

New Plymouth District Council
Water Supplies
Monitoring Programme
Annual Report
2015-2016

Technical Report 2016-101

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ISSN: 0114-8184 (Print)
ISSN: 1178-1467 (Online)
Document: 1678923 (Word)
Document: 1715853 (Pdf)

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August 2016

Executive summary

New Plymouth District Council (NPDC) operates four water supply schemes in the New Plymouth District. This report for the period July 2015 to June 2016 describes the monitoring programme implemented by the Taranaki Regional Council (the Council) to assess NPDC's environmental performance during the period under review. The report also details NPDC's activities.

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, five 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 high level of environmental performance.

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

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.

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

For reference, in the 2015-2016 year, 71% of consent holders in Taranaki monitored through tailored compliance monitoring programmes achieved a high level of environmental performance and compliance with their consents, while another 24% demonstrated a good level of environmental performance and compliance with their consents.

In terms of overall environmental and compliance performance by the consent holder over the last several years, this report shows that NPDC has maintained a high level of performance.

This report includes recommendations for the 2016-2017 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 2015-June 2016 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 19th 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 2016-2017 monitoring year.

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

1.1.3. The Resource Management Act 1991 and monitoring

The *Resource Management Act 1991* (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 performance

Besides discussing the various details of the performance and extent of compliance by the Company, 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 Company's approach to demonstrating consent compliance in site operations and management including the timely provision of information to Council (such as contingency plans and water take data) in accordance with consent conditions.

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

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

Environmental Performance

- **High:** No or inconsequential (short-term duration, less than minor in severity) breaches of consent or regional plan parameters resulting from the activity; no adverse effects of significance noted or likely in the receiving environment. The Council did not record any verified unauthorised incidents involving significant environmental impacts and was not obliged to issue any abatement notices or infringement notices in relation to such impacts.
- **Good:** Likely or actual adverse effects of activities on the receiving environment were negligible or minor at most. There were some such issues noted during monitoring, from self reports, or in response to unauthorised incident reports, but these items were not critical, and follow-up inspections showed they have been dealt with. These minor issues were resolved positively, co-operatively, and quickly. The Council was not obliged to issue any abatement notices or infringement notices in relation to the minor non-compliant effects; however abatement notices may have been issued to mitigate an identified potential for an environmental effect to occur.

For example:

- High suspended solid values recorded in discharge samples, however the discharge was to land or to receiving waters that were in high flow at the time;
- Strong odour beyond boundary but no residential properties or other recipient nearby.
- **Improvement required:** Likely or actual adverse effects of activities on the receiving environment were more than minor, but not substantial. There were some issues noted during monitoring, from self reports, or in response to unauthorised incident reports. Cumulative adverse effects of a persistent minor non-compliant activity could elevate a minor issue to this level. Abatement notices and infringement notices may have been issued in respect of effects.
- **Poor:** Likely or actual adverse effects of activities on the receiving environment were significant. There were some items noted during monitoring, from self reports, or in response to unauthorised incident reports. Cumulative adverse effects of a persistent moderate non-compliant activity could elevate an 'improvement required' issue to this level. Typically there were grounds for either a prosecution or an infringement notice in respect of effects.

Administrative performance

- **High:** The administrative requirements of the resource consents were met, or any failure to do this had trivial consequences and were addressed promptly and co-operatively.
- **Good:** Perhaps some administrative requirements of the resource consents were not met at a particular time, however this was addressed without repeated interventions from the Council staff. Alternatively adequate reason was

provided for matters such as the no or late provision of information, interpretation of 'best practical option' for avoiding potential effects, etc.

- **Improvement required:** Repeated interventions to meet the administrative requirements of the resource consents were made by Council staff. These matters took some time to resolve, or remained unresolved at the end of the period under review. The Council may have issued an abatement notice to attain compliance.
- **Poor:** Material failings to meet the administrative requirements of the resource consents. Significant intervention by the Council was required. Typically there were grounds for an infringement notice.

For reference, in the 2015-2016 year, 71% of consent holders in Taranaki monitored through tailored compliance monitoring programmes achieved a high level of environmental performance and compliance with their consents, while another 24% demonstrated a good level of environmental performance and compliance with their consents

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 with 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.

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

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.	Raw water is abstracted from the Waiwhakaiti River via Lake Mangamahoe. The Waiwhakaiti 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. 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), pH buffered (lime) and fluoridated. 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.
	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.	
Oakura	1277 – Discharge	2019	2025	To discharge filter backwash from the Oakura WTP onto and into land in the vicinity of the Wairau Stream.	<p>Since April 2004 water is taken from a secure bore. The water is treated with sodium hypochlorite followed by lime injection for pH adjustment.</p> <p>Previously water was taken from weir (with a fish pass) in the Wairau Stream. The surface water take and backwash discharge consents have been retained for contingency purposes.</p>
	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).

Water Supply Scheme	Resource consent	Next Review	Expires	Activity	Process
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. The water is used for cooling water at a cool store in Waitara. In 2000 NPDC installed a new control system on the water take. A magnetic flow meter now closes the valve on the take as it nears the consent limit. The settling pond system is emptied periodically to land and the scouring discharge from the settling pond system is discharged to the Waiongana Stream periodically (with a fish pass) near Mountain Road, approximately 9 km south of Waitara.
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.

