'improvement required' issue to this level. Typically there were grounds for either a prosecution or an infringement notice in respect of effects.

Administrative performance

High: The administrative requirements of the resource consents were met, or any failure to do this had trivial consequences and was addressed promptly and co-operatively.

Good: Perhaps some administrative requirements of the resource consents were not met at a particular time, however this was addressed without repeated interventions from the Council staff. Alternatively adequate reason was provided for matters such as the no or late provision of information, interpretation of 'best practical option' for avoiding potential effects, etc.

Improvement required: Repeated interventions to meet the administrative requirements of the resource consents were made by Council staff. These matters took some time to resolve, or remained unresolved at the end of the period under review. The Council may have issued an abatement notice to attain compliance.

Poor: Material failings to meet the administrative requirements of the resource consents. Significant intervention by the Council was required. Typically there were grounds for an infringement notice.

For reference, in the 2016-2017 year, 74% of consent holders in Taranaki monitored through tailored compliance monitoring programmes achieved a high level of environmental performance and compliance with their consents, while another 21% demonstrated a good level of environmental performance and compliance with their consents.

1.2. Process description

1.2.1. Urenui Beach Camp

The current sewage disposal system at Urenui Beach Camp has been in use since 1987. Prior to this, septic tank waste was pumped to a nearby cliff top and discharged to the sea below. This was found to be unsatisfactory, as the septic tank retention time was about 21 hours during the peak summer usage period, resulting in inadequate treatment of sewage.

With the current disposal system, the waste from the campsite receives primary treatment through a septic tank system and is then pumped to groundwater via soakage trenches located approximately 50 m from the edge of the cliff, to the northeast of the camp and golf course. Regular maintenance ensures continued satisfactory performance of the system.

Photo 1 Urenui Estuary and Beach Camp

1.2.2. Onaero Bay Holiday Park

The current sewage disposal system at the Onaero Bay Holiday Park has been in use since 1984. Prior to this, waste was collected in septic tanks and the overflow gravitated to a small pumping station on the northern side of the Onaero River. The septic tank waste was then pumped to the top of a nearby ridge and into a soakage pit (approximately 4 x 2 x 3 m). This was found to be unsatisfactory during the peak summer usage period, resulting in inadequate treatment of sewage.

The current disposal system treats waste from the campsite in a similar manner to the Urenui Beach Camp sewage treatment system. Waste receives primary treatment through a septic tank system and is then pumped to soakage trenches located on high ground, approximately 300 m away.

1.3. Resource consents

1.3.1. Water discharge permit

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a Regional Plan, or by national regulations.

NPDC holds water discharge permit **2046-3** to discharge up to 85 m^3/day of septic tank treated sewage effluent via soakage trenches to groundwater in the vicinity of the Urenui River. This consent was originally issued on 21 August 1991 as a water right under the Water and Soil Conservation Act 1967. This was re-issued by the Council on 6 December 2002 as a discharge permit under Section 386(1)(e)(ii) of the RMA. It is due to expire on 1 June 2021.

The discharge permit has five special conditions attached.

Condition 1 requires bacteriological monitoring of the coastal waters of the foreshore and the Urenui River.

Condition 2 requires the consent holder to ensure proper maintenance of the septic tank, pumping station and soakage trenches.

Condition 3 requires the consent holder to provide records of daily effluent volumes discharged.

Condition 4 requires the consent holder to provide a contingency plan.

Condition 5 deals with review of the consent.

NPDC holds water discharge permit **1389-3** to discharge up to 17 m^3/day of septic tank treated sewage effluent via soakage trenches to groundwater in the vicinity of the Onaero River. This consent was originally issued on 21 August 1991 as a water right under the Water and Soil Conservation Act 1967. This was re-

issued by the Council on 6 December 2002 as a discharge permit under Section 386(1)(e)(ii) of the RMA. It is due to expire on 1 June 2021.

The discharge permit has five special conditions attached.

Condition 1 of the consent requires bacteriological monitoring of the coastal waters of the foreshore and the Onaero River.

Condition 2 requires the consent holder to ensure proper maintenance of the septic tank, pumping station and soakage trenches.

Condition 3 requires the consent holder to provide records of daily effluent volumes discharged.

Condition 4 requires the consent holder to provide a contingency plan.

Condition 5 deals with review of the consent.

Copies of the permits are attached to this report in Appendix I.

1.4. Monitoring programme

1.4.1. Introduction

Section 35 of the RMA sets obligations upon the Council to gather information, monitor and conduct research on the exercise of resource consents within the Taranaki region. The Council is also required to assess the effects arising from the exercising of these consents and report upon them.

The Council may therefore make and record measurements of physical and chemical parameters, take samples for analysis, carry out surveys and inspections, conduct investigations and seek information from consent holders.

The monitoring programme for the Urenui and Onaero beach camps consisted of three primary components.

1.4.2. Programme liaison and management

There is generally a significant investment of time and resources by the Council in:

- ongoing liaison with resource consent holders over consent conditions and their interpretation and application;
- in discussion over monitoring requirements;
- preparation for any reviews;
- renewals;
- new consents;
- advice on the Council's environmental management strategies and content of regional plans; and
- consultation on associated matters.

