

Lower Waiwhakaiho Catchment

Monitoring Programme

Annual Report

2020-2021

Technical Report 2021-75



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Taranaki Regional Council
Private Bag 713
Stratford

ISSN: 1178-1467 (Online)
Document: 2912910 (Word)
Document: 2969641 (Pdf)
March 2022

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Executive summary

The Lower Waiwhakaiho River catchment monitoring programme addresses discharges by several consent holders in the Fitzroy area of New Plymouth. The report covers the period July 2020 to June 2021, and is the 28th report for this combined monitoring programme.

During the monitoring period, the companies demonstrated an overall good level of environmental performance and a high level of administrative performance.

The Waiwhakaiho River catchment is significant for the Taranaki region. It is used for domestic, agricultural and industrial water supply, hydroelectric power generation, recreational purposes, and waste assimilation. It is also important to the local hapū. Because of the pressure on the river, the Taranaki Regional Council (the Council) adopted a water management plan for the river in September 1991.

During the 2020-2021 monitoring period a total of 19 consents were held by the 13 industries monitored under this programme that discharge wastewater, stormwater and/or leachate from the industrial area at Fitzroy, New Plymouth to the lower Waiwhakaiho River and Mangaone Stream, or to land in the lower Waiwhakaiho and Mangaone Stream catchments. The activities and impacts of the consent holders upon water quality are discussed, as is the extent of their compliance with their permits, and their overall environmental performance. There is a separate report covering emissions to air within the catchment.

The monitoring programme included 57 site inspections, 83 samples of discharges, groundwater and receiving waters, and two biomonitoring surveys of the Waiwhakaiho River and Mangaone Stream.

Overall, the results of biomonitoring surveys undertaken during the monitoring period indicated that discharges from the industrial area were not having a significant negative effect on the macroinvertebrate communities in the lower Waiwhakaiho River. However, the taxa richness and MCI scores indicated that a pollution event had likely occurred upstream of the industrial area. The Mangaone Stream had a significant decline in macroinvertebrate indices in the middle reaches, which may be due in part to chronic pollution from historic sites but the results suggest that a more recent discharge lowering water quality has also occurred.

There continued to be evidence of some nutrient enrichment occurring in the lower Mangaone Stream. This was most likely to have been caused by inputs from various sites in the middle reaches. Also noted is the persistence of nutrient contamination in the groundwater surrounding the old Ravensdown site. In addition, there was the introduction of discharges from the new Ravensdown site which have in the past been found to be non-compliant in regard to ammoniacal nitrogen.

Low levels of light organic solvent preservative (LOSP) chemicals Permethrin, Propiconazole, and Tebuconazole were detected in the Mangaone Stream downstream of Taranaki Sawmills Ltd during a wet weather survey. The levels were found to be well within the empirical NOECs (no observable effect concentrations) for aquatic life developed by the European Chemical Agency and the Cawthron Institute.

Monitoring of groundwater and leachate in relation to the old landfill area off Bewley Road showed that all of the samples collected from the three monitoring bores complied with consent limits.

There were four unauthorised incidents recorded that were associated with the consents covered by this report, which resulted in three abatement notices being issued.

During the period under review, AML Ltd demonstrated a **high** level of environmental and administrative performance and compliance with their resource consent as defined in Section 1.1.4.

During the period under review, Devon 662 Limited Partnership demonstrated a **good** level of environmental performance and a **high** level of administrative performance. Groundwater monitoring continues to show the likelihood of fugitive historical fertiliser discharges from the former storage depot. More recent sampling appears to indicate that these trends are decreasing.

During the period under review, Dialog Fitzroy Ltd demonstrated a **high** level of environmental and administrative performance and compliance with their resource consent in relation to the site at Rifle Range Road.

During the period under review, Downer EDI Works Ltd demonstrated a **good** level of environmental and a **high** level of administrative performance and compliance with their resource consents as defined in Section 1.1.4 in relation to its Rifle Range Road site.

During the period under review, Envirowaste Services Ltd demonstrated a **high** level of environmental and administrative performance and compliance with their resource consent, as defined in Section 1.1.4.

During the period under review, Firth Industries Ltd demonstrated a **good** level of environmental and a **high** level of administrative performance and compliance with their resource consents in relation to its site on Clemow Road. There have been ongoing issues with sediment loading in stormwater discharges, which the Company have since addressed.

During the period under review, Freight and Bulk Transport Holdings Ltd demonstrated a **high** level of environmental and administrative performance and compliance with their resource consent as defined in Section 1.1.4.

During the period under review, an **improvement was required** in KiwiRail Holdings Ltd and New Zealand Railways Corporation Ltd's environmental performance as set out in Section 1.1.4. Ongoing issues with sediment controls and loading in stormwater discharges from the site, and delays in providing site management plans, were noted. KiwiRail also demonstrated the need to **improve their level of administrative performance**.

During the period under review, New Plymouth District Council demonstrated a **high** level of environmental performance and **high** level of administrative performance and compliance with its resource consents as defined in Section 1.1.4.

During the period under review, Ravensdown Fertiliser demonstrated a **high** level of environmental and administrative performance and compliance with their resource consent as defined in Section 1.1.4.

During the period under review, Taranaki Sawmills Ltd demonstrated a **high** level of environmental and administrative performance and compliance with their resource consent as defined in Section 1.1.4. Recent works to remediate zinc on the site have successfully reduced levels in stormwater discharges.

During the period under review, Technix Group Ltd demonstrated a **high** level of environmental and administrative performance and compliance with their resource consent as defined in Section 1.1.4.

During the period under review, Waste Management NZ Ltd demonstrated a **high** level of environmental level of administrative performance and compliance with their resource consent and RFWP as defined in Section 1.1.4.

For reference, in the 2020-2021 year, consent holders were found to achieve a high level of environmental performance and compliance for 86% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 11% of the consents, a good level of environmental performance and compliance was achieved.

This report includes recommendations for the 2021-2022 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 for the period July 2020 to June 2021 by the Taranaki Regional Council (the Council) on the monitoring programme associated with resource consents held by 13 industries and New Plymouth District Council (NPDC) in the Lower Waiwhakaiho catchment. The monitoring covers discharges to water and land in the Fitzroy and Katere Road industrial areas of New Plymouth.

This report covers the results and findings of the monitoring programme implemented by the Council in respect of the consents held by these industries that relate to discharges of stormwater, wastewater and leachate to the Lower Waiwhakaiho River and Mangaone Stream, and to land in the Mangaone Stream catchment.

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 companies' use of water and land, and is the 28th combined annual report by the Council for these consent holders.

A separate report covers the results of the Council's monitoring programmes associated with the air discharge permits held by some of these industries.

The lower Waiwhakaiho River has been identified by the Council as a resource of regional significance that has demonstrated evidence of adverse impact from catchment-wide point and diffuse source pollution and other river usage. This is apparent particularly during periods of low flow accentuated by abstraction related to operation of the hydroelectric power station at Mangamahoe. The Mangaone Stream has also been identified in Appendix IA of the *Regional Freshwater Plan for Taranaki* as a stream of high ecological value. This tributary of the Waiwhakaiho River has particularly high native fish diversity, including the presence of threatened species. It is therefore important that monitoring of the Waiwhakaiho River and Mangaone Stream is continued, particularly in relation to any major wastewater or stormwater discharges, in order that these water bodies are safeguarded as resources for the area.

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 the companies in the Lower Waiwhakaiho catchment;
- the nature of the monitoring programme in place for the period under review; and
- a description of the activities and operations conducted on each consent holder's site.

Sections 2 -14 present the results of monitoring at each individual site during the period under review, including scientific and technical data, the results, their interpretations, and their significance for the environment, and presents recommendations to be implemented in the 2021-2022 monitoring year.

Section 15 presents the results of receiving water quality monitoring for the Mangaone Stream and the Waiwhakaiho River, their interpretation and their significance.

Section 16 discusses the general site performance of the consent holders within the catchment, their interpretation, and their significance for the environment in the immediate vicinity of the sites under discussion.

Section 17 presents recommendations to be implemented in the 2021-2022 monitoring year.

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

1.1.3 The Resource Management Act 1991 and monitoring

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

- a. the neighbourhood or the wider community around an activity, and may include cultural and social-economic effects;
- b. physical effects on the locality, including landscape, amenity and visual effects;
- c. ecosystems, including effects on plants, animals, or habitats, whether aquatic or terrestrial;
- d. natural and physical resources having special significance (for example recreational, cultural, or aesthetic); and
- e. risks to the neighbourhood or environment.

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

1.1.4 Evaluation of environmental and administrative performance

Besides discussing the various details of the performance and extent of compliance by the consent holders, this report also assigns a rating as to each Company's 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 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 during investigations of incidents reported to the Council by a third party 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 during investigations of incidents reported to the Council by a third party. 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 during investigations of incidents reported to the Council by a third party. 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 2020-2021 year, consent holders were found to achieve a high level of environmental performance and compliance for 86% of the consents monitored through the Taranaki tailored monitoring

programmes, while for another 11% of the consents, a good level of environmental performance and compliance was achieved.¹

1.2 Resource consents

The locations of the consent holders monitored under this programme and the chemical sampling sites are shown in Figure 1.

A total of 19 consents were held to discharge stormwater, wastewater, and leachate from the industrial area at Fitzroy, New Plymouth to the lower Waiwhakaiho River and Mangaone Stream during the period under review (Table 1). Each of these permits was issued by the Council as a resource consent under Section 87(e) of the RMA. Details of the resource consents are summarised in the table below. Summaries of the conditions attached to each permit are set out in the 'Evaluation of performance' section for each consent holder.

A summary of the various consent types issued by the Council is included in Appendix I, as are copies of all permits held by the Companies during the period under review.

Stormwater discharge consents have standardised special conditions that:

- Require the consent holder to adopt the best practical option to minimise effects.
- Limit the area from which stormwater can be discharged.
- Require the use of a stormwater discharge system.
- Limit constituents of the discharge, with specific regard to pH, suspended solids and oil and grease.
- Require that the discharge does not cause certain effects in the receiving waters.
- Require that the consent holder maintains a spill contingency plan to ensure that in the event of an unforeseen situation, the chances of a spillage resulting in an unauthorised discharge leaving the site are minimised.
- Require that the consent holder maintain and adhere to a management plan to ensure that the consent holder examines the activities taking place on site, and puts appropriate controls in place to minimise the potential for stormwater contamination to occur due to routine activities.
- Require the consent holder to notify the Council prior to making any changes to the site or site processes; and
- Provide for lapse (where applicable) and review of the consent.

¹ The Council has used these compliance grading criteria for more than 17 years. They align closely with the 4 compliance grades in the MfE Best Practice Guidelines for Compliance, Monitoring and Enforcement, 2018

Table 1 Resource consents for discharges to the Mangaone Stream and lower Waiwhakaiho River from New Plymouth industrial area

Consent holder	Consent No	Description	Number of conditions	Granted	Expiry date	Next review date
AML Ltd (Trading as Allied Concrete)	4539-2	To discharge stormwater and treated wastewater from truck washing at a concrete batching plant into the Mangaone Stream in the Waiwhakaiho catchment	10	30 Jul 2008	Jun 2026	-
Devon 662 Limited Partnership (Ravensdown Ltd old site)	3865-4.1	To discharge stormwater from a fertiliser storage depot onto and into land and into the Mangaone Stream and into the Waiwhakaiho River	11	06 Aug 2020	Jun 2026	June 2022
Dialog Fitzroy Ltd	0021-4	To discharge stormwater from an industrial site into the Waiwhakaiho River	10	12 Mar 2015	Jun 2032	June 2026
	9853-2	To discharge stormwater from an industrial site into the Waiwhakaiho River	10	12 Mar 2015	Jun 2032	June 2026
Downer EDI Works Ltd	3917-3	To discharge treated stormwater and minor amounts of treated air scrubber wastewater from an asphalt manufacturing plant onto land and into the Mangaone Stream	8	20 May 2015	Jun 2032	June 2026
Envirowaste Services Ltd	10109-1	To discharge stormwater from an industrial site into the Puremu Stream and an unnamed tributary of the Mangaone Stream	9	06 May 2015	Jun 2032	June 2026
Firth Industries Ltd	0392-4	To discharge stormwater and treated wastewater into the Waiwhakaiho River	10	21 July 2015	Jun 2032	June 2026
Freight & Bulk Transport Ltd	10008-1	To discharge stormwater onto and into land and into the Mangaone Stream	9	05 Jun 2015	Jun 2032	June 2026
KiwiRail Holdings Ltd	3528-3	To discharge stormwater into the Waiwhakaiho River	8	31 Mar 2017	Jun 2026	-
New Zealand Railways Corporation	1735-3	To discharge stormwater from the Smart Road Rail Terminal into an unnamed tributary of the Mangaone Stream, and into the Mangaone Stream in the Waiwhakaiho catchment	9	31 Jul 2009	Jun 2026	-
New Plymouth District Council	1275-3	To discharge stormwater from the Katere and Waiwhakaiho industrial areas into the Mangaone Stream via multiple outfalls between Egmont Road and	4	10 Jun 2008	Jun 2026	-

Consent holder	Consent No	Description	Number of conditions	Granted	Expiry date	Next review date
		the confluence with the Waiwhakaiho River...also 1697032E-5677145N, 1696882E-5677087N, 1696734E-5676990N, 1696545E-5677175N, 1696755E-5677622N, 1696757E-5677671N, 1696771E-5677957N, and 1696777E-5677965N				
	4984-2	To discharge leachate from a former landfill site into groundwater, adjacent to the Waiwhakaiho River	4	16 March 2016	Jun 2032	June 2026
	5163-2	To discharge stormwater from the Waiwhakaiho industrial area into the Waiwhakaiho River via multiple outfalls between the State Highway 3 bridge and the confluence with the Mangaone Stream.	4	10 Jun 2008	Jun 2026	-
Ravensdown Ltd	10513-1.1	To discharge stormwater from a fertiliser storage site onto and into land and into the Mangaone Stream	9	06 Aug 2020	Jun 2032	June 2026
Taranaki Sawmills Ltd	3491-3.0	To discharge stormwater from a timber treatment site into the Mangaone Stream	11	12 March 2021	June 2038	June 2026
Technix Group Ltd	0291-3	To discharge stormwater from an industrial site into the Waiwhakaiho River	9	24 Oct 2014	Jun 2032	June 2026
	9981-1	To discharge stormwater from an industrial site into the Waiwhakaiho River	8	24 Oct 2014	Jun 2032	June 2026
	9982-1	To discharge stormwater from an industrial site into the Mangaone Stream	8	24 Oct 2014	Jun 2032	June 2026
Waste Management NZ Ltd	10430-1	To discharge stormwater from a waste depot into an unnamed tributary of the Mangaone Stream	9	27 Oct 2017	Jun 2032	June 2023

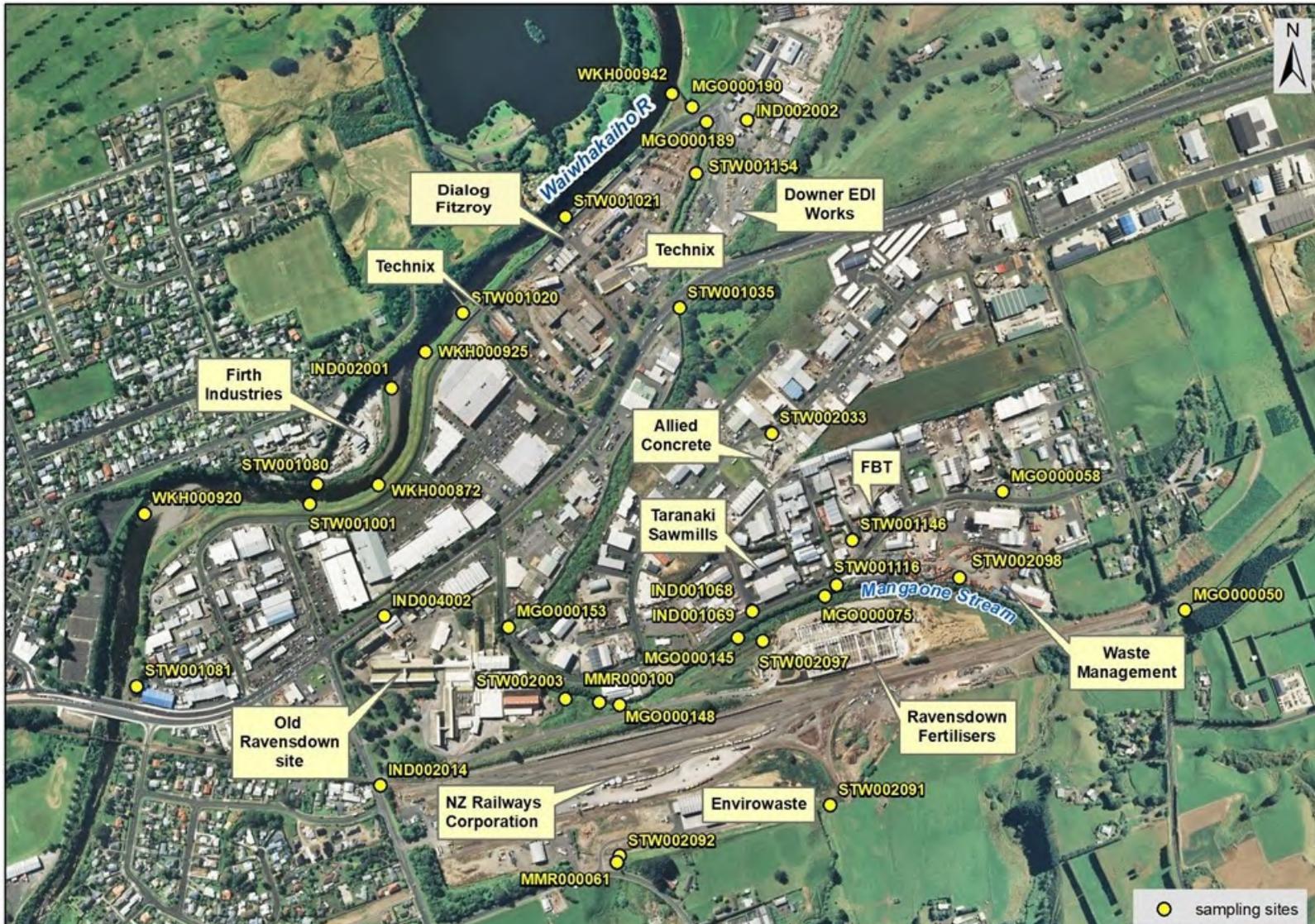


Figure 1 Lower Waiwhakaiho industrial catchment and sampling sites

1.3 Monitoring programme

1.3.1 Introduction

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

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

The monitoring programme for the consisted of four primary components.

