

Urenui and Onaero Motor Camps
Monitoring Programme
Annual Report
2014-2015

Technical Report 2015-16

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Executive summary

New Plymouth District Council (NPDC) operates the sewage disposal systems located at Urenui Beach Motor Camp and Onaero Bay Motor Camp. 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 2014-June 2015 describes the monitoring programme implemented by the Taranaki Regional Council (the Council) to assess NPDC's environmental performance during the period under review, and the results and effects of its activities.

NPDC holds one resource consent per motor camp, each of which has five special conditions setting out the requirements that the 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 during the Christmas holiday period. One of these inspections included bacteriological sampling at four sites at Urenui and five sites at Onaero.

Monitoring at the Urenui and Onaero Motor Camps did not indicate any bacterial contamination of the receiving waters as a result of the discharge of treated sewage to groundwater.

A high level of environmental performance and compliance was demonstrated by NPDC with regards to the resource consents for both Urenui Beach Motor Camp (2046-3) and Onaero Bay Motor Camp (1389-3), as indicated by site inspections and bacteriological monitoring of coastal and riverine waters.

For reference, in the 2014-2015 year, 75% 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 22% demonstrated a good level of environmental performance and compliance with their consents.

This report includes recommendations for the 2015-2016 monitoring year.

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1. Introduction

1.1 Compliance monitoring programme reports and the Resource Management Act 1991

1.1.1 Introduction

This report is the Annual Report for the period July 2014-June 2015 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 Motor 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 the NPDC that relate to discharges of septic tank treated sewage effluent to groundwater via soakage trenches. This is the 25th report to be prepared by the Council to cover the 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 compliance monitoring under the *Resource Management Act 1991* (RMA) and the Council's obligations and general approach to monitoring sites through annual programmes, the resource consents held by the NPDC, 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 Motor Camps.

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

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

Section 4 presents recommendations to be implemented in the 2015-2016 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);
- (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 the consent holder/s during the period under review, this report also assigns a rating as to each Company's environmental and administrative performance.

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 the Company'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 interpretation, 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 were 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 2014-2015 year, 75% 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 22% demonstrated a good level of environmental performance and compliance with their consents.

1.2 Process description

1.2.1 Urenui Beach Motor Camp

The current sewage disposal system at Urenui Beach Motor Camp has been in use since 1987. Prior to this, septic tank wastes were 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.

1.2.2 Onaero Bay Motor Camp

The current sewage disposal system at the Onaero Bay Motor Camp has been in use since 1984. Prior to this, wastes were collected in septic tanks and the overflow gravitated to a small pumping station on the northern side of the Onaero River. The wastes were then pumped to the top of a nearby ridge and into a soakage pit (approximately 4 x 2 x 3 m). This was found 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 sewage treatment system. Wastes receive primary treatment through a septic tank system and are then pumped to soakage trenches located on high ground approximately 300 m away. Regular maintenance ensures continued satisfactory performance of the system.

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.

The NPDC holds water discharge permit **2046-3** to discharge up to 85 m³/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.

The NPDC holds water discharge permit **1389-3** to discharge up to 17 m³/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 out obligations upon the Council to gather information, monitor, and conduct research on the exercise of resource consents, and the effects arising, within the Taranaki region and report upon these.

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 motor 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 camp sites were each 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 environmental effects.

1.4.4 Bacteriological sampling

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

Samples were collected at four sites in conjunction with the Urenui Beach Motor Camp: two river and two coastal sites (Figure 1). Samples were collected at five sites in conjunction with the Onaero Bay Motor Camp: two river and three coastal sites (Figure 2). All samples were analysed for temperature, conductivity, faecal coliforms, *E. coli* and Enterococci bacteria. Faecal indicator bacteria (faecal coliforms, *E. 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 Urenui and Onaero Motor 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 this indicator provides the closest correlation with health effects in New Zealand coastal waters. '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%. For freshwater, the MfE 2003 guidelines use *E. coli* as the preferred indicator (Table 1).

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	<i>E. coli</i> (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 Urenui Beach and in front of the Onaero Surf Club as part of the Council's State of Environment Monitoring Programme during the 2014-2015 monitoring period. Results from this programme are available in the Council's 2014-2015 Bathing Beach Water Quality State of the Environment Monitoring Report.