1.4.3. Site inspections

The Urenui and Onaero beach camps were both visited three times during the monitoring period. With regard to consents for the discharge to water, the main points of interest were plant processes with potential or actual discharges to receiving watercourses. The neighbourhood was surveyed for adverse environmental effects.

1.4.4. Bacteriological sampling

The Council undertook bacteriological sampling in conjunction with the first post-Christmas inspections in January 2017.

Samples were collected at four sites in conjunction with the Urenui Beach Camp: two river and two coastal sites (Figure 1). Samples were collected at five routinely monitored sites in conjunction with the Onaero Bay Holiday Park: two river and three coastal sites (Figure 2). As recommended in the 2015-2016 report, an additional two samples were also collected, in response to elevated faecal indicator bacteria (FIB) counts in the Onaero River in recent years; one from an unnamed tributary and another approximately 25 m upstream of the pump station (Figure 2). The two additional sampling sites were included to differentiate any potential effects of the pump station on the water quality of the river, from the effects of the unnamed tributary and effluent ponds. All samples were analysed for temperature, conductivity, faecal coliforms, *Escherichia coli* and enterococci bacteria. FIB were monitored to provide an indication of potential contamination of the water by animal and/or human excreta.

As the beaches and rivers around the Urenui and Onaero beach camps are popular summer swimming areas, water quality at these sites is of particular interest. In 2003, the Ministry for the Environment (MfE) developed the Guidelines for Recreational Water Quality to assess the safety of water for contact recreation. The coastal guidelines focus on enterococci as these bacteria have the ability to survive in marine water, providing the closest correlation with health effects in New Zealand coastal waters (MfE, 2003). For freshwater, the MfE (2003) guidelines use *E. coli* as the preferred indicator (Table 1). 'Alert' and 'Action' guideline levels are summarised in Table 1 and are based on keeping illness risk associated with recreational use to less than approximately 2%.

Table 1 Recreational bathing guidelines (MfE, 2003)

	Indicator	Mode		
		Surveillance	Alert	Action
Marine	Enterococci (cfu/100 ml)	No single sample >140	Single sample >140	Two consecutive single samples >280
Freshwater	*E. coli* (cfu/100 ml)	No single sample >260	Single sample >260	Single sample >550

In addition to water quality monitoring during inspections, bacteriological samples were also collected from in front of the Onaero Surf Club (SEA900085) as part of the Council's State of Environment Monitoring Programme during the 2016-2017 monitoring period. Results from this programme are available in the Council's 2016-2017 Bathing Beach Water Quality State of the Environment Monitoring Report (TRC, 2017).

Photo 2 Urenui Beach, May 2017

Photo 3 Onaero Beach, May 2015

2. Results

2.1. Urenui Beach Camp

2.1.1. Inspections

15 December 2016

Conditions were rainy with a moderate northerly wind at the time of the inspection. The camp manager reported that there had been no issues with the sewerage system on the camp side of the pump station since the previous inspection. However, it was reported that City Care had visited the site on a couple of occasions in response to the pump station alarm activating. The pump was reset after a call-out at the end of November 2016, and no further problems were found. No odours or visual issues were detected at the pump station. The campsite was relatively quiet at the time of the inspection.

30 January 2017

There was a light drizzle and onshore breeze during the inspection. The tide had just turned and was starting to come in as the first water samples were collected. No odours or visual issues were detected upon inspection of the pump station. According to the camp manager, there had been no notable issues since the previous inspection, although there had been some minor reticulation issues within one of the bach avenues due to growing tree roots. The camp had been busy up until the day before the inspection. Water samples were collected during the inspection.

22 May 2017

Conditions were fine with no wind. According to the camp manager, there had been no notable issues since the previous inspection. There had been some minor electrical issues which had not affected overall system performance. No visual issues or odours were detected at the pump station. The camp was quiet at the time of inspection.

2.1.2. Receiving environment monitoring

FIB have been sampled at the Urenui Beach Camp since 1987. A summary of the FIB results from 1987 to 2016 is provided in Appendix II for comparative purposes (Tables 1A-3A).

A description of each site is provided in Table 2, and the locations of the four sampling sites are shown in Figure 1. The bridge on State Highway 3 (Site 1) was previously used as the upstream sampling site. An alternative site, 1 km downstream at the footbridge (Site 1a), has been used since 2001 as Site 1 is no longer safe to sample from.

Table 2 Location of bacteriological sampling sites at Urenui Beach Camp

Site	Location	Site code	GPS coordinates (NZTM)
1	Urenui River SH3 bridge	URN000420	1721404 - 5682968
1a	Urenui River footbridge	URN000440	1720608 - 5682914
2	Urenui River at mouth	URN000480	1720245 - 5683370
3	Sea coast approx. 200 m east of river mouth	SEA900072	1720582 - 5683563
4	Sea coast at east end of beach	SEA900070	1720803 - 5683667

