

New Plymouth District Council
Water Supplies
Monitoring Programme
Annual Report
2016-2017
Technical Report 2017-15

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Executive summary

New Plymouth District Council (NPDC) operates four water supply schemes in the New Plymouth District. This report for the period July 2016 to June 2017 describes the monitoring programme implemented by the Taranaki Regional Council (the Council) to assess NPDC's environmental performance and consent compliance during the period under review.

NPDC holds 19 resource consents, relating to those water supply systems which include a total of 149 conditions setting out the requirements that the consent holder must satisfy. There are seven consents to take and use water, four consents to discharge to water, seven consents to maintain structures, and one consent to discharge filter backwash onto and into land.

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

The Council's monitoring programme for the year under review included an annual inspection of each water supply scheme, four samples collected for water quality analysis, two fish surveys, and an assessment of the abstraction and discharge data provided by NPDC.

The monitoring showed that overall the NPDC water schemes are well operated and maintained and appeared to be having no adverse effects on the environment.

NPDC provided all the abstraction data required under consent conditions and the data showed that all daily volume limits and instantaneous abstraction rates were complied with.

One matter addressed during the monitoring period in relation to the improvement of fish screens at the Lake Mangamahoe intakes. NPDC has outlined an approach to address this issue.

During the year, NPDC demonstrated a good level of environmental and a high level of administrative performance with the resource consents.

For reference, in the 2016-2017 year, consent holders were found to achieve a high level of environmental performance and compliance for 74% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 21% 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 NPDC has maintained a high to good level of performance.

This report includes recommendations for the 2017-2018 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 2016-June 2017 by the Taranaki Regional Council (the Council) on the monitoring programme associated with resource consents held by New Plymouth District Council (NPDC) for their various water supply schemes and water treatment plants (WTPs).

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 abstractions and discharges of water, and in-stream structures.

One of the intents of the *Resource Management Act 1991* (RMA) is that environmental management should be integrated across all media, so that a consent holder's use of water, air, and land should be considered from a single comprehensive environmental perspective. Accordingly, the Council generally implements integrated environmental monitoring programmes and reports the results of the programmes jointly. This report discusses the environmental effects of the NPDC's use of water and land, and is the 20th combined annual report by the Council for NPDC in relation to their water supply schemes.

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 RMA and the Council's obligations;
- the Council's approach to monitoring sites through annual programmes;
- the resource consents held by NPDC
- the nature of the monitoring programme in place for the period under review; and
- a description of the activities and operations conducted in the NPDC's sites.

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 2017-2018 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 a discharger, and may include cultural and socio-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 the 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 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 2016-2017 year, consent holders were found to achieve a high level of environmental performance and compliance for 74% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 21% of the consents, a good level of environmental performance and compliance was achieved.

1.2 Process description

The WTP's operated by NPDC generally operate in the following manner. Raw water is abstracted, coarse screened, and passed through clarifiers for coagulation and flocculation (aided by the addition of a chemical flocculent at some plants) and filtration. At one plant, water is passed through cartridge filters. Chemicals are then used to adjust pH and chlorinate the water prior to distribution.

The waste products from backwashing of the filters (and clarifier bleed at some sites) are either discharged to land or to a surface waterway via a settling pond (or tank), or are contained in cartridges disposed of at landfills.

1.3 Resource consents

Section 14 of the RMA stipulates that no person may take, use, dam or divert any water, unless the activity is expressly allowed for by a resource consent or a rule in a Regional Plan, or it falls within some particular categories set out in Section 14.

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.

Section 13(1) (a) of the RMA stipulates that no person may use, erect, reconstruct, place, alter, extend, remove or demolish any structure or part of any structure in, on, under, or over the bed of any lake or river, unless the activity is expressly allowed for by a resource consent, or a rule in a Regional Plan and in any relevant proposed regional plan.

NPDC holds various resource consents for water abstraction, water and sludge discharges, and structures. These consents are listed in Table 1 along with purpose of each consent and process description for each plant. Plant locations are shown in Figure 1. Consent details are summarised in Sections 1.3.1 to 1.3.3.

Table 1 Summary of resource consents and processes

Water Supply Scheme	Resource consent	Next Review	Expires	Activity	Process
New Plymouth	0672 - Discharge	2020	2026	To discharge wastewater from a WTP into an unnamed tributary of the Mangorei Stream.	<p>Raw water is abstracted from the Waiwhakaiho River via Lake Mangamahoe. The Waiwhakaiho River is diverted through a tunnel to augment the supply of Lake Mangamahoe. The consent for this diversion (2053) is held by Trust Power Ltd - Taranaki Generation and monitoring of this is included in the Mangamahoe Power Scheme monitoring programme.</p> <p>Two intakes in Lake Mangamahoe supply the New Plymouth WTP. Flocculent is added and water passes through clarifiers then sand filters. Water is disinfected (chlorine gas) and pH buffered (lime)..</p> <p>Clarifier bleed and filter backwash is discharged to settling ponds in front of plant. Supernatant is returned to the treatment plant. Accumulated sludge is periodically discharged to land.</p>
	0673 - Discharge	2020	2026	To discharge stormwater from a WTP into an unnamed tributary of the Mangorei Stream.	
	2055 – Take	No further option for review before expiry	2021	Take up to 60,480 m ³ /day, at a maximum rate of 740 L/sec, from Lake Mangamahoe.	
	5699 – Land use	No further option for review before expiry	2020	To erect, place and maintain a pipe bridge over the Mangorei Stream.	
	5700 – Land use	No further option for review before expiry	2020	To disturb the bed of the Mangorei Stream by trenching to place and maintain a pipeline under the Mangorei Stream.	
	6643 – Land use	No further option for review before expiry	2020	To erect, place and maintain a weir in the Mangorei Stream.	

Water Supply Scheme	Resource consent	Next Review	Expires	Activity	Process
Inglewood	3934 - Take	2018	2021	To take water as a contingency supply and for farm supply purposes from an intake weir in the Ngatoro Stream.	<p>Raw water is abstracted via an infiltration gallery in the bed of the Ngatoro Stream located near Dudley Road, approximately 4.5 km south west of Inglewood. There is also a contingency take via a weir (with a fish pass) located approximately 3 km further upstream near the end of Dudley Road.</p> <p>Flocculent is added to the raw water which is then passed through clarifiers and sand filters. The water is pH buffered (lime) and disinfected (chlorine gas). A new 4,500 m³ reservoir was commissioned in July 2003.</p> <p>Clarifier bleed and filter backwash are discharged to a modified reservoir (1,250 m³) which discharges to the Ngatoro Stream.</p> <p>Plant internal areas and chemical storage areas are drained to a sump which has a slide valve which blocks off a pipe leading to the nearby roadside drain. Probes are also contained within the sump to monitor the level of its contents. Water in the tank is tested and discharged to stormwater if appropriate. Otherwise the tank is emptied by a contractor to an appropriate facility.</p>
	4509 – Land use	2021	2027	To maintain a water supply intake infiltration gallery in and adjacent to the Ngatoro Stream and to maintain a pipeline from the gallery to the water treatment station.	
	4510 – Take	No further option for review before expiry	2021	To take up to 4,850 m ³ /day at 56 L/sec from the Ngatoro Stream.	
	5869 – Discharge	No further option for review before expiry	2021	To discharge clarifier bleed and filter backwash supernatant overflow from the Inglewood WTP into the Ngatoro Stream a tributary of the Manganui River, in the Waitara catchment.	

Water Supply Scheme	Resource consent	Next Review	Expires	Activity	Process
Oakura	1277 – Discharge	2019	2025	To discharge filter backwash from the Oakura WTP onto and into land in the vicinity of the Wairau Stream.	Since April 2004 water is taken from a secure bore. The water is treated with sodium hypochlorite followed by lime injection for pH adjustment. Previously water was taken from weir (with a fish pass) in the Wairau Stream and disinfected with chlorine gas. The surface water take and backwash discharge consents have been retained for contingency purposes.
	1278 – Take	2019	2031	Take and use water from the Wairau Stream for Oakura water supply purposes.	
	5713 – Land use	2019	2031	To use a weir to dam the Wairau Stream for Oakura water supply purposes.	
	6114 - Take	No further option for review before expiry	2020	To take and use groundwater from two bores for Oakura water supply purposes.	
Okato	0026 – Take	No further option for review before expiry	2019	To take water from the Mangatete Stream in the Kaihihi catchment for public water supply purposes.	Water is taken from infiltration gallery and weir (with fish pass) on Mangatete Stream. Passed through cartridge filters (no flocculent or backwashing), pH buffered (lime) and disinfected (chlorine gas).
Waitara Industrial	0126 – Take	2018	2031	To take and use water from the Waiongana Stream to supply water for industry in Waitara.	This supply is not currently used and has been retained for contingency purposes.
	4816 – Land use	No further option for review before expiry	2020	To use and maintain an existing weir, fish pass and associated intake structures on the Waiongana Stream.	Raw water is diverted from the Waiongana Stream via a weir (with a fish pass) near Mountain Road, approximately 9 km south of Waitara.
	4817 – Discharge	No further option for review before expiry	2020	Discharge up to 250 L/sec of water and sediment from intake pipe cleaning and draining of settlement ponds into the Waiongana Stream.	Water is gravity fed through a settling pond system to a reservoir. There is no chemical treatment of water.

Water Supply Scheme	Resource consent	Next Review	Expires	Activity	Process
Urenui	5989 – Land Use	No further option for review before expiry	2021	To modify and maintain an existing earth retention structure (dam) on the Kakapo Stream.	Treatment plant decommissioned and removed, now supplied from the New Plymouth WTP. The weir has a fish pass.

Copies of all resource consents held by NPDC in relation to their water supply schemes are included in Appendix I.

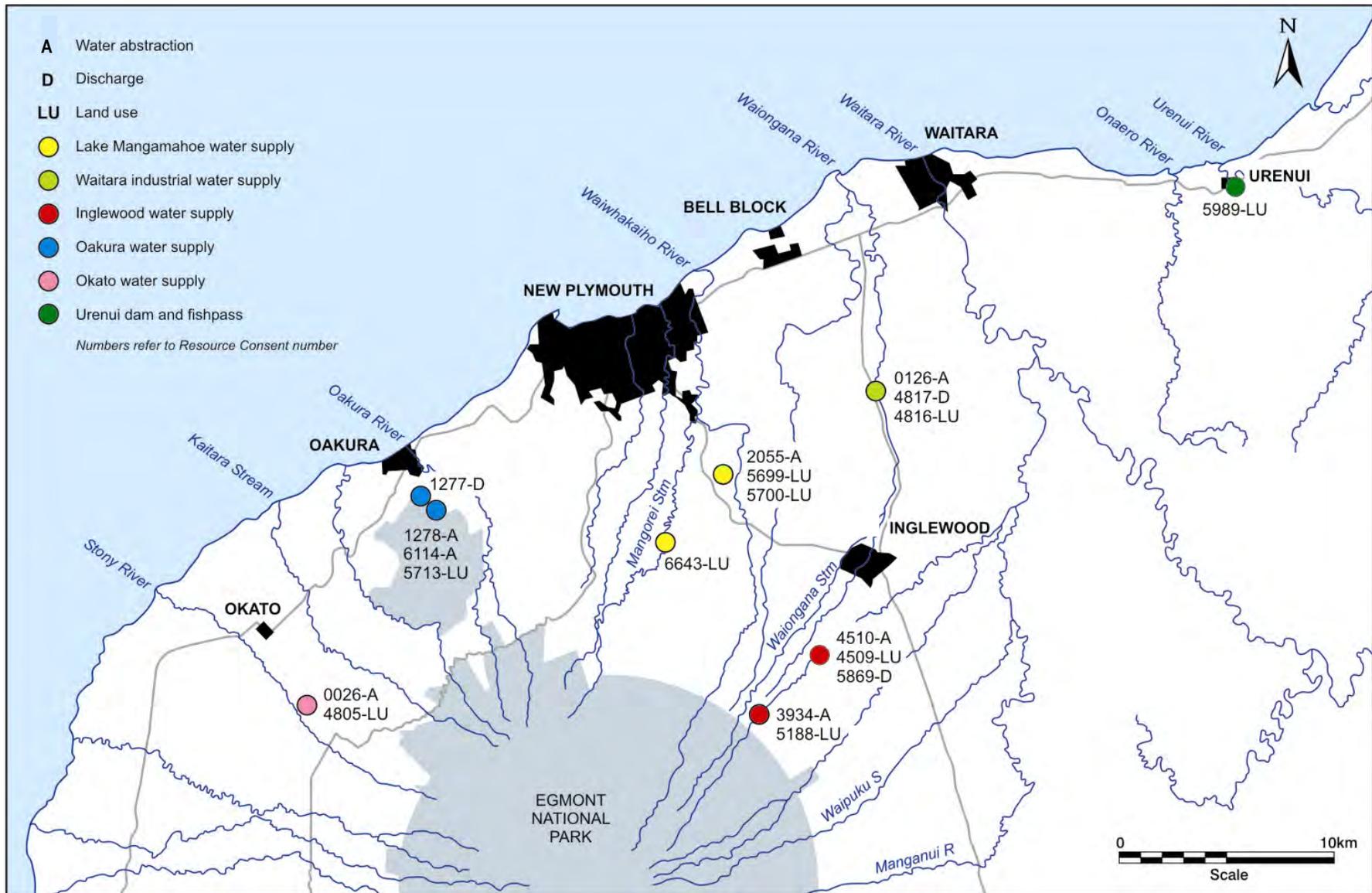


Figure 1 Location of New Plymouth District Council water supply plants and structures

1.3.1 Water abstraction permits

Section 14 of the RMA stipulates that no person may take, use, dam or divert any water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or it falls within some particular categories set out in Section 14.

NPDC holds seven water abstraction consents as set out in Table 1. These permits were issued by the Council under Section 87(d) of the RMA and include consent conditions that:

- specify abstraction rates and/or daily volumes;
- set out requirements for the measurement of abstraction rates and/or volumes;
- specify data reporting requirements;
- set out residual flow and water conservation requirements (Mangatete Stream and Waiongana Stream takes only);
- require financial contributions (Waiongana Stream take only); and
- set out lapse and review provisions.