**Photo 1** Urenui Beach (8 January 2015)



Photo 2 Onaero Beach (8 January 2015)

2. Results

2.1 Urenui

2.1.1 Inspections

16 December 2014

The camp manager reported that there had been no issues with the sewage disposal system since the previous inspection. The alarm had been triggered due to power outages but these events had not resulted in any discharges. No odours were evident around the pump station at the time of inspection. The camp was relatively quiet with approximately 30 campers onsite.

8 January 2015

The camp manager reported that there had been no issues with the sewage disposal system since the previous inspection. There was a slight sewage odour present around the pump station at the time of inspection. The camp was busy with approximately 400 people camping on site and another 200 people staying in baches. Water samples were taken during the inspection for bacteriological analysis.



Photo 3 Urenui pump station (8 January 2015)

30 January 2015

The camp manager reported that there had been no issues with the sewage disposal system since the previous inspection. There was a slight sewage odour present around the pump station at the time of inspection. The camp had quietened down since the previous inspection, with approximately 100 people camping onsite and 100 people staying in baches.

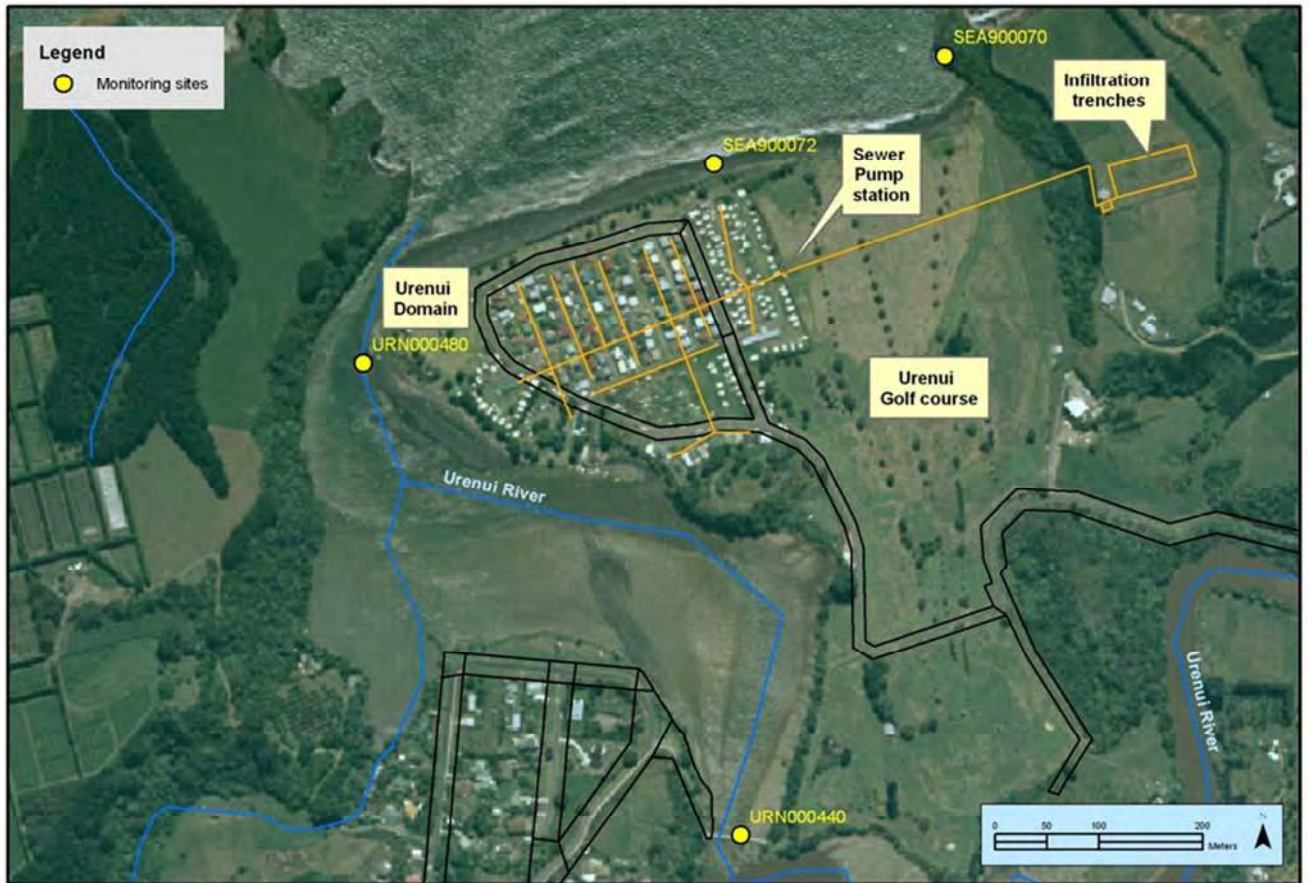


Figure 1 Location of sewage disposal system and sample sites, Urenui Beach Motor Camp

2.1.2 Receiving environment monitoring

The location of the four sampling sites is shown in Figure 1. A description of each site is provided in Table 2.

Table 2 Location of bacteriological sampling sites at Urenui Beach Motor Camp

Site	Location	Site code	Map Reference
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

The bridge on State Highway 3 (Site 1) had previously been used as the upstream sampling site, however, this site is no longer safe to sample from. The alternative site, 1 km downstream at the footbridge (Site 1a), has been used since 2001.

FIB have been sampled at the Urenui Beach Motor Camp since 1987. A summary of faecal coliform results from 1987 to 2014 is provided in Appendix II for comparative purposes (Tables 1A – 3A).

Bacteriological monitoring results for the 2014-2015 monitoring year are shown in Table 3. Nearly all FIB counts from samples collected on 8 January 2015 were lower than the median results from previous seasons at the same sites (Appendix II). The Enterococci

count at site 1a was slightly higher than its historic median. The 2015 Enterococci counts at both coastal sites (Sites 3 and 4) were below the MfE 'Alert' level for coastal waters (<141 cfu/100 ml). The 2015 *E. coli* counts for freshwater Sites 1 and 2 were below the MfE 'Alert' level for freshwater (<260 cfu/100 ml).