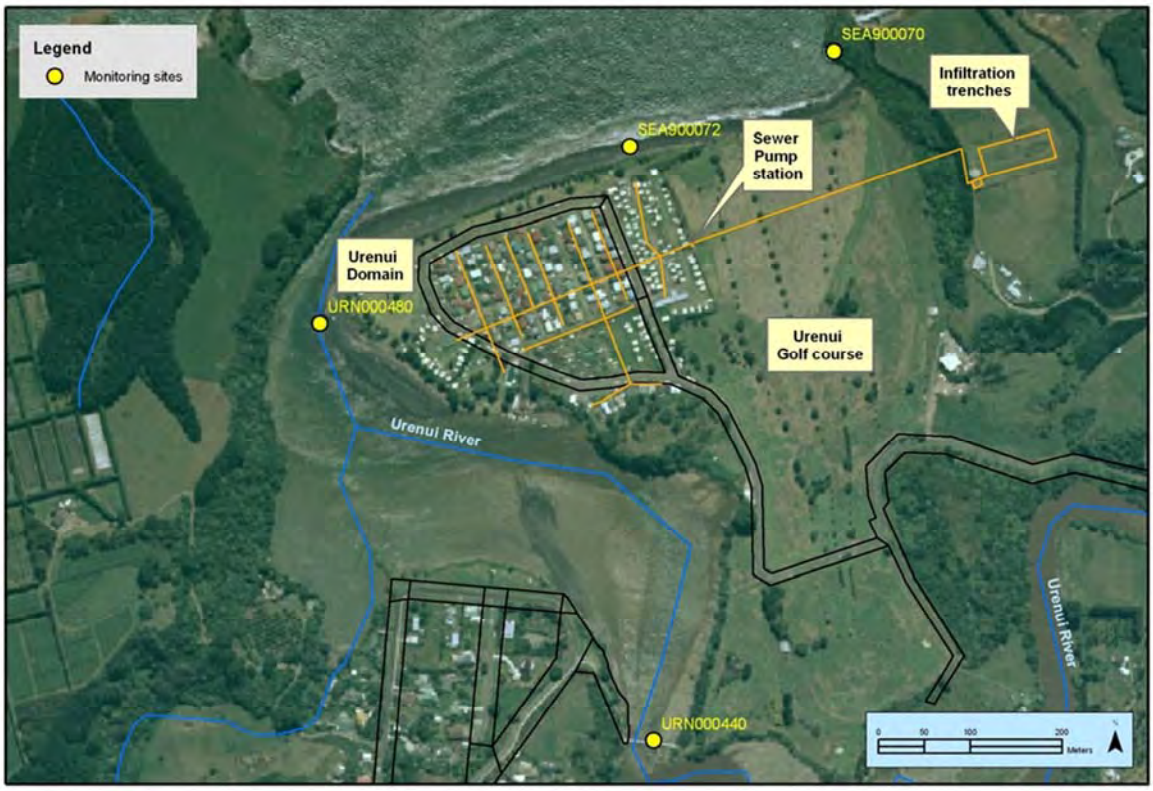

Figure 1 Map of sampling sites, sewage disposal system and other features of interest at Urenui Beach Camp

Bacteriological monitoring results for the 2016-2017 monitoring year are shown in Table 3. The *E. coli* count recorded at the footbridge was above the MfE 'Alert' level for freshwater (Table 1). This result is within the range of previous results however (Table 3A). The FIB counts were relatively low at the river mouth and at the two coastal sites. The FIB counts at these sites were below the respective historical medians and were also below the MfE 'Alert' level for marine waters (Tables 1 & 1A-3A).

Table 3 Bacteriological results, Urenui, 30 January 2017

Parameter	Unit	Site 1a	Site 2	Site 3	Site 4
Conductivity @ 20°C	mS/m	927	4,270	4,280	4,430
E. coli	cfu/100 ml	440	48	38	36
Enterococci	cfu/100 ml	120	12	12	12
Faecal coliforms	cfu/100 ml	460	48	38	40

2.2. Onaero Bay Holiday Park

2.2.1. Inspections

15 December 2016

Conditions were rainy with a moderate northerly wind at the time of the inspection. The camp managers were not present at the time of inspection and attempts to contact the managers to check the performance of the pump system were unsuccessful. No odours or visual issues were detected at the pump station during the inspection. The camp was relatively quiet during the visit.

30 January 2017

Conditions were overcast with a slight offshore breeze at the time of the inspection. The camp manager was present at the time of the inspection. There had not been any issues or alarms related to the pump station since the previous inspection, although it had been generating some objectionable odours during the peak holiday period. Faint sewage odours were detected intermittently within 5 m of the pump station. No odours were detected at a distance further than 5 m and no visual issues were observed. The camp was reasonably quiet at the time of the inspection. It had been busy over the peak period but had quietened down around a week prior to the inspection. Water samples were collected.

22 May 2017

Conditions were fine with no wind. The camp manager was not present at the time of the inspection. No visual issues or odours were detected at the pump station, and the camp was quiet at the time of the inspection. The camp managers were contacted after the inspection to determine whether the pump filter had been replaced and/or serviced, as recommended by an NPDC contractor in January 2016. The Council was subsequently notified that the pump station filter was replaced on 24 July 2017, following the inspection.

2.2.2. Receiving environment monitoring

FIB have been sampled for at the Onaero Bay Holiday Park since 1987. A summary of the FIB results between 1987 and 2016 is provided in Appendix III for comparative purposes (Tables 4A-6A).