1.3.2 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 five water discharge consents as set out in Table 1. These permits were issued by the Council under Section 87(e) of the RMA and include consent conditions that:

- require the adoption of best practice;
- sets limits on contaminants in the discharge;
- limit effects in receiving waters; and
- set out lapse and review provisions.

1.3.3 Land use permits

Section 13(1)(a) of the RMA stipulates that no person may in relation to the bed of any lake or river use, erect, reconstruct, place, alter, extend, remove, or demolish any structure or part of any structure in, on, under, or over the bed, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

NPDC holds seven land use consents as set out in Table 1. These permits were issued by the Council under Section 87(e) of the RMA and include consent conditions that:

- require notification prior to works;
- require the adoption of best practice;
- require provision of fish passage (where applicable);
- require minimisation of effects in receiving waters;
- limit time frames for any works undertaken; and
- set out lapse and review provisions.

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 NPDC's WTP's consisted of five 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 NPDC water supplies and associated structures were each visited once during the monitoring period. With regard to consents for the abstraction of or discharge to water, the main points of interest were plant processes with potential or actual discharges to receiving watercourses, including contaminated stormwater and process wastewaters. Sources of data being collected by the consent holder were identified and accessed, so that performance in respect of operation, internal monitoring, and supervision could be reviewed by the Council. The neighbourhood was surveyed for environmental effects.

1.4.4 Discharge and water quality sampling

A sample of the Inglewood WTP filter backwash discharge was collected on one occasion, along with samples of the receiving water of the Ngatoro Stream – upstream and downstream. A stormwater sample was also taken from the New Plymouth water treatment plant (NPWTP).

1.4.5 Review of supplied flow data

NPDC provided Council with data on abstraction rates, stream flow, and discharge rates which was reviewed by Council staff.

1.4.6 Fish surveys

The Council undertakes fish surveys above and below weirs where consent conditions require the provision of fish passage. During the monitoring period, electric fishing surveys were undertaken in the Ngatoro Stream and Waiongana Streams

2 Results

2.1 Inspections

An annual inspection of NPDC's water treatment activities was undertaken during the period under review. The inspections focussed on instream structures, discharges, and water abstraction measuring equipment. These inspections were undertaken on 7 April 2017.

2.1.1 New Plymouth

The meter was inspected and found to be installed correctly. A review of abstraction data showed no exceedances during this monitoring period. Supernatant from the backwash pond was being recirculated back to the raw water mixing tank and no discharge was occurring. It was discussed that NPDC was required to conduct an annual inspection of the Mangorei weir before 30 June 2017 and report the findings to Council.

A query in regards to the water intake screening at Lake Mangamahoe was raised and NPDC was asked to supply drawings of the intakes. The information supplied indicated inadequate fish screening and an incident was raised (see section 2.7).

2.1.2 Inglewood

The Ngatoro Stream was running clean and clear at moderate flow and no issues were noted with the fish pass or weir. A review of the abstraction data to date showed that no exceedances have occurred during this monitoring period. The data recorder at the plant showed that 99 m³ /hr was being taken for Inglewood and 9 m³ /hr for the Dudley Road user group. This matched telemetered data and was in compliance with consent conditions. The meters were inspected and no issues were noted.

2.1.3 Oakura

The Wairau Stream was running clean and clear at low flow, with adequate flow down the fish pass. The fish pass was also found to be free of debris. Water is no longer abstracted from this stream but the structures and consent are retained for contingency purposes. The bores were inspected and it was found that 30.6 m³ /hr was being abstracted from the Wairau bore, which matched the telemetered data and this complied with consent conditions. The bore adjacent the treatment plant was not being used at the time. The meters were inspected and no issues were noted.

2.1.4 Okato

The Mangatete Stream was running clean and clear at a moderate flow and there was good flow down the fish pass. It was noted that the weir had suffered some damage during the recent rain event and it was outlined that more boulders would be moved into place to address the damage. The plant was found to be abstracting 20 m³ /hr which matched the telemetered data and complied with consent conditions. The meters were inspected and no issues were noted.

2.1.5 Waitara industrial intake weir (contingency take site)

The Waiongana River was at moderate flow. The flow down the fish pass was good and no debris was noted in the fish pass. No issues were noted with the weir which appeared to be in good condition. This water take is not used and is held in reserve as a contingency take.

2.2 Discharge and receiving water monitoring

A routine sample of the Inglewood WTP filter backwash was collected on 26 July 2016, along with samples from upstream and downstream. The results are presented below in Table 2.



Photo 1 Sampling sites at Inglewood WTP

Table 2 Samples collected of the Inglewood WTP backwash and stream sites on 26 July 2016

Parameter	Unit	Site			Consent limit (discharge only)
		Discharge STW002037	Upstream NGT000185	Downstream NGT000186	
Chlorine	g/m ³	0.02	-	-	0.1
Conductivity	mS/m@20°C	6.6	7.5	7.5	-
pH		7.3	7.5	7.5	6.5 – 8.5
Suspended solids	g/m ³	4	-	-	20
Temperature	°C	9.4	10.3	10.3	-
Turbidity	NTU	-	1.1	0.83	-

Chlorine, suspended solids and pH levels in the discharge complied with those set by consent **5869-1**. The receiving water monitoring showed that there was no detectable change in water quality up and downstream of the discharge point.

A review of NPDC self monitoring showed that seven of eight of the discharge samples were compliant with consent conditions. One sample was found to have a suspended solids concentration of 27 g/m³ which was found to be the result of a process control error causing a higher level of back washing. The cause of the non compliance was addressed and subsequent samples were found to comply with consent limits.

A stormwater sample was also collected from the NPWTP. The results are given in Table 3 and the site location in Figure 2.



Figure 2 Aerial photo showing New Plymouth WTP and sampling site

Table 3 Results of NPWTP stormwater sampling

Parameter	Unit	Result	Consent limit (discharge only)
Chlorine	g/m ³	0.01	0.1
pH	-	6.7	6.0 – 9.0
Suspended solids	g/m ³	3	100
Temperature	°C	11.8	-
Alkalinity	g/m ³ CaCO ₃	31	-

All results were found to comply with consented limits.

2.3 Abstraction and stream flow data

2.3.1 Abstraction data

As a condition of their resource consents to abstract water, NPDC are required to record the daily volumes abstracted at each site. This data is to be made available to the Council on request. The data was assessed against either daily volumes and /or instantaneous take rates depending on consent conditions. A summary of compliance in regard to abstraction data is given in Table 4.

Table 4 Summary of compliance with abstraction data requirements and abstraction limits

Site	Records supplied on time?	Compliance daily volumes	Compliance abstraction rate	Completeness of data
New Plymouth	Yes	100%	100%	100%
Inglewood- main take	Yes	100%	100%	100%
Inglewood – farmer and backwash take	Yes	99%	99%	100%
Oakura (groundwater)	Yes	100%	100%	100%
Okato	Yes	100%	100%	100%

A complete set of abstraction data for each site was provided as requested and there was a high level of compliance with daily volumes and abstraction rates at all four locations. The only non-compliance was in relation to the rate of water taken from the upper intake at Inglewood WTP taken during one backwash event.

There were no abstractions from the Waiongana Stream in relation to the Waitara industrial supply during the 2016-2017 monitoring period (contingency only).

2.3.2 Stream flow data

Consent 0026-3, to take water from the Mangatete Stream in the Kaihihi catchment for public water supply purposes, includes the following two conditions:

Condition 6

When the flow in the Mangatete Stream, measured beneath the Saunders Road bridge, is less than 180 L/sec for a period of seven or more consecutive days, water conservation practices are to be put in place by the consent holder (i.e. garden water only to be used every second day).

Condition 7

When the flow in the Mangatete Stream, measured beneath the Saunders Road bridge, is less than 120 L/sec for a period of seven or more consecutive days, the taking of water shall be restricted to the minimum amount necessary to maintain the health of people and animals (i.e. garden water and other non-essential uses are prohibited).

NPDC monitor the stage of the Mangatete Stream at the Saunders Road bridge and from this calculate the stream flow (refer to Table 2). In addition, the Council conducts three gaugings per year to maintain a rating curve.

As of the summer of 2016, NPDC has chosen to automatically implement water restrictions during the summer months to ensure maximum water conservation during the dry periods to ensure compliance with these conditions.

At no time during the period under review did the flow in the Mangatete Stream become low enough to trigger the residual flow conditions of consent 0026-3.

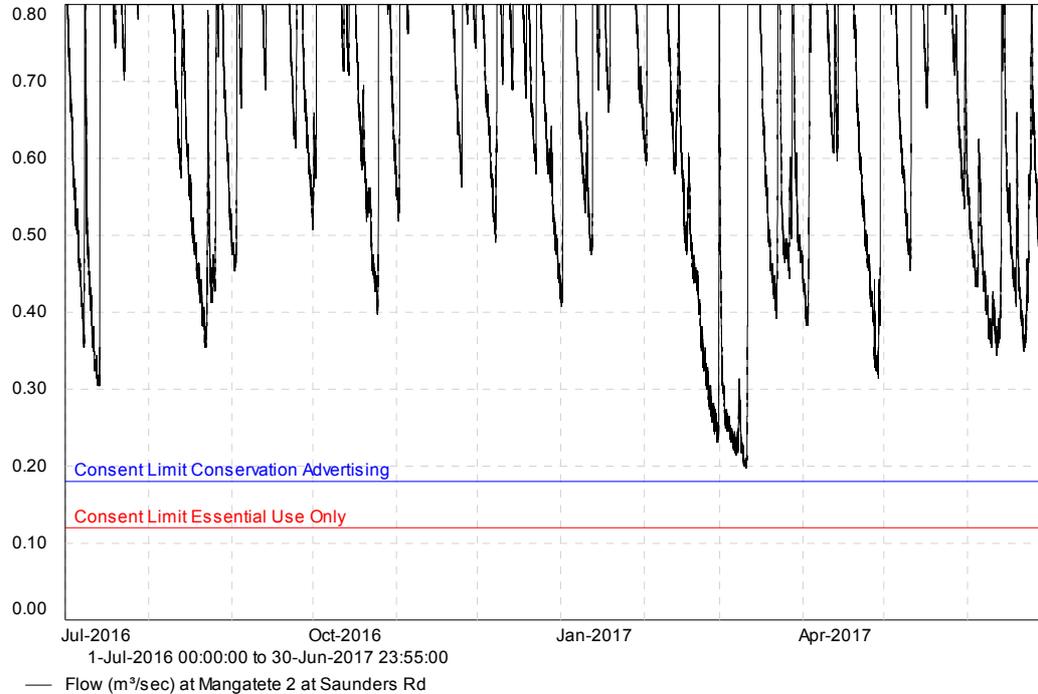


Figure 3 Residual flow in the Mangatete Stream

2.4 Fish surveys

During the period under review fish surveys were undertaken in the Ngatoro and Waiongana Streams. Summaries of the survey reports are given below and the full copies of the survey reports are given in Appendix II.

2.4.1 Inglewood WTP – Ngatoro Stream weir

On 25 May 2017 an electric fishing survey was undertaken at two sites, one upstream of the weir in the Ngatoro Stream and the other downstream of this weir.

Downstream of the Inglewood water supply weir there was a low fish abundance and reduced diversity, with only one shortjaw kokopu (*Galaxias postvectis*) recorded. Upstream of the weir, there was a slight increase in the number of shortjaw kokopu recorded (three), while one longfin eel was recorded also. Unlike the previous survey, no koaro were recorded at either site, but this is the fourth survey to record shortjaw kokopu upstream.

The diversity of fish species in the Ngatoro Stream at the weir will be significantly influenced by the fact that the weir is just over 48 kilometres inland, and at an altitude of 440 metres. Surveys prior to 2003 had only recorded longfin eel upstream of the weir, with koaro (*Galaxias brevipinnis*) and shortjaw kokopu occasionally being recorded downstream. Since the installation of the fish pass in 2001 diversity upstream increased with galaxiids being recorded for the first time in 2003. In the present survey three shortjaw kokopu were observed upstream, and the size range of the fish collected indicates that there is more than one age class of koaro. This indicates that this species has successfully negotiated the weir over at least two

migration seasons, and overall, these results suggest that the weir is no longer a barrier to those species that can migrate to this point in the stream.

It is also promising that the number of galaxiids recorded in this stream is increasing over time, especially considering shortjaw kokopu have recently had a change in classification from 'in decline' to 'nationally vulnerable'. Although the current survey recorded a significantly less abundant and diverse fish community than the previous surveys, this is not unusual for fish communities during the cooler winter months. When water temperatures reduce, fish become less active and therefore their food intake requirements reduce. Consequently they are more frequently under cover at this time, and less likely to be recorded using the spotlighting method.

It is recommended that monitoring of the fish communities in relation to this weir be continued, to confirm that fish passage is being maintained at this structure. Due to the presence of shortjaw kokopu, a regionally distinctive species, the results from future surveys in this stream will be incorporated into the regional State of the Environment Monitoring Programme for Freshwater Fish. It is therefore recommended that the method used is restricted to spotlighting, and continues at a frequency of every three years. The next survey is due to be undertaken in the 2019-2020 monitoring period.

2.4.2 Waitara industrial supply- Waiongana weir

An electric fishing survey was conducted on 17 May 2017 at two sites, one upstream and one downstream of the NPDC Waitara Water Supply weir. An additional two sites were surveyed in the Waiongana catchment on this day, providing additional data for comparison. Fish diversity was low but similar at all sites. The abundance of fish downstream of the weir was slightly higher than that recorded upstream. This could be related to fish accrual below the weir, possibly due to difficulty with negotiating the fish pass, although it is more likely related to the lower altitude of this site.

The fish species recorded were similar both upstream and downstream of the weir. Redfin bully, a key indicator species for determining the success of the fish pass, were recorded both upstream and downstream of the weir. However, torrentfish, also a key indicator species, were not recorded upstream of the weir during this survey. Although this species has been recorded upstream of the weir in previous surveys, the last time was 2005. It may be that there have been some changes to the fish pass since 2005 that now means that the pass presents an impediment to the passage of this species.

This survey indicated that the fish pass on the NPDC Waitara Water Supply weir continues to operate effectively, and therefore compliance with special condition 6 of resource consent 4816 has been achieved. However, the lack of torrentfish and reduced abundance of redfin bully above the weir, suggests that the weir still forms a barrier to some degree. Provided that regular inspections of the fish pass confirm that it is operating as required and is being maintained, it is recommended that the fish monitoring be maintained at the current level of once every three years. However, as the current survey was conducted during relatively high flows, it may be prudent to recheck the weir during lower flows, to confirm it continues to provide adequate fish passage at this time.