1.3.2 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;
- discussion over monitoring requirements;
- preparation for any consent reviews, renewals or new consent applications;
- advice on the Council's environmental management strategies and content of regional plans; and
- consultation on associated matters.

1.3.3 Site inspections

Council undertook 57 inspections during the monitoring period. Inspections focused on general housekeeping, effects on stormwater quality and wastewater disposal. Water and waste treatment systems and areas where chemicals or products are stored or transferred are given particular attention. Sources of data being collected by the consent holder were identified and assessed, so that performance in respect of operation, internal monitoring, and supervision could be reviewed by the Council. The neighbourhood was also surveyed for environmental effects.

The frequency of inspection varied depending on the type of activity at the site, the outcome of previous inspections, and the stage of any investigation of unsourced discharges of contaminants.

1.3.4 Chemical sampling

The Council undertook sampling of both the discharges from the site and the water quality upstream and downstream of the discharge point and mixing zone in the receiving waters.

The number and location of sites sampled, the frequency and conditions of sampling, and the range of water quality parameters determined have changed since this combined monitoring programme commenced in 1988. This evolution has occurred as knowledge of the characteristics of the discharges and waters that receive them has been gained, and as the number and composition of licensed discharges has varied.

Not all parameter results from sampling are published herein, only those relevant to assessing compliance and effects. All results are available upon request.

1.3.4.1 Surface water surveys

The discharge and receiving water chemical sampling sites are shown in Figure 1.

As there are no samples taken downstream of the confluence of the Mangaone Stream and Waiwhakaiho River, the surface water surveys of these two water bodies and their discharges may be carried out separately.

Wet weather sampling was carried out on 14 June 2021 for the Mangaone Stream, and 15 June 2021 for the Waiwhakaiho River. Samples were also collected from both the Waiwhakaiho River and Mangaone Stream in conjunction with groundwater monitoring, and from the Mangamiro Stream in relation to KiwiRail discharges, with a total of 25 surface water samples being taken for analysis.

1.3.4.2 Discharge sampling

Taken in conjunction with wet weather inspections and wet weather river surveys, 46 samples of individual site discharges were collected and analysed.

The results of the discharge monitoring are discussed in the relevant section based on the consent holder responsible for that discharge, and the receiving water results are discussed in Section 15.

1.3.4.3 Groundwater surveys

Groundwater sampling was undertaken in the vicinity of the old Bewley Road landfill, with total of 12 groundwater samples being collected for analysis. Groundwater sampling is conducted independently of the wet weather surface water sampling. A discharge drain and three receiving water sites are sampled in conjunction with the Bewley Road groundwater monitoring, and two receiving water sites are sampled in conjunction with the Ravensdown groundwater monitoring. The location of the sites sampled during the groundwater surveys are shown in Figure 2.

Where possible, a summary of previous monitoring data for a particular site is provided for comparative purposes. Unless specifically stated all metals results are from acid soluble analysis.

1.3.4.4 Streambed sediment sampling

Dry weather sampling of the Mangaone Stream sediments is scheduled to be carried out triennially and will next be undertaken in the 2021-2022 monitoring period. This focuses on current and historical contaminants that may be present in discharges from the Taranaki Sawmills site.

1.3.5 Biomonitoring surveys

Biological surveys are used to determine the impacts that discharges may cause over a period of time, as distinct from chemical surveys which give detailed information upon the constituents of a discharge at the time of sampling but cannot give information upon previous discharge characteristics. Biological surveys also directly indicate any significant adverse effects of discharges upon in-stream flora and fauna, so that cause-effect relationships do not have to be established as for critical levels of individual chemical parameters, although variation in habitat must also be taken into consideration.

1.3.5.1 Macroinvertebrate surveys

Samples of streambed macroinvertebrates and algae are collected from three sampling sites in the Lower Waiwhakaiho River and five sites in the Mangaone Stream on a biannual basis. During the 2020-2021 period, these surveys were conducted on 18 January 2021 and 25 March 2021. The locations of the biomonitoring sites are shown in Figure 19. A summary of the findings is discussed in section 15.2.

1.3.5.2 Fish survey

Fish surveys were originally undertaken at two sites in the Mangaone Stream. In the 2004-2005 fish survey report it was proposed that future surveys incorporate more sites in an attempt to compare sites with

similar habitats, and to ensure that discharges to the Mangaone Stream are not presenting a barrier to upstream migration. Fish surveys are scheduled on a triennial basis and were carried out in April and May 2021.

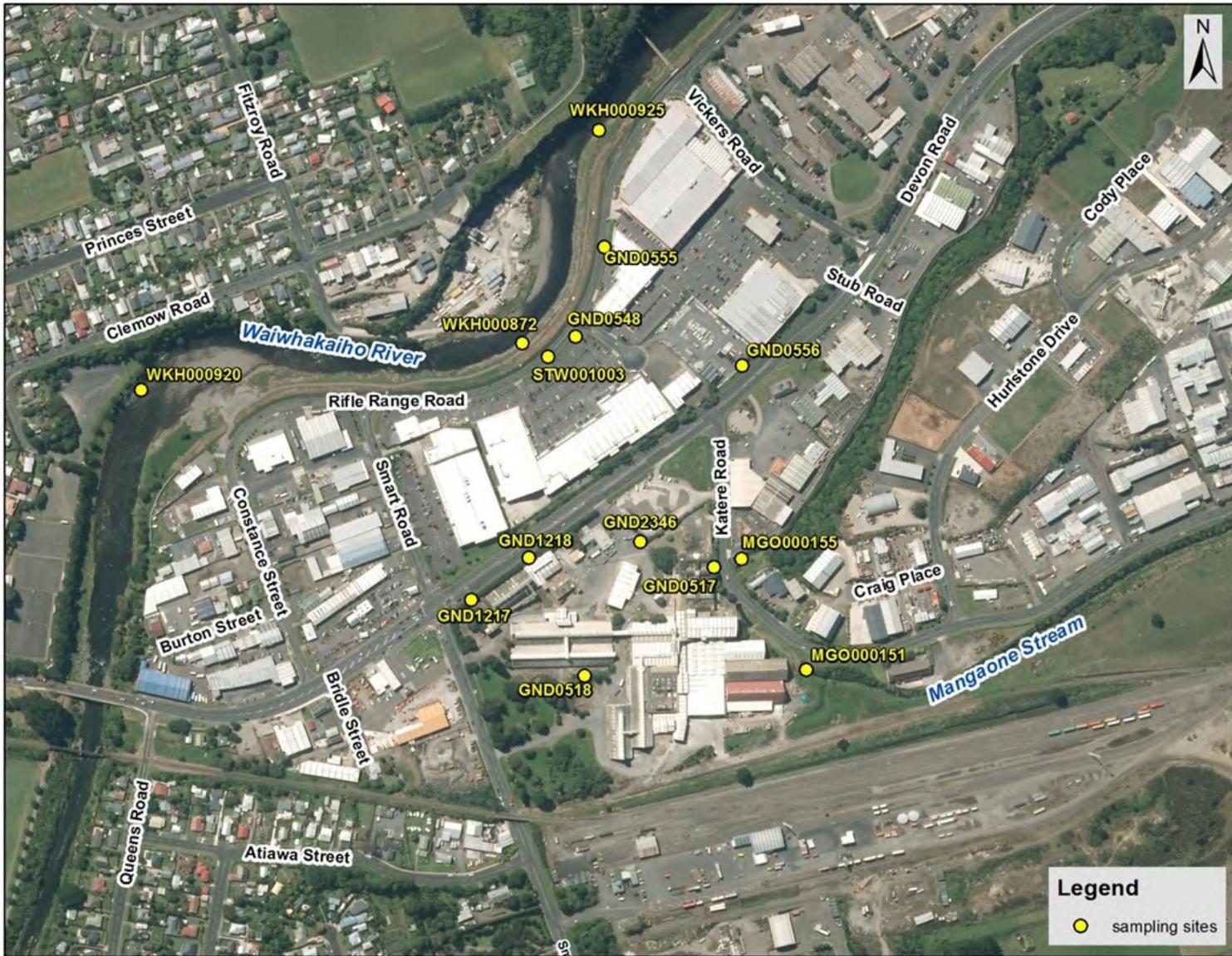


Figure 2 Groundwater monitoring bore locations and associated surface water sampling sites

2 AML Ltd (trading as Allied Concrete)

2.1 Site description

AML Ltd (Allied Concrete) operate a concrete batching plant at 67 Hurlstone Drive (Figure 3), which is one of three such plants the Company operates in the Taranaki region. The main activities are loading of ready-mixed concrete into trucks, and the unloading of concrete raw materials including cement and aggregate into silos and bins.

Stormwater from the majority of the site drains directly to the New Plymouth District Council (NPDC) stormwater system and then to the Mangaone Stream.

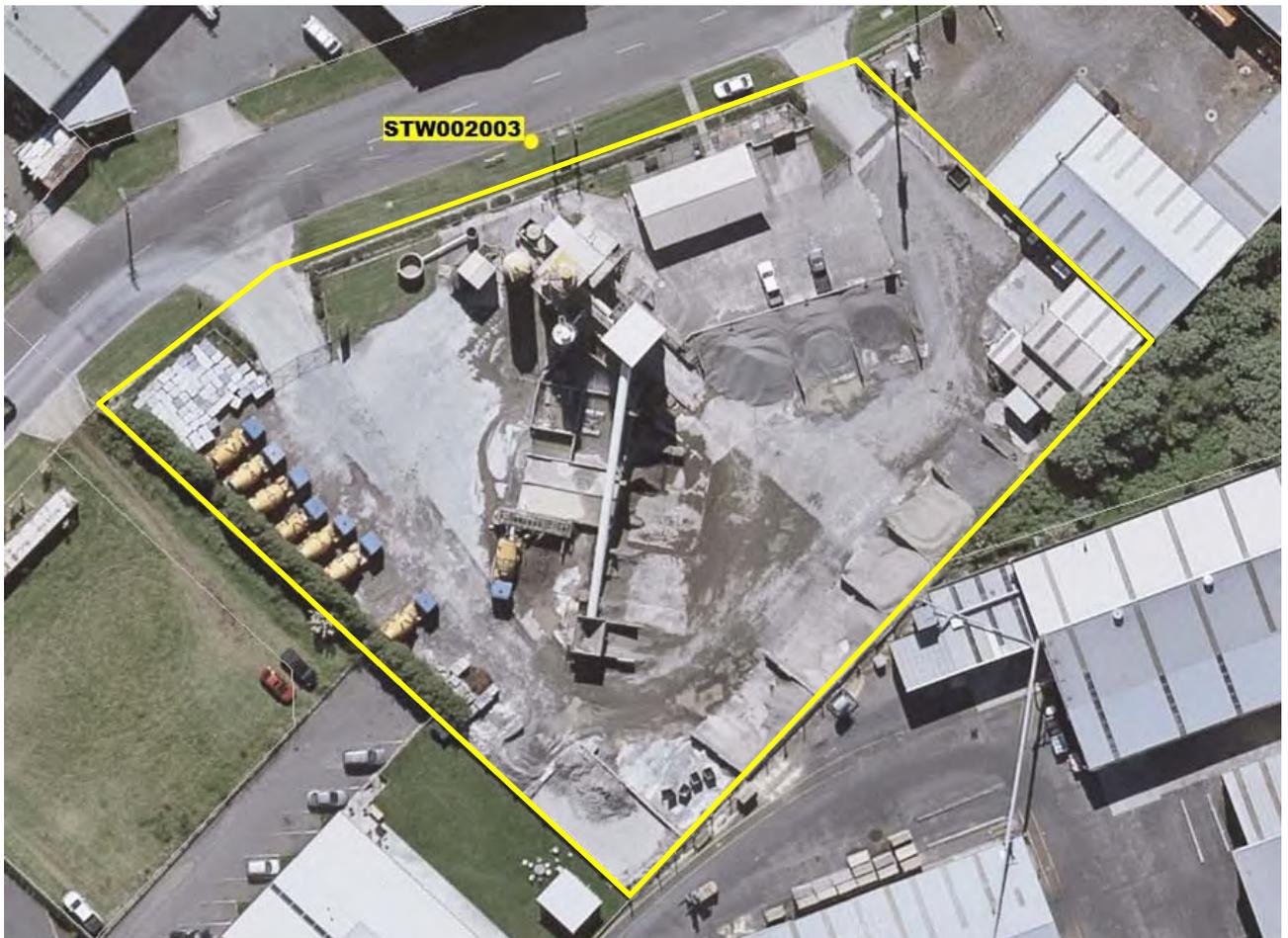


Figure 3 Aerial view of Allied Concrete site location

The wastewater treatment system consists of a series of settlement ponds and pumps for the recycling of process water. The emptied mixing bowls of up to seven concrete trucks are washed out each day using water and a small amount of detergent. This bowl wash water is discharged into two 36 m³ bins and allowed to settle for at least 18 hours before treatment through an additional series of six settlement ponds totalling approximately 360 m³ in volume. Solids from the settlement process are removed from the bins and ponds as required.

Water from the settlement ponds is recycled into the concrete manufacturing process and is also used for bowl washing. The recycled water is supplemented on most days by reticulated supply and no discharge of wastewater occurs to the stormwater drain. However, because the uncovered settlement ponds receive stormwater both directly and as run off from certain areas of the site, an excess of water may enter the

system during heavy or sustained rainfall, or if rainfall occurs when the plant is not operating. This excess is discharged via a sand filter prior to entering the NPDC stormwater system, which discharges to the Mangaone Stream immediately upstream of State Highway 3.

Allied Concrete holds water discharge permit **4539-2** to cover the discharge of stormwater and treated wastewater from truck washing at a concrete batching plant into the Mangaone Stream in the Waiwhakaiho catchment. It contains the standardised special conditions as set out in Section 1.2.

The permit is attached to this report in Appendix I.

2.2 Results

2.2.1 Inspections

Three routine inspections were conducted at the site during the monitoring period, on 27 August 2020, 9 February 2021, and 25 May 2021.

27 August 2020

An inspection to assess compliance with resource consent conditions was carried out in fine weather with moderate wind conditions. The yard was clean and tidy with no spills noted. The sand filter was operating, and discharging a slightly turbid flow at the time. The yard area around the eastern site entry was discharging a small amount of turbid water off the site and into the roadside drain. This was sampled at the point where it entered the stormwater reticulation network. Staff onsite were made aware of the discharge, and contacted Blackstock Roadsweeping at the time to ensure the discharge was contained onsite. The results of sampling showed all discharges were within consented limits, and the site was compliant at the time of the visit.

9 February 2021

The site was inspected in overcast, dry weather with light wind conditions. The site was generally clean and tidy, with no sign of spills or vehicle tracking from roadways. Improvements to dust controls had been made onsite following complaints from neighbours. This included a new dust suppressing sprinkler system, with further improvements planned. The stormwater system was in good condition and not discharging at the time. There were no dust or odour issues on the site, and all consent conditions were being complied with.

25 May 2021

A site inspection was carried out in fine weather with moderate wind conditions. The site was clean and tidy, with sprinklers set up in the aggregate storage area to control any dust (Photo 1). There were no spills or issues noted on the site, and the stormwater system was tidy and not discharging at the time. There were no odour or dust issues and the site was compliant with consent conditions.



Photo 1 View of Allied Concrete yard, May 2021

2.2.2 Results of discharge monitoring

Since 1996, the discharge from the concrete plant has been monitored at a manhole outside the plant, before it enters the stormwater drain along Hurlstone Drive. It is also monitored at a second point, together with contributions from the surrounding industrial area, at the point where the combined NPDC reticulated stormwater drain discharges into the Mangaone Stream (site STW001035).

Discharges from the site were sampled on two occasions during the monitoring period under review and results are displayed in Table 2.

The results for the stormwater drain at the Mangaone Stream (site STW001035) are given in section 10.2.2.5, whilst the results of the receiving water (i.e. for the purposes of monitoring compliance with consent conditions) are given in Section 15.1.2.

Table 2 Allied Concrete stormwater sampling results, site STW002033

Parameter	pH	Temperature	Conductivity	Suspended Solids	Total Hydrocarbons	Turbidity
Units	pH	°C	mS/cm	g/m ³	g/m ³	FNU
27 Aug 2020	11.5	11.0	85.6	47	< 0.7	54
14 Jun 2021	11.6	14.6	89.3	79	-	82
<i>Consent limits</i>	6-9*	-	-	100	15	-

*pH consent limits apply to the receiving waters of the Mangaone Stream

2.3 Investigations, interventions, and incidents

Table 3 sets out details of any incidents recorded, additional investigations, or interventions required by the Council in relation to Allied Concrete's activities during the 2020-2021 period. This table presents details of all events that required further investigation or intervention regardless of whether these were found to be compliant or not.

Table 3 Incidents, investigations, and interventions summary table

Date	Details	Compliant (Y/N)	Enforcement Action Taken?	Outcome
25 Nov 2020	A complaint was received concerning turbid stormwater discharging from the Allied concrete site in New Plymouth	Y	N/A	Investigation found that no stormwater discharges were occurring at the time of the visit, however photographs supplied by the requestor indicated that sediment-laden water had discharged off the site previously. Advice was given to staff to ensure compliance with consent conditions.

2.4 Evaluation of performance

A tabular summary of Allied Concrete's compliance record for the year under review is set out in Table 4.