Table 3 Bacteriological results, Urenui, 8 January 2015

Parameter	Unit	Site 1a	Site 2	Site 3	Site 4
Faecal coliforms	cfu/100 ml	140	68	28	24
Enterococci	cfu/100 ml	80	24	12	8
<i>E. coli</i>	cfu/100 ml	140	68	28	24
Conductivity @ 20 C	mS/m	1,710	2,430	3,810	3,980

2.2 Onaero

2.2.1 Inspections

16 December 2014

The camp manager reported that there had been no issues with the sewage disposal system since the previous inspection. No sewage odours were evident around the pump station at the time of the inspection. The camp was reasonably quiet with around 30 campers onsite.

8 January 2015

The camp manager reported that there had been no issues with the sewage disposal system since the previous inspection. Noticeable sewage odours were present around the pump station at the time of the inspection. The camp was reasonably busy with more than 100 people camping onsite. Water samples were taken during this inspection.

30 January 2015

The camp manager reported that there had been no issues with the sewage disposal system since the previous inspection. There were no sewage odours or visual issues around the pump station at the time of the inspection. The camp was relatively quiet with 12 sites occupied.



Photo 4 Onaero pump station (16 December 2014)

2.2.2 Receiving environment monitoring

The location of each of the five sites is shown in Figure 2 and a description of each site is provided in Table 5.



Figure 2 Location of sewage disposal system and sampling sites, Onaero Bay Motor Camp

Table 4 Location of bacteriological sampling sites at Onaero Bay Motor Camp

Site	Location	Site code	GPS
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 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

FIB have been sampled at the Onaero Bay Motor Camp since 1987. A summary of the faecal coliform results between 1987 and 2014 is provided in Appendix III for comparative purposes (Tables 4A - 6A).

Table 6 shows the results of bacteriological monitoring undertaken during the 2014-2015 monitoring year at five sites. FIB counts from samples collected on 8 January 2015 were within the range of results from previous seasons at the same sites (Appendix III). The 2015 Enterococci counts at the three coastal sites (Sites 3 and 4) were below the MfE 'Alert' level for coastal waters (<141 cfu/100 ml). The 2015 *E. coli* count at site 1 was above the MfE 'Alert' level for freshwater (>260 cfu/100 ml). The 2015 *E. coli* count at site 2 was above the MfE 'Action' level for freshwater (>550 cfu/100 ml).

