Urenui and Onaero Beach Camps Monitoring Programme Annual Report 2017-2018

Technical Report 2018-13

ISSN: 1178-1467 (Online)
Document: 2074397 (Word)
Document: 2083735 (Pdf)

Taranaki Regional Council
Private Bag 713
STRATFORD

August 2018

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 beach camps. This report for the period July 2017 to June 2018 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 beach camp. One of these inspections included routine bacteriological sampling at four sites at Urenui and five sites at Onaero.

An additional sample was also collected at Onaero, in connection with the elevated faecal indicator bacteria counts recorded in the Onaero River in recent years. A second, additional sample, from the unnamed tributary at the pump station, was unable to be collected due to low flow conditions. 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 and Onaero failed to detect any adverse environmental effects caused by the beach camps' sewage treatment systems.

During the year, high levels of environmental and administrative performance and compliance were demonstrated by NPDC with regards to the resource consents 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 2017-2018 year, consent holders were found to achieve a high level of environmental performance and compliance for 76% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 20% of the consents, a good level of environmental performance and compliance was achieved.

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 2018-2019 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 2017 to June 2018 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 28th 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 2018-2019 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 2017-2018 year, consent holders were found to achieve a high level of environmental performance and compliance for 76% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 20% of the consents, a good level of environmental performance and compliance was achieved.

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's 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

NPDC holds two resource consents, the details of which are summarised in the table below and outlined in sections 1.3.1.

Table 1 Resource consents held by NPDC, in relation to treated septic tank effluent discharges into groundwater, at the Urenui Beach Camp and Onaero Bay Holiday Park

Consent number	Purpose	Granted	Review	Expires
2046-3	To discharge treated septic tank sewage effluent via soakage trenches into groundwater in the vicinity of the Urenui River	6 December 2002	June 2015	1 June 2021
1389-3	To discharge treated septic tank effluent via soakage trenches into groundwater in the vicinity of the Onaero River	6 December 2002	June 2015	1 June 2021

1.3.1 Water discharge permits

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.

This summary of consent conditions may not reflect the full requirements of each condition. The consent conditions in full can be found in the resource consents which are appended to this report.

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.

1.4.3 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 consent reviews, renewals or new consent applications;
- advice on the Council's environmental management strategies and content of regional plans; and
- consultation on associated matters.

1.4.4 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.

1.4.5 Bacteriological sampling

The Council undertook bacteriological sampling in conjunction with the first post-Christmas inspections in January 2018.

Samples were collected at four sites in conjunction with the Urenui Beach Camp: two river and two coastal sites (Figure 1; Photo 2). Samples were collected at five routinely monitored sites in conjunction with the Onaero Bay Holiday Park: two river and three coastal sites (Figure 2; Photo 3). As recommended in the 2016-2017 report, an additional sample was also collected, in response to elevated faecal indicator bacteria (FIB) counts in the Onaero River in recent years, from approximately 25 m upstream of the pump station (Figure 2). The unnamed tributary, also scheduled to be sampled in response to the elevated counts, was unable to be sampled at the time of inspection due to low flow conditions. The two additional sampling sites were included in the sampling regime to attempt 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 2). 'Alert' and 'Action' guideline levels are summarised in Table 2 and are based on keeping illness risk associated with recreational use to less than approximately 2%.

Table 2 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 2017-2018 monitoring period. Results from this programme are available in the Council's 2017-2018 Bathing Beach Water Quality State of the Environment Monitoring Report (TRC, 2018).

Photo 2 Urenui Beach, May 2017

Photo 3 Onaero Beach, May 2015

2 Results

2.1 Urenui Beach Camp

2.1.1 Inspections

21 December 2017

Conditions were fine at the time of the inspection. The camp manager reported that approximately 20 campers were present on site, and that the camp was expected to get busier after Christmas. There had been no issues with the sewerage system on the camp side of the pump station since the previous inspection. No odours or visual issues were detected at the pump station.

11 January 2018

Weather conditions were fine during the inspection. The camp was busy at the time of inspection. The camp manager reported that the camp was fully booked, with approximately 1,000 campers present on site, and that the camp was expected to remain busy over the upcoming summer weekends. No visual issues were detected at the pump station, although mild sewage odours were noted. The camp manager said that there had been no issues with the camp's sewerage system. Water samples were collected from two freshwater sites (URN000440 and URN000480) and two coastal sites (SEA900072 and SEA900070), during the site inspection. Although elevated counts were detected both upstream and downstream of the campsite, the campsite's wastewater treatment system did not appear to have any influence on riverine water quality, and the high bacteriological counts recorded in the river did not appear to influence coastal water quality.