Table 4 Summary of performance for Allied Concrete consent 4539-2

Purpose: To discharge stormwater and treated wastewater from truck washing at a concrete batching plant into the Mangaone Stream in the Waiwhakaiho catchment		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option to minimise effects	Observation and discussion at inspection	Yes – improvements shown compared to previous monitoring period
2. Limit on stormwater catchment area	Observation and discussion at inspection	Yes
3. Bunding of above ground hazardous substance storage	Observation at inspection	Yes
4. Concentration limits upon potential contaminants in discharge	Chemical sampling	Yes
5. Discharge cannot cause specified general adverse effects beyond mixing zone	Sampling and discharge point inspections	Yes
6. pH limits on receiving water as a result of discharge	Chemical sampling	Yes
7. Maintenance of and adherence to contingency plan	Site inspections	Yes

Purpose: To discharge stormwater and treated wastewater from truck washing at a concrete batching plant into the Mangaone Stream in the Waiwhakaiho catchment		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
8. Prepare, maintain and adhere to an operation and management plan.	Site inspections	Yes
9. Written notification of changes	Observation and discussion at inspection found no changes requiring notification	N/A
10. Optional review provision re environmental effects	No further provision 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

N/A = not applicable

During the year, Allied Concrete demonstrated a high level of environmental and administrative performance with their resource consent as defined in Section 1.1.4.

3 Devon 662 Ltd Partnership

3.1 Site description

Previously operating as the New Plymouth depot of Ravensdown Fertiliser Co-operative Ltd (Ravensdown), the Devon 662 Partnership (Devon 662) site occupies an area of approximately 7 ha bounded by Devon, Smart and Katere Roads, and the Smart Road rail yard (Figure 4). It is also bordered on the eastern boundary by the Mangaone Stream.

While operating as Ravensdown, the depot previously received, bagged, blended and distributed fertilisers in various forms, namely superphosphate, lime, dolomite and imported high analysis products such as ammonium sulphate, urea, triple super, potassium chloride (potash) and monoammonium and diammonium phosphates (MAP & DAP). Small volumes of trace element fertilisers such as zinc sulphate were also handled through the store. Approximately 250,000 tonnes of fertiliser were distributed per annum.

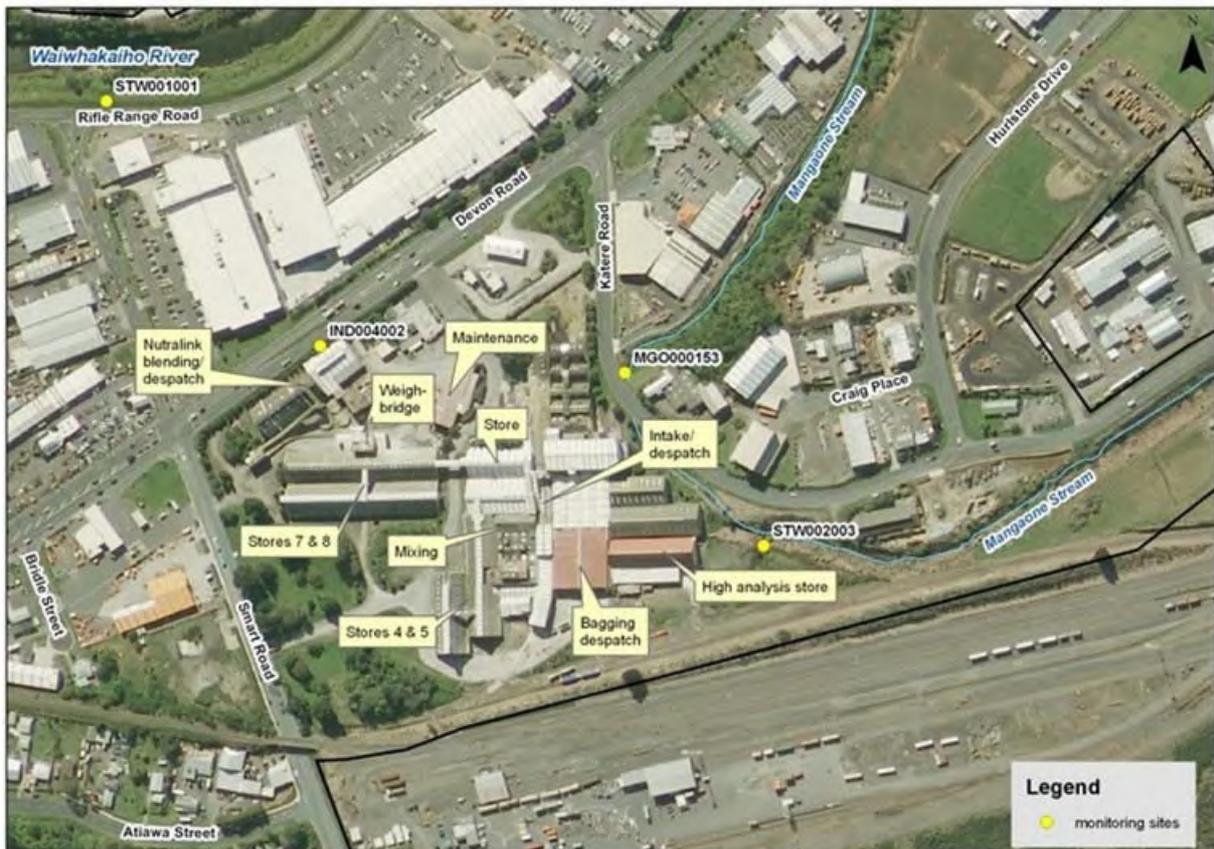


Figure 4 Aerial view of Devon 662 site and sampling point locations (prior to demolition works in 2021)

Prior to 1 July 1997, Farmers Fertiliser Ltd manufactured super phosphate on the site by acidulation of phosphate rock. Sulphuric acid was manufactured from elemental sulphur. A chrome sulphate plant was run in conjunction with the sulphuric acid plant. Hydrofluorosilicic acid was produced as a by-product of the rock acidulation process. The manufacturing plants were all decommissioned and subsequently removed from site, with the acid plant being the last plant to be removed, which was completed during the 2002-2003 year. After decommissioning, the acid tank was retained for storage of liquid wastes containing high levels of fertiliser.

Stormwater from the site discharges to both the Waiwhakaiho River and the Mangaone Stream.

Drainage from western and northern parts of the site flows to the Waiwhakaiho River, via an underground drain that runs alongside Devon Road to the Smart Road intersection, where it meets a piped tributary of the river. The piped tributary, known as McLeod's Drain, originates in the Queens Road area and runs for approximately 600 m beneath lower Smart Road from the railway. The drain then joins the river 50 m downstream of Smart Road. The mean flow of the tributary is approximately 10 L/s. All of the former manufacturing plants on the Devon 662 site were in this catchment.

Drainage from southern and eastern parts of the site flows to the Mangaone Stream at several points. The catchment area of about 2.8 ha includes the (road and rail) transfer area for fertilisers. Part of the fertiliser transfer area is on land owned by KiwiRail. The main discharge from this catchment is via a short drain that meets the Mangaone Stream about 150 m above the Katere Road Bridge. The Mangamiro Stream, which is a small piped tributary of the Mangaone Stream, exits immediately upstream of the stormwater drain. The other discharge points to the stream are mainly roof drain outlets. Ravensdown ceased operations and vacated the site in November 2018, following the recent purchase by Devon 662.

Devon 662 holds resource consent **3865-4** to discharge stormwater from a fertiliser storage depot onto and into land and into the Mangaone Stream and into the Waiwhakaiho River. This consent combined the activities of the two prior consents 3140-2 and 3865-3.

It contains the standardised conditions as well as two extra conditions requiring the maintenance of groundwater bores and foot access to water sampling sites.

3.2 Results

3.2.1 Inspections

Two routine inspections were conducted at the site during the monitoring period, on 13 November 2020 and 25 May 2021. The site was visited on 9 February 2021 but due to ongoing demolition works, no inspection was carried out.

13 November 2020

An inspection was conducted in overcast weather with calm wind conditions. Site demolition works had commenced, which included asbestos removal. All contaminated material, including residual fertiliser product, was scheduled for removal and disposal at an appropriate facility. The site was tidy and well managed, with all accessible stormwater drains banded and dry (Photo 2). The wetland was dry and well vegetated with no sign of discharge or dieback. There were no odour or dust issues onsite, and all consent conditions were being complied with.



Photo 2 Bunding on stormwater drains, November 2021

25 May 2021

The site was inspected in fine weather with strong north easterly winds. Demolition works were still ongoing, with concrete crushing underway onsite. Bulk earthworks had not yet commenced, but were scheduled to be started once the demolition phase was complete. Strong winds at the time had resulted in dust discharging from the crushed concrete area, and works had temporarily been halted to reduce emissions and allow for sprinklers to be set up. There were no offensive or objectionable odour or dust emissions beyond the boundary and the site was compliant with consent conditions at the time of inspection.

3.2.2 Results of discharge monitoring

Stormwater discharge samples were collected from two locations on the Devon 662 site, where stormwater discharges to the Waiwhakaiho River and the Mangaone Stream, on 10 May 2021 and 14 June 2021. Earlier efforts to collect samples had been hampered by access to site IND004002 and lack of flow at STW002003.

Waiwhakaiho River

The discharge to the Waiwhakaiho River is sampled at a manhole on the old effluent line to McLeod's Drain (site IND004002). The results of monitoring for the period under review are presented in Table 5. The consent limits for pH, dissolved reactive phosphorus, and oil and grease were complied with on all occasions. The suspended solids limit was very slightly exceeded on one occasion, and was attributed to sediment that had been re-suspended by the sample collection process.

Table 5 McLeod's Drain stormwater sampling results, site IND004002

Parameter	Units	10 May 2021	14 Jun 2021	Resource consent limits & ANZECC guideline values
		1340	1340	
pH	pH	6.9	7.7	6-9
Temperature	°C	18.8	15.3	-
Conductivity	µS/cm	359	180.9	-
Suspended Solids	g/m ³	103	96	100
Turbidity	FNU/NTU	53	140	-
Nutrients				
NH ₃	g/m ³	0.43	-	0.025*
NH ₄	g/m ³	145	156	-
NNN	g/m ³	114	-	-
Total Phosphorus	g/m ³	6.2	1.72	-
DRP	g/m ³	0.125	< 0.004	30
Metals (total)				
Arsenic	g/m ³	0.03	-	0.024
Cadmium	g/m ³	0.00065	-	0.2
Chromium	g/m ³	0.0106	-	1.0
Copper	g/m ³	0.055	-	1.4
Lead	g/m ³	0.0039	-	3.4
Nickel	g/m ³	0.0148	-	11
Zinc	g/m ³	0.067	-	8.0
Metals (dissolved)				
Arsenic	g/m ³	0.0122	-	-
Cadmium	g/m ³	0.00048	-	-
Chromium	g/m ³	0.0074	-	-
Copper	g/m ³	0.036	-	-
Lead	g/m ³	< 0.00010	-	-
Nickel	g/m ³	0.0139	-	-
Zinc	g/m ³	0.029	-	-

* NH₃ limits apply to instream only (not discharge); ANZECC guidelines apply to metal concentrations.

Mangaone Stream

The main discharge to the Mangaone Stream, made up of stormwater and/or groundwater seepage, is sampled from a small wetland area in the south-eastern corner of the site (site code STW002003). The results of monitoring for the period under review are presented in Table 6. All results were within consented limits.

Table 6 Devon 662 wetland stormwater sampling results, site STW002003

Parameter	Units	10 May 2021	14 Jun 2021	Resource consent limits & ANZECC guideline values
		1400	1210	
pH	pH	6.5	6.6	6-9
Temperature	°C	18.6	15.7	-

Parameter	Units	10 May 2021	14 Jun 2021	Resource consent limits & ANZECC guideline values
		1400	1210	
Conductivity	µS/cm	294	165.2	-
Suspended Solids	g/m ³	11	29	100
Turbidity	FNU/NTU	6.8	17	-
BOD	g O ₂ /m ³	2.7	-	-
Nutrients				
NH ₃	g/m ³	0.073	0.033	0.025*
NH ₄	g/m ³	62	25	-
NNN	g/m ³	79	32	-
Total Phosphorus	g/m ³	8.4	4.3	-
DRP	g/m ³	7.3	2.4	30
Metals (total)				
Arsenic	g/m ³	0.037	-	0.024
Cadmium	g/m ³	0.00119	-	0.2
Chromium	g/m ³	0.0012	-	1.0
Copper	g/m ³	0.0097	-	1.4
Lead	g/m ³	0.00031	-	3.4
Nickel	g/m ³	0.0197	-	11
Zinc	g/m ³	0.109	-	8.0
Metals (dissolved)				
Arsenic	g/m ³	0.036	-	-
Cadmium	g/m ³	0.00116	-	-
Chromium	g/m ³	0.0012	-	-
Copper	g/m ³	0.0078	-	-
Lead	g/m ³	< 0.0002	-	-
Nickel	g/m ³	0.02	-	-
Zinc	g/m ³	0.1	-	-

* NH₃ limits apply to instream only (not discharge); ANZECC guidelines apply to metal concentrations.

3.2.3 Results of groundwater monitoring

Since the 2002-2003 period, a full survey of the groundwater in the immediate vicinity of the site has been undertaken at five bores on two occasions during each monitoring year, along with associated receiving water monitoring. The first round of sampling was carried out during the summer period, on 11 February 2021, while the second was conducted on 10 June 2021 during the autumn sampling season. The locations of the monitoring bores are shown in Figure 2. The results of the sampling are given in Table 7 and Table 8, and compared to the maximum acceptable value (MAV) of the NZ Drinking Water standards.

February 2021

The results of the February 2021 survey indicate that parameters at most bores were within historical ranges, although Bore GND0518 showed elevated concentrations of unionised ammonia (NH₃) compared to previous results. Sulphate (SO₄) concentrations in bore GND1218 were elevated compared to the results from the 2019-2020 monitoring year and drinking water guideline values, however they were within historical and expected ranges for the site.

Bore GND0517 continued to show decreasing concentrations of phosphorus (total and dissolved), total ammoniacal nitrogen (NH₄), and sulphate compared to historical annual means.

Table 7 Devon 662 groundwater sampling results, 11 February 2021

Parameter	Units	GND0517	GND0518	GND1218	GND2346	MGO000151	MGO000155	DWSNZ MAV
		0945	1200	1110	1030	0905	0920	
Level	mbsl	4.38	1.38	2.43	2.057	-	-	-
pH	pH	7.1	7.7	6.0	8.2	7.21	7.4	7.0-8.5
Temperature	°C	16.1	17.9	16.8	18.6	15.9	15.7	-
Conductivity	mS/cm	90.4	61.3	234	39.8	21.3	21.7	-
DO	mg/L	0.36	0.05	0.16	0.13	7.89	9.11	-
	%	3.7	0.5	1.7	1.4	80.1	91.3	-
Fluoride	g/m ³	0.26	0.33	< 0.05	0.18	-	-	1.5
Sulphate	g/m ³	76	77	710	< 0.5	-	-	250
Nutrients								
NH ₃	g/m ³	0.0101	0.041	0.059	0.061	0.00187	0.0021	-
NH ₄	g/m ³	1.54	1.97	157	0.85	0.133	0.159	-
Total Phosphorus	g/m ³	0.058	0.167	0.078	0.194	0.009	0.01	-
DRP	g/m ³	0.034	0.073	< 0.004	0.172	< 0.004	0.004	-
Metals (acid soluble)								
Cadmium	g/m ³	< 0.0010	< 0.0010	< 0.0010	< 0.0010	-	-	0.004
Chromium	g/m ³	< 0.010	< 0.010	< 0.010	< 0.010	-	-	0.05
Lead	g/m ³	< 0.002	< 0.002	< 0.002	< 0.002	-	-	0.001
Nickel	g/m ³	< 0.010	< 0.010	< 0.010	< 0.010	-	-	0.008
Zinc	g/m ³	< 0.02	< 0.02	< 0.02	< 0.02	-	-	-
Metals (other)								
Copper (total)	g/m ³	< 0.011	< 0.011	< 0.011	< 0.011	-	-	2
Vanadium (d)	g/m ³	0.0017	0.0015	< 0.0010	< 0.0010	-	-	-

June 2021

The June 2021 survey was reduced compared to the summer sampling, and bore GND0517 again showed decreasing concentrations in a range of parameters. New minimum values were recorded for phosphorus (dissolved and total) and unionised ammonia (NH₃), while ammoniacal nitrogen (NH₄) levels were also low, although still within historical averages.

All other results for the bores and stream sites were within expected ranges.

Table 8 Devon 662 groundwater sampling results, 10 June 2021

Parameter	Units	GND0517	GND2346	MGO000151	MGO000155	DWSNZ MAV
		1315	1230	1315	1325	
Level	mbsl	4.224	2.131	-	-	-
pH	pH	6.7	8.0	7.0	7.3	7.0-8.5
Temperature	°C	16.1	17.5	13.4	13.4	-
Conductivity	mS/cm	205	40.4	18.5	19.4	-
Sulphate	g/m ³	188	< 0.5	-	-	250
Turbidity	FNU	-	-	2	9.1	-
Nutrients						
NH ₃	g/m ³	0.0072	0.036	0.00037	0.00112	-
NH ₄	g/m ³	4.1	0.85	0.123	0.193	-
Total Phosphorus	g/m ³	0.051	0.2	0.009	0.014	-
DRP	g/m ³	0.033	0.167	< 0.004	< 0.004	-

Results of instream sampling for the Mangaone Stream at two sites (MGO000151 and MGO000155) are also shown in Tables 7 and 8. These sites are adjacent to the eastern and south eastern boundary of the site (Figure 2). Both sites continued to show slightly elevated levels of ammoniacal nitrogen, unionised ammonia, and sulphates, although results were still within historical averages. These results show that groundwater from the site continues to influence the stream, however all results met the guideline values of the NZ Drinking Water Standards.