FIB counts were elevated at both river sites. Although these counts were greater downstream from the sewage treatment system, there is no evidence to suggest that an associated sewage discharge has contaminated the river. Inspections of the camp have failed to detect any problems at the pump station. Furthermore, no issues have been reported by the camp manager during this monitoring period. High FIB counts can often be associated with high rainfall; however, on this occasion the sampling date was preceded by dry weather.

Follow up samples were collected by the Council on April 1 in an attempt to reveal a possible source of contamination. During this investigation, it was noted that a seasonal sand bar had developed at the Onaero river mouth, restricting its flow out to sea. As a result, the river had pooled; this was evident due to its high level (at low tide) and lack of observable surface movement. Sample results revealed that *E.coli* counts were elevated, yet uniform from the SH3 bridge to the river mouth, indicative of pooling. On this occasion the elevated counts could be attributed to the pooling of the river, as any sources of FIB, for example agricultural run-off from the surrounding catchment, are concentrated towards the river mouth. However, the uniform nature of the counts meant that it was not possible to infer any possible immediate sources of faecal contamination. Faecal source tracking may be employed as an additional investigative tool if there is an issue with elevated counts in the upcoming monitoring season. See appendix IV for a detailed account of the follow up investigation undertaken by the council during the 2014-2015 monitoring period.

Table 5 Bacteriological results, Onaero, 8 January 2015

Parameter	Unit	Site 1	Site 2	Site 3	Site 4	Site 5
Faecal coliforms	cfu/100 ml	480	830	120	130	90
Enterococci	cfu/100 ml	85	260	80	16	16
<i>E. coli</i>	cfu/100 ml	470	770	120	120	90
Conductivity @ 20 C	mS/m	256	348	2,580	4,150	4,450

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 the consent holder. 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 the Company concerned 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 2014-2015 period, the Council was required to undertake additional investigations as detailed in section 2.2.2.

The Council did not record any incidents in association with NPDC's resource consent conditions or provisions in Regional Plans.

3. Discussion

3.1 Discussion of site performance

3.1.1 Urenui Beach Motor Camp

Sewage odours were either slightly detectable or absent during each of the three inspections. No issues with the sewage treatment system were reported by the camp manager over the 2014-2015 monitoring period. Although power outages had led to the activation of the pump system alarm, no discharges had actually occurred.

The contingency plan for Urenui Beach Motor Camp is now included in the NPDC Water and Wastes Incident Response Plan. Version 9.7 of this plan was received by the Council on 19 January 2015. As no significant changes have taken place at the camp since, this plan is considered to be valid and active.

3.1.2 Onaero Bay Motor Camp

Sewage odours were undetectable during two inspections, however, a sewage odour was noticeable around the pump station during peak holiday season (8 January 2015). The camp manager reported no issues with sewage treatment system over the 2014-2015 monitoring period.

The contingency plan for Onaero Bay Motor Camp is now included in the NPDC Water and Wastes Incident Response Plan. Version 9.7 of this plan was received by the Council on 19 January 2015. As no significant changes have taken place at the camp since, this plan is considered to be valid and active.

3.2 Environmental effects of exercise of consents

Monitoring has indicated that the Urenui Beach Motor Camp sewage treatment system is not having an adverse effect on the adjacent receiving waters. FIB counts were below the MfE 'Alert' thresholds in both freshwater and marine environments.

Bacteriological monitoring revealed that the Onaero River had elevated levels of FIB at the time of sampling. Furthermore, these counts were higher at the site downstream from the pump station. However, there is no evidence to suggest that a fault in sewage treatment system is the source of this contamination (see section 2.2.2). See appendix IV for a detailed account of the additional investigation undertaken by the Council during the 2014-2015 year. The Onaero coastal sampling sites from this programme all returned Enterococci counts below the MfE 'Alert' level.