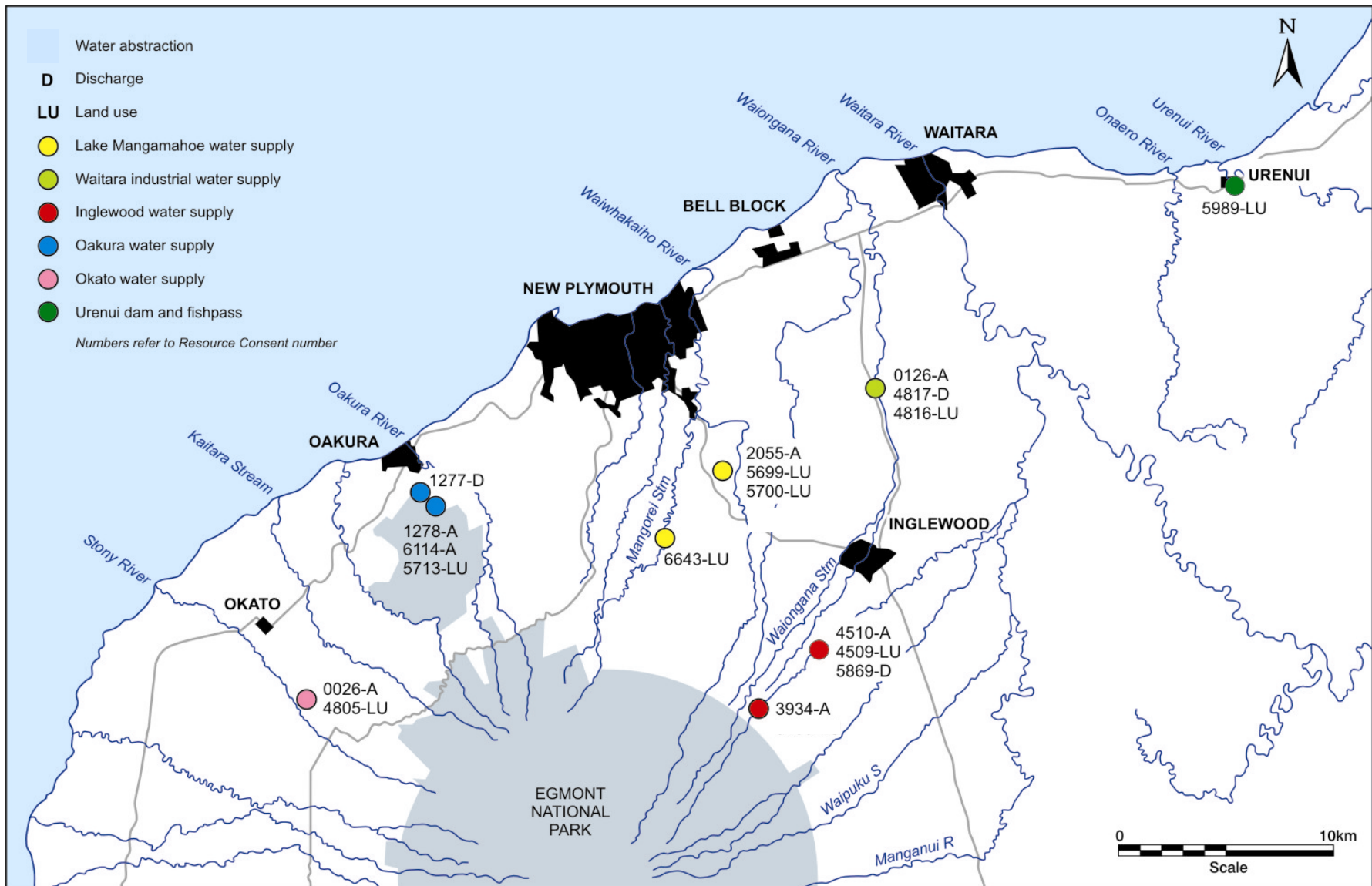


Figure 1 Location of New Plymouth District Council water supply plants and structures

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. 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. The samples were analysed for chlorine, pH, suspended solids (discharge) and turbidity (stream sites).

1.4.5. Review of abstraction and stream flow data

NPDC provide Council with the volume of water abstracted from each site. They also provide stage data for the Mangatete Stream from which flow data is calculated.

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 Mangatete and Mangorei Streams and a spotlighting survey was undertaken in the Wairau Stream.

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 under on 6 April 2016 (Inglewood, Okato and Oakura WTP's) and 13 May 2016 (New Plymouth and Waitara industrial WTP's)

2.1.1. New Plymouth

A review of the abstraction data to date showed that no exceedances have occurred during this monitoring period. NPDC is required to conduct an annual inspection of the Mangorei weir before 30 June 2015 and report to the Council. No issues were noted with the flow meter and the telemetered data matched the onsite reading. The stormwater catchment was in good condition and containment measures were in place in chemical off-loading areas. The northern backwash pond was in use and the southern pond was waiting be de-sludged. It was outlined that with the current system the back-wash was recirculated to the raw water and no discharges would occur during normal operations.

2.1.2. Inglewood

The Ngatoro Stream was running clean and clear and at low flow. A review of the abstraction data to date showed that no exceedances had occurred during this monitoring period. NPDC had completed installation of new abstraction meters; there was a new meter just below the contingency weir and a replacement meter at the plant for measuring the operational take. These meters had been verified. A reading from the main take was compared to the telemetered data and it was found to match.

2.1.3. Oakura

The Wairau Stream was running clean and clear and at low flow. Flow was occurring down the fish pass however there was some accumulated sediment at the top of the fish pass and works were required to improve the flow. NPDC undertook to have this done. Water is no longer abstracted from this stream but the consents for the structures and abstraction are retained for contingency purposes. No issues were noted with the bores, flow meters or with the backwash discharge.

2.1.4. Okato

The Mangatete Stream was running clean and clear and at a moderate flow. The boulders set against the damaged section the weir were working well to keep good flow in the fish pass. It was outlined that stream bed works to clear out accumulated cobbles and boulders would commence soon. A review of the abstraction data to date showed that no exceedances have occurred during this monitoring period. The inlet new meter was installed and verified. A reading of the meter matched the telemetered data.

2.1.5. Waitara industrial intake weir (contingency take site)

The Waiongana River was at moderate-high flow. The flow down the fish pass was good and no debris was present in the fish pass. No issues were noted with the site. 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 13 November 2015, 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 13 November 2015

Parameter	Unit	Site			Consent limit (discharge only)
		STW002037	Upstream NGT000185	Downstream NGT000186	
Chlorine filtered	g/m ³	<0.01	<0.01	<0.01	-
Conductivity	mS/m@20°C	8.2	8.2	8.2	-
pH		7.7	7.7	7.7	6.5 – 8.5
Suspended solids	g/m ³	2	-	-	20
Temperature	°C	10.2	10.0	11.8	-
Turbidity	NTU	-	1.2	1.2	-

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.

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 3.

Table 3 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	Yes	100%	100%	100%
Oakura	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 100% compliance with daily volumes and abstraction rates at all four locations.

There were no abstractions from the Waiongana Stream in relation to the Waitara industrial supply during the 2015-2016 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 Figure 2). In addition, the Council conducts three gaugings per year to maintain a rating curve.

Flow data derived from the stage sensors and the rating curve showed that residual flow in the Mangatete dipped below the 180 L/sec for seven consecutive days, which under consent conditions triggers water conservation advertising.

As a result NPDC implemented the following measures:

- Okato water restrictions were introduced on 3 February 2016 (a ban on sprinklers and partial restriction on hand held hoses) and these were removed on 29 February 2016.
- General water restrictions were introduced on 9 March 2016 (ban on sprinklers and partial restriction on hand held hoses) and these were removed on 11 April 2016.
- General water restrictions were re- introduced on 3 May 2016 (ban on sprinklers and partial restriction on hand held hoses) and removed on 20 May 2016.