A description of each site monitored in the 2016-2017 monitoring period is provided in Table 4, and the locations of the five routinely monitored sampling sites are shown in Figure 2. The two additional sampling sites monitored in the 2016-2017 year, as recommended in the 2015-2016 annual report, are also shown.

Table 4 Locations of bacteriological sampling sites at Onaero Bay Holiday Park in 2016-2017, including the two additional sites monitored (*)

Site	Location	Site code	GPS coordinates (NZTM)
1	Onaero River SH3 bridge	ONR000450	1718296 - 5682687
2	Onaero River at domain pump station bridge	ONR000470	1718283 - 5682895
3	Sea coast on beach adjacent to surf club	SEA900085	1718158 - 5683163
4	Sea coast beneath sewage infiltration cliff	SEA900083	1718216 - 5683212
5	Sea coast north of sewage infiltration cliff	SEA900081	1718296 - 5683239
6*	Unidentified tributary	ONR000469	1718310 - 5682907
7*	Onaero River 25 m upstream of pump station	ONR000464	1718304 - 5682866

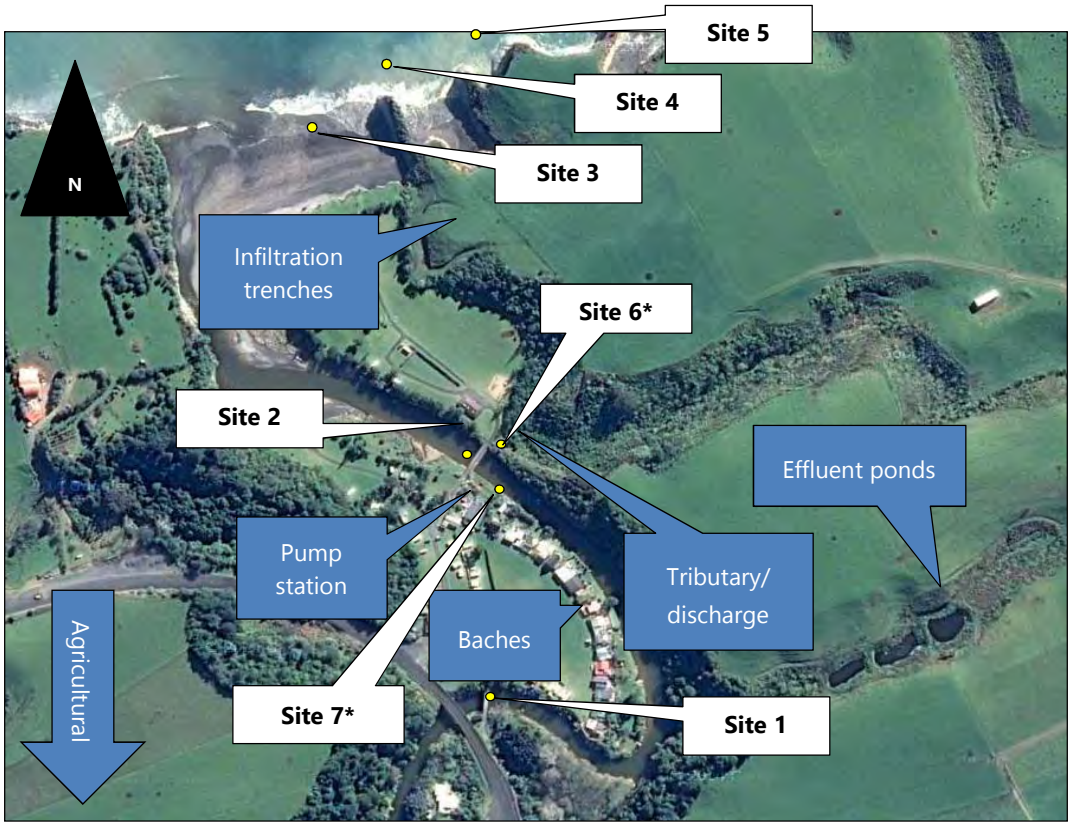

Figure 2 Map of sampling sites, sewage disposal system and other features of interest at Onaero Bay Holiday Park, including the two additional sampling sites monitored in 2016-2017 (*)

Table 5 shows the results of the bacteriological monitoring undertaken during the 2016-2017 monitoring year at the seven sampling sites. Although the *E. coli* counts recorded at the two routinely monitored river sites exceeded the MfE 'Alert' level for freshwater, the counts were below the historical medians (Tables 1 & 6A). There were no major differences between the *E. coli* counts recorded in the five river samples. However, the enterococci count recorded downstream of the pump station was considerably higher than the counts recorded at the four other riverine sampling sites, and was approximately double the historical median (Table 5A). The results of this sampling run suggest that the pump station is most likely affecting the water quality of the Onaero River, while the unnamed tributary and effluent ponds did not appear to have any significant effect on local or downstream water quality.

Enterococci counts at the coastal sites were below the historical medians, and did not exceed the MfE 'Alert' level for marine waters (Tables 1 & 5A). *E. coli* counts at the coastal sites were comparable with previous results (Table 6A).