3.3 Evaluation of performance

A summary of the 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 of 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	Yes
3. Records of daily effluent volumes if requested	Not requested during period under review	N/A
4. Contingency plan	Approved on 5 November 2010. No changes to site/system.	Yes
5. Optional review provision re environmental effects	Next optional review June 2015	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

N/A = not applicable

Table 7 Summary of performance for Consent 1389-3

Purpose: To discharge of 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	Yes
3. Records of daily effluent volumes if requested	Not requested during period under review	N/A
4. Contingency plan	Approved on 5 November 2010. No changes to site/system.	Yes
5. Optional review provision re environmental effects	Next optional review June 2015	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

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

Inspections and bacteriological monitoring also indicate a high level of environmental and administrative performance and compliance from NPDC with regards to the resource consent for Onaero Bay Motor Camp (1389-3).

3.4 Recommendations from the 2012-2014 Biennial Report

In the 2012-2014 Biennial Report, it was recommended:

1. THAT monitoring of discharges from Urenui Domain Motor Camp in the 2014-2015 year continues at the same level as in 2012-2014.
2. THAT monitoring of discharges from Onaero Domain Motor Camp in the 2014-2015 year continues at the same level as in 2012-2014.

These recommendations were implemented.

3.5 Alterations to monitoring programmes for 2015-2016

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, the obligations of the Act in terms of monitoring emissions/discharges and effects, and subsequently 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.

In the case of the Urenui beach camp, the programme for 2014-2015 was unchanged from that for 2012-2014. It is again proposed that for 2015-2016, the programme remains unaltered. A recommendation to this effect is attached to this report.

The 2014-2015 monitoring programme for the Onaero beach camp was unchanged from that for 2012-2014. It is proposed for 2015-2016 that the routine monitoring programme remains unaltered. However, it is also proposed that an additional faecal source tracking component is including into the monitoring for the 2015-2016 year. This additional component is not intended to be a permanent alteration to the programme, rather a provision that will enable the Council to determine the source of faecal contamination in the Onaero River if FIB results are elevated again in 2015-2016. A recommendation to this effect is attached to this report.

3.6 Exercise of optional review of consent

Resource consents 2046-3 and 1389-3 both provide for an optional review of the consent in June 2015. In both cases, condition 5 allows the Council to review the consent. The purpose of this optional review is to ensure that the consent conditions are adequate to prevent 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 was not appropriate to deal with at the time.

Based on the results of monitoring in the year under review, and in previous years as set out in earlier annual compliance monitoring reports, it is considered that there are no grounds that require a review to be pursued or grounds to exercise the review option.

4. Recommendations

1. THAT monitoring of discharges from Urenui Domain Motor Camp in the 2015-2016 year continues at the same level as in 2014-2015.
2. THAT monitoring of discharges from Onaero Domain Motor Camp in the 2015-2016 year continues at the same level as in 2014-2015.
3. THAT faecal source tracking technology is employed for the Onaero beach camp in the 2015-2016 monitoring period in addition to the routine monitoring programme in order to distinguish the source of faecal contamination.

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 usually expressed as per 100 millilitre sample.
Conductivity	Conductivity, an indication of the level of dissolved salts in a sample, usually measured at 20°C and expressed in mS/m.
Contact recreation	Recreation activities that bring people physically in contact with water, involving a risk of involuntary ingestion or inhalation of water.
<i>E.coli</i>	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	Enterococci, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre of sample.
Faecal Coliforms	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 Council to instruct or direct actions be taken to avoid or reduce the likelihood of an incident occurring.
Investigation	Action taken by Council to establish what were the circumstances/events surrounding an incident including any allegations of an incident.
IR	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	<i>Resource Management Act</i> 1991 and 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.

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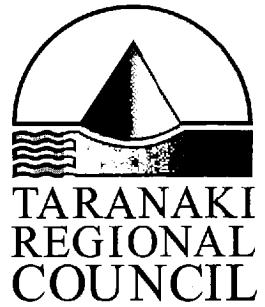
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Appendix I