There is a newly-emerging trend of elevated levels of nutrients (nitrogen and phosphorus) and sulphates in the bores on the site (GND0518) and adjacent to the northern boundary on Devon Road (GND1217, GND1218, and GND2346), when compared to historical averages. This is consistent with the ongoing disturbance and mobilisation of in situ contaminants as the site is remediated. The predominant hydrogeological flow paths are to the north and northeast of the site, and as such, short-term elevations of contaminants in these bores are not unexpected. It is also expected that these contaminants will re-mobilise offsite and could be detected in groundwater monitoring bores down-gradient of the site. Ongoing monitoring will be required to establish longer-term trends.

There were no significant effects noted in the Waiwhakaiho River or Mangaone Stream during wet weather surveys, as noted in section 15.1.

3.2.4 Results of receiving environment monitoring

The routine programmed monitoring undertaken to assess the condition of the receiving waters encompasses the entire catchment and is reported in Section 15.

A one-off survey was carried out in May 2021 at two sites in the Mangaone Stream upstream and downstream of the Devon 662 site. The purpose of the survey was to assess any impacts of the site

remediation works on the quality of the receiving waters. Of particular interest were the nutrient, metals (dissolved and total), and suspended solids concentrations. The results of the sampling (Table 9) showed that there were no effects noted in the Mangaone Stream as a result of groundwater and stormwater discharges during the decommissioning of the Devon 662 site.

Table 9 Mangaone Stream receiving water sampling results, 10 May 2021

Site		MGO000148	MGO000153	Resource consent limits & ANZECC guideline values
Parameter	Description	Upstream	Downstream	
pH	pH	7.1	7.2	6-9
Temperature	°C	15.5	16.9	-
Conductivity	mS/cm	15.7	16.7	-
Suspended Solids	g/m ³	8	7	100
Turbidity	FNU	6.4	5.7	-
CBOD (dissolved)	g O ₂ /m ³	< 1.0	< 1.0	-
Nutrients				
NH ₃	g/m ³	0.00037	0.00101	0.025*
NH ₄	g/m ³	0.096	0.21	-
NNN	g/m ³	0.63	0.88	-
DRP	g/m ³	0.014	0.027	30
Metals (total)				
Arsenic	g/m ³	< 0.0011	< 0.0011	0.024
Cadmium	g/m ³	< 0.000053	< 0.000053	0.2
Chromium	g/m ³	0.00092	0.00085	1.0
Copper	g/m ³	0.0023	0.0024	1.4
Lead	g/m ³	0.00023	0.00039	3.4
Nickel	g/m ³	< 0.00053	< 0.00053	11
Zinc	g/m ³	0.0093	0.009	8.0
Metals (dissolved)				
Arsenic	g/m ³	< 0.0010	< 0.0010	-
Cadmium	g/m ³	< 0.00005	< 0.00005	-
Chromium	g/m ³	< 0.0005	0.0006	-
Copper	g/m ³	0.0015	0.0015	-
Lead	g/m ³	< 0.00010	0.00011	-
Nickel	g/m ³	< 0.0005	< 0.0005	-
Zinc	g/m ³	0.0058	0.0063	-

All results were within both the consented limits and the default guideline protection values for the 95th percentile for highly disturbed systems².

² (ANZECC & ARM CANZ, 2000)

3.3 Investigations, interventions, and incidents

In the 2020-2021 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with Devon 662's conditions in resource consents or provisions in Regional Plans.

3.4 Evaluation of performance

A tabular summary of Devon 662's compliance record for the year under review is set out in Table 10.

Table 10 Summary of performance for Devon 662 Ltd Partnership consent 3865-4

Purpose: To discharge stormwater from a fertiliser storage depot onto and into land and into the Mangaone Stream and into the Waiwhakaiho River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practical option	Inspection	No - leaching of fertiliser residue into groundwater
2. Limit on catchment area	Inspection	Yes
3. Limits on discharge contaminant concentrations	Discharge sampling	Yes
4. Limit on effects in receiving water	Inspection and sampling	Yes
5. Provide contingency plan	Plan received	Yes
6. Provide management plan	Plan received	Yes
7. Maintenance of groundwater bores	Inspection and sampling	Yes
8. Maintenance of site access	Inspection and sampling	Yes
9. Notification of changes	Inspection	Yes
10. Review condition	No further provision for review prior to expiry	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

N/A = not applicable

During the period under review, Devon 662 Limited Partnership demonstrated a good level of environmental and high level of administrative performance and compliance with their resource consent and RFWP as defined in Section 1.1.5. The monitoring indicates that the site is still leaching fertiliser residue into groundwater and that there may be some effects noted on macroinvertebrate communities in the Mangaone Stream. These results are partially-attributed to ongoing site remediation works, which are expected to be transient in nature and followed by longer-term improvements to environmental conditions.

4 Dialog Fitzroy

4.1 Site description

Dialog Fitzroy Ltd (Dialog) (previously Fitzroy Engineering Group Ltd) operates an engineering business which involves the manufacturing of heavy engineering components and structures. Activities at the site also include abrasive blasting and painting.

The site was previously leased from Technix Group Ltd (Technix), and the stormwater discharges from Dialog's activities were covered under consents held by Technix. In 2013 Dialog purchased the part of the property they operate on from Technix (Figure 5) and resource consent 0021-3 was transferred to Dialog. Resource consent 0291-3 was split into two consents as the northern area covered by this consent was now owned by Dialog, and a new consent number (9853) was assigned to this catchment area.

Dialog holds two consents to discharge stormwater, **0021-4** and **9853-2**. These contain the standardised conditions given in section 1.2. Two of these have been modified to prohibit the discharge of contaminants from hydrotesting and require the notification of any outdoor hydrotesting being undertaken.

The permits are attached to this report in Appendix I.



Figure 5 Aerial view of Technix Group Ltd and Dialog Fitzroy Ltd subdivided site

The stormwater area for consent 0021 covers the south-west section of Dialog Fitzroy's property. The stormwater drainage system runs from the south and east boundary towards the east boundary, the drainage then runs north towards the Waiwhakaiho River and discharges into the river via a stormwater drain (STW002001, Figure 6). There are multiple sumps along this system to collect stormwater.

The buildings/land use within this area include:

- Staff offices and facilities,
- Workshops (Machining, plate and general),
- Dangerous goods storage,
- Liquid oxygen tanks, and
- Blast and paint storage.

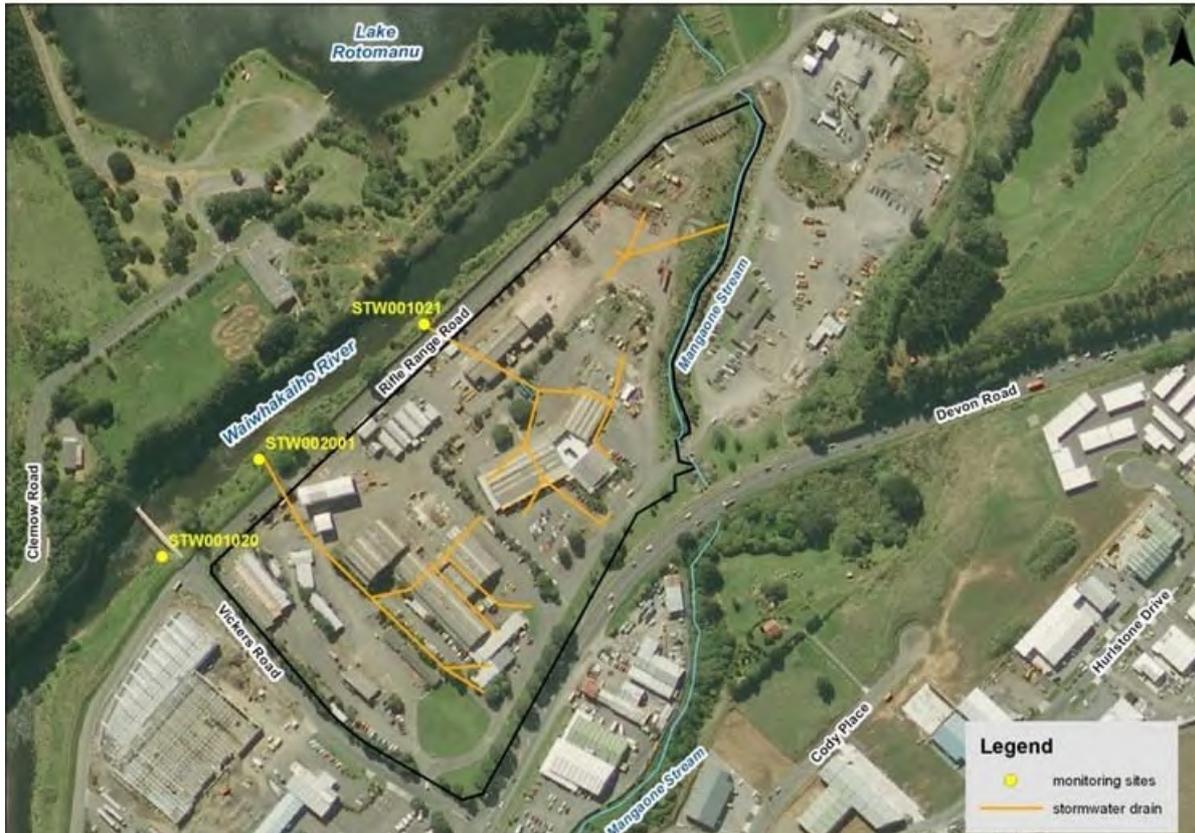


Figure 6 Aerial view of Dialog site and associated stormwater discharge points

The drainage system for the discharge covered by consent 9853 begins in the adjacent Technix property, continues north through Dialog's section, and discharges into the Waiwhakaiho River via a stormwater drain (STW001021). The system has a sump on the southern boundary and another attached to the blast and paint shop. A dangerous goods storage shed is also in this catchment area.

Dialog undertakes infrequent hydrotesting processes on large fabrications, and also operations involving the passivating of stainless steel. These activities produce wastewater that may contain contaminants such as penetrant dye and rust inhibitor, and also can be acidic. These activities sometimes occur outside. As per their operating procedures, the wastewater from these processes is banded using tarpaulin sheets, and any drains are blocked with sandbags. Once that activity is completed the waste is removed by a waste management specialist.

Dialog continue to provide and maintain a stormwater management plan and spill contingency plan.

4.2 Results

4.2.1 Inspections

Three routine inspections were conducted at the site during the monitoring period, on 24 September 2020, 9 February 2021, and 4 May 2021.

24 September 2020

An inspection was carried out in overcast weather with light rain conditions. The site was tidy and clean, and there was no sign of spills or sheens. A small amount of garnet had accumulated around the blasting shed, however there was no debris noted at the discharge points to the Waiwhakaiho River. The stormwater drains were clear, and discharging at the time. Samples were collected from both discharge points, and results were within consented limits. There were no odour or dust issues, and the site was compliant at the time.

9 February 2021

The site was inspected in overcast weather with light wind conditions. The yard was tidy, however the drain socks located on the stormwater ingress points were in need of maintenance. There was no sign of spills or hydrocarbon sheens, and the stormwater drains were dry and not discharging. There were no offensive or objectionable emissions of odour and dust levels were within allowable limits. There was no accumulated garnet at the stormwater discharge points, and all consent conditions were being complied with.

4 May 2021

An inspection to assess compliance with resource consent conditions was carried out in hot, dry weather with calm wind conditions. The site was relatively quiet, and in need of maintenance with several areas noted where garnet had been spilt (Photo 3). Staff onsite advised that this would be cleaned immediately, and a dedicated containment area for used garnet was due to be created. The stormwater system was tidy, with all but two of the drain socks recently replaced, and the remainder scheduled for maintenance. There were no discharges of stormwater or emissions to air, and all dust levels were within allowable limits. At the time of inspection, the site was compliant with consent conditions.



Photo 3 View of Dialog site with garnet residue on yard, May 2021

4.2.2 Results of discharge monitoring

There are two routine sampling points for monitoring of stormwater discharges from the Dialog Fitzroy site to the Waiwhakaiho River. These sampling points are opposite Dialog Fitzroy's plate shop (consent 0021, site STW001021), and opposite Dialog Fitzroy's blast and paint shop (consent 9853, site STW002001). The blast and paint shop discharge point also contains stormwater from the area covered by the Technix consent 0291. The results of sampling from these locations are presented in Table 11 and Table 12 respectively.

Table 11 Dialog Fitzroy stormwater sampling results, site STW001021

Parameter	Temperature	pH	Conductivity	Suspended Solids	Turbidity	Hydrocarbons			
						C7-C9	C10-C14	C15-C36	Total HC
Unit	°C	pH	mS/cm	g/m ³	FNU	g/m ³	g/m ³	g/m ³	g/m ³
24 Sep 2020	15.3	7	6.2	35	13.4	< 0.10	< 0.2	< 0.4	< 0.7
15 Jun 2021	15.4	6.9	3.1	23	14.9	< 0.10	< 0.2	< 0.4	< 0.7
Consent limits	-	6-9	-	100	-	-	-	-	15*

*HC measured in place of oil & grease

Table 12 Dialog Fitzroy/Technix combined stormwater sampling results, site STW002001

Parameter	Temperature	pH	Conductivity	Suspended Solids	Turbidity	Hydrocarbons			
						C7-C9	C10-C14	C15-C36	Total HC
Unit	°C	pH	mS/cm	g/m ³	FNU	g/m ³	g/m ³	g/m ³	g/m ³
24 Sep 2020	15.3	7.6	7.4	90	102	< 0.10	< 0.2	< 0.4	< 0.7
15 Jun 2021	15.4	7.2	4.7	19	21	< 0.10	< 0.2	< 0.4	< 0.7
Consent limits	-	6-9	-	100	-	-	-	-	15*

*HC measured in place of oil & grease

All results were within consented limits and historical means.

4.3 Investigations, interventions, and incidents

In the 2020-2021 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with Dialog's conditions in resource consents or provisions in Regional Plans.

4.4 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Table 13 and Table 14.

Table 13 Summary of performance for Dialog Fitzroy consent 0021-4

Purpose: To discharge stormwater from an industrial site into the Waiwhakaiho River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practicable option to prevent or minimise adverse effects	Inspections, liaison with consent holder	Yes
2. Catchment not to exceed 3.3 ha	Inspections	Yes
3. No discharge of contaminants from hydrotesting activities	Inspections	Yes
4. Notification of outdoor hydrotesting	Notification received	Yes
5. Limits on contaminants in discharge	Sampling	Yes
6. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection, sampling and biomonitoring	Yes
7. Maintain a spill contingency plan	Review of documentation received. Latest version received 2018	Yes
8. Maintain and update and adhere to Stormwater Management Plan	Review of documentation received. Latest version received 2018	Yes
9. Notification prior to significant changes to processes or operations	Inspections and liaison with consent holder – no significant changes during period	N/A
10. Provision for review of consent	Next option for review in June 2026	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

N/A = not applicable

Table 14 Summary of performance for Dialog Fitzroy consent 9853-2

Purpose: To discharge stormwater from an industrial site into the Waiwhakaiho River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practicable option to prevent or minimise adverse effects	Inspections, liaison with consent holder	Yes

Purpose: To discharge stormwater from an industrial site into the Waiwhakaiho River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
2. Catchment not to exceed 3.3 ha	Inspections	Yes
3. No discharge of contaminants from hydrotesting activities	Inspections, review of sample results	Yes
4. Notification of hydrotesting	Notification received	Yes
5. Limits on pH, suspended solids, oil and grease and chloride in discharge	Sampling	Yes
6. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling and biomonitoring	Yes
7. Maintain and update a Contingency Plan	Review of documentation received. Latest version received 2018	Yes
8. Site to operate in accordance with a Stormwater Management Plan	Review of documentation received. Latest version received 2018	Yes
9. Notification prior to significant changes to processes or operations	Inspections and liaison with consent holder – no significant changes during period	Yes
10. Provision for review of consent	Next option for review in June 2026	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

N/A = not applicable

During the year, Dialog Fitzroy demonstrated a high level of environmental and administrative performance with their resource consents as defined in Section 1.1.4.

5 Downer EDI Works Ltd

5.1 Site description

Downer EDI Works Ltd (Downer) operates an asphalt manufacturing plant at a site off Rifle Range Road (Figure 7). A depot for maintenance, parking and storage of equipment and materials used in road-making is also on the site. Ownership of the plant has changed several times, with Works Civil Construction previously taking over the site from Technic Industries Ltd in November 1997.