2.5 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 the individual 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 2016-2017 period, the Council was required to record an incident, in association with NPDC's activities.

[19 May 2017](#)

During an annual inspection it was ascertained that underwater fish screens at the Lake Mangamahoe intakes did not meet best practice standards and NPDC was asked to supply drawings of the intakes.

A letter requesting an explanation was sent. The response described the current screening arrangements and conceded the current screens were not best practice. A plan to retrofit the intakes with fish screens that meet current best practice requirements was outlined. This explanation and proposal was accepted.

3 Discussion

3.1 Discussion of plant performance

During the monitoring period the plants were well run and organised. Abstraction data was provided to Council in a timely manner and with exception of one backwashing event at Inglewood, all abstraction volumes/and rates were in compliance with consent conditions.

One issue was noted was the fish screens on the Lake Mangamahoe intakes did not meet best practice requirements. This matter was raised with NPDC and they undertook to install fish upgraded screens within a set time frame.

Also noted is that self-notification was received that the duration of the Inglewood WTP backwash discharge exceeded the consent limit of three hours per day duration limit on one occasion. However this occurred during very high stream flows so no effect was likely. NPDC is considering a change to consent conditions to provide for prolonged discharges during high flow events.

NPDC is also complemented for financing the rescue of fish and eels residing in their unused reservoir at the Waitara industrial supply when it was discovered it was draining due to seismic damage. The fish recovery was undertaken by Council staff in response to a request for assistance by NPDC.

3.2 Environmental effects of exercise of consents

Overall there were no significant adverse impacts on the environment, occurring from the exercise of resource consents held by NPDC in relation to their WTP's and water supply schemes. This was supported by inspections of abstraction and discharge points, and supply weirs noted compliance.

Fish surveys undertaken in the Ngatoro and Waiongana Stream indicated that the presence of NPDC weirs in the supply water bodies were unlikely to be having any adverse effects.

Chlorine, suspended solids and pH levels in the Inglewood backwash discharge complied with those set by consent conditions on all but one sample noted during self monitoring.

3.3 Evaluation of performance

A tabular summary of the consent holder's compliance record for the year under review is set out in Tables 5-23.

3.3.1 New Plymouth WTP

Table 5 Summary of performance for Consent 0672-3

Purpose: To discharge wastewater into an unnamed tributary of the Mangorei Stream in the Waiwhakaiho catchment		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option	No discharge in monitoring year- wastewater is being recycled	N/A
2. Exercise of consent in accordance with information submitted in support of application	No discharge in monitoring year- wastewater is being recycled	N/A

Purpose: To discharge wastewater into an unnamed tributary of the Mangorei Stream in the Waiwhakaiho catchment		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
3. Limits not to be exceeded in the discharge	No discharge in monitoring year- wastewater is being recycled	N/A
4. Discharge not to cause certain effects in the receiving waters	No discharge in monitoring year- wastewater is being recycled	N/A
5. Lapse provision	N/A	N/A
6. Optional review provision re environmental effects	Next option to review in June 2020	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		N/A
Overall assessment of administrative performance in respect of this consent		N/A

Table 6 Summary of performance for Consent 0673-3

Purpose: To discharge stormwater into an unnamed tributary of the Mangorei Stream in the Waiwhakaiho catchment		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option	Inspection and liaison with consent holder	Yes
2. Exercise of consent in accordance with information submitted in support of application	Inspection and liaison with consent holder	Yes
3. Catchment area not to exceed 2 ha	Inspection	Yes
4. Requirement for a Management Plan	WTP Emergency Management Plan	Yes
5. Requirement for a Contingency Plan	WTP Emergency Management Plan	Yes
6. Hazardous substance storage areas to be bunded	Inspection	Yes
7. Limits not to be exceeded in the discharge	Sampling	Yes
8. Discharge not to cause certain effects in the receiving waters	Inspection	Yes
9. Lapse provision	Not applicable	N/A
10. Optional review provision re environmental effects	Next option to review in June 2020	N/A

Purpose: To discharge stormwater into an unnamed tributary of the Mangorei Stream in the Waiwhakaiho catchment		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
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

Table 7 Summary of performance for Consent 2055-3

Purpose: To take up to 60,480 m³/day at a maximum rate of 740 L/sec of water from Lake Mangamahoe		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. To take up to 60,480 m ³ /day at a maximum rate of 740 L/sec	Review of abstraction data	Yes
2. Exercise of consent in accordance with information submitted in support of application	Inspection and liaison with consent holder	Yes
3. Adoption of best practicable option	Inspection and liaison with consent holder	Yes
4. Screening of intake structures	Inspection	No- screens found not to be in line with best practice
5. Recording of abstraction rates and provision of data to Council	Data forwarded to Council and reviewed	Yes
6. Optional review provision re environmental effects	No more options for review	Yes
Overall assessment of consent compliance and environmental performance in respect of this consent		Good
Overall assessment of administrative performance in respect of this consent		High

Table 8 Summary of performance for Consent 5699-1

Purpose: To erect, place and maintain a pipe bridge over the Mangorei Stream in the Waiwhakaiho catchment		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Notification of Council prior to construction and maintenance works	No maintenance in monitoring year	N/A

Purpose: To erect, place and maintain a pipe bridge over the Mangorei Stream in the Waiwhakaiho catchment		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
2. Exercise of consent in accordance with information submitted in support of application	No maintenance in monitoring year	N/A
3. Adoption of best practicable option	No maintenance in monitoring year	N/A
4. Minimise disturbance of riverbed and bank and reinstatement of areas disturbed	No maintenance in monitoring year	N/A
5. Removal of structure when no longer required and reinstatement of the area. Notification of Council prior to removal of structure	Not applicable	N/A
6. Optional review provision re environmental effects	No further option for review before expiry	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		N/A
Overall assessment of administrative performance in respect of this consent		N/A

Table 9 Summary of performance for Consent 5700-1

Purpose: To disturb the bed of the Mangorei Stream by trenching to erect, place and maintain a pipeline under the Mangorei Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Notification of Council prior to construction and maintenance works	No maintenance in monitoring year	N/A
2. Exercise of consent in accordance with information submitted in support of application	No maintenance in monitoring year	N/A
3. Disturbance of riverbed areas covered by water	No maintenance in monitoring year	N/A
4. Adoption of best practicable option	No maintenance in monitoring year	N/A
5. Minimise disturbance of riverbed and bank and reinstatement of areas disturbed	No maintenance in monitoring year	N/A
6. Removal of structure when no longer required and reinstatement of the area. Notification of Council prior to removal of structure	Not applicable	N/A
7. Optional review provision re environmental effects	No further option for review before expiry	N/A

Purpose: To disturb the bed of the Mangorei Stream by trenching to erect, place and maintain a pipeline under the Mangorei Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
Overall assessment of consent compliance and environmental performance in respect of this consent		N/A
Overall assessment of administrative performance in respect of this consent		N/A

Table 10 Summary of performance for Consent 6643-1

Purpose: To erect, place and maintain a weir in the Mangorei Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option	Liaison with consent holder	Yes
2. Consent to be exercised in line with application documentation	Liaison with consent holder	Yes
3. Review provision	Consultation planned on whether a review is needed	N/A
4. Annual inspection by consent holder and report to Council	Report received	Yes
5. Notification of Council prior to maintenance works	No maintenance in monitoring year	N/A
6. Adoption of best practicable option during maintenance works	No maintenance in monitoring year	N/A
7. No maintenance to occur 1 May to 31 October unless waived by Council	No maintenance in monitoring year	N/A
8. Lapse provision	Not applicable – consent exercised	N/A
9. Review provision	No further option for review before expiry	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

3.3.2 Inglewood WTP

Table 11 Summary of performance for Consent 3934-3

Purpose: To take water from the Ngatoro Stream (contingency take and farm take)		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Limit on abstraction from Ngatoro Stream (for contingency, gallery backwash and Dudley Road User Group).	Contingency take not exercised- User group/backwash records received	99%
2. Limit on the combined abstraction from Ngatoro Stream (including main abstraction from consent)	Contingency take not exercised	N/A
3. Notification of use of contingency take	Contingency take not exercised	N/A
4. Install and operate measuring device	Inspection	Yes
5. Documentation of measuring device	NES verification in place	Yes
6. Notification of equipment failure	No notification received	N/A
7. Allow access to water measuring device	Inspection	Yes
8. Recording and transmission of data	Data received	Yes
9. Restriction on abstraction during low flow	Contingency take not exercised	N/A
10. Adopt best practice	Inspection	Yes
11. Review condition	Review not required in June 2018	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

Table 12 Summary of performance for Consent 4509-2

Purpose: To maintain a water supply intake infiltration gallery in and adjacent to the Ngatoro Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Any works to be undertaken only between 1 November and 30 April	Liaison with consent holder – no works undertaken during monitoring period	Yes
2. Notification of Council 48 hrs prior to maintenance works	Liaison with consent holder	Yes

Purpose: To maintain a water supply intake infiltration gallery in and adjacent to the Ngatoro Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
3. Minimise areas of disturbance	Liaison with consent holder – no works undertaken during monitoring period	Yes
4. Undertake works in accordance with guidelines	Liaison with consent holder – no works undertaken during monitoring period	Yes
5. Structure to be removed and area reinstated when no longer required	Not applicable - structure in use	N/A
6. Structure not to restrict fish passage	Inspection	Yes
7. Lapse condition	Not applicable	N/A
8. Optional review provision re environmental effects	Next option for review in June 2021	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

Table 13 Summary of performance for Consent 4510-2

Purpose: To take and use water from the Ngatoro Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Abstraction not to exceed 4,850 m ³ /day or 56 L/sec	Review of abstraction data	Yes
2. Requirement for water meter and data logger	Inspection	Yes
3. Emergency take and notification	Not exercised	N/A
4. Provision of data to Council	Data received	Yes
5. Efficient and conservative use of water	Liaison with consent holder	Yes
6. Intake screened for fish	Inspection	Yes
7. Lapse condition	Not applicable	N/A
8. Optional review provision re environmental effects	No further option for review prior to expiry	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

Table 14 Summary of performance for Consent 5869-1

Purpose: To discharge clarifier bleed and filter backwash supernatant overflow from the Inglewood WTP into the Ngatoro Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Limit on discharge rate and duration	Data review	99%
2. Adopt best practice	Inspection	Yes
3. Prepare and adhere to management plan	Inspection and liaison with consent holder	Yes
4. Limits on effects in receiving waters	Inspection and sampling	Yes
5. Limits on certain contaminants in discharge	Sampling	One non compliant sample reported by consent holder/
6. Notification of changes at site	Inspection and liaison with consent holder	Yes
7. Review condition	Review not required in June 2018	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		Good
Overall assessment of administrative performance in respect of this consent		High

3.3.3 Oakura WTP

Table 15 Summary of performance for Consent 1277-3

Purpose: To discharge filter backwash from the Oakura WTP onto and into land in the vicinity of the Wairau Stream (contingency)		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practice	Not assessed this period – consent not exercised	N/A
2. Consent exercised in accordance with information supplied	Not assessed this period – consent not exercised	N/A
3. Discharge quality	Not assessed this period – consent not exercised	N/A
4. Effects of discharge	Not assessed this period – consent not exercised	N/A
5. A review provision	Not assessed this period – consent not exercised	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		N/A
Overall assessment of administrative performance in respect of this consent		N/A

Table 16 Summary of performance for Consent 1278-4

Purpose: To take and use water from the Wairau Stream for Oakura water supply purposes		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Abstraction as contingency measure only	No abstraction in monitoring year	N/A
2. Volume not to exceed 1,300 m ³ or 15 L/sec	No abstraction in monitoring year	N/A
3. Water meter and datalogger to be installed and maintained, data to be provided to Council	No abstraction in monitoring year	N/A
4. Maintenance of water meter and datalogger	No abstraction in monitoring year	N/A
5. Council to be notified if measuring and recording equipment breaks down	No problems during monitoring period	N/A
6. Water meter and datalogger to be accessible to Council staff	No abstraction in monitoring year	N/A
7. Format of water records	No abstraction in monitoring year	N/A
8. Payment of \$1,300 required when consent exercised	No abstraction in monitoring year	N/A
9. Adopt best practicable option to prevent or minimise effects	No abstraction in monitoring year	N/A
10. Annual report	No abstraction in monitoring year	N/A
11. Optional review provision re environmental effects	Next option for review in June 2019	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		N/A
Overall assessment of administrative performance in respect of this consent		N/A

Table 17 Summary of performance for Consent 5713-2

Purpose: To use a weir to dam the Wairau Stream for Oakura water supply purposes		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Maintenance of weir and fish pass to be in accordance with plan submitted with the application	Not applicable	N/A
2. Screening of intake structure to avoid entrapment of fish	Inspection	Yes
3. Works or structures not to obstruct native fish passage	Inspection and triennial fish survey	Yes

Purpose: To use a weir to dam the Wairau Stream for Oakura water supply purposes		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
4. Optional review provision re environmental effects	Next option for review in June 2019	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

Table 18 Summary of performance for Consent 6114-1

Purpose: To take and use groundwater from two bores for Oakura water supply purposes		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Consent to be exercised in accordance with information submitted in support of the application and to ensure consent conditions are met	Inspection and liaison with consent holder	Yes
2. Adoption of best practicable option to prevent or minimise adverse effects on the environment	Inspection and liaison with consent holder	Yes
3. Limits on volume and rate of abstraction	Review of abstraction data provided to Council	Yes
4. Abstraction not to have adverse effects on other known groundwater and surface water takes	Liaison with consent holder	Yes
5. Recording of abstraction rates	Provision of data	Yes
6. Optional review provision re environmental effects	No further option for review before expiry	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

3.3.4 Okato WTP

Table 19 Summary of performance for Consent 0026-3

Purpose: To take water from the Mangatete Stream in the Kaihihi catchment for public water supply purposes		
Condition requirement	Means of monitoring during period under review	Compliance achieved?