9 February 2018

Conditions were fine with no wind. The camp was moderately busy at the time of inspection. The camp manager reported that approximately 200 campers were present on site, and that the camp had been emptying out since the previous weekend. No visual issues or odours were detected at the pump station. The camp manager reported that there had been no issues with the camp's sewerage system over the busy season.

2.1.2 Receiving environment monitoring

Faecal indicator bacteria (FIB) have been sampled at the Urenui Beach Camp since 1987. A summary of the FIB results from 1987 to 2017 is provided in Appendix II for comparative purposes (Tables 1A-2A).

A description of each site is provided in Table 3, 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 3 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

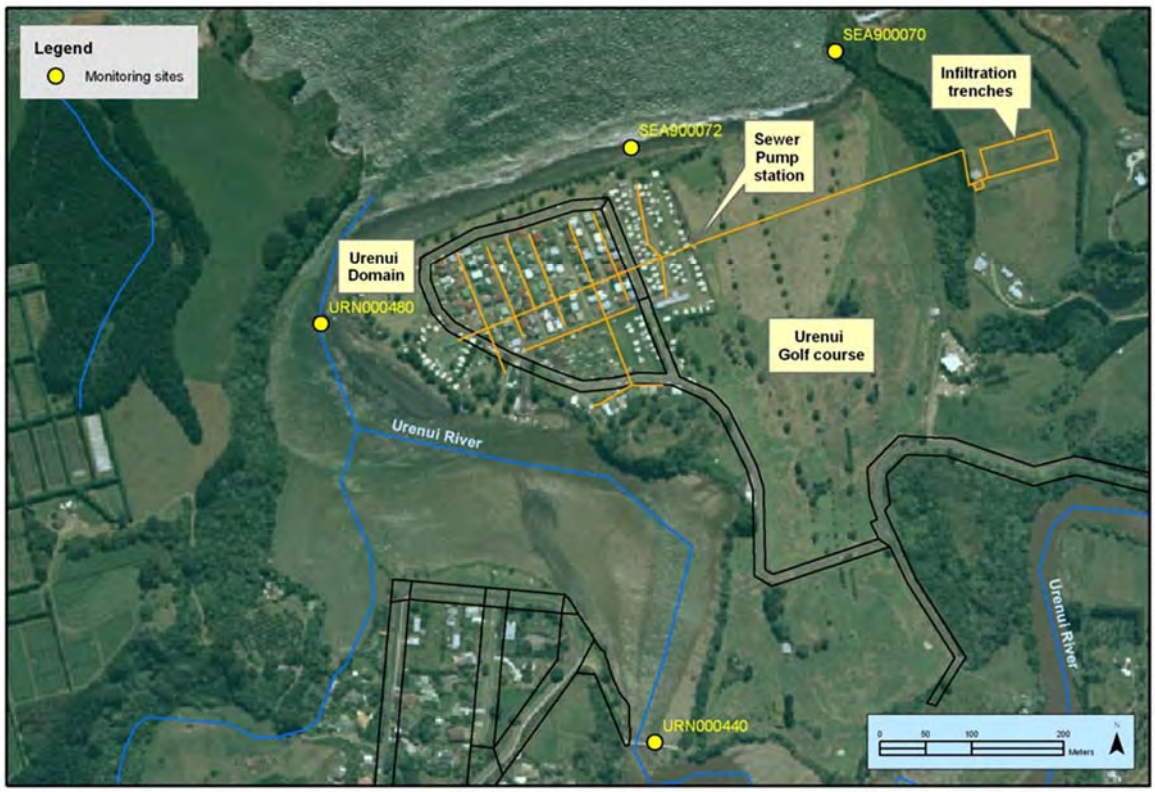

Figure 1 Map of sampling sites, sewage disposal system and other features of interest at Urenui Beach Camp

Bacteriological monitoring results for the 2017-2018 monitoring year are shown in Table 4. The *E. coli* counts recorded at the footbridge and at the river mouth were both above the respective historical medians, and the count at the former was above the MfE 'Alert' level for freshwater (Table 2). These results are within the ranges of previous results, however (Appendix II, Table 2A). The FIB counts were relatively low at the coastal sites, and were below the MfE 'Alert' level for marine waters (Table 2; Appendix II, Tables 1A-2A).