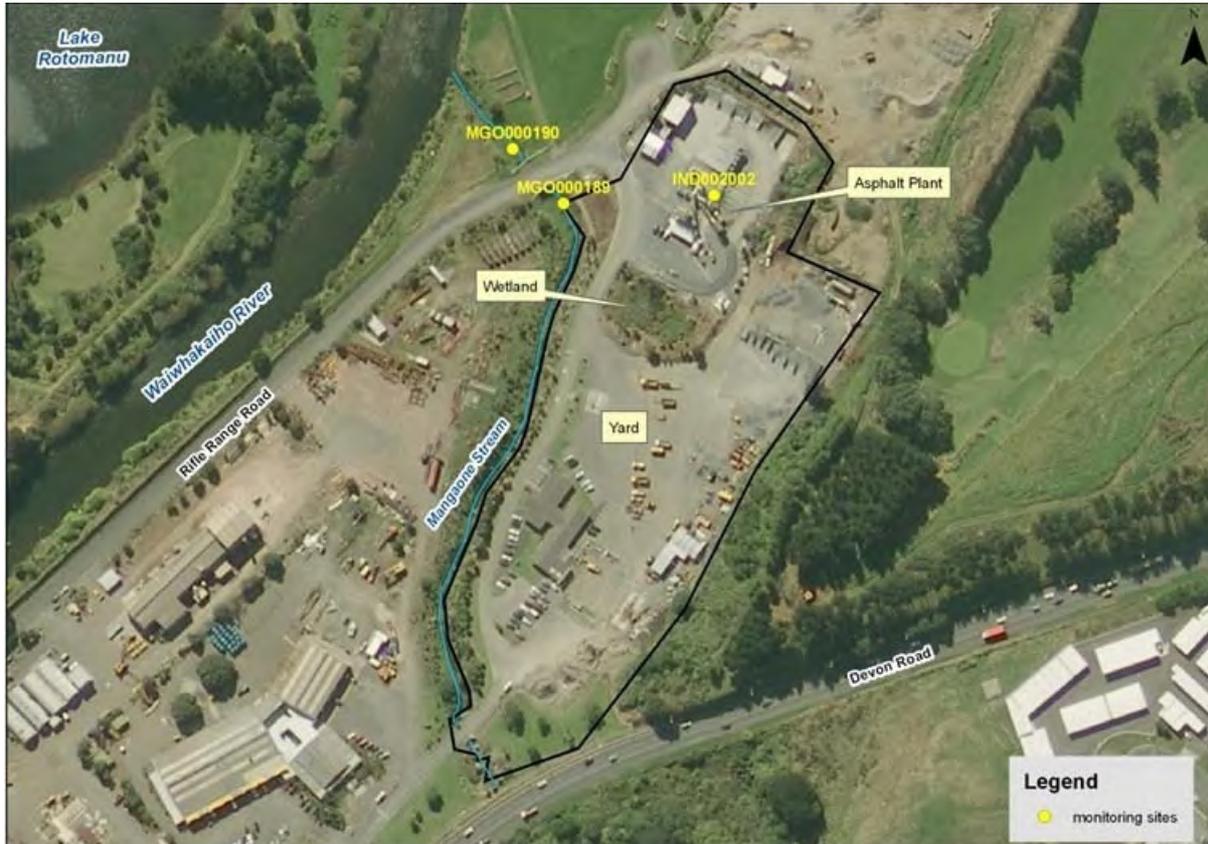


Figure 7 Aerial view of Downer site and sampling point locations

In the manufacturing process, aggregate metal is dried by gas heating and is mixed with heated bitumen to form hot-mix bitumen. Diesel oil and/or kerosene may be added to adjust the consistency of the mix. The product is loaded onto trucks for transport. Dust and gases generated from the process are treated in a wet scrubber. Scrubber effluent is treated in four settling ponds then reused.

The asphalt plant stormwater catchment contains raw materials, comprising various grades of aggregate, static bitumen tanks, bunded emulsion tanks, and stores housing bitumen additives and plant maintenance materials, such as chain oil.

The depot includes an administration building, vehicle and equipment maintenance workshops, aggregate stores, and an area for parking motor vehicles and equipment.

The plant is situated on the right bank of the Mangaone Stream near its confluence with the Waiwhakaiho River. Stormwater from this area drains via a three-stage oil separator to a small constructed wetland that also receives piped water from naturally-occurring springs in the area. Stormwater from the eastern side of the site which contain aggregate storage and the asphalt plant is treated by a three-stage interceptor prior to discharge to the network. There is also a truck wash facility in the depot area, the drainage from which is currently diverted to sewer at all times by means of a locked diversion valve.

Drainage from the asphalt plant settling ponds (which have a baffle installed on the outlet to contain floatables) and the depot both discharge via the small wetland, to the Mangaone Stream immediately above the Rifle Range Road Bridge.

Downer holds consent **3917-3** to discharge treated stormwater from an asphalt manufacturing plant onto land and into the Mangaone Stream. It contains all eight of the standardised special conditions as set out in Section 1.2.

The permit is attached to this report in Appendix I.

5.2 Results

5.2.1 Inspections

Three routine inspections were conducted at the site during the monitoring period, on 24 September 2020, 9 February 2021, and 4 May 2021.

24 September 2020

An inspection was carried out in overcast weather with light rain ongoing. The site was tidy with no sign of spills or sheens. The asphalt plant was not operating at the time, and there were no trucks loading out. Discharge samples were collected from the air scrubber and stormwater systems. Both samples were turbid, and analysis of results found that the stormwater discharge sample had exceeded suspended solids limits. There were no odour or dust issues at the time.

9 February 2021

The site was inspected in warm, overcast weather with light wind conditions. The yard was relatively clean and tidy with no sign of spills. The plant was not operating at the time, and there were no discharges to air or stormwater. The onsite wetland was discharging a low, clear flow. It was scheduled for routine maintenance to clean out accumulated debris and sediment, and systems were in place to ensure this work did not cause any unauthorised discharges. A new interceptor system was being considered prior to the discharge point to the Mangaone Stream, which was running clear and uncoloured at the time. There were no odours onsite, and ambient dust levels were within allowable limits. Staff advised that the annual emissions stack testing was scheduled to be carried out in March. The site was compliant with all consent conditions.

4 May 2021

An inspection was conducted in overcast weather with light rain conditions. The yard was relatively tidy, but in need of sweeping. The plant was not operating at the time, and there were no discharges to air or water. It was noted that there had been excessive application of the slip agent Rhapsody which had caused the product and other contaminants to accumulate on the ground. Staff were advised that this had the potential to discharge to water. The wetland was discharging a clear flow into the Mangaone Stream, which was clear and uncoloured at the time. The new interceptor had not yet been installed. There were no odour or dust issues, and all consent conditions were being complied with.



Photo 4 View of Downer site with scrubber effluent settling ponds in foreground, May 2020

5.2.2 Results of discharge monitoring

Chemical monitoring of discharges from the site of Downer EDI Works Ltd takes place at two points. The scrubber settling pond effluent (Photo 4) discharges to the onsite wetland, and is sampled at the ponds' outlet (site IND002002). This then combines with stormwater from the depot, which is treated in the oil separator and constructed wetland, and is sampled at the outlet to the Mangaone Stream (site MGO000189).

The discharge from the scrubber ponds is often highly turbid, however further "treatment" occurs in the constructed wetland. The discharge to the wetland is usually a grey colour, and contains a high concentration of fine suspended solids.

The results of chemical monitoring of the scrubber pond effluent and combined stormwater flows for the period under review are given in Table 15 and Table 16, and compared to the limits set out in the consent.

Table 15 Downer stormwater sampling results, site IND002002

Parameter	Temperature	pH	Conductivity	Suspended Solids	Turbidity	Hydrocarbons			
						C7-C9	C10-C14	C15-C36	Total HC
Unit	°C	pH	mS/cm	g/m ³	NTU/FNU	g/m ³	g/m ³	g/m ³	g/m ³
24 Sep 2020	23.2	7.4	69.9	88	97	< 0.10	< 0.2	< 0.4	< 0.7
15 Jun 2021	19.2	7.3	44.3	17	12.5	< 0.4	< 1.0	< 2	< 4
<i>Consent limits</i>	-	6-9	-	100	-	-	-	-	15*

*HC measured in place of oil & grease

Table 16 Downer stormwater sampling results, site MGO000189

Parameter	Temperature	pH	Conductivity	Suspended Solids	Turbidity	Hydrocarbons			
						C7-C9	C10-C14	C15-C36	Total HC
Unit	°C	pH	mS/cm	g/m ³	FNU	g/m ³	g/m ³	g/m ³	g/m ³
24 Sep 2020	15.4	7.1	21.1	200	-	< 0.10	< 0.2	< 0.4	< 0.7
15 Jun 2021	15.9	6.9	22.5	12	16.1	< 0.10	< 0.2	< 0.4	< 0.7
<i>Consent limits</i>	-	6-9	-	100	-	-	-	-	15*

*HC measured in place of oil & grease

One exceedance of suspended solids in the discharge from the wetland was found in September 2020. All other results for the monitoring period complied with consented limits and were within expected ranges.

5.3 Investigations, interventions, and incidents

Table 17 sets out details of any incidents recorded, additional investigations, or interventions required by the Council in relation to Downer's activities during the 2020-2021 period. This table presents details of all events that required further investigation or intervention regardless of whether these were found to be compliant or not.

Table 17 Incidents, investigations, and interventions summary table

Date	Details	Compliant (Y/N)	Enforcement Action Taken?	Outcome
24 Sept 2020	Sampling results found 200 g/m ³ suspended solids concentration, above 100 g/m ³ consent limit.	N	14 day letter (explanation requested) and abatement notice issued	Further explanation was requested and abatement notice EAC-23612 was issued. Reinspection found that sediment controls had been improved and the abatement notice was being complied with.

5.4 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Table 18.

Table 18 Summary of performance for Downer EDI consent 3917-3

<i>To discharge treated stormwater and minor amounts of treated air scrubber wastewater from an asphalt manufacturing plant onto land and into the Mangaone Stream</i>		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practical option	Inspection	Yes
2. Limit on catchment size	Inspection	Yes
3. Limits on contaminants in discharge	Sampling	No – one exceedance of suspended solids
4. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling and biomonitoring	Yes
5. Maintain and adhere to a stormwater management plan	Inspection and programme supervision	Yes
6. Maintain and adhere to a spill contingency plan	Inspection and programme supervision	Yes
7. Notify the Council of changes at site	No notification received	N/A
8. Provision for review of consent	Next opportunity for review June 2026	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

N/A not applicable

During the period under review, Downer EDI Works Ltd demonstrated a good level of environmental and high level of administrative performance and compliance with their resource consent and RFWP as defined in Section 1.1.4. Breaches of consented site discharges were addressed by the Company during the monitoring period.

6 Envirowaste Services Ltd

6.1 Site description

Envirowaste Services Ltd (Envirowaste) operates a material recovery facility (MRF) on Colson Road (Figure 8). The site receives and separates recyclable material sourced from district council kerbside collections and transfer stations for the entire Taranaki region.

Stormwater from the site discharges via retention ponds to the Puremu and Mangamiro Streams. Prior to discharge the stormwater is treated in long sediment ponds that discharge via grates to prevent litter being carried with it.



Figure 8 Aerial view of Envirowaste site and sampling locations

Envirowaste holds consent **10109-1** to discharge stormwater from an industrial site into the Puremu Stream and an unnamed tributary of the Mangaone Stream. It has nine of the standardised special conditions as set out in Section 1.2.

The permit is attached to this report in Appendix I.

6.2 Results

6.2.1 Inspections

Three routine inspections were conducted at the site during the monitoring period, on 28 September 2020, 10 February 2021, and 25 May 2021.

28 September 2020

The site was inspected in overcast weather with light rain conditions. The site was in need of maintenance with wind-blown rubbish widespread throughout the stormwater swale and tracking onto the banks of the Mangamiro Stream. Advice was given to ensure that this was cleaned up. The stormwater system was not

discharging at the time, so representative samples were collected from the scruffy dunes prior to entry to the Mangamiro and Puremu Streams. All results were within consent limits. There were no odour or dust issues, and the site was compliant with consent conditions at the time.

10 February 2021

An inspection was carried out in overcast conditions with light rain ongoing. The yard was clean and tidy and housekeeping had significantly improved following the previous inspection. Very little windblown rubbish was noted in the ring drain (Photo 5) and there was no evidence of spills onsite. The stormwater system was not discharging at the time. Some rubbish was noted in the Mangamiro Stream and advice was given to ensure this was removed quickly. There were no offensive or objectionable odours or dust noted. At the time of inspection, all consent conditions were being complied with.

25 May 2021

An inspection was conducted in fine weather with moderate south easterly wind conditions. The gusty winds had caused windblown rubbish to accumulate around the site, and staff advised that a clean-up was scheduled once the weather had settled. The stormwater system was fully contained and operational, and not discharging at the time. There were no odours or dust noted, and the site was compliant with resource consent conditions.



Photo 5 View of Envirowaste perimeter ring drain, February 2021

6.2.2 Results of discharge monitoring

Monitoring of discharges from the Envirowaste site takes place at two points. Stormwater discharging to the Puremu Stream is sampled at STW002091 whilst stormwater discharging to the Mangamiro Stream is sampled at STW002092 (Figure 8).

During the period under review, site STW002092 was not able to be accessed on 18 June 2020, while there was no discharge from STW002091 on 15 November 2020. The results of the discharge sampling are given in Table 19 and Table 20.

Table 19 Envirowaste stormwater sampling results, site STW002091

Parameter	Temperature	pH	Conductivity	Suspended Solids	Turbidity	Nutrients	
						NH ₃	NH ₄
Unit	°C	pH	mS/cm	g/m ³	FNU	g/m ³	g/m ³
14 Jun 2021	15.1	7.0	5.7	10	17.8	< 0.00003	< 0.010
<i>Consent limits</i>	-	6-9	-	100	-	-	-

Table 20 Envirowaste stormwater sampling results, site STW002092

Parameter	Temperature	pH	Conductivity	Suspended Solids	Turbidity	Nutrients	
						NH ₃	NH ₄
Unit	°C	pH	mS/cm	g/m ³	FNU	g/m ³	g/m ³
24 Sep 2020	15.7	7.1	14.9	7	-	< 0.00004	< 0.010
14 Jun 2021	15.5	7.2	5.9	4	7.6	< 0.00005	< 0.010
<i>Consent limits</i>	-	6-9	-	100	-	-	-

All results were found to be compliant with consent conditions and within historical ranges for both sites.

Receiving water results indicate no adverse effects were occurring in the Mangamiro or Mangaone Stream during discharges (see section 15.1.2).

6.3 Investigations, interventions, and incidents

In the 2020-2021 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with Envirowaste's conditions in resource consents or provisions in Regional Plans.

6.4 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Table 21.

Table 21 Summary of performance for Envirowaste consent 10109-1

Purpose: To discharge stormwater from an industrial site into the Puremu Stream and an unnamed tributary of the Mangaone Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practical option	Inspection	Yes

Purpose: To discharge stormwater from an industrial site into the Puremu Stream and an unnamed tributary of the Mangaone Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
2. Limit on catchment size	Inspection	Yes
3. Limits on contaminants in discharge	Sampling	Yes
4. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling and biomonitoring	Yes
5. Maintain and adhere to a stormwater management plan	Plan provided July 2019	Yes
6. Maintain and adhere to a spill contingency plan	Plan provided July 2018	Yes
7. Notify the Council of changes at site	No notification received	N/A
8. Lapse condition	Consent exercised	N/A
9. Provision for review of consent	Next opportunity for review June 2026	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

N/A = not applicable

During the year, Envirowaste Services Ltd demonstrated a high level of environmental and administrative performance with their resource consent as defined in Section 1.1.4.

7 Firth Industries Ltd (division of Fletcher Concrete & Infrastructure Ltd)

7.1 Site description

Firth Industries Ltd (Firth) operates a concrete batching plant on a 1.19 ha site off Clemow Road, on the true left bank of the Waiwhakaiho River (Figure 9). The plant is situated partly on the flood plain and partly above the escarpment formed by the river. A concrete precast factory operated by Ultimate Engineered Concrete Ltd was previously located on the site, but has since relocated to De Havilland Drive. The precast factory was located on the escarpment above the main site and included a bedding plant that is no longer operational. The stormwater drainage system for this site is still in place.

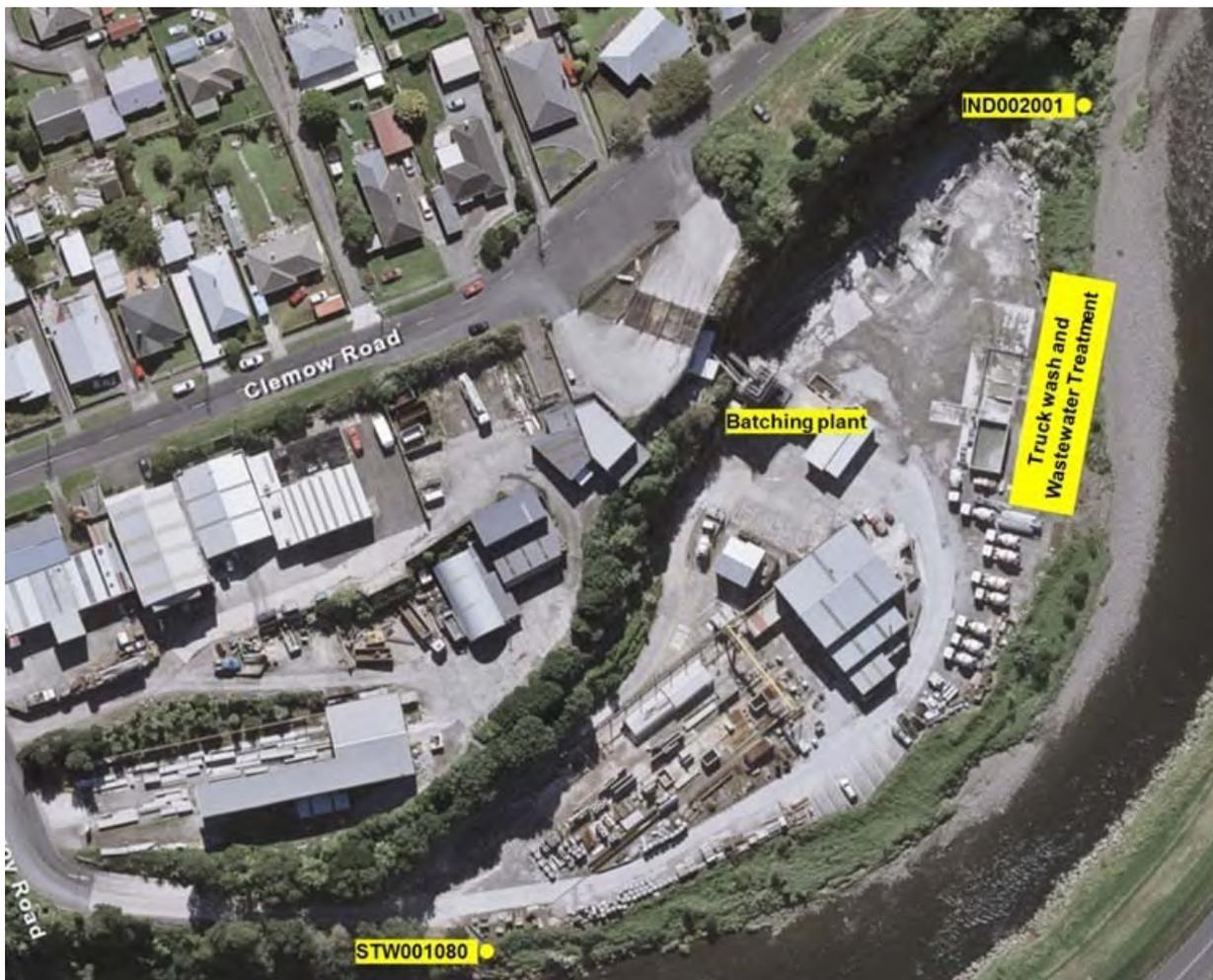


Figure 9 Aerial view of Firth site and sampling locations

Stormwater from the lower part of the site is processed by a purpose-built Siltbuster Ltd stormwater treatment system, before discharging to the Waiwhakaiho River via an old watercourse. This system was installed and began operating in September 2020. Prior to this, stormwater was treated in a four-pond settling system before being pumped to the river. Wastewater from the washing of plant and concrete delivery trucks is discharged to separate wastewater treatment system which treats and recycles the wastewater.