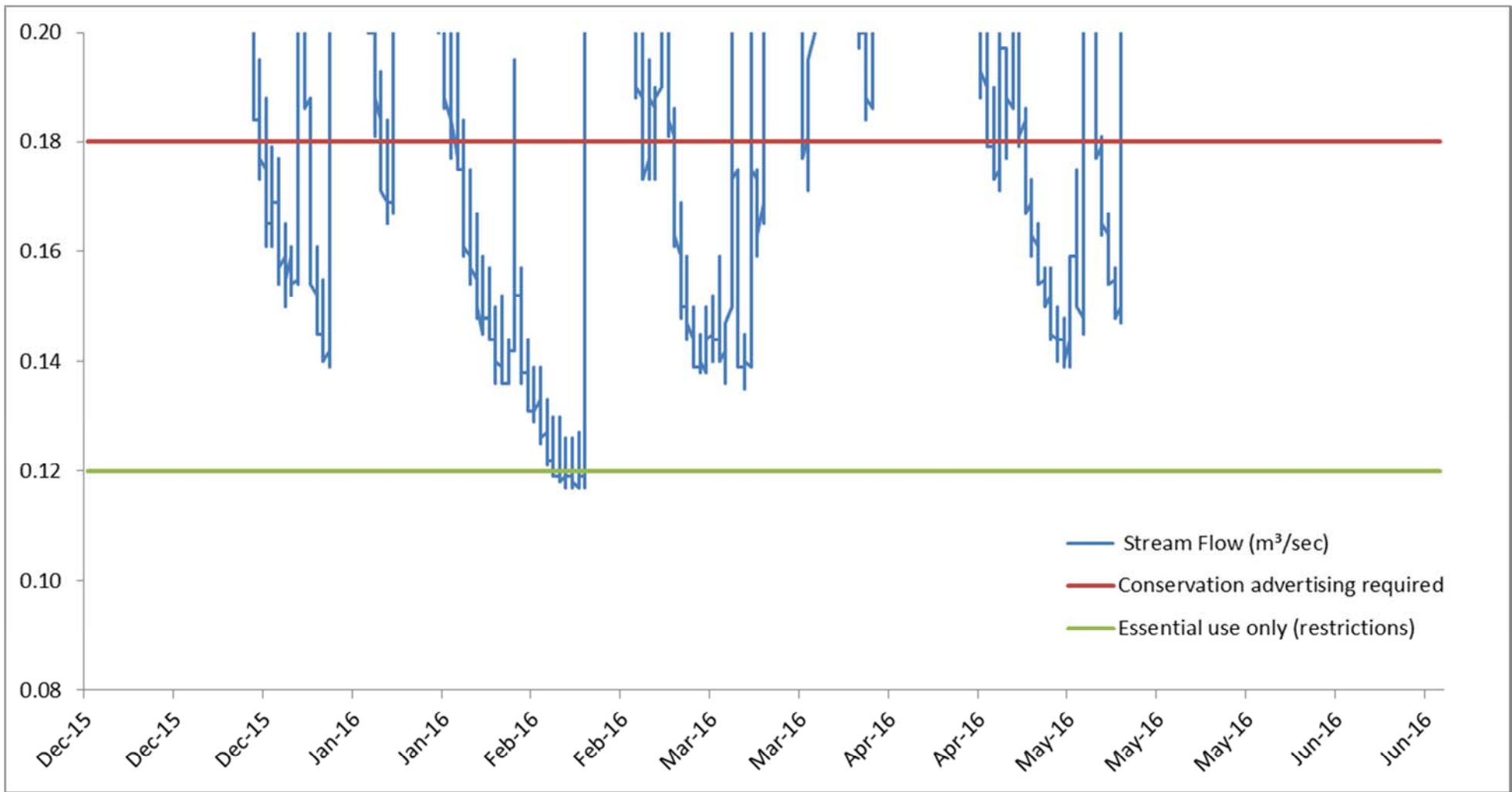


Figure 2 Graph showing the Mangatete Steam flow during low flow period

2.4. Fish surveys

During the period under review fish surveys were undertaken in the Mangorei, Wairau and Mangatete 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. Mangorei Stream weir

On 23 March 2016, a fish survey was undertaken at two sites, one upstream of the Scout Road weir in the Mangorei Stream and the other downstream of this weir. A separate survey was undertaken further upstream during the same monitoring period, which has provided additional useful information.

NPDC holds a land use consent for the Scout Road weir. A special condition of this consent states that the 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. There is no specific condition relating to the provision of fish passage, as the headwaters of the Mangorei Stream, upstream, of this weir are intended as a reserve for native fish. Should a fish pass be installed it may lead to an increase in brown trout, a highly predatory species, within this reserve.

From the results of this survey, and data held in databases, it is apparent that the Scout Road weir does not act as a barrier with regard to the passage of banded kokopu, shortjaw kokopu, koaro and eels. It is also not considered to represent a significant restriction to the passage for redfin bully, although it is considered that the weir presents a total barrier to the passage of torrentfish. Torrentfish currently has the threat classification of 'in decline'.

The primary result for consideration is that relating to the abundance of brown trout upstream of the weir. The current survey recorded eight trout upstream of the weir. This is the highest number of trout recorded upstream of the weir to date. Although there is insufficient quantitative data, there is sufficient anecdotal evidence to conclude that the brown trout population upstream of the weir is increasing. It is clear that brown trout are spawning in the headwaters, as juvenile brown trout have been recorded in the current survey and the most recent preceding survey, including at a site 4.5km upstream of the weir.

It is clear from the current and previous surveys that there is a healthy population of adult galaxiids present in the headwaters of the Mangorei Stream, including shortjaw kokopu. However, there appears to be an issue with recruitment, as no younger size classes were observed. Therefore, there is still value in retaining the weir as a barrier to trout passage, so as to reduce the potential recruitment of trout to the headwaters.

As this survey has identified an increase in the population of brown trout upstream of the weir, it is recommended that the consent holder undertake consultation with the Department of Conservation and Fish and Game Taranaki, to determine whether it is now appropriate to restore fish passage for all species present in the Mangorei Stream at this point. It is also recommended that consideration be given to reviewing consent 6643-1, so that it adequately reflects the outcome(s) of the consultation.

2.4.2. Mangatete Stream weir (Okato WTP)

On 6 April 2016, a spotlighting survey was undertaken at two sites in the in the Mangatete Stream, so as to assess the NPDC weir in terms of fish passage. This weir is not to restrict fish passage, in order to meet the permitted activity rule for existing structures (Rule 52 in the Regional Freshwater Plan for Taranaki).

A low species richness was recorded during this survey, with only three species recorded in total. The absence of torrentfish in the Mangatete Stream is unusual, and may indicate the presence of a barrier to fish passage further downstream.

Species richness and abundance was higher downstream than upstream, although this difference is not considered significant, and likely to be a reflection of subtle differences in habitat between the two sites. There is no indication that the weir is a barrier to the fish species recorded within its vicinity. Previous surveys undertaken by the Council, coupled with work undertaken by the Department of Conservation in the headwaters of the Mangatete Stream, indicate that the weir is not a barrier to the passage of banded kokopu, giant kokopu or shortjaw kokopu. A visual inspection of the pass indicates that the pass is too shallow to provide passage for trout, but it is considered that adult trout will be able to jump over the weir itself, especially in the higher flows that usually initiate trout migration.

With regard to whether the weir meets the fish passage condition of permitted activity rule 52 of the Regional Freshwater Plan for Taranaki, it appears that there is no restriction of fish passage. Therefore it is considered that the weir meets this condition. However, it may be worthwhile for NPDC to hold consent for this weir, as this will provide a greater degree of flexibility for management, for example, planning maintenance works etc.

2.4.3. Wairau Stream weir (Oakura WTP)

A fish survey was conducted on 20 April 2016 upstream and downstream of the Wairau Stream weir. Fish diversity and abundance was higher downstream of the weir, compared with that recorded upstream of the weir, by two species. The species richness recorded downstream of the weir was the highest recorded since 2002. The greater amount of undercut bank in the reach downstream of the weir provided good cover, and this may explain this higher richness and abundance. Unfortunately, only one shortjaw kokopu was recorded, and it is unclear what has resulted in this reduced abundance of a species that used to be relatively common in this stream. Koaro were present in moderate numbers, although only downstream of the weir, while banded kokopu were more abundant than they have been during any previous survey, both upstream and downstream of the weir. It was interesting to note that there were two koaro observed on the weir itself.

Upstream of the weir only two species were confirmed as present. There were no new species recorded above the weir, and although no shortjaw kokopu were recorded, the individual unidentified galaxiid was tentatively identified as a shortjaw kokopu. The presence of banded kokopu above the weir is an indication that the weir is operating in compliance with special condition 5 of resource consent 5713. However, there was a lack of flow down the fish pass at the time of the survey, due to inadequate maintenance, with sediment having built up at the head of the pass.

This was resolved at the time of the survey.

While there were some differences between the fish populations upstream of the weir with those downstream of the weir, these differences are more likely to have been influenced by the habitat available to the fish. It is not thought to be related to the presence of the weir. During the previous survey, an additional site was surveyed downstream of State Highway 45, and this indicated that the SH45 road culvert is a barrier to the passage of at least one species, and may also be a partial barrier to those species recorded upstream. Once this is resolved, it is likely that species richness and potentially abundance will increase upstream.

The monitoring of the Wairau Stream indicates that fish passage on the NPDC weir is likely to provide fish passage for all fish present in the monitored reach. However, the pass had not been maintained appropriately by the NPDC, and it is recommended that they improve their inspection and maintenance regime. Provided that regular inspections of the fish pass confirms that it is operating and being maintained as required, it is recommended that the fish monitoring be conducted once every three years as per the scheduled monitoring programme currently implemented.