Resource consents held by the New Plymouth District Council



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

CHIEF EXECUTIVE
PRIVATE BAG 713
47 CLOTEN ROAD
STRATFORD
NEW ZEALAND
PHONE 06-765 7127
FAX 06-765 5097

Please quote our file number
on all correspondence

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*

www.trc.govt.nz

Consent 1389-3

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



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

CHIEF EXECUTIVE
PRIVATE BAG 713
47 CLOTEN ROAD
STRATFORD
NEW ZEALAND
PHONE 06-765 7127
FAX 06-765 5097

Please quote our file number
on all correspondence

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*
www.trc.govt.nz

Consent 2046-3

General conditions

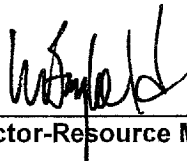
- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) Unless it is otherwise specified 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.
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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.
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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 1987-2014

Table 1A Faecal coliform results 1987 to 2014

Parameter	Site 1/1a	Site 2	Site 3	Site 4
No of samples	35	37	35	35
Median*	280	100	46	37
Mean*	655	353	225	182
Minimum*	0.5	<1	1	0
Maximum*	3300	2100	1700	2200

* cfu per 100 ml

Table 2A Enterococci results 1993 to 2014

Parameter	Site 1/1a	Site 2	Site 3	Site 4
No of samples	22	22	22	22
Median*	78	60	23	18
Mean*	151	108	57	61
Minimum*	0.5	<1	1	1
Maximum*	540	340	250	400

* cfu per 100 ml

Table 3A *E. coli* results 1995 to 2014

Parameter	Site 1/1a	Site 2	Site 3	Site 4
No of samples	19	19	19	19
Median*	280	180	87	56
Mean*	604	418	301	280
Minimum*	8	4	1	5
Maximum*	3300	2100	1700	2200

* cfu per 100 ml

Appendix III
Onaero Faecal Indicator Bacteria Results 1987-2014

Table 4A Faecal coliform results, 1987 to 2014

Parameter	Site 1	Site 2	Site 3	Site 4	Site 5
No of samples	36	38	37	34	29
Median*	535	570	52	53	42
Mean*	777	706	239	197	190
Minimum*	38	7	1	0.5	1
Maximum*	2400	2000	1600	2000	1800

* cfu per 100 ml

Table 5A Enterococci results, 1993 to 2014

Parameter	Site 1	Site 2	Site 3	Site 4	Site 5
No of samples	21	22	22	22	18
Median*	320	330	61	41	33
Mean*	379	392	127	113	97
Minimum*	38	60	1	3	1
Maximum*	930	1100	1100	1200	1000

* cfu per 100 ml

Table 6A *E. coli* results, 1995 to 2014

Parameter	Site 1	Site 2	Site 3	Site 4	Site 5
No of samples	18	19	19	19	15
Median*	695	660	52	57	54
Mean*	916	787	260	204	183
Minimum*	89	84	5	0.5	5
Maximum*	2400	2000	1500	1900	1700

* cfu per 100 m

Appendix IV
Onaero River 1 April 2015 investigation

Memorandum

To: Science Manager – Hydrology/Biology, Regan Phipps
From: Scientific Officer, Emily Roberts and Technical Officer, Thomas McElroy
File: #1499105
Date: 28 April 2015

Onaero River – Bacteriological investigation April 1 2015

1. Introduction

New Plymouth District Council (NPDC) holds a resource consent to allow the Onaero Bay motor camp to discharge septic tank treated sewage to groundwater via an infiltration trench. The septic tank and sewage pump are positioned directly next to the Onaero River and the infiltration trench is positioned on high ground towards the coast (see Figure 1). Accordingly, faecal indicator bacteria (FIB) are monitored during the peak holiday period each year to ensure the system is not contaminating the river or coast.