Purpose: To take water from the Mangatete Stream in the Kaihihi catchment for public water supply purposes		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practicable option	Inspection and liaison with consent holder	Yes
2. Exercise consent in accordance with the application documentation	Inspection and liaison with consent holder	Yes
3. Abstraction rates and daily limits	Review of abstraction data received by Council	Yes
4. Notification of exceedances	Rate not exceeded	Yes
5. Installation of staff gauge	Staff gauge installed by Council	Yes
6. Implementation of water conservation for flows less than 180 L/sec over seven days	Restrictions put in place by consent holder	Yes
7. Implementation of water conservation for flows less than 120 L/sec over seven days	Review of stage data- trigger values not met	Yes
8. Maintaining and supplying of abstraction records	Provision of data	Yes
9. Screen off intake structure	Inspection	Yes
10. Lapse condition	Not applicable – consent exercised	N/A
11. Review condition	No more review options	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

3.3.5 Urenui dam

Table 20 Summary of performance for Consent 5989-1

Purpose: To modify and maintain an existing earth retention structure (dam) on the Kakapo Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Notification of Council prior to maintenance works	No maintenance in monitoring year	N/A
2. Structure not to obstruct fish passage	Triennial fish surveys	Not assessed this period

Purpose: To modify and maintain an existing earth retention structure (dam) on the Kakapo Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
3. Adoption of best practicable option to avoid or minimise discharge of silt or other contaminants and any adverse effects on water quality	No maintenance in monitoring year	N/A
4. Area and volume of river bed disturbance during fish pass construction and structure maintenance minimised and disturbed areas reinstated where possible	No maintenance in monitoring year	N/A
5. Maintenance of structure to ensure compliance with consent conditions	No maintenance in monitoring year	N/A
6. Removal of structure when no longer required and reinstatement of area. Notification of Council prior to removal	Not applicable - weir held as contingency	N/A
7. Optional review provision re environmental effects	No further option for review prior to expiry	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		N/A
Overall assessment of administrative performance in respect of this consent		N/A

3.3.6 Waitara industrial supply

This is a contingency supply and was not utilised in the monitoring period under review.

Table 21 Summary of performance for Consent 0126-5

Purpose: To take and use water from the Waiongana Stream to supply water for industry in Waitara		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Rate of take to not exceed 58 L/sec	No abstraction in monitoring year	N/A
2. Notification prior to exercise of consent	No abstraction in monitoring year	N/A
3. Datalogger and water meter to be installed	To be installed before consent exercised	N/A
4. Document required to show datalogger has been installed	To be installed before consent exercised	N/A

Purpose: To take and use water from the Waiongana Stream to supply water for industry in Waitara		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
5. Council to be advised if recording equipment breaks down	No abstraction in monitoring year	N/A
6. Water meter and datalogger to be accessible to Council staff	To be installed before consent exercised	N/A
7. Records of abstraction to be provided	No abstraction in monitoring year	N/A
8. Restrictions on abstraction due to low flow	No abstraction in monitoring year	N/A
9. Cessation of abstraction if river flow <402 L/s	No abstraction in monitoring year	N/A
10. Best practicable option to prevent environmental effects	Inspection	N/A
11. Intake screened	Consent not exercised	N/A
12. Financial contribution if consent exercised	None required as consent not exercised	N/A
13. Report required if consent exercised	Due 30 April 2018, if consent exercised	N/A
14. Lapse provision	Lapse in 2031	N/A
15. Review provision	Review not required in June 2018	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		N/A
Overall assessment of administrative performance in respect of this consent		N/A

Table 22 Summary of performance for Consent 4816-2

Purpose: To use and maintain an existing weir, fish pass and associated intake structures on the Waiongana Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Notification of Council prior to maintenance works	No maintenance in monitoring year	N/A
2. Adoption of best practicable option to avoid or minimise adverse effects	No maintenance in monitoring year	N/A
3. Minimising of area and volume of river disturbance during maintenance and reinstatement of disturbed areas	No maintenance in monitoring year	N/A

Purpose: To use and maintain an existing weir, fish pass and associated intake structures on the Waiongana Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
4. Maintenance work not to be conducted between 1 May and 31 October unless waived in writing	No maintenance in monitoring year	N/A
5. Maintenance of structures to ensure compliance with consent conditions	No maintenance in monitoring year	N/A
6. Structure not to restrict fish passage	Inspection and triennial fish surveys	Yes
7. Structure to be removed when no longer required and area to be reinstated	Retained for contingency supply-abstraction consent still in place	N/A
8. Optional review provision re environmental effects	No further option for review before expiry	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

Table 23 Summary of performance for Consent 4817-2

Purpose: To discharge water and sediment from intake pipe cleaning and draining of settling ponds into the Waiongana Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Records of cleaning and draining operations and provision of records to Council	No discharge in monitoring year	N/A
2. Notification prior to discharge	No discharge in monitoring year	N/A
3. Discharge only to occur when flow is greater than three times median other than for emergency works or with prior approval from Council	No discharge in monitoring year	N/A
4. Discharge not to cause certain effects in the Waiongana Stream below the established mixing zone	No discharge in monitoring year	N/A
5. Limit on increase in turbidity below mixing zone as result of discharge	No discharge in monitoring year	N/A
6. Optional review provision re environmental effects	No further option for review before expiry	N/A

Purpose: To discharge water and sediment from intake pipe cleaning and draining of settling ponds into the Waiongana Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
Overall assessment of consent compliance and environmental performance in respect of this consent		N/A
Overall assessment of administrative performance in respect of this consent		N/A

During the year under review, NPDC demonstrated a good level of environmental performance and compliance with their resource consents and a high level of administrative performance.

3.4 Recommendation from the 2015-2016 Annual Report

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

1. THAT the monitoring programme for consents associated with New Plymouth District Council's WTPs and water supply schemes in the 2016-2017 monitoring year remain unchanged from that for 2015-2016.

These recommendations were implemented in full.

3.5 Alterations to monitoring programmes for 2017-2018

In designing and implementing the monitoring programmes for water abstractions/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 abstractions/discharges and effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of consents, and the need to maintain a sound understanding of industrial processes within Taranaki abstracting water and discharging to the environment.

It is proposed that for 2017-2018, the programme remains unchanged from that for 2016-2017. A recommendation to this effect is included in this report.

3.6 Exercise of optional review of consent

Resource consents 0126-3, 3934-3 and 5869-2 provides for an optional review of the consent in June 2018. Consent conditions allow the Council to review the consent, for the purposes of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of the 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.

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 the monitoring programme for consents associated with New Plymouth District Council's WTPs and water supply schemes in the 2017-2018 monitoring year remain unchanged from that for 2017- 2016.
2. THAT the option for a review of resource consents 0126-3, 3934-3 and 5869-2 in June 2018, as set out in the conditions of the consents, not be exercised, on the grounds that the current 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.

Glossary of common terms and abbreviations

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

Bund	A wall around a tank to contain its contents in the case of a leak.
Conductivity	Conductivity, an indication of the level of dissolved salts in a sample, usually measured at 20°C and expressed in mS/m.
g/m ³	Grams per cubic metre, and equivalent to milligrams per litre (mg/L). In water, this is also equivalent to parts per million (ppm), but the same does not apply to gaseous mixtures.
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.
L/sec	Litres per second.
Incident Register	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 regional plan.
mS/m	Millisiemens per metre.
Mixing zone	the zone below a discharge point where the discharge is not fully mixed with the receiving environment. For a stream, conventionally taken as a length equivalent to 7 times the width of the stream at the discharge point.
NES	National Environmental Standard.
NTU	Nephelometric Turbidity Unit, a measure of the turbidity of water
pH	A numerical system for measuring acidity in solutions, with 7 as neutral. Numbers lower than 7 are increasingly acidic and higher than 7 are increasingly alkaline. The scale is logarithmic i.e. a change of 1 represents a ten-fold change in strength. For example, a pH of 4 is ten times more acidic than a pH of 5.
Physicochemical	Measurement of both physical properties (e.g. temperature, clarity, density) and chemical determinants (e.g. metals and nutrients) to characterise the state of an environment.
Resource consent	Refer Section 87 of the RMA. Resource consents include land use consents (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 1991</i> and including all subsequent amendments.
SS	Suspended solids.
Temp	Temperature, measured in °C (degrees Celsius).
Turb	Turbidity, expressed in NTU.

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

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Appendix I

Resource consents held by New Plymouth District Council

(For a copy of the signed resource consent
please contact the TRC Consents department)

New Plymouth WTP

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 4342

Consent Granted 30 May 2008
Date:

Conditions of Consent

Consent Granted: To discharge wastewater from a water treatment plant into
an unnamed tributary of the Mangorei Stream in the
Waiwhakaiho catchment at or about (NZTM)
1696185E-5669305N

Expiry Date: 1 June 2026

Review Date(s): June 2014, June 2020

Site Location: Junction Road, New Plymouth

Legal Description: Lot 1 DP 10097 Blk X Paritutu SD

Catchment: Waiwhakaiho

Tributary: Mangorei

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council 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. Notwithstanding any other condition of this consent, the consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this consent.
2. The exercise of this consent shall be undertaken generally in accordance with the documentation submitted in support of application 5038. In the case of any contradiction between the documentation submitted in support of application 5038 and the conditions of this consent, the conditions of this consent shall prevail.
3. The following concentrations shall not be exceeded in the discharge:

Component	Concentration
pH (range)	6.0 – 9.0
suspended solids	100 gm ⁻³
free chlorine	0.2 gm ⁻³

This condition shall apply prior to the entry of the wastewater into the receiving waters of the unnamed tributary, at a designated sampling point approved by the Chief Executive, Taranaki Regional Council.

4. After allowing for reasonable mixing, within a mixing zone extending 15 metres downstream of the discharge point, the discharge shall not, either by itself or in combination with other discharges, give rise to any or all of the following effects in the receiving water:
 - a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - b) any conspicuous change in the colour or visual clarity;
 - c) any emission of objectionable odour;
 - d) the rendering of fresh water unsuitable for consumption by farm animals;
 - e) any significant adverse effects on aquatic life.

Consent 0672-3

5. This consent shall lapse on the expiry of five years after the date of issue of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.
6. 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 2014 and/or June 2020, 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 30 May 2008

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

Name of
Consent Holder: New Plymouth District Council
Private Bag 2025
NEW PLYMOUTH 4342

Consent Granted 30 May 2008
Date:

Conditions of Consent

Consent Granted: To discharge stormwater from a water treatment plant into
an unnamed tributary of the Mangorei Stream in the
Waiwhakaiho catchment at or about (NZTM)
1696185E-5669305N

Expiry Date: 1 June 2026

Review Date(s): June 2014, June 2020

Site Location: Junction Road, New Plymouth

Legal Description: Lot 1 DP 10097 Blk X Paritutu SD

Catchment: Waiwhakaiho

Tributary: Mangorei

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council 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. Notwithstanding any other condition of this consent, the consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this consent.
2. The exercise of this consent shall be undertaken substantially in accordance with the documentation submitted in support of application 5001. In the case of any contradiction between the documentation submitted in support of application 5001 and the conditions of this consent, the conditions of this consent shall prevail.
3. The stormwater discharged shall be from a catchment area not exceeding 2 hectares.
4. The consent holder shall maintain a stormwater management plan. This plan shall document how the site is to be managed in order to minimise the contaminants that become entrained in the stormwater to the satisfaction of the Chief Executive, Taranaki Regional Council.
5. The consent holder shall maintain a contingency plan. The plan shall detail measures and procedures to be undertaken to prevent spillage or accidental discharge of contaminants not licensed by this consent, and measures to avoid, remedy or mitigate the environmental effects of such a discharge, to the satisfaction of the Chief Executive, Taranaki Regional Council.
6. Any above ground hazardous substances storage areas shall be bunded with drainage to sumps, or other appropriate recovery systems, and not to the stormwater catchment.

Consent 0673-3

7. The following concentrations shall not be exceeded in the discharge:

Component	Concentration
pH (range)	6.0 – 9.0
suspended solids	100 gm ⁻³
free chlorine	0.2 gm ⁻³

This condition shall apply prior to the entry of the stormwater into the receiving waters of the unnamed tributary, at a designated sampling point approved by the Chief Executive, Taranaki Regional Council.

8. After allowing for reasonable mixing, within a mixing zone extending 15 metres downstream of the discharge point, the discharge shall not, either by itself or in combination with other discharges, give rise to any or all of the following effects in the receiving water:
- the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - any conspicuous change in the colour or visual clarity;
 - any emission of objectionable odour;
 - the rendering of fresh water unsuitable for consumption by farm animals;
 - any significant adverse effects on aquatic life.
9. This consent shall lapse on the expiry of five years after the date of issue of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.
10. 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 2014 and/or June 2020, 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 30 May 2008

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Water 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: 25 June 2002

Conditions of Consent

Consent Granted: To take up to 60,480 cubic metres per day at a maximum
rate of 740 litres/ second of water from Lake Mangamahoe
in the Waiwhakaiho Catchment for municipal water supply
purposes at or about GR: P19:072-308, P19:071-306 and
P19:078-298

Expiry Date: 1 June 2021

Review Date(s): June 2006, June 2011, June 2016

Site Location: Lake Mangamahoe, Junction Road, New Plymouth

Legal Description: Pt Sec 13 DP 5433 Hua and Waiwakaiho Hundred Blk X
Paritutu SD

Catchment: Waiwhakaiho

Tributary: Lake Mangamahoe

Consent 2055-3

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 exercise of this consent shall be conducted in accordance with the information submitted in support of the application and to ensure that the conditions of the consent are met at all times.
2. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to avoid or minimise any adverse effects on the environment as a result of the exercise of this consent.
3. All intake structures shall be screened to avoid the entrainment of fish.
4. The consent holder shall install and operate a measuring device capable of accurately recording daily rates of abstraction and shall measure, record and make such records available to the Chief Executive, Taranaki Regional Council, upon request.
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 2006 and/or June 2011 and/or June 2016, 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 25 June 2002

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Land Use Consent
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: 9 November 2000

Conditions of Consent

Consent Granted: To erect, place and maintain a pipebridge over the
Mangorei Stream in the Waiwhakaiho catchment at or
about GR: P19:055-316