2.5. Monitoring of upstream discharge consents

NPDC have indicated that the Inglewood WTP and Okato WTP are particularly susceptible to any event which may affect the incoming raw water quality. At their request, this section has been included to summarise the monitoring of consents upstream of these WTPs, where there is a potential for the discharge of contaminants to water.

2.5.1. Ngatoro catchment (Inglewood WTP)

There are four discharge consents upstream of the Inglewood WTP abstraction point on the Ngatoro Stream, which are monitored by the Council. Details are summarised in Table 4.

Table 4 Discharge consents upstream of the Inglewood WTP

Consent No.	Purpose	Monitoring	Compliance achieved?
1351-3	To discharge farm dairy effluent after treatment in an oxidation pond system: in all its forms onto land; and in liquid form only into the Ngatoro Stream when the land disposal area is unsuitable for effluent disposal	Annual inspection and sample	No- suspended solids exceeded consent conditions. Site compliant on next visit
1477-3	To discharge dairy effluent from an oxidation pond treatment system into the Ngatoro Stream	Annual inspection and sample	Yes

Consent No.	Purpose	Monitoring	Compliance achieved?
2266-2	To discharge dairy effluent from an oxidation pond treatment system into an unnamed tributary of the Ngatoro Stream	Annual inspection	Yes
5763-2	To discharge untreated farm dairy effluent by spray irrigation onto and into land and/or to discharge treated farm dairy effluent from an oxidation pond treatment system into the Ngatoro Stream	Annual inspection	Yes

During the monitoring period one incident was recorded by the Council that was related to discharges to water upstream of the Inglewood WTP abstraction point on the Ngatoro Stream.

23 September 2015

H & T Farms Limited/ MLC Hitchcock Family Partnership (consent 1351-2)
During the analysis of samples (23 September 2015), taken during the annual dairy round (15 September 2015), it was found that the oxidation pond system was not operating within its resource consent conditions, at Dudley Road, Inglewood. Suspended solids concentration in the discharge was found to be 220 g/m³ which exceeded the 200 g/m³ limit.

An abatement was issued requiring the second pond to be cleaned out to ensure compliance with resource consent conditions. The site was revisited and found to be in compliance with the abatement notice and consent conditions.

2.5.2. Mangatete catchment (Okato WTP)

There are four discharge consents upstream of the Okato WTP abstraction point on the Mangatete Stream, which are monitored by the Council. Details are summarised in Table 5.

Table 5 Discharge consents upstream of the Okato WTP

Consent No.	Purpose	Monitoring	Compliance achieved?
1001-4	To discharge treated dairy shed effluent by oxidation ponds into the Mangatete Stream	Annual inspection	Yes
2379-2	To discharge untreated farm dairy effluent by spray irrigation onto and into land	Annual inspection	Yes
3969-2	To discharge dairy effluent from an oxidation pond treatment system and a wetland into the Mangatete Stream	Annual inspection	Yes
4991-2	To discharge partially treated farm dairy effluent by holding pond and spray irrigation onto and into land	Annual inspection	Yes

During the monitoring period there were no incidents recorded by the Council that were related to discharges to water upstream of the Okato WTP abstraction point on the Mangatete Stream.

2.7. 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 Company concerned has itself notified the Council. The register contains details of any investigation and corrective action taken.

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

In the 2015-2016 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with NPDC's conditions in resource consents or provisions in Regional Plans.

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 all daily abstraction volumes were in compliance with consent conditions.

One issue was noted with the partial restriction of flow down a fish pass by accumulated sediment at the Oakura WTP, and this was commented on during a fish survey and separately during a general inspection in April 2016. NPDC has since inspected the weir and found that the sediment had cleared and as recommended by the Wairau Stream fish survey report (section 2.4.3) NPDC is implementing regular inspections to ensure sediment does not build up again.

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 Mangorei, Wairau and Mangatete Stream indicated of the presence of NPDC weirs in the supply water bodies were unlikely to be having any adverse effects.

The report of the Mangorei Stream fish survey recommended that the consent holder consult with affected parties on the status of the weir and whether it is still providing effective sanctuary to native fish in the upper reaches of the Mangorei Stream.

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

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 6-25.

3.3.2. New Plymouth WTP

Table 6 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- waste waster is being recycled	N/A
2. Exercise of consent in accordance with information submitted in support of application	No discharge in monitoring year- waste waster is being recycled	N/A
3. Limits not to be exceeded in the discharge	No discharge in monitoring year- waste waster is being recycled	N/A
4. Discharge not to cause certain effects in the receiving waters	No discharge in monitoring year- waste waster 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 7 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 - not sampled during monitoring period	N/A
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 8 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	Yes
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	Next option for review 2016, recommendation attached in section 3.7	Yes
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 9 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
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

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?
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 10 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
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 11 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

Purpose: To erect, place and maintain a weir in the Mangorei Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
4. Annual inspection by consent holder and report to Council	Report not yet due	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

3.3.3. Inglewood WTP

Table 12 Summary of performance for Consent 3934-2 (to 29/2/2016)

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 combined abstraction from Ngatoro Stream	Contingency take not exercised; farm take exercised	Not assessed
2. Install and operate measuring device	Contingency take not exercised	N/A
3. Optional review provision re environmental effects	Expired 1 June 2015, no further option for review.	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 13 Summary of performance for Consent 3934-3 (from 29/2/2016)

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 both contingency and Dudley Road User Group).	Contingency take not exercised- User group records received	Yes
2. Limit on the combined abstraction from Ngatoro Stream (including abstraction from consent)	Contingency take not exercised	N/A

Purpose: To take water from the Ngatoro Stream (contingency take and farm take)		
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	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	Next review option 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 14 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 – no works undertaken during monitoring period	Yes
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 15 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 16 Summary of performance for Consent 5188-1

Purpose: To license and maintain an existing weir structure in the Ngatoro Stream a tributary of the Manganui River in the Waitara Catchment		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Maintenance of weir to enable fish passage	Inspection and triennial fish survey	Yes
2. Optional review provision re environmental effects	Consent expired June 2015	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

Table 17 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	Not monitored	N/A
2. Proper and efficient maintenance and operation of settlement facility	Inspection	Yes

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?
3. Discharge not to cause certain effects in the Ngatoro Stream below the established mixing zone	Inspection and sampling	Yes
4. Limits on certain contaminants in discharge	Sampling	Yes
5. 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. Oakura WTP

Table 18 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 19 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

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?
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 20 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	Fish pass flow found to be partially obstructed with sediment
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		Good
Overall assessment of administrative performance in respect of this consent		High

Table 21 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	Inspection and liaison with consent holder	Yes

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?
ensure consent conditions are met		
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 surfacewater 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

3.3.5. Okato WTP

Table 22 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?
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

3.3.6. Urenui dam

Table 23 Summary of performance for Consent 5989-1

<i>Purpose: To modify and maintain an existing earth retention structure (dam) on the Kakapo Stream</i>		
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
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

3.3.7. Waitara industrial supply

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

Table 24 Summary of performance for Consent 0126-5

<i>Purpose: To take and use water from the Waiongana Stream to supply water for industry in Waitara</i>		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Rate of take to not exceed 58 L/Ssec	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
5. Council to be advised if recording	No abstraction in monitoring year	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?
equipment breaks down		
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	Next option for review 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 25 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
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 structure[s] 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

<i>Purpose: To use and maintain an existing weir, fish pass and associated intake structures on the Waiongana Stream</i>		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
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 26 Summary of performance for Consent 4817-2

<i>Purpose: To discharge water and sediment from intake pipe cleaning and draining of settling ponds into the Waiongana Stream</i>		
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 3 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
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 high level of environmental performance and compliance with their resource consents and a high level of administrative performance.