Table 5 Bacteriological results, Onaero, 30 January 2017, including additional sites monitored in 2016-2017 (*)

Parameter	Unit	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6*	Site 7*
Conductivity @ 20°C	mS/m	54.5	108.0	4,130	4,540	4,620	25.2	111.0
E. coli	cfu/100 ml	380	390	72	31	<2	280	390
Enterococci	cfu/100 ml	160	1,300	38	16	<2	360	160
Faecal coliforms	cfu/100 ml	380	400	72	31	<2	280	410

2.3. Investigations, interventions, and incidents

The monitoring programme for the year was based on what was considered to be an appropriate level of monitoring, review of data, and liaison with NPDC. During the year matters may arise which require additional activity by the Council, for example provision of advice and information, or investigation of potential or actual courses of non-compliance or failure to maintain good practices. A pro-active approach that in the first instance avoids issues occurring is favoured.

The Council operates and maintains a register of all complaints or reported and discovered excursions from acceptable limits and practices, including non-compliance with consents, which may damage the environment. The Incident Register (IR) includes events where NPDC has itself notified the Council. The register contains details of any investigation and corrective action taken.

Complaints may be alleged to be associated with a particular site. If there is potentially an issue of legal liability, the Council must be able to prove by investigation that the identified company is indeed the source of the incident (or that the allegation cannot be proven).

Two additional sampling sites were included with the bacteriological monitoring in 2016-2017, due to the high FIB counts recorded in the Onaero River in recent years. The two sampling sites were located in the unnamed tributary and approximately 25 m upstream of the pump station, as recommended in the 2015-2016 annual report. The high enterococci count recorded downstream of the pump station, relative to the lower counts recorded further upstream and in the unnamed tributary, indicates that the pump station may be adversely influencing the water quality of the river. Potential pathways for bacterial contamination of the river from the pump station include wastewater leakage or overflow. Ongoing inspection of the pump station and monitoring of the two additional sampling sites will continue to shed light on any possible sources of faecal contamination, which could also include the camp manager's wildlife and pigeons underneath the camp bridge. It is recommended that faecal source tracking is employed in the 2017-2018 monitoring year, in order to conclusively identify the sources of faecal contamination influencing the water quality of the Onaero River.

3. Discussion

3.1. Discussion of site performance

3.1.1. Urenui Beach Camp

No visual issues or sewage odours were noted during any of the three inspections. There were no issues with the sewerage treatment system reported by the camp manager over the 2016-2017 monitoring period.

3.1.2. Onaero Bay Holiday Park

Intermittent sewage odours were noticeable around the pump station during an inspection on 30 January 2017. Although management had received odour complaints around the peak holiday period, the issue resolved as the camp emptied out. It is possible that these odours, as well as the elevated FIB counts recorded during the monitoring year, may have been linked to wastewater leakage or overflow from the pump station. No odours were detected during the final inspection and no visual issues were noted over the monitoring period.

3.2. Environmental effects of exercise of consents

Water quality monitoring was undertaken in the Urenui River and adjacent coastal waters during the period under review. The samples failed to detect any adverse effects caused by the Urenui Beach Camp's sewerage treatment system.

Water quality monitoring was also undertaken in the Onaero River and adjacent coastal waters during the period under review. The elevated enterococci count recorded immediately downstream of the pump station, compared with the considerably lower counts recorded upstream, suggests that the pump station at the campsite is likely influencing the water quality of the Onaero River. Objectionable sewage odours detected in the vicinity of the pump station were also reported over the peak summer season. The historical median *E. coli* count of the downstream site is now greater than that of the upstream site, lowering the likelihood that the results found in recent years are due to chance. It should also be noted that the elevated FIB levels recorded in the riverine samples do not appear to be influencing coastal water quality. In addition to the extended monitoring programme, faecal source tracking is recommended for the upcoming summer, in order to gain further insight into the potential sources of faecal contamination adversely influencing the water quality of the Onaero River.

3.3. Evaluation of performance

A summary of NPDC's compliance record for the year under review is provided in Tables 6 and 7.

Table 6 Summary of performance for Consent 2046-3

Purpose: ***To discharge treated septic tank effluent in the vicinity of the Urenui River***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Bacteriological monitoring of Urenui River and coastal foreshore	Sample collection	Yes
2. Consent holder to maintain septic tank system as required	Site inspections, liaison with camp management	Yes
3. Records of daily effluent volumes if requested	Not requested during period under review	N/A
4. Contingency plan	NPDC Water & Wastes IRP version 10.0 received Jan 2016	Yes
5. Optional review provision re. environmental effects	No further provisions for review; expires 1 June 2021	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent Overall assessment of administrative performance in respect of this consent		**High** **High**

N/A = not applicable

Table 7 Summary of performance for Consent 1389-3

Purpose: ***To discharge septic tank sewage effluent at Onaero***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Bacteriological monitoring of Onaero River and coastal foreshore	Sample collection	Yes
2. Consent holder to maintain septic tank system as required	Site inspections, liaison with camp management	Yes
3. Records of daily effluent volumes if requested	Not requested during period under review	N/A
4. Contingency plan	NPDC Water & Wastes IRP version 10.0 received Jan 2016	Yes
5. Optional review provision re environmental effects	No further provisions for review; expires 1 June 2021	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent Overall assessment of administrative performance in respect of this consent		**High** **High**

NPDC demonstrated a high level of environmental and administrative performance and compliance with the resource consent for Urenui Beach Camp (2046-3), as indicated by site inspections and bacteriological monitoring of receiving waters.