Stormwater from the upper part of the site, where the bedding plant is situated, discharges via two small settling pits to the Waiwhakaiho River at a separate point.

A range of chemicals used in the ready-mix and precast operations are held in the catchment of the main settling system. On the whole, they are either stored indoors or within bunded areas.

Off-specification and surplus concrete, and solids from the settling ponds are deposited along the riverbank. This forms part of the flood protection works for the site. Excess solids are removed from the site periodically.

Firth holds consent **0392-4** to discharge stormwater and treated wastewater into the Waiwhakaiho River. This consent contains the nine standardised special conditions as set out in Section 1.2. It also has one additional condition requiring stormwater and wastewater separation by a certain date.

A copy of the permit is attached to this report in Appendix I.

7.2 Results

7.2.1 Inspections

Three routine inspections were conducted at the site during the monitoring period, on 1 September 2020, 10 February 2021, and 25 May 2021.

1 September 2020

The site was inspected in overcast weather following heavy rain. The yard was generally clean and tidy, and the stormwater system was operating under flows due to the recent wet weather. Discharge samples were collected from the upper site and the final discharge from the stormwater settling pond, and it was found that the pond discharge was causing discolouration in the Waiwhakaiho River, in breach of consent conditions. Analysis of samples showed that the suspended solids concentration of the discharge had also exceeded consented limits. Staff onsite advised at the time that the discharge from the pond would be plugged and a vacuum truck used to maintain pond levels until a suitable treatment system could be installed.

10 February 2021

An inspection to assess compliance with resource consent conditions was conducted in overcast weather with moderate rainfall ongoing. The site was tidy with ponded water collecting at low points and discharging to the stormwater system. The treatment system was operating at the time, and recent upgrades had seen the installation of Siltbuster equipment to reduce sediment loading (Photo 6). It appeared to be working effectively, with the discharge slightly turbid and no visual effects noted in the receiving waters. There were no odour or dust issues noted, and all consent conditions were compliant at the time of inspection.

25 May 2021

An inspection was carried out in warm, fine weather with moderate wind conditions. The site was clean and well maintained with no sign of spills or hydrocarbon sheens. The stormwater system was in good conditions and dry, with no discharge to the Waiwhakaiho River. There was no offensive or objectionable dust or odour discharging at the time, and the site was complying with resource consent conditions.



Photo 6 View of Firth lower yard with new Siltbuster treatment system on right, February 2021

7.2.2 Results of discharge monitoring

Runoff from Firth's site is monitored where it enters the Waiwhakaiho River below the former settling ponds and new treatment system (site IND002001). This also includes stormwater runoff from the adjacent property (which is not owned by Firth, but is within the area covered by their resource consent). Discharges from the settling pond at the bedding plant, located above the main plant, are sampled from a flume at the main entrance to the lower yard (STW001080).

Consent conditions require that the discharges do not exceed 15 g/m³ oil and grease or 100 g/m³ suspended solids. Consent conditions also require that discharges do not cause a pH of below 6.0 or above 9.0 and/or an increase of pH of more than 0.5 in the Waiwhakaiho River.

The results for the stormwater drain and the flume discharge are given in Table 22 and Table 23 respectively. The results of monitoring the receiving waters below the site are reported in Section 15.

Table 22 Firth stormwater sampling results, site IND002001

Parameter	Temperature	pH	Conductivity	Suspended Solids	Turbidity
Unit	°C	pH	mS/cm	g/m ³	FNU
01 Sep 2020	13.8	9.6	25.4	144	143
15 Jun 2021	15.0	8.6	18.2	40	41
<i>Consent limits</i>	-	6-9	-	100	-

The concentration of suspended solids in the stormwater drain sample taken on 1 September 2020 exceeded the consent limit and further enforcement action was undertaken (refer to section 7.3 below). All other results were compliant with consent conditions.

Table 23 Firth stormwater sampling results, site STW001080

Parameter	Temperature	pH	Conductivity	Suspended Solids	Turbidity	CBOD	DRP	Metals (dissolved)	
								Copper	Zinc
Unit	°C	pH	mS/cm	g/m ³	FNU	g/m ³	g/m ³	g/m ³	g/m ³
01 Sep 2020	13.5	7.6	4.4	3	4.3	-	-	-	-
15 Jun 2021	15.1	7.4	3.9	28	7.2	< 1.0	0.079	0.0022	0.13
<i>Consent limits</i>	-	6-9	-	100	-	-	-	-	-

All results for the flume discharge were within consented limits and historical averages for the site. The upper site that drains to the flume is now inactive and discharges clear stormwater only, however there is potential for historical contaminants to be re-mobilised from the yard area.

7.3 Investigations, interventions, and incidents

Table 24 sets out details of any incidents recorded, additional investigations, or interventions required by the Council in relation to Firth's activities during the 2020-2021 period. This table presents details of all events that required further investigation or intervention regardless of whether these were found to be compliant or not.

Table 24 Incidents, investigations, and interventions summary table

Date	Details	Compliant (Y/N)	Enforcement Action Taken?	Outcome
1 September 2020	Sampling results found 144 g/m ³ suspended solids concentration, above 100 g/m ³ consent limit.	N	Infringement notice issued	The discharge breached existing abatement notice EAC-22917, and an infringement notice (EAC-23620) was issued. Firth subsequently upgraded the stormwater system and installed purpose-built treatment.

7.4 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Table 25.

Table 25 Summary of performance for Firth consent 0392-4

Purpose: To discharge stormwater and treated wastewater into the Waiwhakaiho River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practical option	Inspection and programme supervision	Yes – improvements carried out to onsite stormwater treatment system

Purpose: To discharge stormwater and treated wastewater into the Waiwhakaiho River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
2. Stormwater catchment not to exceed 1.618 ha	Inspection	Yes
3. Stormwater treatment system to be used	Inspection	Yes
4. Limits on contaminants in discharge	Sampling	No – one exceedance of suspended solids
5. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling and biomonitoring	Yes
6. Maintain and adhere to a contingency plan	Inspection and programme supervision	Yes
7. Maintain and adhere to a Management Plan	Updated plan received September 2019	Yes
8. Undertake improvements as set out in the management plan by 22 February 2016	Inspection	Plant completed
9. Notify Council of any changes at the site	Inspection and liaison with consent holder	Yes
10. Review condition	Next opportunity for review June 2026	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

N/A not applicable

During the period under review, Firth Industries Ltd demonstrated a good level of environmental and high level of administrative performance and compliance with their resource consent and RFWP as defined in Section 1.1.4. Ongoing issues with sediment-laden stormwater were addressed and remedied by the Company during the monitoring period.

8 Freight and Bulk Transport Holdings Ltd

8.1 Site description

Freight and Bulk Transport Holdings Ltd (FBT) operate a truck depot that services the rural sector from a 1.77 ha site on Katere Road (Figure 10).

This site was previously monitored under the annual inspection round of truck washes, and was incorporated into the Lower Waiwhakaiho Catchment Monitoring Programme at the start of the 2009-2010 year.



Figure 10 Aerial view of FBT site

FBT stores, blends and distributes dry stock feeds such as crushed meal, palm kernel and grains. Lime, fertiliser and gravel used for farm races are also stored at the site. The lime, stock feeds and fertilisers are stored in the sheds at the northern end of the site; only the gravel is stored outside in the stormwater catchment. Trucks are washed at the site and the wash water was historically (until expiry of consent 0241) discharged to soak holes. During the 2018-2019 monitoring period a truck wash was installed that recycles wash water and discharges contaminants to trade waste (Photo 7).

FBT holds consent **10008-1** to discharge stormwater onto and into land and into the Mangaone Stream. This consent contains nine standard special conditions set out in Section 1.2.

A copy of the consent is attached to this report in Appendix I.



Photo 7 FBT truck wash discharge to trade waste

8.2 Results

8.2.1 Inspections

Three routine inspections were conducted during the monitoring period, on 1 September 2020, 10 February 2021, and 25 May 2021.

1 September 2020

An inspection to assess compliance with resource consent conditions was carried out in warm, cloudy weather with calm wind conditions. Heavy rain prior to the visit had caused localised ponding at low points on the site, which was discharging to the stormwater system. The site was clean and tidy with no sheens or spills noted. Stormwater drains were clean and operating at high flows at the time, and silt socks were in place on all drain entrances. The final discharge point at the driveway entrance was slightly turbid but not discoloured, and samples were collected that showed the discharge was within consented limits. There were no odour or dust issues, and the site was compliant with consent conditions.

10 February 2021

The site was inspected in overcast weather with calm wind conditions. There had been heavy rain overnight, but the yard was clean and tidy with no sign of spills. The stormwater system was in good operational condition with all drains clear and free of contaminants. There was a clear, trickle flow discharging into the roadside drain, and no odour or dust issues noted. At the time of inspection, all consent conditions were being complied with.

25 May 2021

An inspection was carried out in fine weather with moderate south easterly wind conditions. The site was generally clean and tidy with no evidence of spills or hydrocarbon sheens. The stormwater system was tidy and clean, and all grates were clear of debris. There were no discharges of water or air, and no issues with dust or odour. The site was compliant with consent conditions at the time.

8.2.2 Results of discharge monitoring

Stormwater discharges from FBT's site are collected from a roadside stormwater drain located on the western driveway (site STW001146). This site was sampled on two occasions during the period under review. The results are given in Table 26. The results of all parameters were compliant with consent conditions.

Table 26 FBT stormwater sampling results, site STW001146

Parameter	Temp	pH	Conductivity	Suspended Solids	Turbidity	CBOD	TBOD	Nutrients		
								NH ₃	NH ₄	DRP
Unit	°C	pH	mS/cm	g/m ³	NTU	g O ₂ /m ³	g O ₂ /m ³	g/m ³	g/m ³	g/m ³
01 Sep 2020	14.6	7.6	13.6	45	-	13	6.9	0.0065	0.53	1.29
14 Jun 2021	15.3	7.2	8.7	11	7.1	2.7	-	0.0023	0.5	0.37
<i>Consent limits</i>	-	6-9	-	100	-	15	-	0.025*	-	-

*NH₃ limits apply to receiving waters downstream of the discharge

8.3 Investigations, interventions, and incidents

In the 2020-2021 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with FBT's conditions in resource consents or provisions in Regional Plans.

8.4 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Table 27.

Table 27 Summary of performance for Freight and Bulk Transport Holdings Ltd consent 10008-1

Purpose: To discharge stormwater onto and into land and into the Mangaone Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practical option	Inspection and programme supervision	Yes
2. Stormwater catchment not to exceed 1.77 ha	Inspection	Yes
3. Limits on contaminants in discharge	Sampling	Yes
4. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling and biomonitoring	Yes

Purpose: To discharge stormwater onto and into land and into the Mangaone Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
5. Maintain and adhere to a contingency plan	Inspection and programme supervision	Yes
6. Maintain and adhere to a stormwater plan	Updated plan provided May 2019	Yes
7. Notify the Council of changes at the site	Inspection and programme supervision	N/A
8. Lapse condition	Consent exercised	N/A
9. Review condition	Option for review in June 2026	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

N/A not applicable

During the period under review, Freight and Bulk Transport Holdings Ltd demonstrated a high level of environmental and administrative performance and compliance with their resource consent as defined in Section 1.1.4.

9 KiwiRail Holdings Ltd/ New Zealand Railways Corporation (KiwiRail)

9.1 Site description

New Zealand Railways Corporation/KiwiRail Holdings Ltd (KiwiRail) own a rail terminal on a site off Smart Road (Figure 11). In addition to transportation of freight, the terminal is utilised as a maintenance depot. The freight receipt and dispatch area and the refuelling and maintenance depots are situated at the Smart Road end of the site.

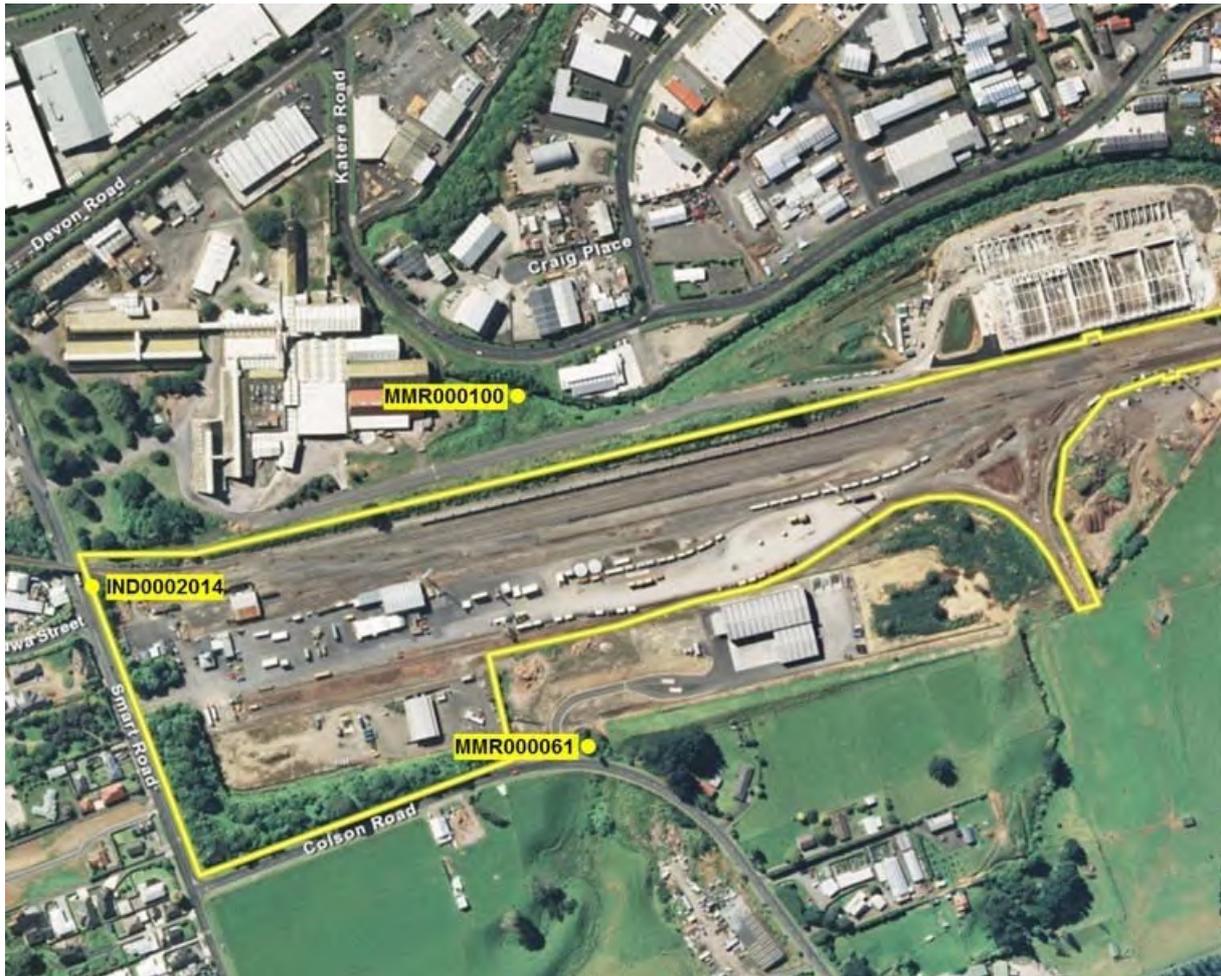


Figure 11 Aerial view of KiwiRail site and sampling locations

Drainage from the area to the west and north of the offices (the refuelling and maintenance areas) flows to the Waiwhakaiho River via McLeod's Drain, an underground pipe that also receives stormwater from Devon 662's former fertilizer depot, other industrial sites, a residential area, and a rural area. Wastewater from washing of wagons, containers and locomotives is treated in a three-stage oil separator before discharge to the river. Liquids from the repair depot and locomotive fuelling point are discharged to an underground holding tank that is emptied by a waste disposal company at two-monthly intervals. The holding tank is also connected to the oil separator via an automatic pump in case of overfilling.

Drainage from the (sealed) freight area and the unsealed areas of the eastern end of the site is to the Mangaone Stream and its tributaries.

Railway wagons carrying containers of hazardous substances and the bulk products including urea, resins, fertilisers, di-ammonium phosphate (DAP), lime, oils, bitumen and carbon dioxide are held temporarily on

the tracks in this area. No loading or unloading of freight takes place in the stormwater catchment that drains to the Mangaone Stream.

KiwiRail hold two consents for the Smart Road railway yard. One consent relates to the discharge of treated wastewater and stormwater to the Waiwhakaiho River which is held by KiwiRail Holdings Ltd, and the other is to discharge of stormwater to the Mangaone Stream which is held by New Zealand Rail Corporation.

KiwiRail holds consent **3528-3** to discharge stormwater into the Waiwhakaiho River. This consent contains the standardised conditions as set out in Section 1.2 as well as limits of 3 g/m³ ammoniacal nitrogen (NH₄) and 1 g/m³ dissolved reactive phosphorus (DRP).