3.4. Recommendation from the 2014-2015 Annual Report

In the 2014-2015 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 2015-2016 monitoring year remain unchanged from that for 2014-2015.

2. THAT the optional review of consent **2055-3** in June 2016 not be exercised on the grounds that current consent conditions are adequate to deal with any adverse effects on the environment arising from the exercise of the consent.
3. THAT fish surveys of the Kakapo Stream in relation to special condition 2 of resource consent 5989 are discontinued. It is recommended that an inspection of the spillway, to be undertaken every two years, is added to the monitoring programme.

These recommendations were implemented in full.

3.5. Alterations to monitoring programmes for 2016-2017

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 2016-2017, the programme remains unchanged from that for 2015-2016. A recommendation to this effect is included in this report.

4. Recommendations

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.

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 a
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

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

*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. 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

Consent 4510-2

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
Date: 16 June 2003

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 reports

Memorandum

To Scott Cowperthwaite, Scientific Officer
From B Jansma, Scientific Officer
Document 1685998
Report No. BJ275
Date 18 May 2016

Fish survey in the Mangatete Stream, undertaken in relation to an NPDC weir, June 2016

New Plymouth District Council (NPDC) hold resource consents in relation to several water supply schemes. The monitoring programmes for these schemes include fish monitoring of a selection of the weirs each year. The programme for the 2015-2016 monitoring period included monitoring of the Mangatete Stream weir.

The weir in the Mangatete Stream was originally installed to supply water to the Okato Dairy Factory (since closed down). This weir is therefore considered an existing structure under the Regional Freshwater Plan for Taranaki. In order to meet the permitted activity rules of this plan, the weir must (amongst other things) not restrict the passage of fish.

The weir itself is 0.5m high, and has had a fish pass installed.

An electric fishing survey was undertaken in the Mangatete Stream on 6 April 2016, with one site upstream and one downstream of the weir surveyed. This survey was undertaken to assess the fish population in the downstream vicinity of this weir, and to gain an understanding of which species can successfully negotiate this weir. This information can then be used to assess the effectiveness of the fish pass.

The Taranaki Regional Council has previously conducted two fish surveys in the Mangatete Stream, both upstream and downstream of the weir, while the Department of Conservation has undertaken some work in the headwaters. The results from these surveys are available from the New Zealand Freshwater Fish Database, administered by NIWA. The surveys employed one of two methods – night spotting and electric fishing. Both methods have their advantages and disadvantages for determining fish populations. When all results are compiled from both survey methods it can provide comprehensive fish community data.

Methods

In this survey two sites were sampled, one site upstream of the weir and one site downstream of the weir. The sites were surveyed using the electric fishing method, which employed a Kainga EFM machine. Those fish captured were identified and counted, where possible. Inevitably, some fish eluded capture, although some were identified before reaching cover. The length of each fish was estimated, following which they were released.

In general an electric fishing survey will survey a smaller area of stream than spotlighting. In this case, 85 m² of stream length was surveyed at site 1 (upstream of the weir), and 90 m² of stream length was surveyed at site 2 (downstream of the weir).

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.

Table 1 Location of sites surveyed for fish in relation to the NPDC weir on the Mangatete Stream

Stream	Site No.	Site code	Description	Altitude (m)	Distance Inland from sea (km)	Area Surveyed (m ²)
Mangatete Stream	1	MTT000198	Approx. 100 m upstream of NPDC weir	180	11.2	85
	2	MTT000203	Downstream of NPDC weir	180	10.9	90



Figure 1 The Mangatete Stream, showing sampling sites.

Results

The environmental conditions noted at the time of the survey included that the stream had a clear uncoloured flow. Both sites had substrate dominated by boulders and cobbles, with only a slippery film of algae noted. There was some fish cover present, with both sites having undercut banks and site 2 also having some overhanging vegetation.

The results of the survey conducted in the Mangatete Stream on 6 April 2016 are presented in Table 2. Data held in the TRC and NIWA databases is included in Table 2 for comparison.

Table 2 Fish species recorded in the Mangatete Stream upstream and downstream of the NPDC Weir

Species	Upstream of weir		Downstream of weir	
	MTT000198	Database records	MTT000203	Database records
Longfin eel <i>Anguilla dieffenbachii</i>	10	✓	10	✓
Shortfin eel <i>Anguilla australis</i>		✓	2	✓
Redfin Bully <i>Gobiomorphus huttoni</i>	2	✓	3	✓
Brown trout <i>Salmo trutta</i>		✓		
Banded kokopu <i>Galaxias fasciatus</i>		✓		
Shortjaw kokopu <i>Galaxias postvectis</i>		✓		
Giant kokopu <i>Galaxias argenteus</i>		✓		
UID galaxiid		✓		
UID eel	1	✓	5	✓
No. of species	2	6	3	3

Discussion

A low species richness was recorded during the current survey, with only three species recorded in total. The absence of torrentfish in the Mangatete Stream is unusual, and may indicate the presence of a fish barrier further downstream.

The species richness and abundance observed were both higher downstream than upstream. While this is in part a reflection of subtle differences in habitat sampled, it is not consistent with that recorded in the previous survey, which used the spotlighting technique, and surveyed a site further upstream.

Those species recorded upstream of the weir in the current survey were longfin eel (*Anguilla dieffenbachii*) and redfin bully (*Gobiomorphus huttoni*). The previous survey also recorded a good population of giant kokopu (*Galaxias argenteus*) upstream of the weir, while work undertaken by the Department of Conservation in the headwaters of the Mangatete Stream also indicates that the weir is not a barrier to the passage of banded and shortjaw kokopu. The presence of a healthy population of giant kokopu as confirmed in the previous survey is significant, and indicates that the headwaters of the Mangatete Stream support a very significant native fish community. Visual observation indicates that the pass is too shallow to provide passage of trout, but it is considered that adult trout will be able to jump over the weir itself, especially in the higher flows that usually initiate trout migration. Therefore, trout do not need to use the pass.

With regard to whether the weir meets the fish passage condition of permitted activity rule 52 of the Regional Freshwater Plan for Taranaki, it appears that there is no restriction of fish passage. Therefore it is considered that the weir meets this condition. However, it may be worthwhile for NPDC to hold consent for this weir, as this will provide a greater degree of flexibility for management e.g. planning maintenance works.

Summary

On 6 April 2016, a spotlighting survey was undertaken at two sites in the in the Mangatete Stream, so as to assess the NPDC weir in terms of fish passage. This weir is not to restrict fish passage, in order to meet the permitted activity rule for existing structures (rule 52 in the Regional Freshwater Plan for Taranaki).

A low species richness was recorded during this survey, with only three species recorded in total. The absence of torrentfish in the Mangatete Stream is unusual, and may indicate the presence of a barrier to fish passage further downstream.

Species richness and abundance was higher downstream than upstream, although this difference is not considered significant, and likely to be a reflection of subtle differences in habitat between the two sites. There is no indication that the weir is a barrier to the fish species recorded within its vicinity. Previous surveys undertaken by the Council, coupled with work undertaken by the Department of Conservation in the headwaters of the Mangatete Stream, indicate that the weir is not a barrier to the passage of banded kokopu, giant kokopu or shortjaw kokopu. A visual inspection of the pass indicates that the pass is too shallow to provide passage of trout, but it is considered that adult trout will be able to jump over the weir itself, especially in the higher flows that usually initiate trout migration.