Inspections and bacteriological monitoring indicated a high level of environmental and administrative performance and compliance from NPDC with regards to the resource consent for Onaero Bay Holiday Park (1389-3). Although concerns have been raised around the potential impact of the pump station on the water quality of the Onaero River, further monitoring is required in order to conclusively identify the source of faecal contamination.

3.4. Recommendations from the 2015-2016 Annual Report

In the 2015-2016 Annual Report, it was recommended:

1. THAT monitoring of discharges from Urenui Beach Camp in the 2016-2017 year continues at the same level as in 2015-2016.
2. THAT monitoring of discharges from Onaero Bay Holiday Park in the 2016-2017 year continues at the same level as in 2015-2016.
3. THAT faecal source tracking technology is employed at Onaero in the 2016-2017 monitoring period in addition to the routine monitoring programme in order to distinguish the source of faecal contamination.

These recommendations were implemented; however faecal source tracking technology could not be employed for reasons outside of the Council's control.

3.5. Alterations to monitoring programmes for 2017-2018

In designing and implementing the monitoring programmes for air/water discharges in the region, the Council has taken into account:

- the extent of information made available by previous authorities;
- its relevance under the RMA;
- its obligations to monitor emissions/discharges and effects under the RMA; and
- to report to the regional community.

The Council also takes into account the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere/discharging to the environment.

It is proposed that for 2017-2018, the monitoring programmes for both camps remain unchanged from those of 2016-2017.

4. Recommendations

1. THAT monitoring of discharges from Urenui Beach Camp in the 2017-2018 year continues at the same level as in 2016-2017.
2. THAT monitoring of discharges from Onaero Bay Holiday Park in the 2017-2018 year continues at the same level as in 2016-2017.
3. THAT faecal source tracking technology is employed for the Onaero Bay Holiday Park in the 2017-2018 monitoring period, in addition to the routine monitoring programme, in order to identify the source of faecal contamination occurring in the Onaero River.

Glossary of common terms and abbreviations

The following abbreviations and terms may be used within this report:

cfu	colony forming units, a measure of the concentration of bacteria in a sample. Usually expressed as cfu per 100 millilitre sample.
Conductivity	An indication of the level of dissolved salts in a sample, usually measured at 20°C and expressed in mS/m.
Contact recreation	Recreational activities that bring people physically in contact with water, involving a risk of involuntary ingestion or inhalation of water.
E. coli	*Escherichia coli*, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre sample.
Enterococci	An indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre sample.
Faecal coliforms	An indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre sample.
Fresh	Elevated flow in a stream, such as after heavy rainfall.
Incident	An event that is alleged or is found to have occurred that may have actual or potential environmental consequences or may involve non-compliance with a consent or rule in a regional plan. Registration of an incident by the Council does not automatically mean such an outcome had actually occurred.
Intervention	Action/s taken by the Council to instruct or direct actions be taken to avoid or reduce the likelihood of an incident occurring.
Investigation	Action taken by the Council to establish what the circumstances/events surrounding an incident were, including any allegations of an incident.
Incident Register	Unauthorised Incident Register – contains a list of events recorded by the Council on the basis that they may have the potential or actual environmental consequences that may represent a breach of a consent or provision in a Regional Plan.
Median	Central value when values are arranged in order of magnitude.
NZDT	New Zealand Daylight Time, the addition of one hour to New Zealand Standard time (NZST) for daylight savings
Resource consent	Refer Section 87 of the RMA. Resource consents include land use consents (refer Sections 9 and 13 of the RMA), coastal permits (Sections 12, 14 and 15), water permits (Section 14) and discharge permits (Section 15).
RMA	*Resource Management Act* 1991, including all subsequent amendments.
SEM	State of Environment Monitoring performed as part of Council obligations under the RMA
Temp	Temperature, measured in °C (degrees Celsius).
UI	Unauthorised Incident.
Water quality	The bacteriological condition of a water body as it relates to human health, measured using indicator bacteria

For further information on analytical methods, contact the Council's laboratory.

Bibliography and references

Ministry for the Environment, 2003: Microbiological Water Quality Guidelines For Marine and Freshwater Recreational Areas. Ministry for the Environment, Wellington.

Taranaki Regional Council, 2017: Bathing Beach Recreational Water Quality State of the Environment Monitoring Report Summer 2016-2017. TRC Technical Report 2017-2.

Taranaki Regional Council, 2016: Urenui and Onaero Motor Camps monitoring programme annual report 2015-2016. TRC Technical Report 2016-108.

Taranaki Regional Council, 2015: Urenui and Onaero Motor Camps monitoring programme annual report 2014-2015. TRC Technical Report 2015-16.

Taranaki Regional Council, 2014: Bathing Beach Water Quality State of the Environment monitoring report. Summer 2013-2014. Technical Report 2014-13.

Taranaki Regional Council, 2014: Urenui and Onaero motor camps monitoring programme biannual report 2012-2014. TRC Technical Report 14-76.

Taranaki Regional Council, 2013: Bathing Beach Water Quality State of the Environment monitoring report. Summer 2012-2013. Technical Report 2013-17.