Expiry Date: 1 June 2020

Review Date(s): June 2002, June 2008, June 2014

Site Location: Mangorei Road, New Plymouth

Legal Description: Lot 1 DP 9635 Pt Sec 773 Grey Dist Blk IX Paritutu SD

Catchment: Waiwhakaiho

Tributary: Mangorei

General conditions

- a) That 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) That 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) That 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 notify the Taranaki Regional Council at least 48 hours prior to the commencement and upon completion of the initial construction and again prior to and upon completion of any subsequent maintenance works which would involve disturbance of or deposition to the riverbed or discharges to water.
- 2. The structure[s] authorised by this consent shall be constructed generally in accordance with the documentation submitted in support of the application and shall be maintained to ensure the conditions of this consent are met.
- 3. The consent holder shall adopt the best practicable option to avoid or minimise the discharge of silt or other contaminants into water or onto the riverbed and to avoid or minimise the disturbance of the riverbed and any adverse effects on water quality.
- 4. The consent holder shall ensure that the area and volume of riverbed and bank disturbance shall, so far as is practicable, be minimised and any areas which are disturbed shall, so far as is practicable, be reinstated, including riparian vegetation.
- 5. The structure[s] authorised by this consent shall be removed and the area reinstated, if and when the structure[s] are no longer required. The consent holder shall notify the Taranaki Regional Council at least 48 hours prior to structure[s] removal and reinstatement.
- 6. The Taranaki Regional Council may review any or all of the conditions of this consent by giving notice of review during the month of June 2002 and/or June 2008 and/or June 2014, for the purpose of ensuring that the conditions adequately deal with the environmental effects arising from the exercise of this 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 9 November 2000

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Land Use Consent
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 30 January 2001
Date:

Conditions of Consent

Consent Granted: To disturb the bed of the Mangorei Stream by trenching to
erect, place and maintain a pipeline under the Mangorei
Stream in the Waiwhakaiho catchment at or about GR:
P19:059-331

Expiry Date: 1 June 2020

Review Date(s): June 2002, June 2008, June 2014

Site Location: Junction Road, New Plymouth

Legal Description: Pt Lot 1 DP 6447 Blk X Paritutu SD

Catchment: Waiwhakaiho

Tributary: Mangorei

Consent 5700-1

General conditions

- a) That 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) That 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) That 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 notify the Taranaki Regional Council at least 48 hours prior to the commencement and upon completion of the initial construction and again prior to and upon completion of any subsequent maintenance works which would involve disturbance of or deposition to the riverbed or discharges to water.
2. The structure[s] authorised by this consent shall be constructed generally in accordance with the documentation submitted in support of the application and shall be maintained to ensure the conditions of this consent are met.
3. The disturbance of parts of the riverbed covered by water and/or any works which may result in downstream discolouration of water shall only be undertaken between the period 1 November and 30 April, except where this requirement is waived in writing by the Chief Executive, Taranaki Regional Council.
4. The consent holder shall adopt the best practicable option to avoid or minimise the discharge of silt or other contaminants into water or onto the riverbed and to avoid or minimise the disturbance of the riverbed and any adverse effects on water quality.
5. The consent holder shall ensure that the area and volume of riverbed and bank disturbance shall, so far as is practicable, be minimised and any areas which are disturbed shall, so far as is practicable, be reinstated, including riparian vegetation.
6. The structure[s] authorised by this consent shall be removed and the area reinstated, if and when the structure[s] are no longer required. The consent holder shall notify the Taranaki Regional Council at least 48 hours prior to structure[s] removal and reinstatement.
7. The Taranaki Regional Council may review any or all of the conditions of this consent by giving notice of review during the month of June 2002 and/or June 2008 and/or June 2014, for the purpose of ensuring that the conditions adequately deal with the environmental effects arising from the exercise of this 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 30 January 2001

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Land Use Consent
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: 1 August 2005

Conditions of Consent

Consent Granted: To erect, place and maintain a weir in the Mangorei Stream
in the Waiwhakaiho catchment at or about GR: P19:044-
268

Expiry Date: 1 June 2020

Review Date(s): June 2008, June 2014

Site Location: Scout Road, Korito, New Plymouth

Legal Description: Sec 96 Hua & Waiwhakaiho Hun Blk II Egmont SD

Catchment: Waiwhakaiho

Tributary: Mangorei

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council 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 at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this consent.
2. The exercise of this consent shall be undertaken generally in accordance with the documentation submitted in support of application 3838. In the case of any contradiction between the documentation submitted in support of application 3838 and the conditions of this consent, the conditions of this consent shall prevail.
3. This consent may be reviewed at any time should monitoring show that brown trout densities upstream of the structure are increasing or if there are significant adverse effects on conservation values upstream of the structure or if the structure is found to be no longer necessary for the conservation of native fish biodiversity.
4. The consent holder shall undertake annual inspections of the structure authorised by this resource consent and provide a report to the satisfaction of the Chief Executive, Taranaki Regional Council.
5. The consent holder shall notify the Chief Executive, Taranaki Regional Council, at least 48 hours prior to any maintenance works of the structure licensed by this consent which would involve disturbance of, or deposition to, the streambed or discharges to water.
6. The consent holder, during any maintenance works, shall adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to avoid or minimise the discharge of silt or other contaminants into water or onto the streambed and to avoid or minimise the disturbance of the streambed and any adverse effects on water quality.
7. No maintenance work shall be conducted during the period 1 May to 31 October unless waived in writing by the Chief Executive, Taranaki Regional Council.

Consent 6643-1

8. This consent shall lapse on the expiry of five years after the date of issue of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.
9. 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 2008 and/or June 2014, 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 1 August 2005

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Inglewood WTP

Water 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 4342

Decision Date: 29 February 2016

Commencement Date: 29 February 2016

Conditions of Consent

Consent Granted: To take water as a contingency supply and for farm supply
purposes from an intake weir in the Ngatoro Stream

Expiry Date: 1 June 2021

Review Date(s): June 2018

Site Location: Dudley Road, Inglewood

Grid Reference (NZTM) 1698662E-5657635N

Catchment: Waitara

Tributary: Manganui
Ngatoro

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

General condition

- a. The consent holder shall pay to the Taranaki Regional Council all the administration, monitoring and supervision costs of this consent, fixed in accordance with section 36 of the Resource Management Act 1991.

Special conditions

1. This consent authorises taking:
 - (a) at a maximum rate of 5 litres per second, up to a maximum of 400 m³ in any 24 hour period ending at midnight (New Zealand Standard Time), for a water supply to the Dudley Road Rural Users Group;
 - (b) of up to 5000 m³ in any 24 hour period ending at midnight (New Zealand Standard Time), when the taking authorised by consent 4510 (the main Inglewood water supply intake) can not occur due to necessary maintenance or equipment failure; and
 - (c) at a maximum of 70 litres per second for up to 3 hours for the purpose of back flushing the infiltration gallery at the main Inglewood water supply intake.
2. The rate of taking pursuant to this consent in combination with consent 4510 (the main Inglewood supply intake) shall not exceed 75 litres per second.
3. The consent holder shall notify the Chief Executive, Taranaki Regional Council by emailing worknotification@trc.govt.nz as soon as practicable if any water is to be, or has been, taken pursuant to condition 1(b) above. Notification shall include the consent number, the date that water will be/was first taken, and the circumstances that have necessitated the taking.
4. Before 1 July 2016, the consent holder shall install, and thereafter maintain water meters and dataloggers at sites established in accordance with Regulation 10 of the *Resource Management (Measurement and Reporting of Water Takes) Regulations 2010*. The water meters and dataloggers shall be tamper-proof and shall measure and record the rate and volume of water taken for each of the uses described in condition 1, to an accuracy of $\pm 5\%$. Records of the date, the time and the rates and volumes of water taken at intervals not exceeding 15 minutes, shall be made available to the Chief Executive, Taranaki Regional Council at all reasonable times.

Note: Water meters and dataloggers must be installed, and regularly maintained, in accordance with manufacturer's specifications in order to ensure that they meet the required accuracy. Even with proper maintenance water meters and dataloggers have a limited lifespan.

Consent 3934-3.0

5. The consent holder shall provide the Chief Executive, Taranaki Regional Council with a document from a suitably qualified person certifying that water measuring and recording equipment required by the conditions of this consent ('the equipment'):
 - (a) has been installed and/or maintained in accordance with the manufacturer's specifications; and/or
 - (b) has been tested and shown to be operating to an accuracy of $\pm 5\%$.The documentation shall be provided:
 - (i) within 30 days of the installation of a water meter or datalogger;
 - (ii) at other times when reasonable notice is given and the Chief Executive, Taranaki Regional Council has reasonable evidence that the equipment may not be functioning as required by this consent; and
 - (iii) no less frequently than once every five years.
6. If any measuring or recording equipment breaks down, or for any reason is not operational, the consent holder shall advise the Chief Executive, Taranaki Regional Council immediately. Any repairs or maintenance to this equipment must be undertaken by a suitably qualified person.
7. Any water meter or datalogger shall be accessible to Taranaki Regional Council officers at all reasonable times for inspection and/or data retrieval. In addition the data logger shall be designed and installed so that Taranaki Regional Council officers can readily verify that it is accurately recording the required information.
8. The records of water taken shall:
 - (a) be in a format that, in the opinion of the Chief Executive, Taranaki Regional Council, is suitable for auditing;
 - (b) specifically record the water taken as 'zero' when no water is taken: and
 - (c) be transmitted to the Taranaki Regional Council's computer system within two hours of being recorded.
9. When the flow in the Ngatoro Stream at the 'Bushline' gauging site is less than 134 litres per second the taking of water shall be restricted to the minimum amount necessary to maintain the health of people and animals (i.e. garden watering and other non-essential uses are prohibited).
10. At all times the consent holder shall adopt the best practicable option to prevent or minimise any actual or likely adverse effect on the environment associated with the abstraction of water, including, but not limited to, the efficient and conservative use of water.

Consent 3934-3.0

11. 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 2018 for the purposes 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 29 February 2016

For and on behalf of
Taranaki Regional Council

A D McLay
Director - Resource Management

Land Use Consent
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 4342

Consent Granted
Date: 12 June 2009

Conditions of Consent

Consent Granted: To maintain a water supply intake infiltration gallery in and adjacent to the Ngatoro Stream a tributary of the Manganui River in the Waitara catchment and to maintain a pipeline from the gallery to the water treatment station for Inglewood urban water supply purposes at or about (NZTM) 1701081E-5660275N

Expiry Date: 1 June 2027

Review Date(s): June 2015, June 2021

Site Location: Dudley Road, Inglewood

Legal Description: Pt Sec 17 Blk VIII Egmont SD

Catchment: Waitara

Tributary: Manganui
Ngatoro

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council 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. Any disturbance of parts of the riverbed covered by water and/or any works which may result in downstream discolouration of water shall be undertaken only between 1 November and 30 April, except where this requirement is waived in writing by the Chief Executive, Taranaki Regional Council.
2. The consent holder shall notify the Chief Executive, Taranaki Regional Council, in writing at least 48 hours prior to the commencement and upon completion of maintenance works which would involve disturbance of or deposition to the riverbed or discharges to water. Notification shall include the consent number and a brief description of the activity consented and be emailed to worknotification@trc.govt.nz.
3. The consent holder shall ensure that the area and volume of riverbed disturbance shall, so far as is practicable, be minimised and any areas which are disturbed shall, so far as is practicable, be reinstated.
4. The consent holder shall take all reasonable steps to:
 - a. minimise the amount of sediment discharged to the stream;
 - b. minimise the amount of sediment that becomes suspended in the stream; and
 - c. mitigate the effects of any sediment in the stream.

Undertaking work in accordance with *Guidelines for Earthworks in the Taranaki region*, by the Taranaki Regional Council, will achieve compliance with this condition.

5. Except with the written agreement of the Chief Executive, Taranaki Regional Council, the structure[s] authorised by this consent shall be removed and the area reinstated, if and when the structure is no longer required. A further resource consent may be required to authorise the removal of the structure, and the consent holder is advised to seek advice from the Council on this matter.
6. The exercise of this consent shall not restrict the passage of fish.

Consent 4509-2

7. This consent shall lapse on 30 June 2014, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.
8. 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 2015 and/or June 2021, 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 12 June 2009

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Water 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 4342

Consent Granted
Date: 12 June 2009

Conditions of Consent

Consent Granted: To take and use water from the Ngatoro Stream a tributary
of the Manganui River in the Waitara catchment, for
Inglewood urban water supply purposes at or about
(NZTM) 1701081E-5660275N

Expiry Date: 1 June 2021

Review Date(s): June 2015

Site Location: Dudley Road, Inglewood

Legal Description: Pt Sec 17 Blk VIII Egmont SD

Catchment: Waitara

Tributary: Manganui
Ngatoro

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council 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. Subject to condition 3, the volume of water taken shall not exceed 4,850 cubic metres per day, at a rate not exceeding 56 litres per second.
2. The consent holder shall maintain a water meter and a datalogger. The water meter and a datalogger shall be tamper-proof and shall measure and record the rate and volume of water taken to an accuracy of $\pm 5\%$.
3. The consent holder shall be allowed to take up to 70 litres per second when it is necessary in emergency cases, provided previous notification is made to the Chief Executive of the Taranaki Regional Council. Notification shall be made by e-mailing worknotification@trc.govt.nz 24 hours of the emergency abstraction commencing. Notification shall include the consent number and a brief description of the activity consented.
4. The consent holder shall make available electronic records of water taken to the Council at a frequency and in a format to be advised by the Chief Executive Taranaki Regional Council.
5. Notwithstanding the terms and conditions of this consent the consent holder shall take all reasonable steps to avoid, remedy or mitigate any adverse effect on the environment arising from the exercise of this consent, including, but not limited to, the efficient and conservative use of water
6. The consent holder shall ensure that the intake structure is appropriately screened to avoid the entrainment of fish.
7. This consent shall lapse on 30 June 2014, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

Consent 4510-2

8. 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 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 12 June 2009

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

Name of
Consent Holder: New Plymouth District Council
Private Bag 2025
New Plymouth 4342

Decision Date: 29 February 2016

Commencement Date: 29 February 2016

Conditions of Consent

Consent Granted: To discharge clarifier bleed and filter backwash supernatant
overflow from the Inglewood water treatment plant into the
Ngatoro Stream

Expiry Date: 1 June 2021

Review Date(s): June 2018

Site Location: Dudley Road, Inglewood

Grid Reference (NZTM) 1701945E-5660972N

Catchment: Waitara

Tributary: Manganui
Ngatoro

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

General condition

- a. The consent holder shall pay to the Taranaki Regional Council all the administration, monitoring and supervision costs of this consent, fixed in accordance with section 36 of the Resource Management Act 1991.