With regard to whether the weir meets the fish passage condition of permitted activity rule 52 of the Regional Freshwater Plan for Taranaki, it appears that there is no restriction of fish passage. Therefore it is considered that the weir meets this condition. However, it may be worthwhile for NPDC to hold consent for this weir, as this will provide a greater degree of flexibility for management e.g. planning maintenance works etc.

References

- Jansma, B., 2010: Fish surveys in the Mangorei and Mangatete Streams, in relation to NPDC weirs, 2008 – 2009. Report Number BJ110.
- Jansma, B., 2013: Fish survey in the Mangatete Stream, undertaken in relation to an NPDC weir, June 2013. Report Number BJ200.
- McDowall, R.M., 2000: The Reed Field Guide to New Zealand Freshwater Fishes. Reed books, Reed Publishing (New Zealand) Ltd. 224pp.
- Rhys FG, Barrier D.J. and Caskey D., 2002: Survey methodology for Shortjawed Kokopu (*Galaxias postvectis*) – standardised spotlighting techniques. Department of Conservation, Wellington, New Zealand.

Memorandum

To S Cowperthwaite, Scientific Officer
From B Jansma, Scientific Officer
Document 1684569
Report No. BJ274
Date 13 May 2016

Fish survey in the Mangorei Stream Catchment, in relation to an NPDC weir, 2015 - 2016

New Plymouth District Council (NPDC) hold resource consents in relation to several water supply schemes. The monitoring programmes for the weirs used by these schemes include fish monitoring of a selection of the weirs each year. In the 2015-2016 monitoring period the Mangorei Stream weir was one of those monitored.

The relevant consent relating to the Mangorei Stream weir, also known as the Scout Road weir, is as follows:

6643 To erect, place and maintain a weir in the Mangorei Stream in the Waiwhakaiho catchment

A special condition of this consent states that the 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. There is no specific condition relating to the provision of fish passage, as the headwaters of the Mangorei Stream upstream of this weir are intended as a reserve for native fish. Should a fish pass be installed it may lead to an increase in brown trout, a highly territorial and predatory species, within this reserve.

An electric fishing survey was undertaken at two sites in the Mangorei Stream on 23 March 2016. One site was located downstream of the weir to assess any accrual of fish, while the other site was located upstream of the weir, in an effort to determine which species are able to negotiate the weir. Over the summer period an unrelated survey was also undertaken further upstream, and these results are discussed herein also.

A two meter high weir, which has a 'v' shape, is located in the Mangorei Stream off Scout Road, Egmont Village (Photo 1). The weir was built in 1964 and formerly used to provide stream flow data but today has no known current use. This weir does not have a fish pass, and no fish pass is required, so as to prevent the upstream migration of brown trout. However, it is understood that should the densities of brown trout increase upstream of this weir, then this arrangement will be reassessed.



Photo 1 The Scout Road weir, 23 March 2016.

The Taranaki Regional Council has previously conducted several fish surveys in the Mangorei Stream, both upstream and downstream of the weir, as has the Department of Conservation. The surveys employed one of two methods – night spotting and electric fishing. Both methods have their advantages and disadvantages for determining fish populations. When all results are compiled from both survey methods it can provide comprehensive fish community data.

Methods

On 23 March 2016, two sites were surveyed in the Mangorei Stream, the first downstream of the weir, and the second immediately upstream of the weir. The sites were surveyed using the electric fishing method, which employed a Kainga EFM machine. Those fish captured were identified and counted, where possible. Inevitably, some fish eluded capture, although some were identified before reaching cover. The length of each fish was estimated, following which they were released. The results of this survey are presented in Table 2.

The area surveyed at each site ranged from approximately 105m² upstream of the weir to approximately 60 m² downstream of the weir. Details of the sites surveyed are given in Table 1 and the locations of sites are shown in Figure 1.

An unrelated survey was undertaken on 9 March 2016, using the spotlighting technique. This technique involves the use of hand held spotlights powered by 12 volt, 7 amp hour batteries, with observed fish captured using handnets where possible. In this case fish were identified, with notes made about length of some species only. The sites surveyed are not described in detail in this report, suffice to say that they are upstream of the Scout Rd weir. These results are also presented in Table 2.

Table 1 Location of sites surveyed on 23 March 2016 for fish in relation to the Scout Road weir

Stream	Site code	Description	Altitude (m)	Distance Inland from sea (km)
Mangorei Stream	MGE000500	Downstream of Scout Rd Weir	180	20.3
	MGE000505	Upstream of Scout Rd Weir	180	20.6



Figure 1 Mangorei Stream catchment, showing the sampling sites.

Results

The results of the surveys conducted in the Mangorei Stream catchment on 9 and 23 March 2016 are presented in Table 2. Data held in the TRC and NIWA databases is included in Table 2 for comparison.

Table 2 Fish species recorded in the Mangorei Stream upstream and downstream of the Scout Rd Weir

Species	Downstream of Scout Rd weir		Upstream of Scout Rd weir			
	Database records	23 March 2016	9 March 2016	9 March 2016	23 March 2016	Database records
Method:	-	Electric fishing	Spotlighting	Spotlighting	Electric fishing	-
Site Code or Stream name:	-	MGE000505	Mangorei Stream	Unnamed Tributary	MGE000500	-
Longfin eel <i>Anguilla dieffenbachii</i>	✓	14	2	2	5	✓
Shortfin eel <i>Anguilla australis</i>		1				✓
Redfin Bully <i>Gobiomorphus huttoni</i>	✓	33	common		3	✓
Brown trout <i>Salmo trutta</i>	✓	1	4	3	1	✓
Koaro <i>Galaxias brevipinnis</i>				5		✓
Banded kokopu <i>Galaxias fasciatus</i>						✓
Shortjaw kokopu <i>Galaxias postvectis</i>			4	3		✓
Torrentfish <i>Cheimarrichthys fosteri</i>	✓	1				
UID galaxiid						✓
UID bully	✓	2			1	
UID eel	✓	1	6	6	2	✓
Freshwater Shrimp <i>Paratya</i>						✓
No. of species	4	5	4	4	3	7

In terms of habitat, that surveyed downstream of the weir comprised a range of habitat types, from extremely swift rapids to small cascades and swift riffles, where depths were of a moderate to shallow depth. Upstream, the area surveyed was deeper and swifter, making electric fishing in this reach more difficult. Both sites contained good fish cover, with large substrate (cobble and boulders), undercut banks and overhanging vegetation.

The highest taxa richness was recorded downstream of the weir, with longfin and shortfin eel, redfin bully, brown trout and torrentfish all recorded as present. This is the first time that shortfin eel have been recorded this far up the Mangorei Stream. This species is more typically found at lower altitudes. Torrentfish have been frequently recorded at this site, but never in abundance. The individual torrentfish recorded in the current survey was large, being 160mm (Photo 2).

Photo 2 A large torrentfish, recorded downstream of the weir, 23 March 2016.



Upstream of the weir, only three species were recorded by electric fishing, being longfin eel, redfin bully and brown trout. All three species were recorded at a lower abundance than that recorded downstream. However, the spotlighting survey undertaken further upstream recorded an additional two species (shortjaw kokopu and koaro), and recorded redfin bully as common, with between 15 and 20 individuals observed. Of note was that this survey also recorded seven individual brown trout, including one individual of approximately 300mm (Photo 3).



Photo 3 A 300mm brown trout recorded upstream of the Scout Rd weir, 9 March 2016.

A concerning feature of the spotlighting survey was that of the galaxiids recorded, all were adults. There were no smaller fish, indicating that recruitment may be limited, possibly through the increased population of brown trout.