Table 4 Bacteriological results, Urenui, 11 January 2018

Parameter	Unit	Site 1a	Site 2	Site 3	Site 4
Conductivity @ 20°C	mS/m	2,210	3,560	3,650	4,060
E. coli	cfu/100 ml	399	226	256	97
Enterococci	cfu/100 ml	110	63	53	25

2.2 Onaero Bay Holiday Park

2.2.1 Inspections

21 December 2017

The camp was relatively quiet and conditions were fine at the time of the inspection. The camp manager reported that the camp had been quiet, and was starting to fill up. City Care continued to maintain the camp's sewerage system, with no report of any issues in relation to the system. No odours or visual issues were noted at the pump station during the inspection.

11 January 2018

Conditions were fine at the time of the inspection. The camp manager was present and reported that the camp had been full over Christmas and the New Year, and that 150-200 campers were currently present on site. No issues had been reported over the busy period, although odours had been noted at the pump station. No odours or visual issues were noted at the pump station during the inspection. Water samples were collected from two routinely monitored freshwater sites (ONR000470 and ONR000450) and three coastal sites (SEA900081, SEA900083, SEA900085), during the site inspection. One sample was also collected from an additional freshwater site (ONR000464), located 25 m upstream of the pump station, in order to isolate any potential influence of the pump station on the water quality of the Onaero River. Water sampling was unable to be carried out at the second, additional site (ONR000469), due to insufficient water flow in the unnamed tributary. Although elevated counts were detected both upstream and downstream of the campsite, the camp's wastewater treatment system did not appear to have influenced riverine water quality.

9 February 2018

Conditions were fine with no wind. The camp manager was not present at the time of the inspection, and the camp appeared to be quiet. No visual issues were noted at the pump station during the inspection, although strong sewage odours were detected less than 10 m downwind of the system.

2.2.2 Receiving environment monitoring

Faecal indicator bacteria have been sampled for at the Onaero Bay Holiday Park since 1987. A summary of the FIB results between 1987 and 2017 is provided in Appendix III for comparative purposes (Appendix III, Tables 3A-4A).

A description of each site monitored in the 2017-2018 monitoring period is provided in Table 5, and the locations of the five routinely monitored sampling sites are shown in Figure 2. The two additional sampling sites monitored in the 2017-2018 year, as recommended in the 2016-2017 annual report, are also shown.

Table 5 Locations of bacteriological sampling sites at Onaero Bay Holiday Park in 2017-2018, 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