Special conditions

1. The discharge shall for no more than 3 hours per day, at a rate not exceeding 125 m³ per hour.
2. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this consent.
3. At all times after 30 April 2016, the site shall be operated in accordance with a 'Management Plan' prepared by the consent holder and approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity. The plan shall detail how the site will be managed to achieve compliance with the conditions of this consent and shall include as a minimum:
 - (a) a schedule of sampling of the discharge;
 - (b) details of maintenance and operation of the settlement facility;
 - (c) a schedule of monitoring of sediment levels in the reservoir; and
 - (d) a programmed cleaning regime.
4. After allowing for reasonable mixing, within a mixing zone extending 25 metres downstream of the discharge point, the discharge shall not, either by itself or in combination with other discharges, give rise to any or all of the following effects in the receiving water:
 - (a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - (b) any conspicuous change in the colour or visual clarity;
 - (c) any emission of objectionable odour;
 - (d) the rendering of fresh water unsuitable for consumption by farm animals;
 - (e) any significant adverse effects on aquatic life.
5. Constituents of the discharge shall meet the standards shown in the following table.

Constituent	Standard
pH	Within the range 6.0 to 9.0
suspended solids	Concentration not greater than 20 gm ⁻³
Free available chlorine	Concentration not greater than 0.1 gm ⁻³

This condition shall apply before entry of the treated stormwater into the receiving waters at a designated sampling point approved by the Chief Executive, Taranaki Regional Council.

Consent 5869-2.0

6. The consent holder shall notify the Chief Executive, Taranaki Regional Council, prior to making any changes to the processes or operations undertaken at the site, or the chemicals used or stored on site that could alter the nature of the discharge. Any such change shall then only occur following receipt of any necessary approval under the Resource Management Act 1991. Notification shall include the consent number, a brief description of the activity consented and an assessment of the environmental effects of any changes, and be emailed to consents@trc.govt.nz.
7. 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 2018 for the purposes 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 29 February 2016

For and on behalf of
Taranaki Regional Council

A D McLay
Director - Resource Management

Oakura WTP

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 4600

Consent Granted 11 December 2006
Date:

Conditions of Consent

Consent Granted: To discharge filter backwash from the Oakura Water
Treatment Plant onto and into land in the vicinity of the
Wairau Stream at or about GR: P19:930-301

Expiry Date: 1 June 2025

Review Date(s): June 2013, June 2019

Site Location: Main South Road, Oakura

Legal Description: Sec 13 Pt Sec 14 30 Oakura Dist Blk II Wairau SD

Catchment: Wairau

General conditions

- a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council 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 at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this consent.
2. The exercise of this consent shall be undertaken generally in accordance with the documentation submitted in support of application 4477. In the case of any contradiction between the documentation submitted in support of application 4477 and the conditions of this consent, the conditions of this consent shall prevail.
3. The discharge quality shall not exceed the following limits at all times:

Component	Concentration
Suspended solids	100 g/m ³
Free available chlorine	0.2 g/ m ³
pH	6-9

4. The discharge shall not give rise to any of the following effects in the Wairau Stream:
 - a) the production of any conspicuous oil or grease films, scums or foams or floatable or suspended materials;
 - b) Any conspicuous change in the colour or visual clarity;
 - c) Any emission of objectionable odour;
 - d) The rendering of fresh water unsuitable for consumption by farm animals;
 - e) Any significant adverse effects on aquatic life, habitats or ecology.

Consent 1277-3

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 2013 and/or June 2019, 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 11 December 2006

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Water 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 4342

Decision Date: 12 September 2013

Commencement Date: 12 September 2013

Conditions of Consent

Consent Granted: To take and use water from the Wairau Stream for Oakura
water supply purposes

Expiry Date: 1 June 2031

Review Date(s): June 2019, June 2025

Site Location: Upper Wairau Road, Oakura

Legal Description: Pt Sub 2 Sec 170 Oakura Dist (Site of take)

Grid Reference (NZTM) 1683254E-5667943N

Catchment: Wairau

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

General condition

- a. The consent holder shall pay to the Taranaki Regional Council [the Council] all the administration, monitoring and supervision costs of this consent, fixed in accordance with section 36 of the Resource Management Act.

Special conditions

1. The water abstraction shall only be exercised as a contingency measure, when the groundwater bores are unable to provide sufficient water to the Oakura supply scheme.
2. The volume of water abstracted shall not exceed 1,300 cubic metres/day and the rate shall not exceed 15 litres/second.
3. Before exercising this consent the consent holder shall install, and thereafter maintain a water meter and a datalogger at the site of taking. The water meter and datalogger shall be tamper-proof and shall measure and record the rate and volume of water taken to an accuracy of $\pm 5\%$. Records of the date, the time and the rate and volume of water taken at intervals not exceeding 15 minutes, shall be made available to the Chief Executive, Taranaki Regional Council at all reasonable times/ on an annual basis.

Note: Water meters and dataloggers must be installed, and regularly maintained, in accordance with manufacturer's specifications in order to ensure that they meet the required accuracy. Even with proper maintenance water meters and dataloggers have a limited lifespan.

4. The consent holder shall provide the Chief Executive, Taranaki Regional Council with a document from a suitably qualified person certifying that water measuring and recording equipment required by the conditions of this consent ('the equipment'):
 - (a) has been installed and/or maintained in accordance with the manufacturer's specifications; and/or
 - (b) has been tested and shown to be operating to an accuracy of $\pm 5\%$.

The documentation shall be provided:

- (i) within 30 days of the installation of a water meter or datalogger;
 - (ii) at other times when reasonable notice is given and the Chief Executive, Taranaki Regional Council has reasonable evidence that the equipment may not be functioning as required by this consent; and
 - (iii) no less frequently than once every five years.
5. If any measuring or recording equipment breaks down, or for any reason is not operational, the consent holder shall advise the Chief Executive, Taranaki Regional Council immediately. Any repairs or maintenance to this equipment must be undertaken by a suitably qualified person.
6. The water meter and datalogger shall be accessible to Taranaki Regional Council officer's at all reasonable times for inspection and/or data retrieval.

Consent 1278-4

7. The records of water taken shall:
 - (a) be in a format that, in the opinion of the Chief Executive, Taranaki Regional Council, is suitable for auditing; and
 - (b) specifically record the water taken as 'zero' when no water is taken.
8. During any 12-month period ending on 30 June in which this consent is exercised, the consent holder shall make a payment of \$1300 (plus GST) to the Taranaki Regional Council as a financial contribution. The financial contribution shall be used to remedy or mitigate adverse environmental effects of the taking in the Wairau Stream catchment. The financial contribution shall be adjusted in accordance with the Consumer Price Index (or similar) so that the real value of the payment remains the same.
9. At all times the consent holder shall adopt the best practicable option to prevent or minimise any actual or likely adverse effect on the environment associated with the abstraction of water, including, but not limited to, the efficient and conservative use of water
10. The consent holder shall, on an annual basis, provide a report detailing:
 - the work done to detect and minimise leaks;
 - water use efficiency and conservation measures undertaken; and
 - water use benchmarking data for the region and how the area supplied by this consent supplied compare.

The report(s) shall be provided to the Chief Executive, Taranaki Regional Council before 31 August each year and cover the previous 1 July to 30 June period.
11. The Taranaki Regional Council may review, under section 128 of the Resource Management Act, 1991:
 - (a) Condition 2 to assess water use requirements in June 2019 and /or June 2025; and
 - (b) Any or all of the conditions of this consent by giving notice of review during the month of June 2019 and /or June 2025, for the purpose of ensuring that the conditions are adequate to deal with any significant adverse effects on the environment arising from the exercise of this consent, which either were 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 12 September 2013

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Land Use Consent
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 4342

Decision Date: 12 September 2013

Commencement Date: 12 September 2013

Conditions of Consent

Consent Granted: To use a weir to dam the Wairau Stream for Oakura water
supply purposes

Expiry Date: 1 June 2031

Review Date(s): June 2019, June 2025

Site Location: Upper Wairau Road, Oakura

Legal Description: Pt Sub 2 Sec 170 Oakura Dist (Site of structure)

Grid Reference (NZTM) 1683254E-5667943N

Catchment: Wairau

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

General condition

- a. The consent holder shall pay to the Taranaki Regional Council [the Council] all the administration, monitoring and supervision costs of this consent, fixed in accordance with section 36 of the Resource Management Act.

Special conditions

1. The consent holder shall maintain the weir, including the fish pass, in accordance with the details provided in support of the renewal application 5844. In the case of any contradiction between the information and the conditions of this consent, the conditions of this consent shall prevail.
2. The consent holder shall ensure that the intake is appropriately screened to avoid the entrapment of fish.
3. The works or structure authorised by this consent shall not obstruct fish passage.
4. 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 2019 and/or June 2025, 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 12 September 2013

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Water 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: 19 March 2003

Conditions of Consent

Consent Granted: To take and use groundwater from two bores for Oakura
water supply purposes at or about GR: P19:932-300 and
GR: P19:934-301

Expiry Date: 1 June 2020

Review Date(s): June 2008, June 2014

Site Location: Wairau Road, Oakura

Legal Description: Lot 1 DP 312138 & Lot 1 DP 19978 Blk II Wairau SD

Catchment: Oakura

Tributary: Wakamure

Consent 6114-1

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 exercise of this consent shall be undertaken in general accordance with the information submitted in support of the application and to ensure the conditions of this consent are met at all times.
2. The consent holder shall at all times adopt the best practicable option, as defined by section 2 of the Resource Management Act 1991, to prevent or minimise any actual or likely adverse effect on the environment associated with the abstraction of groundwater, including but not limited to the efficient and conservative use of water.
3. The volume of water abstracted shall not exceed 3715 cubic metres/day at an individual bore rate of 35 litres/second, or a combined rate of 43 litres/second between the two bores.
4. The abstraction shall be managed such that there are no adverse effects on other known groundwater and surface water takes from the exercise of this consent.
5. The consent holder shall operate a measuring device capable of recording daily rates of abstraction from the bore[s] and monitor water levels in nearby observation bores, and shall make these records available to the Chief Executive upon request.
6. 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 2008 and/or June 2014, 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 19 March 2003

For and on behalf of
Taranaki Regional Council

Chief Executive

Okato WTP

Water 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 4342

Decision Date 27 September 2011
[Change]:

Commencement 27 September 2011 [Granted: 14 June 2007]
Date [Change]:

Conditions of Consent

Consent Granted: To take water from the Mangatete Stream in the Kaihihi
catchment for public water supply purposes at or about
(NZTM) 1678253E-5658216N

Expiry Date: 1 June 2019

Review Date(s): June 2013

Site Location: Okato Intake, Saunders Road, Okato

Legal Description: Lot 5 DP 431790 [Site of take]

Catchment: Kaihihi

Tributary: Mangatete

*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 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 at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any actual or likely adverse effects on the environment from the exercise of this consent, including, but not limited to, the efficient and conservative use of water.
2. The exercise of this consent shall be undertaken generally in accordance with the documentation submitted in support of applications 4464 and 6829. In the case of any contradiction between the documentation submitted in support of applications 4464 and 6829, and the conditions of this consent, the conditions of this consent shall prevail.
3. The volume of water abstracted shall not exceed 1000 cubic metres/day, at a rate not exceeding 13.8 litres/second, except when a fault or incident occurs at the plant that threatens the security of the water supply for Okato, in this case the water abstracted shall not exceed 1200 cubic metres/day, for the duration of the event.
4. The consent holder is to notify the Chief Executive, Taranaki Regional Council, when a fault or incident occurs, that requires taking more than 1000 m³/day, and of the nature of the fault or incident.
5. A staff gauge shall be installed immediately downstream of the water take and a low flow rating curve established before the exercise of this consent. The staff gauge will be installed by the Taranaki Regional Council and all costs will be recovered through the compliance monitoring programme in place for the activity.
6. When the flow in the Mangatete Stream, measured beneath the Saunders Road bridge, is less than 180 litres/second for a period of seven or more consecutive days, water conservation practices are to be put in place by the consent holder (eg. garden water only to be used every odd day).

Consent 0026-3

7. When the flow in the Mangatete Stream, measured beneath the Saunders Road bridge, is less than 120 litres/second for a period of seven or more consecutive days, the taking of water shall be restricted to the minimum amount necessary to maintain the health of people and animals (i.e. garden water and other non-essential uses are prohibited).
8. The consent holder shall maintain a record of abstraction including date, and daily volume abstracted (to an accuracy of + 5%), and shall make these records available to the Chief Executive, Taranaki Regional Council, upon request.
9. The consent holder shall ensure that the emergency intake structure is appropriately screened to avoid the entrapment of freshwater fish.
10. This consent shall lapse on the expiry of five years after the date of issue of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.
11. 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 2013, 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 27 September 2011

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Waitara Industrial Water Supply

Water 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 4342

Decision Date: 21 June 2013

Commencement Date: 21 June 2013

Conditions of Consent

Consent Granted: To take and use water from the Waiongana Stream to supply water for industry in Waitara

Expiry Date: 1 June 2031

Review Date(s): June 2018, June 2024, June 2030

Site Location: Mountain Road, Lepperton

Legal Description: Adjacent to Pt Sec 190 (Site of take)

Grid Reference (NZTM) 1704217E-5672857N

Catchment: Waiongana

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

General condition

- a. The consent holder shall pay to the Taranaki Regional Council all the administration, monitoring and supervision costs of this consent, fixed in accordance to section 36 of the Resource Management Act 1991.

Special conditions

1. The rate of taking shall not exceed 58 litres per second.
2. The consent holder shall notify the Chief Executive, Taranaki Regional Council of the intention to exercise this consent at least 60 days before the consent is first exercised. Notification shall include the consent number and a brief description of the activity consented and be emailed to worknotification@trc.govt.nz.
3. Before exercising this consent the consent holder shall install, and thereafter maintain a water meter and a datalogger at the site of taking. The water meter and datalogger shall be tamper-proof and shall measure and record the rate and volume of water taken to an accuracy of $\pm 5\%$. Records of the date, the time and the rate and volume of water taken at intervals not exceeding 15 minutes, shall be made available to the Chief Executive, Taranaki Regional Council at all reasonable times/ on an annual basis.