Discussion

A moderate diversity was recorded during this survey, with five fish species recorded in the Mangorei Stream downstream of the weir and five in the catchment upstream of the weir. In total, seven species of fish were recorded across the two surveys.

The passage of torrentfish continues to be restricted by the weir, a conclusion consistent with that from previous surveys. Torrentfish are classified as being 'in decline' (Goodman *et al* 2013), and capable of migrating up to 710m in altitude and 235 km inland (McDowall, 2000). However, in Taranaki where the streams have a relatively steep grade, it is likely that this species does not migrate to such an extent. This is supported by the relatively low number of torrentfish recorded in the current survey, indicating that this species is not accruing downstream of the weir.

Immediately downstream of the weir, there was a very high abundance of redfin bully. This suggests accrual of this species, indicating that the weir is a barrier to their passage. However, it should also be noted that the substrate in this location consisted of very coarse substrate with excellent interstitial habitat, well suited to redfin bully. This may explain this high abundance. It should also be noted that upstream of the weir, redfin bully were recorded in moderate abundance. Considering this, it is reasonable to conclude that although the weir may present a partial barrier to the passage of this species, sufficient fish are able to negotiate the weir to populate the headwaters.

Good populations of shortjaw kokopu and koaro were also recorded upstream of the weir in the current monitoring year. However, neither population included younger size classes, indicating that there may be some restriction on the recruitment of these species. These populations were cohabiting with brown trout, a species which is known to predate on juvenile galaxiids. This may explain the lack of small shortjaw kokopu and koaro.

Although not recorded in the current monitoring year, previous data also indicates that a healthy population of banded kokopu also exists upstream of this weir. In addition, migratory freshwater shrimp have also been recorded upstream of the weir in the past.

It is apparent that the Scout Road weir does not act as a barrier with regard to the passage of banded kokopu, shortjaw kokopu, koaro and eels. There may be a partial barrier to the passage of redfin bully, but it doesn't appear significant. However, it is likely that there is a total restriction of torrentfish passage at this weir.

The primary result for consideration is that relating to the abundance of brown trout upstream of the weir. The two previous surveys both noted a healthy brown trout population upstream of the weir, with the last report, published in 2013, noting that brown trout were spawning in the headwaters, as there were juveniles observed 4.5km upstream of the weir. This result was repeated in the current survey, and although there is insufficient quantitative data to be sure, there is anecdotal evidence that the number of trout upstream of the weir is increasing.

The findings of this report are sufficient to engage special condition 3 of resource consent 6643-1. It is therefore expected that the consent holder will have initiated this review by the end of the next monitoring period (30 June 2018). This review will require consultation with the Department of Conservation and Fish and Game Taranaki.

Summary

On 23 March 2016, a fish survey was undertaken at two sites, one upstream of the Scout Rd weir in the Mangorei Stream and the other downstream of this weir. A separate survey was undertaken further upstream during the same monitoring period, which has provided additional useful information.

NPDC holds a land use consent for the Scout Rd weir. A special condition of this consent states that the 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. There is no specific condition relating to the provision of fish passage, as the headwaters of the Mangorei Stream upstream of this weir are intended as a reserve for native fish. Should a fish pass be installed it may lead to an increase in brown trout, a highly predatory species, within this reserve.

From the results of this survey, and data held in databases, it is apparent that the Scout Road weir does not act as a barrier with regard to the passage of banded kokopu, shortjaw kokopu, koaro and eels. It is also not considered to represent a significant restriction to the passage for redfin bully, although it is considered that the weir presents a total barrier to the passage of torrentfish. Torrentfish currently has the threat classification of 'in decline'.

The primary result for consideration is that relating to the abundance of brown trout upstream of the weir. The current survey recorded eight trout upstream of the weir. This is the highest number of trout recorded upstream of the weir to date. Although there is insufficient quantitative data, there is sufficient anecdotal evidence to conclude that the brown trout population upstream of the weir is increasing. It is clear that brown trout are spawning in the headwaters, as juveniles brown trout have been in the current survey and the most recent preceding survey, including at a site 4.5km upstream of the weir.

It is clear from the current and previous surveys that there is a healthy population of adult galaxiids present in the headwaters of the Mangorei Stream, including shortjaw kokopu. However, there appears to be an issue with recruitment, as no younger size classes were observed. Therefore, there is still value in retaining the weir as a barrier to trout passage, so as to reduce the potential recruitment of trout to the headwaters.

As this survey has identified an increase in the population of brown trout upstream of the weir, it is recommended that the consent holder initiate a review of consent 6643-1, as provided for by special condition 3. The Department of Conservation and Fish and Game Taranaki should be consulted as a part of this process.

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Memorandum

To Scott Cowperthwaite, Scientific Officer
From Bart Jansma, Scientific Officer
Document No. 1686190
Report No. BJ276
Date 18 May 2016

Fish survey conducted in the Wairau Stream in relation to the NPDC water supply weirs for the Oakura water supply, April 2016

Introduction

The New Plymouth District Council (NPDC) holds various resource consents in relation to several municipal water supply schemes. The monitoring programme for these schemes include fish monitoring, to assess whether the weirs used by these schemes are providing fish passage to the upper reaches of their respective catchments, as required by their resource consent(s). As a part of the 2015-16 monitoring programme, the Wairau Stream was monitored. NPDC do not actively abstract water from the Wairau stream but it is retained as a contingency, to supply the Oakura township when necessary. The consent relating to the weir is as follows:

5713 To erect, place and maintain a weir in the Wairau Stream for Oakura water supply purposes at or about GR: P19:933-297

The Wairau Stream is the shortest corridor in Taranaki for the migration of native freshwater fish between the sea and Egmont National Park. The stream supports an important community of native freshwater fish, including a significant population of shortjaw kokopu, which is an important conservation species. Most of the fish species recorded previously in this stream are migratory and therefore must be allowed free access upstream and downstream of the weir. Consequently, special condition 5 of resource consent 5713 requires "that any works or structures which are the subject of this consent shall not obstruct native fish passage". This report discusses the results of a spotlighting survey conducted on 20 April 2016, to assess compliance with this consent condition.

The NPDC weir in the Wairau Stream is located at an altitude of approximately 120 m above sea level and is two metres high. It is a stepped weir, and some native fish were able to negotiate it prior to a fish pass being in place. A fish pass was installed at the weir in June 2001 (Photo 1). It is constructed of rocks cemented in place, to form a rock ramp. This ramp provides a flow of water that is spread over a less steep gradient, which should be sufficient to provide passage to all species that are present at this altitude in the catchment.

Previous studies have been undertaken to assess the effect of this weir, both prior to and post installation of the fish pass. A summary of the results from these studies are presented in previous annual reports, and summarised in table 1.



Photo 1 Wairau Stream weir and fish pass

Methods

Two sites were sampled in this survey conducted on 20 April 2016, one site upstream of the weir, and one site downstream of the weir. Night spotlighting surveys are undertaken using hand held spotlights powered by 12 volt 7 amp 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. Upstream of the weir, the stream was approximately two metres wide, with approximately 200 m² surveyed. Downstream the stream was slightly narrower, with an average width of approximately 1m. At this site, approximately 125 m² was surveyed.

Results

Both sites had very good fish cover present, with the substrate dominated by boulders, cobbles and gravels, while there were also undercut banks and overhanging vegetation noted. Due to less shading at the downstream site, there was an increase in periphyton when compared with that at the upstream site. There was some bank erosion noted throughout the stream, and it appeared that a large flood may have impacted the stream in recent weeks.



Photo 2 The fish pass with very little flow, 20 April 2016

Of some concern was the observation of the fish pass with very little flow, due to sediment build up at the top. This was remediated during the survey, but needs more attention from the District Council in order to maintain fish passage, and consequently consent compliance.