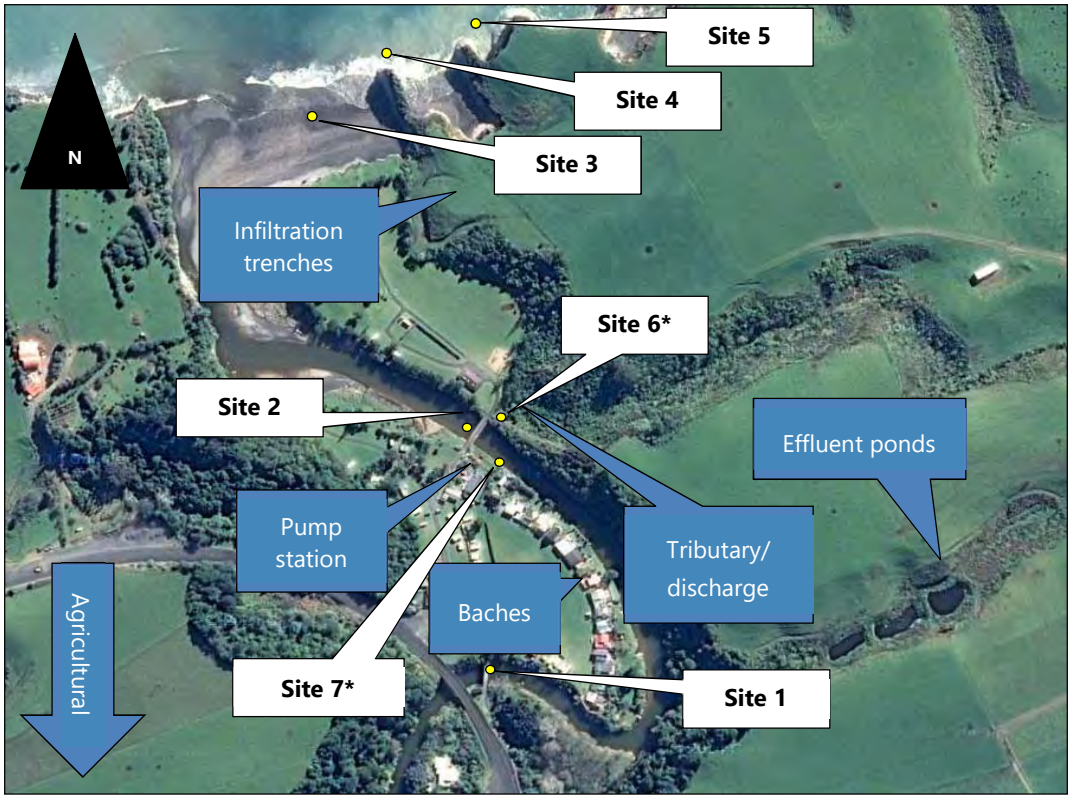

Figure 2 Map of sampling sites, sewage disposal system and other features of interest at Onaero Bay Holiday Park, including the two additional sampling sites monitored in 2017-2018 (*)

Table 6 shows the results of the bacteriological monitoring undertaken during the 2017-2018 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 (Table 2; Appendix III, Table 4A). There were no significant differences between the *E. coli* counts recorded in the five river samples. The results of this sampling run provided no evidence to suggest that the pump station is affecting the water quality of the Onaero River. The unnamed tributary and effluent ponds did not appear to have any 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 (Table 2; Appendix III, Table 3A).

Table 6 Bacteriological results, Onaero, 11 January 2018, including additional sites monitored in 2017-2018 (*)

Parameter	Unit	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6*	Site 7*
Conductivity @ 20°C	mS/m	374	178	1,255	4,340	4,530	N/D	127
E. coli	cfu/100 ml	448	388	265	109	85	N/D	448
Enterococci	cfu/100 ml	62	50	120	28	35	N/D	75

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 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).

In the 2017-2018 period, the Council was required to undertake significant additional investigation in association with NPDC's conditions in resource consent 1389-3.

Concerns were raised in the 2014-2015 monitoring year over the elevated *E. coli* count recorded at the downstream site in the Onaero River, relative to the upstream site, a pattern that is now reflected in the historical medians of the two sites. Four potential sources of faecal contamination have been identified between these two sample sites, a dairy pond discharge, domestic septic tanks, the beach camp's sewage pump station and a small, unnamed tributary approximately 25 m upstream of the pump station. Accordingly, further work has been required to determine the source of faecal contamination.

Bacteriological monitoring of two additional sites (the unnamed tributary, and 25 m upstream of the sewerage pump station) has been carried out over the past three monitoring periods, in conjunction with routine sampling. The option of carrying out faecal source tracking has also been investigated over the past two monitoring rounds, although samples have returned insufficiently high FIB counts to produce meaningful faecal source tracking results.

The two additional sampling sites were again included with the bacteriological monitoring in 2017-2018, due to the high FIB counts recorded in the Onaero River in 2016-2017. The results provided no indication of the pump station adversely influencing the water quality of the river during the period under review. *E. coli* levels at the upstream sites were found to be either higher than or similar to the levels recorded at the downstream sites. Upstream tributaries of the Onaero River drain an agricultural catchment, making agricultural influence a likely contributor to the *E. coli* levels recorded in the river. Estuarine influence due to the resuspension of bed sediments may have also resulted in elevated *E. coli* levels in previous monitoring periods.

3 Discussion

3.1 Discussion of site performance

3.1.1 Urenui Beach Camp

No visual issues were noted during any of the three inspections, although mild sewage odours were detected during the inspection on 11 January 2018. There were no issues with the sewage treatment system reported by the camp manager over the 2017-2018 monitoring period.

3.1.2 Onaero Bay Holiday Park

No issues were reported over the busy period, although the camp managers noted that odours had been detected at the pump station over Christmas.

No odours or visual issues were noted at the pump station during the first two inspections. Strong sewage odours were detected less than 10 m downwind of the system during the final inspection, on 9 February 2018, however.