KiwiRail (trading as NZRC) holds consent **1735-3** to discharge stormwater from the Smart Road Rail Terminal into an unnamed tributary of the Mangaone Stream, and into the Mangaone Stream in the Waiwhakaiho catchment. The unnamed tributary of the Mangaone is informally referred to as the Mangamiro Stream. This consent contains the standardised special conditions as set out in Section 1.2.

9.2 Results

9.2.1 Inspections

Three routine inspections were conducted during the monitoring period, on 27 August 2020, 10 February 2021, and 25 May 2021.

27 August 2020

An inspection of the site to assess compliance with resource consent conditions was carried out in overcast weather with light rain conditions. The site was clean and tidy, and housekeeping had improved noticeably from the previous visit. There were no spills or hydrocarbon sheens noted. The unsealed parts of the site that had previously been identified as areas of potential sediment entrainment were still due to be sealed, and works were ongoing to identify the extent of the stormwater system onsite. No discharges were occurring to the Mangaone Stream, which showed no visual effects. A sample was collected prior to the discharge to the roadside drain, and results were within consented limits. The site was compliant with consent conditions at the time.

10 February 2021

The site was inspected in warm, overcast weather with moderate rainfall ongoing. The yard was generally tidy and clear, with no sign of spills. The unsealed parts of the yard were still posing potential issues with turbid, sediment-laden stormwater from these areas discharging to onsite drains. The interceptor was in need of maintenance but was not discharging to the stream at the time. The stormwater management plan including all drain locations and discharge points was due to be submitted to Council. At the time of inspection, all consent conditions were being complied with.

25 May 2021

A site inspection was carried out in cold, fine weather with moderate south easterly wind conditions. The site was clean and tidy, with no sign of spills and all stormwater contained and directed to the interceptor, which was in good operational condition. The stormwater system was operating well, with all collection points clear of debris. An updated stormwater management plan had not yet been received by Council, which was in breach of consent conditions. The wind conditions had resulted in some dust discharging from the site, however this was within allowable limits and there were no odours being emitted.

9.2.2 Results of discharge monitoring

The discharge of stormwater from the freight and fuel handling and storage areas is monitored where the stormwater enters the Smart Road stormwater drain, south of the railway overbridge (site IND002014). The results for period under review are given in Table 28.

Table 28 KiwiRail stormwater sampling results, site IND002014

Parameter	Unit	24 Aug 2020	14 Jun 2021	Consent limits
Temperature	°C	11.2	15.3	-
pH	pH	7.3	6.8	6-9
Conductivity	mS/m	22.7	6.5	-
Suspended solids	g/m ³	6	24	100
Turbidity	NTU/FNU	6.9	21	-
TBOD	g O ₂ /m ³	6.3	3.1	-
Nutrients				
NH ₃	g/m ³	0.00148	0.000154	-
NH ₄	g/m ³	0.29	0.091	3
DRP	g/m ³	0.015	0.035	1
Hydrocarbons				
C7 - C9	g/m ³	< 0.10	-	-
C10 - C14	g/m ³	< 0.2	-	-
C15 - C36	g/m ³	< 0.4	-	-
Total HC	g/m ³	< 0.7	-	15*

*HC measured in place of oil & grease

Compliance with consent limits was achieved for all parameters during the period under review.

9.2.3 Results of surface water monitoring

Sampling of the site discharge from the eastern end into the Mangaone Stream is carried out via the Mangamiro Stream, which is culverted for the entire stretch flowing beneath the yard. There are multiple KiwiRail discharges that enter the Mangamiro Stream along this stretch, so it is inferred that any changes in the quality of the stream, where it exits the culvert and enters the Mangaone Stream, were considered to be the effect of activities onsite.

One survey of the surface waters in the Mangamiro Stream was conducted for the period under review, and the results of this monitoring are reported in Table 29.

Table 29 Mangamiro Stream surface water sampling results, 14 June 2021

Site		MMR000061	MMR000100	Consent limits
Parameter	Description	Upstream of yard	Below yard discharge	
Temperature	°C	15.1	15.6	-
pH	pH	6.9	8.3	6-9
Conductivity	mS/m	18.8	14.3	-

Site		MMR000061	MMR000100	Consent limits
Parameter	Description	Upstream of yard	Below yard discharge	
Suspended solids	g/m ³	16	840	100
Turbidity	FNU	11.8	950	-
CBOD	g O ₂ /m ³	< 1.0	-	-
Metals (dissolved)				
Copper	g/m ³	0.0012	-	-
Zinc	g/m ³	0.0067	-	-
Nutrients				
NH ₃	g/m ³	0.00046	0.0068	-
NH ₄	g/m ³	0.22	0.122	-
DRP	g/m ³	< 0.004	0.042	-

The suspended solids concentration of 840 g/m³ measured in the sample below the combined yard discharge point exceeded the consent limit of 100 g/m³. This was associated with a noticeable decline in the visual clarity of the Mangaone Stream below the discharge point, which extended beyond the downstream mixing zone. Further enforcement action was undertaken (refer to section 9.3 below). All other results were compliant with consent conditions.

9.3 Investigations, interventions, and incidents

Table 30 sets out details of any incidents recorded, additional investigations, or interventions required by the Council in relation to KiwiRail's activities during the 2020-2021 period. This table presents details of all events that required further investigation or intervention regardless of whether these were found to be compliant or not.

Table 30 Incidents, investigations, and interventions summary table

Date	Details	Compliant (Y/N)	Enforcement Action Taken?	Outcome
25 May 2021	Routine inspection found that an updated stormwater management plan for the site was overdue	N	Abatement notice issued	Abatement notice EAC-24090 was issued and an updated plan was subsequently received.
14 June 2021	Sampling results found 840 g/m ³ suspended solids concentration, above 100 g/m ³ consent limit.	N	Abatement notice issued	Abatement notice EAC-24135 was issued. KiwiRail undertook a review of the stormwater system and installed sediment controls.

9.4 Evaluation of performance

A tabular summary of the KiwiRail's compliance record for the period under review is set out in Table 31 and Table 32.

Table 31 Summary of performance for KiwiRail consent 1735-3

Purpose: To discharge stormwater into the Mangaone Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option to prevent or minimise adverse effects	Inspection and receiving water monitoring	Yes
2. Limits stormwater catchment to 11.28 ha	Inspection	Yes
3. Bunding of hazardous substances if on site for more than three days	Inspection	N/A
4. Concentration limits upon potential contaminants in discharge	By inference from chemical sampling of receiving water	No – one exceedance of suspended solids limit
5. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling and biomonitoring	No – one instance where stream was noticeably turbid
6. Prepare and maintain contingency plan	Review of documentation received	Yes
7. Prepare, maintain and adhere to management plan	Plan not adhered to re suspended solids in discharge	No – updated plan not received
8. Provision for lapsing of consent	Consent exercised	N/A
9. Provision for review of conditions	No further provision for review prior to expiry	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent Overall assessment of administrative performance in respect of this consent		Improvement required Improvement required

N/A not applicable

Table 32 Summary of performance for KiwiRail consent 3528-3

Purpose: To discharge of stormwater into the Waiwhakaiho River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practical option	Inspection	Yes
2. Size of catchment area	Inspection	Yes
3. Contaminant limits in discharge	Sampling	Yes

Purpose: <i>To discharge of stormwater into the Waiwhakaiho River</i>		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
4. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling and biomonitoring	Yes
5. Contingency planning	Plan received	Yes
6. Adhere to Stormwater management plan	Plan received	Yes
7. Notification of changes in site processes	No changes made	N/A
8. Review condition	No further provision for review prior to expiry	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High High
Overall assessment of administrative performance in respect of this consent		

N/A not applicable

During the period under review, an improvement was required in KiwiRail Holdings Ltd/New Zealand Railways Corporations' level of environmental performance as defined in Section 1.1.4.

KiwiRail Holdings Ltd/NZ Railways also demonstrated the need for an improvement in their level of administrative performance.

10 New Plymouth District Council

10.1 Site description

New Plymouth District Council (NPDC) holds two resource consents in relation to discharges to the Lower Waiwhakaiho River below State Highway 3, and one consent in relation to discharges to the Mangaone Stream. The results for the stormwater and leachate discharge monitoring are reported on separately.

It has been acknowledged that NPDC has no direct control over the quality of discharges from sites in the catchment. However, road run-off and surface flooding due to poorly maintained drains may contribute to the contamination of stormwater entering the Waiwhakaiho River and Mangaone Stream.

All stormwater screen inlets and outlets in the system are inspected and cleaned regularly by NPDC to ensure that debris is not accumulated in any way that may affect the network capacity. Outfalls with flap gates are serviced every two months. These inspections are usually undertaken following a heavy rainfall event.

During periods of high rainfall, one of the key features of the performance of the stormwater drainage system is its susceptibility to inlet and outlet blockages. The NPDC maintenance plan aims to reduce reactive maintenance and improve the operation and reliability of the system through preventative maintenance. This includes pipeline condition assessment using video inspection.

10.1.1 Water discharge permits

Waiwhakaiho River

NPDC holds consent **5163-2** to discharge stormwater from the Waiwhakaiho industrial area into the Waiwhakaiho River via multiple outfalls between State Highway 3 and the confluence with the Mangaone Stream.

The catchment area and location of stormwater and landfill leachate discharge points are shown in Figure 12.



Figure 12 Aerial view of NPDC stormwater and leachate discharge locations in the Waiwhakaiho Catchment

Conditions on the consent require the consent holder to adopt the best practicable option to prevent or minimise any adverse effects, address erosion, and prohibit some specific effects.

Mangaone Stream

NPDC holds consent **1275-3** to discharge stormwater from the Katere and Waiwhakaiho industrial areas into the Mangaone Stream via multiple outfalls between Egmont Road and the confluence with the Waiwhakaiho River.

The catchment area and location of stormwater and landfill leachate discharge points are shown in Figure 13.

Conditions on the consent require the consent holder to adopt the best practicable option to prevent or minimise any adverse effects, address erosion, and prohibit some specific effects.



Figure 13 Aerial view of NPDC stormwater discharges to the Mangaone Stream

10.1.2 Bewley Road closed landfill

The old Taranaki County Council (TCC) depot site was quarried at the end of its life, and was then infilled, becoming the Bewley Road landfill. The former Bewley Road landfill extended for about 740 m along the Waiwhakaiho River bank between Constance Street and Vickers Road, and back to Devon Road. In 2006 the closed landfill area was developed and is now the site of the Valley Mega Centre retail outlet and car park. Leachate from the site discharges to groundwater which seeps into both the stormwater network, and the Waiwhakaiho River, along the river bank between Constance Street and Vickers Road. There is no treatment of the leachate generated from this closed landfill. Leachate is discharged continuously to the river at very low levels and low volumes.

NPDC holds consent **4984-2** to discharge landfill leachate to groundwater and the Waiwhakaiho River from an industrial development off Bewley Road.

The consent has conditions that set limits for contaminant concentrations in the discharge, limit effects on receiving water, require the maintenance of monitoring bores, and provide for the review.

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

10.2 Results

10.2.1 Inspections

Four routine inspections were conducted during the monitoring period, on 26 August 2020, 10 February 2021, and 17 and 19 May 2021.

26 August 2020

An inspection was conducted in overcast weather with moderate rainfall ongoing. All three discharge points at the Mangaone Stream, Waiwhakaiho River, and landfill leachate outlet were visited and samples collected. The stormwater and leachate systems were in good operational condition and discharging moderately high flows. The Mangaone Stream and leachate outlets were flowing clear and uncoloured, with no odours, sheens, or foaming notes. There were no visual effects observed downstream and consent conditions were being complied with. The discharge to the Waiwhakaiho River was sampled at two points, and the discharge at the Burton St outlet was clear and uncoloured. The McLeod's Drain sample was slightly turbid with noticeable iron oxide deposits suspended throughout the water column. All results were within consented limits, and there were no visual effects noted in the receiving waters. At the time of inspection, all conditions for all consents were being complied with.

10 February 2021

A visual inspection of the discharge points for all three consents was carried out in overcast weather with moderate rain conditions. All stormwater and leachate outlets were discharging moderate to trickle flow volumes, which were generally clear and uncoloured. Some iron oxide deposits were noted at the outlets to the leachate system and McLeod's Drain, but no impacts were observed in the receiving waters. All consent conditions on each consent were compliant at the time of inspection.

17 May 2021

The stormwater outlets to the Waiwhakaiho River were inspected in overcast weather in light rain conditions. The outlets were flowing at a moderate, steady rate, with no discolouration or visual impacts noted in the downstream receiving waters. All consent conditions were being complied with at the time.

19 May 2021

The stormwater outlets to the Mangaone Stream and the landfill leachate outlet were visited in overcast weather with light rain ongoing. All sites were discharging a clear, low volume trickle flow with no impacts noted in the receiving waters. There were no signs of sheens or foaming, and no odours noted in the discharge. At the time of inspection, all consent conditions were compliant.

10.2.2 Results of discharge monitoring

Discharge monitoring is carried out at six public stormwater drain outlets, three of which also discharge wastewater or stormwater from consented industrial sites. These are McLeod's Drain at the bottom of Smart Road, the "mid Katere Road" storm drain to the Mangaone Stream and the storm drain to the Mangaone Stream that services the Hurlstone Drive area.

No contaminant concentration limits have been incorporated into the NPDC consents as it is acknowledged that, for the most part, the District Council has no direct control over the quality of the discharges from the industrial and commercial sites. However, the quality of the discharges is still monitored as road run-off and surface flooding due to poorly maintained drains may contribute to the contamination of stormwater entering the receiving waters.

10.2.2.1 Discharge to Waiwhakaiho River from Burton Street

The sampling site that monitors the discharge of stormwater from the Burton Street area as it enters the Waiwhakaiho River was introduced during the 1999-2000 monitoring period. The drain carries stormwater from a number of small commercial sites that are located along Burton Street. The discharge is monitored to determine influences on water quality occurring upstream of other larger discharge sources (such as Firth's or McLeod's Drain).

The results of routine chemical monitoring for the period under review are presented in Table 33.

Table 33 Stormwater sampling results for Burton Street, site STW001081

Parameter	Unit	24 Aug 2020	14 Jun 2021	RFWP Guideline
Temperature	°C	12.5	15.5	-
pH	pH	7.0	7.0	6-9
Conductivity	mS/m	1.7	1.8	-
Suspended solids	g/m ³	73	15	100
Turbidity	NTU/FNU	40	6	-
Hydrocarbons				
C7 - C9	g/m ³	< 0.10	-	-
C10 - C14	g/m ³	< 0.2	-	-
C15 - C36	g/m ³	< 0.4	-	-
Total HC	g/m ³	< 0.7	-	15*

*HC measured in place of oil & grease

The pH, suspended solids and oil and grease concentrations were determined to be within the standards expected for permitted activities within this stormwater catchment.

10.2.2.2 Discharge to Waiwhakaiho River from McLeod's Drain

The discharge from McLeod's Drain enters the Waiwhakaiho River about 50 m downstream of the lower end of Smart Road. The drain carries stormwater from the Devon 662 site, other industrial sites including the railyard on Smart Road, the residential area of Glen Avon, and a rural area to the south. The discharge is monitored to determine influences on water quality in addition to those of the former fertiliser storage depot and railyard.

Although Devon 662's former fertiliser depot is no longer in use, there is likely to still be some inputs of phosphorus and ammonia due to dissolution of existing fertiliser particles carried by wind or water into storm drains at and around the site. The results of routine chemical monitoring for the period under review are presented in Table 34.

Table 34 Stormwater sampling results for McLeod's Drain, site STW001001

Parameter	Unit	24 Aug 2020	RFWP Guideline
Temperature	°C	13.4	-
pH	pH	7.1	6-9
Conductivity	mS/m	10.4	-
Suspended solids	g/m ³	43	100
Turbidity	NTU/FNU	36	-

Parameter	Unit	24 Aug 2020	RFWP Guideline
Nutrients			
NH ₃	g/m ³	0.00063	-
NH ₄	g/m ³	0.191	-
DRP	g/m ³	0.06	
Hydrocarbons			
C7 - C9	g/m ³	< 0.10	-
C10 - C14	g/m ³	< 0.2	-
C15 - C36	g/m ³	< 0.4	-
Total HC	g/m ³	< 0.7	15*

*HC measured in place of oil & grease

The pH, unionised ammonia (NH₃), suspended solids, and hydrocarbon concentrations were all determined to be well within the standards expected for a permitted activity and within the prescribed "standardised" limits for the consent holders contributing to this discharge.

10.2.2.3 Discharge to Waiwhakaiho River from Vickers Road

This catchment drains the area on both sides of Vickers Road along with a section of Devon Road, to the west of the Katere Road junction. The results for the period under review are given in Table 35.

Table 35 Stormwater sampling results for Vickers Road, site STW001020

Parameter	Unit	24 Aug 2020	14 Jun 2021	RFWP Guideline
Temperature	°C	15.3	15.8	-
pH	pH	7.4	7.2	6-9
Conductivity	mS/m	3.7	4	-
Suspended solids	g/m ³	25	18	100
Turbidity	NTU/FNU	14.8	15.7	-
Hydrocarbons				
C7 - C9	g/m ³	< 0.10	< 0.4	-
C10 - C14	g/m ³	< 0.2	< 1.0	-
C15 - C36	g/m ³	< 0.4	< 2	-
Total HC	g/m ³	< 0.7	< 4	15*

*HC measured in place of oil & grease

Sampling showed that the suspended solids, pH, and oil and grease concentrations were within the standards expected for the permitted activities within this stormwater catchment on all monitoring occasions.

10.2.2.4 Discharge to Mangaone Stream from mid Katere Road

Stormwater from the mid-section of Katere Road discharges to the Mangaone Stream upstream of the discharge from Taranaki Sawmill's timber treatment plant site, and carries stormwater from a number of permitted activities on the northern side of Katere Road, and from the Freight and Bulk Transport site.