The results of this survey are presented in Table 1. Fish species recorded in previous surveys at these sites are also included in Table 1, for comparison.

Table 1 Fish species recorded in the Wairau Stream upstream and downstream of the water supply weir together with results of past surveys; UID = unidentified

Survey date	Site	Area fished (m ²)	Banded kokopu	Longfin eel	UID eel	Koaro	Shortjaw kokopu	UID galaxiid	Redfin bully
<u>Previous Surveys</u>									
28-Apr-99	D/s of weir	300	4	-	7	2	5	-	-
	U/s of weir	200	1	2	-	2	-	5	-
02-Feb-00	D/s of weir	300	-	10	-	2	11	3	-
	U/s of weir	300	-	8	-	1	11	2	-
27-Mar-02	D/s of weir	200	5	-	4	2	3	-	-
	U/s of weir	200	2	-	2	3	-	5	-
12-Mar-03	D/s of weir	200	5	1	7	-	5	2	-
	U/s of weir	200	3	-	5	-	-	9	-
7-Jun-06	D/s of weir	150	2	-	-	-	-	2	-
	U/s of weir	300	3	1	7	1	-	3	-
4-Mar-10	D/s of weir	150	2	-	10	-	6	5	-
	U/s of weir	300	2	-	2	-	-	3	-
7-Jun-2013	D/s of SH45	70	-	2	-	2	-	-	3
	D/s of weir	100	-	1	2	1	-	1	-
	U/s of weir	156	2	1	-	2	-	-	-
<u>Current Survey</u>									
20-Apr-2016	D/s of weir	125	11	4	4	3*	1	3	-
	U/s of weir	200	9	1	1	-	-	1	-

* Two of the koaro were observed on the weir itself

The diversity of fish (number of fish species) at the downstream site was equal to the highest richness recorded in this stream to date, and is higher than any richness recorded in this stream since 2002 (Figure 2). Three galaxiids were recorded (koaro (*Galaxias brevipinnis*),

banded kokopu (*Galaxias fasciatus*) and shortjaw kokopu (*Galaxias postvectis*), as was longfin eel (Table 1). Four unidentified eels and three unidentified galaxiid were also observed, but not caught to enable identification. In comparison, the upstream site had a reduced diversity, with only two species being confirmed as present (banded kokopu (*Galaxias fasciatus*) and longfin eel (*Anguilla dieffenbachii*)). This is not dissimilar to that recorded in previous surveys.

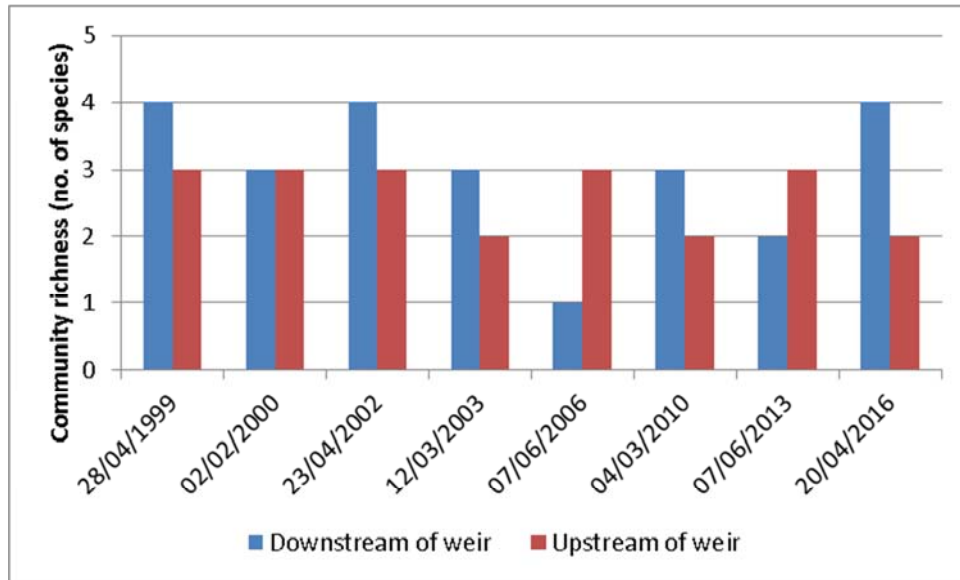


Figure 2 Community richness (number of fish species) recorded in surveys conducted in the Wairau Stream since 1999 (only includes UID eels or UID galaxiids when no eels or galaxiids were not identified to species).

The presence of koaro in the stream continues the positive results noted in the last survey, which recorded the highest koaro abundance since 2002. Unfortunately, this is tempered somewhat by the low numbers of shortjaw kokopu recorded both in the current and previous survey. This species was recorded as relatively abundant at the downstream site during the 2010 survey. What is particularly notable is the significant increase in the abundance of banded kokopu, with this species being at least twice as abundant as that recorded in any previous survey. This species was represented by both young and old individuals, indicating good recruitment.

It is important to note that there were some significant differences in habitat between the upstream and downstream sites. Downstream, the Wairau flowed through pasture, although its banks have been recently retired and planted with native shrubs, which were approximately one metre high. The weir is located just inside the bush line, and consequently the upstream site was completely shaded by riparian vegetation. There was still some undercut bank, but the channel was wider with longer pools.

The previous survey also surveyed the stream immediately downstream of State Highway 45. This survey concluded that redfin bully are unable to negotiate the SH45 culvert, and that this suggested that the abundances of other species upstream of this culvert may also be reduced. Remediation of this barrier will be pursued with the relevant authority.

Conclusions

A fish survey was conducted on 20 April 2016 upstream and downstream of the Wairau Stream weir. Fish diversity and abundance was higher downstream of the weir, compared with that recorded upstream of the weir, by two species. The species richness recorded downstream of the weir was the highest recorded since 2002. The greater amount of undercut bank in the reach downstream of the weir provided good cover, and this may explain this higher richness and abundance. Unfortunately, only one shortjaw kokopu was recorded, and it is unclear what has resulted in this reduced abundance of a species that used to be relatively common in this stream. Koaro were present in moderate numbers, although only downstream of the weir, while banded kokopu were more abundant than they have been during any previous survey, both upstream and downstream of the weir. It was interesting to note that there were two koaro observed on the weir itself.

Upstream of the weir only two species were confirmed as present. There were no new species recorded above the weir, and although no shortjaw kokopu were recorded, the individual unidentified galaxiid was tentatively identified as a shortjaw kokopu. The presence of banded kokopu above the weir is an indication that the weir is operating in compliance with special condition 5 of resource consent 5713. However, there was a lack of flow down the fishpass at the time of the survey, due to inadequate maintenance, with sediment having built up at the head of the pass. This was resolved at the time of the survey.

While there were some differences between the fish populations upstream of the weir with those downstream of the weir, these differences are more likely to have been influenced by the habitat available to the fish. It is not thought to be related to the presence of the weir. During the previous survey, an additional site was surveyed downstream of State Highway 45, and this indicated that the SH45 road culvert is a barrier to the passage of at least one species, and may also be a partial barrier to those species recorded upstream. Once this is resolved, it is likely that species richness and potentially abundance will increase upstream.

Summary and Recommendations

The monitoring of the Wairau Stream indicates that fish passage on the NPDC weir is likely to provide fish passage for all fish present in the monitored reach. However, the pass had not been maintained appropriately by the NPDC, and it is recommended that they improve their inspection and maintenance regime. Provided that regular inspections of the fish pass confirms that it is operating and being maintained as required, it is recommended that the fish monitoring be conducted once every three years as per the scheduled monitoring programme currently implemented.

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