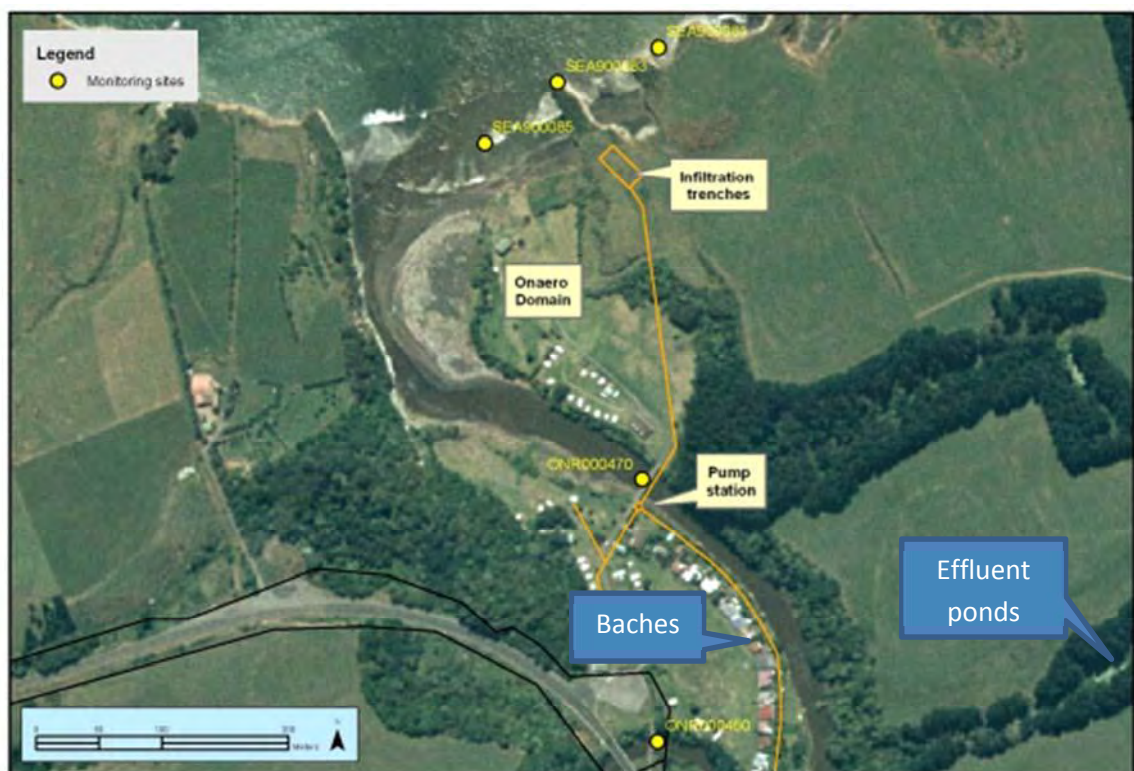


Figure 1 Important features surrounding the Onaero River, including the sewerage system plan and TRC monitoring sites

Samples collected on 8 January 2015 returned elevated counts of *E.coli* at the two river sites (Figure 1, Table 1). These results raised concern as there had been no rain in the three days preceding this sampling date (wet weather can increase agricultural runoff and lead to elevated FIB counts). Furthermore, the *E.coli* count was higher at

the sampling site downstream of the pump station. However, there was no evidence to suggest that a sewage discharge had contaminated the river. Inspections of the camp had failed to detect any problems at the pump station and no issues had been reported by the camp manager during the monitoring period.

Table 1 Onaero River bacteriological results, 8 January 2015 with the associated national bathing guidelines (Note: *E.coli* used as a guideline indicator in freshwater)

Parameter	Unit	Onaero River sites		MfE Recreational bathing guidelines	
		ONR000450 (Upstream)	ONR000470 (Downstream)	Alert Mode	Action Mode
Faecal coliforms	cfu/100 ml	480	830	Alert Mode	Action Mode
Enterococci	cfu/100 ml	85	260		
<i>E. coli</i>	cfu/100 ml	470	770	Single sample >260	Single sample >550
Conductivity @ 20 C	mS/m	256	348		

Preliminary investigation identified three possible nearby sources of faecal contamination. Although there was no evidence to suggest the pump station had malfunctioned, its proximity to the river deemed it necessary to consider. A nearby effluent pond system was also identified (Figure 1). This pond system discharges into an unnamed tributary which then drains into the Onaero River. Interestingly, the point at which this tributary meets the Onaero River is downstream of the SH3 bridge sampling site, but upstream of the river site where the highest counts were collected. Finally, the septic tanks from holiday baches positioned along the Onaero River were also considered. These baches also fall between the original upstream and downstream river sampling sites (Figure 1).

Samples were collected on 1 April 2015 in order to investigate the source of the faecal contamination.

2. Methods

Five water samples were collected and analysed for temperature, conductivity, faecal indicator bacteria (FIB), and turbidity. A need to isolate each potential FIB source justified the location of the five water samples (Figure 2, Table 2). Sample locations included four sites on the Onaero River (OR1 - 4) and one dairy pond discharge (DD).