Note: Water meters and dataloggers must be installed, and regularly maintained, in accordance with manufacturer's specifications in order to ensure that they meet the required accuracy. Even with proper maintenance water meters and dataloggers have a limited lifespan.

4. The consent holder shall provide the Chief Executive, Taranaki Regional Council with a document from a suitably qualified person certifying that water measuring and recording equipment required by the conditions of this consent ('the equipment'):
 - (a) has been installed and/or maintained in accordance with the manufacturer's specifications; and/or
 - (b) has been tested and shown to be operating to an accuracy of $\pm 5\%$.

The documentation shall be provided:

- (i) within 30 days of the installation of a water meter or datalogger;
 - (ii) at other times when reasonable notice is given and the Chief Executive, Taranaki Regional Council has reasonable evidence that the equipment may not be functioning as required by this consent; and
 - (iii) no less frequently than once every five years.
5. If any measuring or recording equipment breaks down, or for any reason is not operational, the consent holder shall advise the Chief Executive, Taranaki Regional Council immediately. Any repairs or maintenance to this equipment must be undertaken by a suitably qualified person.

Consent 0126-5

6. The water meter and datalogger shall be accessible to Taranaki Regional Council officer's at all reasonable times for inspection and/or data retrieval.
7. The records of water taken shall:
 - (a) be in a format that, in the opinion of the Chief Executive, Taranaki Regional Council, is suitable for auditing; and
 - (b) specifically record the water taken as 'zero' when no water is taken.
8. When the flow in the Waiongana Stream is less than 471 litres per second as measured at State Highway 3A, the taking of water shall be restricted to the minimum amount necessary to maintain the health and welfare of people and animals (i.e. garden water and other non-essential uses are prohibited).
9. The taking of water authorised by this consent shall be managed to ensure that the flow in the Waiongana Stream as measured at State Highway 3A is not less than 402 litres per second. No taking shall occur when the flow is less than 402 litres per second.
10. At all times the consent holder shall adopt the best practicable option to prevent or minimise any actual or likely adverse effect on the environment associated with the abstraction of water from the Waiongana Stream, including, but not limited to, the efficient and conservative use of water.
11. The consent holder shall ensure that the intake is screened to avoid fish (in all stages of their life-cycle) entering the intake or being trapped against the screen.
12. During any 12-month period ending on 30 June in which this consent is exercised, the consent holder shall make a payment of \$2000 (plus GST) to the Taranaki Regional Council as a financial contribution. The financial contribution shall be used to remedy or mitigate adverse environmental effects of the taking in the Waiongana Stream catchment. The financial contribution shall be adjusted in accordance with the Consumer Price Index (or similar) so that the real value of the payment remains the same.
13. The consent holder shall provide reports to the Chief Executive, Taranaki Regional Council to demonstrate that the amount authorised for taking, or some lesser amount, is reasonably needed. These reports shall be provided no later than 30 April 2018, 30 April 2024, and 30 April 2030.
14. This consent shall lapse on in 1 June 2031, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

Consent 0126-5

15. 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 2018 and/or June 2024 and/or June 2030, for the purposes of:
- (a) reducing the amount of water authorised to be taken following a review of requirements provided in accordance with condition 13;
 - (b) 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; and/or
 - (c) to require any data collected in accordance with the conditions of this consent to be transmitted directly to the Council's computer system, in a format suitable for providing a 'real time' record over the internet.

Signed at Stratford on 21 June 2013

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Land Use Consent
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 16 June 2003
Date:

Conditions of Consent

Consent Granted: To use and maintain an existing weir, fish pass and
associated intake structures on the Waiongana Stream for
Waitara Industrial water supply purposes at or about GR:
Q19:143-344

Expiry Date: 1 June 2020

Review Date(s): June 2008, June 2014

Site Location: Mountain Road, Lepperton

Legal Description: Pt Secs 190 & 191 Blk XI Paritutu SD

Catchment: Waiongana

Consent 4816-2

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 notify the Chief Executive, Taranaki Regional Council, at least 48 hours prior to any maintenance works of the structure[s] or fish pass licensed by this consent which would involve disturbance of, or deposition to, the streambed or discharges to water.
2. The consent holder, during any maintenance works, shall adopt the best practicable option to avoid or minimise the discharge of silt or other contaminants into water or onto the streambed and to avoid or minimise the disturbance of the streambed and any adverse effects on water quality.
3. The consent holder, during any maintenance, shall ensure that the area and volume of river bed disturbance shall, so far as practicable, be minimised and any areas which are disturbed shall, so far as practicable, be reinstated.
4. No maintenance work shall be conducted during the period 1 May to 31 October unless waived in writing by the Chief Executive, Taranaki Regional Council
5. The structure[s] authorised by this consent shall be maintained to ensure the conditions of this consent are met.
6. The structure[s] authorised by this consent shall be constructed and maintained so as not to restrict the passage of native fish and trout, to the satisfaction of the Chief Executive, Taranaki Regional Council.
7. The structure[s] authorised by this consent shall be removed and the area reinstated, if and when the structure is no longer required. The consent holder shall notify the Taranaki Regional Council at least 48 hours prior to the removal of the structures and reinstatement of the area.

Consent 4816-2

8. 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 2008 and/or June 2014, 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 16 June 2003

For and on behalf of
Taranaki Regional Council

Chief Executive

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: 15 July 2003

Conditions of Consent

Consent Granted: To discharge up to 250 litres/second of water and sediment
from intake pipe cleaning and draining of settling ponds
into the Waiongana Stream at or about GR: Q19:142-346

Expiry Date: 1 June 2020

Review Date(s): June 2008, June 2014

Site Location: Mountain Road [State Highway 3A], Lepperton

Legal Description: Pt Secs 190 & 191 Blk XI Paritutu SD

Catchment: Waiongana

Consent 4817-2

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 keep a record of all cleaning and draining operations, including date, time, and duration of discharge, with such records to be available to the Chief Executive, Taranaki Regional Council, upon request.
2. The consent holder shall notify the Taranaki Regional Council at least 24 hours prior to discharging water and sediment from intake pipe cleaning and/or draining of settling ponds to the Waiongana Stream where practicable.
3. The consent holder shall discharge water and sediment where possible during high flow events when the flow is greater than 3 times the median flow i.e. more than 4.41 cubic metres per second as measured at the Taranaki Regional Council's hydrological monitoring station at State Highway 3A. Discharges under other flow conditions, other than draining of settling ponds for emergency maintenance work, will only be permitted with the prior written approval of the Chief Executive, Taranaki Regional Council.
4. The discharge shall not give rise, beyond a 25-metre mixing zone, to any or all of the following effects in the Waiongana Stream:
 - a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - b) any conspicuous change in colour or visual clarity;
 - c) any emission of objectionable odour;
 - d) the rendering of fresh water unsuitable for consumption by farm animals;
 - e) any significant adverse effects on aquatic life.
5. The discharge shall not give rise, beyond a 25-metre mixing zone, to an increase in turbidity of greater than 25% in terms of NTU [nephelometric turbidity units] in the Waiongana Stream.

Consent 4817-2

6. 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 2008 and/or June 2014, 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 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 15 July 2003

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Urenui dam

Land Use Consent
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 9 April 2002
Date:

Conditions of Consent

Consent Granted: To modify and maintain an existing earth retention
structure (dam) on the Kakapo Stream at or about GR:
Q19:303-429

Expiry Date: 1 June 2021

Review Date(s): June 2009, June 2015

Site Location: Kaipikari Road, Urenui

Legal Description: Lots 1 & 2 DP 12063 Urenui Dist

Catchment: Onaero

Tributary: Kakapo

Consent 5989-1

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 notify the Chief Executive, Taranaki Regional Council, at least 48 hours prior to any maintenance works of the structure[s] or fish pass licensed by this consent which would involve disturbance of, or deposition to, the streambed or discharges to water.
2. Any works or structure[s] which are the subject of this consent shall not obstruct fish passage after 1 December 2003.
3. The consent holder, during fish pass construction and any structure maintenance, shall adopt the best practicable option to avoid or minimise the discharge of silt or other contaminants into water or onto the streambed and to avoid or minimise the disturbance of the streambed and any adverse effects on water quality.
4. The consent holder, during fish pass construction and any structure maintenance shall ensure that the area and volume of river bed disturbance shall, so far as is practicable, be minimised and any areas which are disturbed shall, so far as is practicable, be reinstated.
5. The structure[s] authorised by this consent shall be maintained to ensure the conditions of this consent are met.
6. The structure[s] authorised by this consent shall be removed and the area reinstated, if and when the structure is no longer required. The consent holder shall notify the Taranaki Regional Council at least 48 hours prior to the removal of the structures and reinstatement of the area.
7. 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 9 April 2002

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Appendix II

Fish survey report

To Scott Cowperthwaite, Job Manager
From Bart Jansma, Scientific Officer
Date 17 July 2017
Doc No. 1900561
Report No. BJ290

Fish survey in the Ngatoro Stream in relation to NPDC's water take structure, May 2017

The Ngatoro Stream supplies water for the Inglewood township. A 2.3 m high weir was constructed for this purpose (although now used as a contingency due to the installation of an infiltration gallery), with access from the top of Dudley Road south-east of Inglewood. Several fish surveys have been conducted in the past, the most recent in 2014, the fifth since a concrete and rock fish pass was installed in May 2001 at the weir. The purpose of these surveys is to determine whether the weir is sufficiently providing for the passage of freshwater fish.

In this survey two sites were sampled, one site upstream of the weir and one site downstream of the weir. These sites were surveyed using the spotlighting method, which employed hand held spotlights powered by 12 volt, 7amp hour batteries, with observed fish captured using hand held scoop nets where possible. Those fish captured were counted and identified where possible, with their size estimated. Downstream, a reach of approximately 50m was surveyed, while upstream a 60 metre reach was surveyed. This equated to approximately 300m² being surveyed upstream and 200 m² being surveyed downstream.



Figure 2 Ngatoro Stream weir and fish pass

Table 1 Location and description of fish monitoring sites in relation to the Inglewood water supply weir

Site code	Site description	GPS Reference (NZTM)	Distance to coast (km)	Altitude (m)
NGT000104	50 m u/s NPDC intake weir	E1698684 N5657684	48.41	440
NGT000106	20 m d/s NPDC intake weir	E1698654 N5657628	48.36	440

The survey was completed on 25 May 2017 and details of the sites surveyed are presented in Table 1. It was noted during the 2014 survey that the pine trees that surrounded the downstream had been cut down, reducing the shading of the site. However, there had been no physical impact on the site itself e.g. disturbance of the river bed. There had been little revegetation since this survey, although the banks of the stream were still relatively intact, with native scrub predominating.

Table 2 Fish species and abundance recorded in previous surveys in relation to the Inglewood water supply weir on Ngatoro Stream together with results from the current survey. Included is the 'probability of capture' as predicted by Leathwick et al (2008). UID = unidentified; P = present

Survey date	Site	Area fished (m ²)	Longfin eel (<i>Anguilla dieffenbachii</i>)	UID eel	Koaro (<i>Galaxias brevipinnis</i>)	Shortjaw kokopu (<i>Galaxias postvectis</i>)	UID galaxiid
Prior to 99	U/s of weir	-	P	-	-	-	-
Prior to 99	D/s of weir	-	-	P	P	-	-
28-Apr-99	U/s of weir	300	4	-	-	-	-
28-Apr-99	D/s of weir	300	-	-	-	1	1
27-Mar-02	U/s of weir	200	-	3	-	-	-
27-Mar-02	D/s of weir	200	-	5	-	2	4
10-Apr-03	U/s of weir	200	2	2	-	1	1
10-Apr-03	D/s of weir	200	-	2	-	-	2
27-Feb-08	U/s of weir	~300	12	-	-	-	5
27-Feb-08	D/s of weir	~300	11	-	-	5	-
8-Mar-11	U/s of weir	~300	8	-	-	5	-
8-Mar-11	D/s of weir	~300	15	-	-	11	-
29-Jan-14	U/s of weir	~60	2	-	3	2	-
29-Jan-14	D/s of weir	~60	2	-	1	5	1
Present survey							
25-May-17	U/s of weir	300	-	-	-	1	-
25-May-17	D/s of weir	200	1	-	-	3	-

Table 3 Size range of fish recorded during the current Ngatoro Stream fish survey

Species		Upstream	Downstream
Longfin eel (<i>Anguilla dieffenbachii</i>)		400 mm	-
Koaro (<i>Galaxias brevipinnis</i>)		-	-
Shortjaw kokopu (<i>Galaxias postvectis</i>)		160-220 mm	180 mm

Habitat observed at the sampled sites included substrate dominated predominantly by cobbles and boulders, with the majority of the stream consisting of riffles, runs and rapids, with small areas of slow deep water. Upstream of the weir there was a slight change to habitat, due to gravel impoundment behind the weir. This resulted in reduced stream gradient, with slower flows and fewer rapids.

Downstream of the Inglewood water supply weir there was a low fish abundance and reduced diversity, with only one shortjaw kokopu (*Galaxias postvectis*) recorded. Upstream of the weir, there was a slight increase in the number of shortjaw kokopu recorded (three), while one longfin eel was recorded also. Unlike the previous survey, no koaro were recorded at either site, but this is the fourth survey to record shortjaw kokopu upstream.

The diversity of fish species in the Ngatoro Stream at the weir will be significantly influenced by the fact that the weir is just over 48 kilometres inland, and at an altitude of 440 metres. Surveys prior to 2003 had only recorded longfin eel upstream of the weir, with koaro (*Galaxias brevipinnis*) and shortjaw kokopu occasionally being recorded downstream. Since the installation of the fish pass in 2001 diversity upstream increased with galaxiids being recorded for the first time in 2003. In the present survey three shortjaw kokopu were observed upstream, and the size range of the fish collected indicates that there is more than one age class of koaro. This indicates that this species has successfully negotiated the weir over at least two migration seasons, and overall, these results suggest that the weir is no longer a barrier to those species that can migrate to this point in the stream.