3.2 Environmental effects of exercise of consents

Water quality monitoring was undertaken in the Urenui River, Onaero River and adjacent coastal waters during the period under review. The samples did not detect any adverse effects caused by the beach camps' sewerage systems.

3.3 Evaluation of performance

A summary of NPDC's compliance record for the year under review is provided in Tables 7 and 8.

Table 7 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 Incident Response Plan version 10.3, received September 2017	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 8 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 Incident Response Plan version 10.3, received September 2017	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

NPDC demonstrated a high level of environmental and administrative performance and compliance with the resource consents for Urenui Beach Camp (2046-3) and Onaero Bay Holiday Park (1389-3), as indicated by site inspections and bacteriological monitoring of the receiving waters.

Although concerns around the potential impact of the pump station on the water quality of the Onaero River have been raised in recent years, no detectable effects were found in 2017-2018.

3.4 Recommendations from the 2016-2017 Annual Report

In the 2016-2017 Annual Report, it was recommended:

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.

These recommendations were implemented; however faecal source tracking technology could not be employed as samples returned insufficiently high FIB counts to produce meaningful faecal source tracking results.

3.5 Alterations to monitoring programmes for 2018-2019

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

- the extent of information already made available through monitoring or other means to date;
- its relevance under the RMA;
- the Council's obligations to monitor consented activities and their effects under the RMA;
- the record of administrative and environmental performances of the consent holder; and
- reporting 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 2018-2019, the additional monitoring carried out in the Onaero River during the past three monitoring periods is discontinued, due to insufficient evidence to suggest that the camp's pump station is affecting the water quality of the Onaero River.

It should be noted that the proposed programme represents a reasonable and risk-based level of monitoring for the sites in question. The Council reserves the right to subsequently adjust the programme from that initially prepared, should the need arise if potential or actual non-compliance is determined at any time during 2018-2019.

4 Recommendations

1. THAT monitoring of discharges from Urenui Beach Camp in the 2018-2019 year continues at the same level as in 2017-2018.
2. THAT the additional monitoring carried out in the Onaero River during the past three monitoring periods is discontinued, due to insufficient evidence to suggest that the camp's pump station is affecting the water quality of 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).
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 a Science Services Manager.

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, 2017: Urenui and Onaero Motor Camps monitoring programme annual report 2016-2017. TRC Technical Report 2017-34.

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 number	Purpose	Granted	Review	Expires
1389-3	To discharge treated septic tank effluent via soakage trenches into groundwater in the vicinity of the Onaero River	6 December 2002	June 2015	1 June 2021
2046-3	To discharge treated septic tank sewage effluent via soakage trenches into groundwater in the vicinity of the Urenui River	6 December 2002	June 2015	1 June 2021

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 1987-2017

Table 1A Enterococci results, Urenui, 1993 to 2017

Parameter	Site 1/1a	Site 2	Site 3	Site 4
No of samples	25	25	25	25
Median*	88	46	17	16
Mean*	146	100	51	56
Minimum*	0.5	0.5	0.5	1
Maximum*	540	340	250	400

* cfu per 100 ml

Table 2A *E. coli* results, Urenui, 1995 to 2017

Parameter	Site 1/1a	Site 2	Site 3	Site 4
No of samples	22	22	22	22
Median*	290	115	49	43
Mean*	562	372	263	245
Minimum*	8	4	0.5	5
Maximum*	3300	2100	1700	2200

* cfu per 100 ml

Appendix III

Onaero faecal indicator bacteria results 1987-2017

Table 3A Enterococci results, Onaero, 1993 to 2017

Parameter	Site 1	Site 2	Site 3	Site 4	Site 5
No of samples	26	27	25	25	21
Median*	285	330	78	40	31
Mean*	355	420	122	106	86
Minimum*	38	60	1	3	1
Maximum*	930	1300	1100	1200	1000

* cfu per 100 ml

Table 4A *E. coli* results, Onaero, 1995 to 2017

Parameter	Site 1	Site 2	Site 3	Site 4	Site 5
No of samples	23	24	22	22	18
Median*	460	625	67	57.5	48
Mean*	786	702	236	187	159
Minimum*	77	69	5	0.5	2
Maximum*	2400	2000	1500	1900	1700

* cfu per 100 ml