Taranaki Regional Council, 2012: Bathing Beach Water Quality State of the Environment monitoring report. Summer 2011-2012. Technical Report 2012-19.

Taranaki Regional Council, 2012: Urenui and Onaero motor camps monitoring programme annual report 2011-2012. TRC Technical Report 12-01.

Taranaki Regional Council, 2011: Freshwater contact recreational water quality at selected Taranaki sites State of Environment Monitoring Report summer 2010-2011. TRC Technical Report 11-01.

Taranaki Regional Council, 2011: Urenui and Onaero motor camps monitoring programme annual report 2009-2010. TRC Technical Report 11-02.

Taranaki Regional Council, 2011: Bathing Beach Water Quality State of Environment Monitoring Report summer 2010-2011. TRC Technical Report 11-15.

Taranaki Regional Council, 2010: Urenui and Onaero motor camps monitoring programme annual report 2009-2010. TRC Technical Report 10-05.

Taranaki Regional Council, 2010: Freshwater contact recreational water quality at selected Taranaki sites State of Environment Monitoring Report summer 2009-2010. TRC Technical Report 10-11.

Taranaki Regional Council, 2010: Bathing Beach Water Quality State of Environment Monitoring Report summer 2009-2010. TRC Technical Report 10-08.

Taranaki Regional Council, 2009: Urenui and Onaero motor camps monitoring programme annual report 2008-2009. TRC Technical Report 09-06.

Taranaki Regional Council, 2009: Freshwater contact recreational water quality at selected Taranaki sites State of Environment Monitoring Report summer 2008-2009. TRC Technical Report 09-12.

Taranaki Regional Council, 2009: Bathing Beach Water Quality State of Environment Monitoring Report summer 2008-2009. TRC Technical Report 09-11.

Taranaki Regional Council, 2008: Urenui and Onaero motor camps monitoring programme annual report 2007-2008. TRC Technical Report 08-19.

Taranaki Regional Council, 2008: Freshwater contact recreational water quality at selected Taranaki sites State of Environment Monitoring Report summer 2007-2008. TRC Technical Report 08-02.

Taranaki Regional Council, 2008: Bathing Beach Water Quality State of Environment Monitoring Report summer 2007-2008. TRC Technical Report 08-01.

Taranaki Regional Council, 2007: Urenui and Onaero motor camps monitoring programme annual report 2006-2007. TRC Technical Report 07-21.

Taranaki Regional Council, 2006: Urenui and Onaero motor camps monitoring programme annual report 2005-2006. TRC Technical Report 06-35.

Taranaki Regional Council, 2005: Urenui and Onaero motor camps monitoring programme annual report 2004-2005. TRC Technical Report 05-28.

Taranaki Regional Council, 2004: Urenui and Onaero motor camps monitoring programme annual report 2003-2004. TRC Technical Report 04-10.

Taranaki Regional Council, 2003: Urenui and Onaero motor camps monitoring programme annual report 2002-2003. TRC Technical Report 03-08.

Taranaki Regional Council, 2002: Urenui and Onaero motor camps monitoring programme annual report 2001-2002. TRC Technical Report 02-23.

Taranaki Regional Council, 2001: Urenui and Onaero motor camps monitoring programme annual report 2000-2001. TRC Technical Report 01-35.

Taranaki Regional Council, 2000: Urenui and Onaero motor camps monitoring programme annual report 1999-2000. TRC Technical Report 00-09.

Taranaki Regional Council, 1999: Urenui and Onaero motor camps monitoring programme annual report 1998-99. TRC Technical Report 99-19.

Taranaki Regional Council, 1998: Urenui and Onaero motor camps monitoring programme annual report 1997-98. TRC Technical Report 98-27.

Taranaki Regional Council, 1997: Urenui and Onaero motor camps monitoring programme annual report 1996-97. TRC Technical Report 97-18.

Taranaki Regional Council, 1996: Urenui and Onaero motor camps monitoring programme annual report 1995/96. TRC Technical Report 96-14.

Taranaki Regional Council, 1995: Urenui and Onaero motor camps monitoring programme annual report 1994/95. TRC Technical Report 95-20.

Taranaki Regional Council, 1994: Urenui and Onaero motor camps monitoring programme annual report 1993/94. TRC Technical Report 94-6.

Taranaki Regional Council, 1993: Urenui and Onaero beach camps monitoring programmes annual report 1992/93. TRC Technical Report 93-6.

Taranaki Regional Council, 1992: Urenui and Onaero beach camps monitoring programmes annual report 1991/92. TRC Technical Report 92-12.

Taranaki Regional Council, 1991: Urenui and Onaero beach camps monitoring programmes annual report 1990/91. TRC Technical Report 91-1.

Taranaki Regional Council, 1990: Onaero and Urenui beach resorts monitoring programme annual report 1989/90. TRC Technical Report 90-36.

Taranaki Regional Council, 1990: Bacteriological survey of selected Taranaki coastal recreational streams: Summer 1989/90. TRC Technical Report 90-13.