It is also promising that the number of galaxiids recorded in this stream is increasing over time, especially considering shortjaw kokopu have recently had a change in classification from 'in decline' to 'nationally vulnerable'. Although the current survey recorded a significantly less abundant and diverse fish community than the previous surveys, this is not unusual for fish communities during the cooler winter months. When water temperatures reduce, fish become less active and therefore their food intake requirements reduce. Consequently they are more frequently under cover at this time, and less likely to be recorded using the spotlighting method.

It is recommended that monitoring of the fish communities in relation to this weir be continued, to confirm that fish passage is being maintained at this structure. Due to the presence of shortjaw kokopu, a regionally distinctive species, the results from future surveys in this stream will be incorporated into the regional State of the Environment Monitoring Programme for Freshwater Fish. It is therefore recommended that the method used is restricted to spotlighting, and continues at a frequency of every three years. The next survey is due to be undertaken in the 2019-2020 monitoring period.

References

- Colgan, B. 2003. Fish surveys in the Wairau Stream and the Ngatoro Stream in relation to NPDC water take structures. TRC internal memo. Document number 59115.
- Jansma, B. 2008. Fish survey in the Ngatoro Stream in relation to NPDC water take structures. TRC internal memo BJ145. Document number 914644.
- Jansma, B. 2011. Fish survey in the Ngatoro Stream in relation to NPDC's water take structure. TRC internal memo BJ107. Document number 550535.
- Jansma, B. 2014. Fish survey in the Ngatoro Stream in relation to NPDC's water take structure. TRC internal memo BJ246. Document number 1451685.
- McWilliam, H. 1999. *Fish surveys in the Ngatoro and Wairau Streams surveyed in relation to the NPDC abstraction weirs*. TRC internal memo. Document number 59110.

To Scott Cowperthwaite, Job Manager
From Bart Jansma, Scientific Officer
Document No. 190272
Report No. BJ291
Date 26 May 2017

Fish survey conducted in the Waiongana Stream in relation to the NPDC Waitara water supply weir, May 2017

Introduction

NPDC hold resource consents in relation to the Waitara Water Supply Scheme, one of which relates to the water supply structure in the Waiongana Stream:

4816 To use and maintain an existing weir, fish pass and associated intake structures on the Waiongana Stream for Waitara Industrial water supply purposes.

Special condition 6 under resource consent 4816 requires that the water intake weir structure does not restrict the passage of native fish and trout.

The weir is 1.5 m high and is located by SH3, south of Lepperton at an altitude of 100 m a.s.l. A fish pass was installed in 1996, and comprised of a "natural stream" channel with rocks concreted into the channel (Photo 1). Monitoring conducted in 1997-98 and 2004-05 confirmed that the fish pass was allowing the passage of some native fish, although redfinned bullies may have sometimes been unable to pass the weir due to a drop at the bottom end of the fish pass (McWilliam, 1998). Modifications were made to the fish pass in 1998 to rectify this drop. The current survey was carried out to confirm the continued effectiveness of this fishpass, in doing so, assessing compliance with condition 6 of consent 4816.

An electric fishing survey was performed on 26 May 2017 in the Waiongana Stream at two sites, upstream and downstream of the Waitara water supply weir, to assess the effectiveness of the fish pass. On the same day, two other sites in the Waiongana catchment were surveyed for State of the Environment monitoring purposes, providing additional data for comparison.

Four previous fish surveys have been conducted in relation to the Waitara Water Supply weir in the Waiongana Stream, using two survey methods – night spotting and electric fishing. Both methods have their advantages and disadvantages for determining fish populations. When used together these methods can provide comprehensive fish community data. The results of the past fish surveys are summarised in references listed below. Other fish monitoring has also been conducted in the Waiongana Stream upstream of the weir in relation to other investigations, and this data is also considered in this report.



Photo 1 Waitara Water Supply weir in the Waiongana Stream

Methods

In this survey two sites (sites 1 and 2) were sampled, one site upstream of the weir and one site downstream of the weir, using the standard backpack electric fishing machine. A handheld stop-net was used to capture fish in the sampled reach, which were then collected in a bucket to be identified, measured and counted. Approximately 60 m² was surveyed at the downstream site and 68 m² at the upstream site. Only one electric fishing pass was conducted, to assess the presence/absence of fish at each site. Details of the sites surveyed are given in Table 1 and the location of sites surveyed in relation to the weir and fish pass are shown in Figure 1.

The two sites (sites 3 and 4) surveyed for State of the Environment monitoring purposes were also surveyed using the electric fishing method, although less intensively. These sites were surveyed in an effort to identify juvenile lamprey rearing habitat, and as such, not all habitat present was fished. The total area surveyed at these sites was not recorded.

Table 1 Location of sites surveyed for fish in relation to the NPDC Waitara water supply weir on 30 March 2010

Site no.	Stream	Site code	Description	GPS Reference (NZTM)	Altitude (m)	Distance Inland from sea (km)
1	Waiongana iti Stream	WGT000967	10 m upstream of Hursthouse Rd	E1704319 N5666657	180	22.8
2	Waiongana Stream	WGA000295	500 m downstream of NPDC weir	E1704314 N5672956	95	15.0
3	Manganaeia Stream	MNE000080	Little Lepper Rd – 25 m upstream of tributary	E1703732 N5667811	105	18.0
4	Mangaonaia Stream	MON000075	25 m downstream of York Rd	E1708696 N5674787	160	21.6

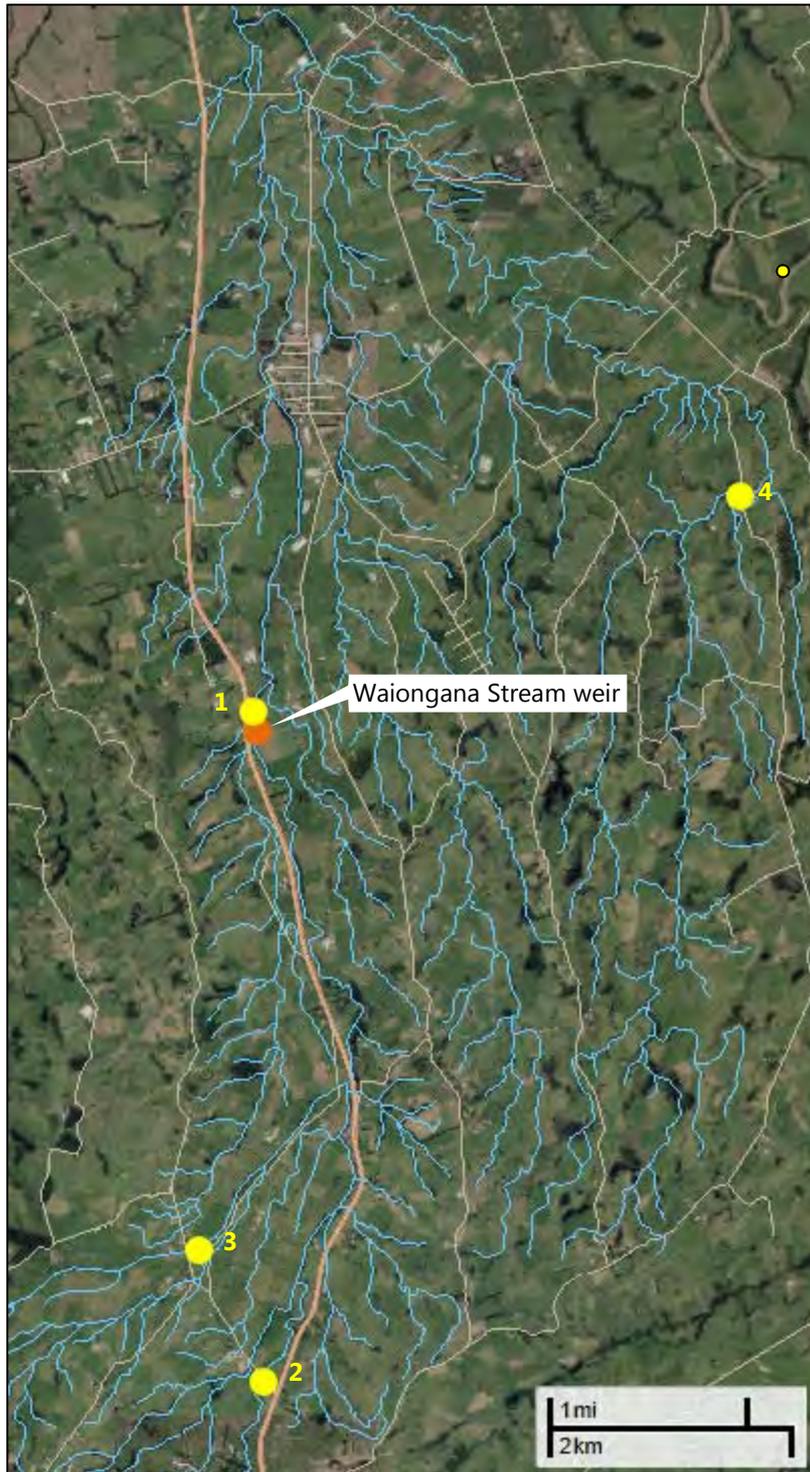


Figure 1 Location of all sites monitored in the current survey in the Waiongana Stream catchment

Results

The results of the survey conducted in the Waiongana Stream on 26 May 2017 are presented in Table 2. For comparison, fish species recorded in previous surveys at these sites and records stored on the New Zealand Freshwater Fish Database (administered by NIWA) are also included in Table 2.

Table 2 Fish species recorded in the Waiongana Stream upstream and downstream of the water supply weir together with results of past surveys

Fish species	Site 1 WGA000295 500 m downstream of weir		Site 2 WGT000967 Hursthouse Rd - u/s weir		Site 3 MNE000080 Little Lepper Rd - u/s weir	Site 4 MON000075 York Rd - d/s weir	All data (New Zealand Freshwater Fish database)
	Current survey	Previous surveys (4)	Current survey	Previous surveys (1)	Current survey	Current survey	Upstream of weir (altitude >95m)
Lamprey							P
Longfin eel	6	P	4	P	22		P
Shortfin eel	1		5	P	1	2	P
UID eel		P	2		2	10	P
Elver		P					P
Torrentfish	1	P					P
Common bully							P
Redfin bully	7	P			2		P
Koaro							P
Shortjaw kokopu							P
Brown trout							P
UID Bully	1						P
Total abundance of fish	16	-	11	-	27	12	-
No. of fish species	4	3	2	2	3	1	9

The diversity of fish (number of fish species) in the communities at both sites was low during this survey. Diversity was similar upstream and downstream of the weir, and generally reflected the diversity recorded in past surveys (Table 2). The abundance of fish downstream of the weir was slightly higher than that recorded upstream (Table 2). This could be related to fish accrual below the weir, possibly due to difficulty with negotiating the fish pass, although is likely to be more related to the lower altitude of the downstream site. Redfin bully (*Gobiomorphus huttoni*) were recorded upstream, indicating that this species can successfully negotiate the weir. However, their abundance was significantly lower, suggesting that passage is restricted at some point between the sites.

Torrentfish (*Cheimarrichthys fosteri*) were recorded downstream of the weir in the current survey, but not upstream of the weir, despite the presence of some torrentfish habitat (riffle, faster flowing water). Torrentfish are a good indicator species for determining the successfulness of this fish pass as they are considered to be more of a swimmer than jumper or climber, and are expected to naturally occur at this altitude and distance inland from the coast. If they are able to negotiate the pass, then most other fish species expected at this altitude and/or distance inland should also be able to successfully pass over the weir via the fish pass. The presence of torrentfish at Bedford Road in previous surveys, 12.5km upstream of the weir, indicates that the fish pass does operate effectively at times.

One individual lamprey (*Geotria australis*) was recorded immediately upstream of the NPDC weir in a previous survey. This was the first time that this species had been recorded in the Waiongana catchment.

Since 1981, numerous fish surveys have been conducted in the Waiongana Stream, with five conducted specifically in relation to the NPDC Waitara water supply weir. Other fish recorded in the Waiongana Stream upstream of the weir include brown trout (*Salmo trutta*), Koaro (*Galaxias brevipinnis*), shortfin eel (*Anguilla australis*) and common bullies (*Gobiomorphus cotidianus*) (Table 2). The New Zealand Freshwater Fish Database includes data collected by other agencies, and also has a record of shortjaw kokopu (*Galaxias postvectis*) upstream of the weir.

A visual assessment of the pass found that the provision of passage was adequate, with a deeper flowing channel in the centre allowing passage of strong swimming fish, with shallower, slower flow on the edges, allowing passage for climbing fish. It was noted however that some of the rocks that had been set into the concrete are no longer in place, likely having been knocked out during floods. It is not considered that this

has significantly reduced the effectiveness of the pass, as this damage was primarily limited to the deeper, swifter section. Flows were relatively high during this survey, and it may be prudent to recheck the weir during lower flows, to confirm it continues to provide adequate fish passage at this time.

Conclusions

A fish survey was conducted on 17 May 2017 at two sites, one upstream and one downstream of the NPDC Waitara Water Supply weir. An additional two sites were surveyed in the Waiongana catchment on this day, providing additional data for comparison. Fish diversity was low but similar at all sites. The abundance of fish downstream of the weir was slightly higher than that recorded upstream (Table 2). This could be related to fish accrual below the weir, possibly due to difficulty with negotiating the fish pass, although it is more likely related to the lower altitude of this site. .

The fish species recorded were similar both upstream and downstream of the weir. Redfin bully, a key indicator species for determining the success of the fish pass, were recorded both upstream and downstream of the weir. However, torrentfish, also a key indicator species, were not recorded upstream of the weir during this survey. Although this species has been recorded upstream of the weir in previous surveys, the last time was 2005. It may be that there have been some changes to the fish pass since 2005 that now means that the pass presents an impediment to the passage of this species. .

This survey indicated that the fish pass on the NPDC Waitara Water Supply weir continues to operate effectively, and therefore compliance with special condition 6 of resource consent 4816 has been achieved. However, the lack of torrentfish and reduced abundance of redfin bully above the weir, suggests that the weir still forms a barrier to some degree. Provided that regular inspections of the fish pass confirm that it is operating as required and is being maintained, I recommend that the fish monitoring be maintained at the current level of once every three years. However, as the current survey was conducted during relatively high flows, it may be prudent to recheck the weir during lower flows, to confirm it continues to provide adequate fish passage at this time.

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