Figure 2 Sampling sites for 1 April 2015 investigation.

Table 2 Location of bacteriological sampling sites for 1 April 2015 investigation

Site	Location	Site code	GPS
OR1	Onaero River SH3 bridge	ONR000450	1718296 - 5682687
DD	Effluent pond discharge	-	1718656 - 5682636
OR2	Onaero River at bach no. 8	-	1718381 - 5682780
OR3	Onaero River at domain pump station bridge	ONR000470	1718283 - 5682895
OR4	Onaero River mouth	ONR000490	1718104 - 5683165

3. Results

The results show uniform, elevated counts of *E.coli* spanning from the State Highway 3 Bridge to the river mouth (Table 3). The riverine sites were all slightly turbid. Conductivity was low with negligible variance between different riverine sites. The *E. coli* count in the effluent discharge was lower than in the river samples, although it was higher in terms of conductivity, temperature and turbidity.

Table 3 Bacteriological results for 1 April 2015 investigation

Parameter	Unit	OR1	DD	OR2	OR3	OR4
Faecal coliforms	cfu/100 ml	470	130	390	390	470
Enterococci	cfu/100 ml	280	500	240	270	360
<i>E. coli</i>	cfu/100 ml	460	130	380	390	470
Conductivity @ 20 C	mS/m	28.0	66.1	31.2	31.5	34.2
Turbidity	NTU	4.1	28	4.9	4.7	4.9
Temperature	°C	17.6	24.1	17.8	18.3	16.8
Flow rate	L/s	-	0.5	-	-	-

4. Discussion

The uniform nature of the riverine bacteria counts meant that it was not possible to isolate any immediate sources of faecal contamination. The uniform counts were likely due to the natural, seasonal development of a sand bar at the river mouth; an observation made whilst collecting the final sample (Photo 2). The sand bar was restricting drainage into the sea, causing the river to pool. It was observed that the surface water flow was significantly reduced and appeared stagnant at some points along the river (Photo 1). Also, the river level was relatively high considering that it was approximately low tide at the time of sampling.



Photo 1 Onaero river downstream from SH3 bridge



Photo 2 A) Sand bar restricting flow of the Onaero River (southward facing) B) Sand bar restricting flow of the Onaero River (northward facing)

In instances where pooling occurs, there is potential for contaminants within the river to accumulate near the point of the restricted flow. Here, the accumulation of FIB has resulted in elevated counts of *E.coli*. Given that this river drains from developed agricultural land it is likely that much of the catchment has contributed to these high counts. This further limits any inferences that can be made concerning faecal contamination of the Onaero River from sources near the motor camp.



Photo 3 **A)** Three pond dairy effluent system **B)** Final pond with discharge pipe

It should be noted that the effluent discharge that was sampled was likely to be misrepresentative of a typical discharge. After collecting the sample, onsite correspondence with a share-milker revealed that the effluent ponds had been recently cleaned out (Photo 3). This was reflected by the unusually low FIB counts detected in the sample. As the effluent discharge forms the headwaters of the tributary, it seems intuitive that the potential for dilution before reaching the Onaero River is limited. The tributary itself was not thoroughly inspected as it was overgrown with dense scrub and bush (Photo 4).



Photo 4 Discharge pipe (inset) and receiving tributary

The outcome of this investigation is inconclusive, however further monitoring is advised. In particular, it would be useful to employ the same sampling scheme at some point over the 2015-2016 monitoring period. Relevant factors to consider when setting a sampling time frame include the formation of the sand bar. A downstream flow is essential to isolate contaminant sources, therefore it would be suitable to sample before this sand bar has established. Also, the dairy calendar should be considered. The effluent discharge needs to be sampled in the midst of the milking season in order to sample a typical discharge. Lastly, sampling should occur during the months of the bathing season, as the presence of faecal contaminants in the Onaero River creates a health risk. It would be useful to employ faecal source tracking as an additional tool. The use of this tool is particularly relevant in this circumstance as human sewage, agricultural effluent and wildfowl are being considered as possible sources of contamination.

Thomas McElroy
Technical Officer