Appendix I

Resource consents held by the New Plymouth District Council

Consent 1389-3

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	New Plymouth District Council Private Bag 2025 NEW PLYMOUTH
Consent Granted Date:	6 December 2002

Conditions of Consent

Consent Granted:	To discharge up to 17 cubic metres/day of treated septic tank sewage effluent via soakage trenches into groundwater in the vicinity of the Onaero River at or about GR: Q19:284-448
Expiry Date:	1 June 2021
Review Date(s):	June 2009, June 2015
Site Location:	Onaero Bay Motor Camp, State Highway 3, Onaero
Legal Description:	Sec 82 Urenui Dist Blk III Waitara SD Kaipikari Farm Sett Rec Res
Catchment:	Onaero

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

1. The consent holder shall, in conjunction with the Taranaki Regional Council, undertake such bacteriological monitoring of the Onaero River and coastal waters of the foreshore as deemed necessary by the Chief Executive, Taranaki Regional Council.

2. The consent holder shall ensure proper maintenance of the septic tanks, pumping station and soakage trenches as required.

3. The consent holder shall provide records of daily effluent volumes discharged to the soakage trenches at the request of the Chief Executive, Taranaki Regional Council.

4. The consent holder shall provide a contingency plan to the satisfaction of the Chief Executive, Taranaki Regional Council, outlining measures to be undertaken in the event of power failure, pump breakdown, pipe blockage and failure of soakage trenches, within three months of granting this consent.

5. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2009 and/or June 2015, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 6 December 2002

For and on behalf of
Taranaki Regional Council

_____

Director-Resource Management

Consent 2046-3

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	New Plymouth District Council Private Bag 2025 NEW PLYMOUTH
Consent Granted Date:	6 December 2002

Conditions of Consent

Consent Granted:	To discharge up to 85 cubic metres/day of treated septic tank sewage effluent via soakage trenches into groundwater in the vicinity of the Urenui River at or about GR: Q19:310-452
Expiry Date:	1 June 2021
Review Date(s):	June 2009, June 2015
Site Location:	Urenui Beach Motor Camp, Beach Road, Urenui
Legal Description:	Lot 1 DP 15787 Blk III Waitara SD
Catchment:	Urenui

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

1. The consent holder shall, in conjunction with the Taranaki Regional Council, undertake such bacteriological monitoring of the Urenui River and coastal waters of the foreshore as deemed necessary by the Chief Executive, Taranaki Regional Council.

2. The consent holder shall ensure proper maintenance of the septic tanks, pumping station and soakage trenches as required.

3. The consent holder shall provide records of daily effluent volumes discharged to the soakage trenches at the request of the Chief Executive, Taranaki Regional Council.

4. The consent holder shall provide a contingency plan to the satisfaction of the Chief Executive, Taranaki Regional Council, outlining measures to be undertaken in the event of power failure, pump breakdown, pipe blockage and failure of soakage trenches, within three months of granting this consent.

5. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2009 and/or June 2015, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 6 December 2002

For and on behalf of
Taranaki Regional Council

_____

Director-Resource Management

Appendix II

Urenui Faecal Indicator Bacteria Results 1987-2016

Table 1A Faecal coliform results, Urenui, 1987 to 2016

Parameter	Site 1/1a	Site 2	Site 3	Site 4
No of samples	37	39	37	37
Median*	280	100	42	24
Mean*	631	339	214	173
Minimum*	<1	<1	<1	<1
Maximum*	3,300	2,100	1,700	2,200

* cfu per 100 ml

Table 2A Enterococci results, Urenui, 1993 to 2016

Parameter	Site 1/1a	Site 2	Site 3	Site 4
No of samples	24	24	24	24
Median*	84	60	20	18
Mean*	147	104	53	57
Minimum*	<1	<1	<1	1
Maximum*	540	340	250	400

* cfu per 100 ml

Table 3A *E. coli* results, Urenui, 1995 to 2016

Parameter	Site 1/1a	Site 2	Site 3	Site 4
No of samples	21	21	21	21
Median*	280	120	56	49
Mean*	568	387	274	255
Minimum*	8	4	<1	5
Maximum*	3,300	2,100	1,700	2,200

* cfu per 100 ml

Appendix III

Onaero Faecal Indicator Bacteria Results 1987-2016

Table 4A Faecal coliform results, Onaero, 1987 to 2016

Parameter	Site 1	Site 2	Site 3	Site 4	Site 5
No of samples	40	42	39	36	31
Median*	475	510	61	55	42
Mean*	730	677	231	193	181
Minimum*	38	7	1	<1	1
Maximum*	2,400	2,000	1,600	2,000	1,800

* cfu per 100 ml

Table 5A Enterococci results, Onaero, 1993 to 2016

Parameter	Site 1	Site 2	Site 3	Site 4	Site 5
No of samples	25	26	24	24	20
Median*	290	315	79	41	33
Mean*	363	386	126	110	91
Minimum*	38	60	1	3	1
Maximum*	930	1,100	1,100	1,200	1,000

* cfu per 100 ml

Table 6A *E. coli* results, Onaero, 1995 to 2016

Parameter	Site 1	Site 2	Site 3	Site 4	Site 5
No of samples	22	23	21	21	17
Median*	465	660	62	58	54
Mean*	805	716	244	195	168
Minimum*	77	69	5	<1	5
Maximum*	2,400	2,000	1,500	1,900	1,700

* cfu per 100 m