Monitoring of this discharge commenced in 2007. The results for the period under review are presented in Table 36.

Table 36 Stormwater sampling results for mid Katere Road, site STW001116

Parameter	Unit	24 Aug 2020	14 Jun 2021	RFWP Guideline
Temperature	°C	12.8	15.4	-
pH	pH	7.3	7.3	6-9
Conductivity	mS/m	6.5	5.2	-
Suspended solids	g/m ³	82	40	100
Turbidity	NTU/FNU	27	44	-
TBOD	g O ₂ /m ³	4.4	19	-
Nutrients				
NH ₃	g/m ³	0.0011	0.00088	-
NH ₄	g/m ³	0.2	0.149	-
DRP	g/m ³	0.089	0.118	-
Hydrocarbons				
C7 - C9	g/m ³	< 0.10	< 0.4	-
C10 - C14	g/m ³	< 0.2	< 1.0	-
C15 - C36	g/m ³	< 0.4	< 2	-
Total HC	g/m ³	< 0.7	< 4	15*

*HC measured in place of oil & grease

The consent held by NPDC for discharges into the Mangaone Stream has no conditions relating to the quality of the discharge.

The biochemical oxygen demand of this discharge exceeded the concentration given in the RFWP for Taranaki for permitted activities (Rule 23), on one of the monitoring occasions. However, instream levels of filtered carbonaceous biochemical oxygen demand (CBOD) in the Mangaone Stream on the same day were measured at 1.2 g/m³; well below the 2.0 g/m³ RFWP guideline values.

The suspended solids, pH, and unionised ammonia (NH₃) concentrations were found to be in compliance with the 0.025 g/m³ limit set in the RFWP.

10.2.2.5 Discharge to Mangaone Stream from Hurlstone Drive

Stormwater from the industrial area along Hurlstone Drive discharges to the Mangaone Stream immediately upstream of State Highway 3. This discharge contains stormwater and wastewater from Allied Concrete's batching plant as well as roadside runoff.

The results of routine chemical monitoring for the period under review are presented in Table 37.

On one sampling occasion the pH of the discharge exceeded the concentration given in the RFWP for Taranaki for permitted activities (Rule 23), however the consent does not contain conditions controlling the quality of the stormwater discharged from NPDC's stormwater system. The pH of the Mangaone Stream measured on the same day was within the guideline values (pH of 7.2) and no adverse effects were noted. The suspended solids and hydrocarbon concentrations complied with standards expected for a permitted activity, and were within the prescribed limits for consent holders discharging via this outlet.

Table 37 Stormwater sampling results for Hurlstone Drive, site STW001035

Parameter	Unit	24 Aug 2020	14 Jun 2021	RFWP Guideline
Temperature	°C	13.4	15.8	-
pH	pH	7	9.5	6-9
Conductivity	mS/m	10	5.7	-
Suspended solids	g/m ³	17	20	100
Turbidity	NTU/FNU	9.4	23	-
Nutrients				
NH ₃	g/m ³	< 0.00003	0.024	-
NH ₄	g/m ³	< 0.010	0.051	-
Hydrocarbons				
C7 - C9	g/m ³	< 0.10	< 0.10	-
C10 - C14	g/m ³	< 0.2	< 0.2	-
C15 - C36	g/m ³	< 0.4	< 0.4	-
Total HC	g/m ³	< 0.7	< 0.7	15*

*HC measured in place of oil & grease

10.2.3 Results of groundwater monitoring

There are three groundwater bores located around the periphery of the area, which NPDC is required to maintain for the purpose of consent compliance monitoring. There is also a leachate discharge monitoring point at the outlet of the main drain which carries the groundwater to the river. The locations of the four sites are shown on Figure 2 as GND0548, GND0555, GND0556, and WKH000872. Stormwater from the retail area between Struthers Place and Constance Street, the commercial area of Struthers Place, and part of Rifle Range Road and a small unnamed tributary that once discharged at this location are also piped to the Waiwhakaiho via this leachate discharge point.

10.2.3.1 Bore GND0556

Groundwater monitoring bore GND0556 is drilled into natural alluvial deposits beside Devon Road and acts as a control bore for the area. This bore was affected by the raising of the ground surface around it by approximately 0.5 m which may affect the chemical results. The results for this site are shown in Table 38.

Table 38 NPDC groundwater sampling results, site GND0556

Parameter	Unit	12 Feb 2021	11 Jun 2021	Consent limits
Level	m	2.168	2.07	-
Temperature	°C	19.7	18.4	-
pH	pH	6.3	6.3	6.5-8.5
Conductivity	mS/m	130.3	128.9	-
DO	mg/L	5.09	-	-
	%	56	-	-
Alkalinity (as CaCO ₃)	g/m ³ as CaCO ₃	97	78	-
Bicarbonate	g/m ³	119	95	-
COD	g O ₂ /m ³	< 6	14	-
Potassium	g/m ³	48	49	-
Zinc	g/m ³	0.0038	0.0059	-

Parameter	Unit	12 Feb 2021	11 Jun 2021	Consent limits
Nutrients				
NH ₃	g/m ³	0.0102	0.0071	-
NH ₄	g/m ³	11.3	8.4	25
NNN	g/m ³	0.003	0.079	-
DRP	g/m ³	< 0.004	< 0.004	0.065

The levels recorded for each of the parameters analysed were similar to previously observed values. Ammoniacal nitrogen (NH₄) continues to show elevated levels compared to pre-2017 results. It is not known what caused concentrations to increase at this site at that time, and the current trend appears to be relatively stable with no further spikes. Potassium and sulphate concentrations, which also spiked in 2017, are now showing a slightly declining trend, although this is still at an elevated level compared to pre-2017. The exact cause of these increases are not known, however it is noted that the bores around the old Ravensdown site (up gradient and to the west) are known to contain elevated levels of sulphate and ammoniacal nitrogen and have some connectivity to the bores in the Bewley Road area.

10.2.3.2 Bore GND0555

Groundwater monitoring bore GND0555 is on Rifle Range Road between Struthers Place and Vickers Road. This bore was affected by stop-bank construction in a previous review period and had to be re-drilled as a result. During the 2001-2002 monitoring period it was found that this bore had collapsed internally and NPDC was requested to clear the bore or re-drill as necessary. The bore was subsequently re-drilled (prior to the sampling run undertaken in June 2002) and a bore log was provided to the Council. During the 2007-2008 monitoring period the bore was again destroyed by development activities in the area. NPDC replaced the bore at the request of the Council. The number of times this bore has been re-drilled needs to be considered in interpreting the results and in particular median values for parameters. The results for GND0555 are shown in Table 39.

Table 39 NPDC groundwater sampling results, site GND0555

Parameter	Unit	12 Feb 2021	11 Jun 2021	Consent limits
Level	m	2.767	3.2	-
Temperature	°C	19.5	19.2	-
pH	pH	6.5	6.4	6.5-8.5
Conductivity	mS/m	51.3	49.5	-
DO	mg/L	0.77	-	-
	%	8	-	-
Alkalinity (as CaCO ₃)	g/m ³ as CaCO ₃	210	210	-
Bicarbonate	g/m ³	260	250	-
COD	g O ₂ /m ³	6	17	-
Potassium	g/m ³	7.3	8.7	-
Zinc	g/m ³	0.007	0.0027	-
Sulphate	g/m ³	0.7	< 0.5	-
Nutrients				
NH ₃	g/m ³	0.0098	0.0075	-
NH ₄	g/m ³	7.0	6.2	25
NNN	g/m ³	< 0.004	0.03	-

Parameter	Unit	12 Feb 2021	11 Jun 2021	Consent limits
DRP	g/m ³	< 0.008	< 0.004	0.065

The pH result obtained for the 11 June 2021 sample was within the range of uncertainty of measurement for this parameter. Therefore consent limits for ammoniacal nitrogen, dissolved reactive phosphorus, and pH were complied with and all parameters were either similar to median of all results and/or were below the maximum. It is noted that increased levels in potassium and ammoniacal nitrogen continue to be observed in all bores, however the actual values being recorded either comply with consent conditions (for ammoniacal nitrogen) or are within acceptable ranges.

10.2.3.3 Bore GND0548

Groundwater bore GND0548 is located near the corner of Struthers Place and Rifle Range Road. This is also a replacement bore as the first bore sunk in this area was destroyed during stop-bank construction in 1997. The replacement bore was itself destroyed during landscaping in front of what was then the Hookers site, and a new bore was installed prior to the sampling survey undertaken in October 2002. Care needs to be taken when interpreting the results, and in particular the median values for parameters. The results for GND0548 are shown in Table 40.

Table 40 NPDC groundwater sampling results, site GND0548

Parameter	Unit	12 Feb 2021	11 Jun 2021	Consent limits
Level	m	1.564	1.57	-
Temperature	°C	19.5	18.8	-
pH	pH	6.9	6.7	6.5-8.5
Conductivity	mS/m	69.4	73.4	-
DO	mg/L	0.05	-	-
	%	0.5	-	-
Alkalinity (as CaCO ₃)	g/m ³ as CaCO ₃	290	290	-
Bicarbonate	g/m ³	350	350	-
COD	g O ₂ /m ³	13	55	-
Potassium	g/m ³	22	25	-
Zinc	g/m ³	0.0033	0.0021	-
Sulphate	g/m ³	< 0.5	< 0.5	-
Nutrients				
NH ₃	g/m ³	0.024	0.03	-
NH ₄	g/m ³	6.5	12.7	25
NNN	g/m ³	0.004	0.011	-
DRP	g/m ³	< 0.004	0.02	0.065

The groundwater complied with the consent limits for ammoniacal nitrogen, dissolved reactive phosphorus, and pH. It is noted that the ammoniacal nitrogen concentration, while showing the same elevated levels observed in other bores in the area, appears to be declining slightly over time.

Potassium also appears to be slowly decreasing, however these trends are recently emerging and may be a result of natural, long-term fluctuations. The upper limit on the range of potassium concentrations found in the bore is well within acceptable levels.

Overall the leachate component concentrations in both downstream bores are relatively low in comparison to most municipal landfill leachates.

10.2.4 Results of surface water monitoring

The former Bewley Road landfill is situated on the right bank of the Waiwhakaiho River and extends about 740 m between Constance Street to a point near Vickers Road. The area has been substantially developed and now contains a retail park and a number of commercial operators. Combined stormwater and groundwater leachate from this area discharges to the Waiwhakaiho River (site WKH000872) (Figure 2).

The Waiwhakaiho River is sampled at three points in relation to the landfill leachate discharge. The first is above the leachate discharge point (WKH000920), the second is adjacent to the discharge (WKH000925), and a third below the mixing zone (WKH000942). The results from these sites are used to assess any potential impacts of the leachate.

The leachate and associated river sites were sampled twice during the period under review, and results are shown in Table 41 and Table 42.

Table 41 NPDC landfill leachate and surface water sampling results, 12 February 2021

Site		WKH000920	WKH000872	WKH000925	WKH000942	<i>Consent limits for discharge</i>
	Description	Upstream	Leachate discharge	Adjacent to leachate discharge	Below mixing zone	
Parameter	Time	1045	1105	1120	1145	
Temperature	°C	17.8	20.5	17.7	18.2	-
pH	pH	7.9	7.6	7.8	7.9	6.5-8.5
DO	mg/L	9.54	6.09	9.71	8.56	-
	%	100	68	102	90	-
Conductivity	mS/m	11.1	89.3	12.1	11.5	-
Sulphate	g/m ³	-	130	-	-	-
Turbidity	NTU	1.94	-	1.41	2.3	-
Total Alkalinity	g/m ³ as CaCO ₃	-	200	-	-	-
COD	g O ₂ /m ³	-	< 6	-	-	-
Potassium	g/m ³	-	22	-	-	-
Zinc	g/m ³	-	0.0143	-	-	-
Nutrients						
NH ₃	g/m ³	< 0.0004	0.46	0.0196	0.005	-
NH ₄	g/m ³	< 0.010	26	0.79	0.141	25
NNN	g/m ³	-	7.3	-	-	-
DRP	g/m ³	0.008	< 0.004	0.023	0.009	0.065

Ammoniacal nitrogen concentrations in the leachate discharge exceeded the consent limit of 25 g/m³ in February 2021, however this was attributed to the influence of the Devon 662 site remediation works. Downstream, the concentration of unionised ammonia remained below 0.025 g/m³, which is the general limit applied within the RFWP for permitted effects in receiving waters. Disturbance of contaminated soil and removal of hardstand areas had increased infiltration and very likely resulted in down-gradient mobilisation of nitrogen and phosphorus into the Bewley Road area (section 3.2.3). Further investigations have since been carried out to better establish the potential connectivity between these two sites.

Table 42 NPDC landfill leachate and surface water sampling results, 11 June 2021

Site		WKH000920	WKH000872	WKH000925	WKH000942	Consent limits
	Description	Upstream	Leachate discharge	Adjacent to leachate discharge	Below mixing zone	
Parameter	Time	1220	1210	1245	1255	
Temperature	°C	12.8	18.4	14.2	12.8	-
pH	pH	8.1	7.6	8.1	8.2	6.5-8.5
Conductivity	mS/m	13.6	98.1	14.3	13.7	-
Sulphate	g/m ³	-	145	-	-	-
Turbidity	FNU/NTU	0.55	9	0.5	0.71	-
Total Alkalinity	g/m ³ as CaCO ₃	-	220	-	-	-
COD	g O ₂ /m ³	-	12	-	-	-
Potassium	g/m ³	-	21	-	-	-
Zinc	g/m ³	-	< 0.02	-	-	-
Nutrients						
NH ₃	g/m ³	< 0.0004	0.57	0.0005	0.0009	25
NH ₄	g/m ³	< 0.010	33	0.012	0.023	-
NNN	g/m ³	-	7.7	-	-	-
DRP	g/m ³	0.007	< 0.004	0.006	0.006	0.065

Analysis of results showed that ammoniacal nitrogen was generally the same between the three river sites, with only a slight increase between the upstream sites and WKH000942 in the samples from June 2021. Due to the extremely low levels found, there would have been few, if any, environmental effects associated with this contaminant concentration.

All other results were within consented limits and historical averages for each site.

10.3 Investigations, interventions, and incidents

In the 2020-2021 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.

10.4 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Table 43, Table 44, and Table 45.

Table 43 Summary of performance for NPDC consent 1275-3

Purpose: To discharge stormwater discharge from the Katere Industrial area into the Mangaone Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option to minimise adverse effects	Inspection and receiving water monitoring	Yes
2. Prevention of erosion	Visual assessment at inspection and receiving water sampling	Yes

Purpose: To discharge stormwater discharge from the Katere Industrial area into the Mangaone Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
3. Discharge cannot cause specified adverse effects in Mangaone Stream	Inspection and receiving water monitoring	Yes
4. Optional review provision re environmental effects	No further provision 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

N/A = not applicable

Table 44 Summary of performance for NPDC consent 5163-2

Purpose: To discharge stormwater discharge from an industrial subdivision into the Waiwhakaiho River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option to minimise adverse effects	Inspection and receiving water monitoring	Yes
2. Prevention of erosion	Visual assessment at inspection and receiving water sampling	Yes
3. Discharge cannot cause specified adverse effects in Mangaone Stream	Inspection and receiving water monitoring	Yes
4. Optional review provision re environmental effects	No further provision 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

N/A = not applicable

Table 45 Summary of performance for NPDC consent 4984-2

Purpose: To discharge leachate from a former landfill site into groundwater, adjacent to the Waiwhakaiho River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Limits on chemical composition of discharge	Inspection and sampling of discharge	Yes
2. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling	Yes – results from landfill leachate within consent limits
3. Maintenance of monitoring bores	Inspection and accessibility at sampling	Yes
4. Optional review provision re environmental effects	No further provision for review prior to expiry	N/A

Purpose: <i>To discharge leachate from a former landfill site into groundwater, adjacent to the Waiwhakaiho River</i>		
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

N/A = not applicable

During the period under review, New Plymouth District Council demonstrated a high level of environmental performance and high level of administrative performance and compliance with its resource consents as defined in Section 1.1.4.

11 Ravensdown Fertiliser Co-operative Ltd

11.1 Site description

The New Plymouth depot of Ravensdown Fertiliser Co-operative Ltd (Ravensdown) occupies an area of about 8 Ha of land adjacent to the KiwiRail yard (Figure 14). The depot receives, bags, blends and distributes fertilisers in various forms, namely superphosphate, lime, dolomite and imported high analysis products such as ammonium sulphate, urea, triple super, potassium chloride (potash) and monoammonium and diammonium phosphates (MAP & DAP). Small volumes of trace element fertilisers such as zinc sulphate are also handled through the store.

Stormwater from the roof and the area immediately surrounding the main building is directed through a planted wetland prior to discharge to the Mangaone Stream. Stormwater from the upper end entrance road is diverted to setting ponds and discharged to the Mangaone further downstream. Stormwater from the lower part of the access road is diverted to the Waiwhakaiho River via MacLeod's drain on Smart Road.



Figure 14 Aerial view of Ravensdown site (building construction since completed)

Ravensdown holds consent **10513-1** to discharge stormwater from a fertiliser storage site onto and into land and water. This consent contains eight of nine of the standard special conditions as set out in Section 1.2. As the activity had already commenced when the consent was granted, the standard lapse condition was omitted.

A copy of the permit is attached to this report in Appendix I.

11.2 Results

11.2.1 Inspections

Three routine inspections were conducted during the monitoring period, on 24 September 2020, 14 April 2021, and 15 June 2021.

24 September 2020

An inspection to assess compliance with resource consent conditions was carried out in overcast weather with light wind and rain conditions. The site was generally tidy, although there was tracking of product noted near the exit doorway which required sweeping. A new stormwater treatment pond system had been installed, and was discharging a low flow at the time. Staff onsite were advised to maintain good housekeeping to reduce the amount of fertiliser and product entering the stormwater system. At the time of the visit, all consent conditions were being complied with.

14 April 2021

An inspection was conducted in overcast weather with moderate rainfall ongoing. The site was tidy and clean with no tracking of product from the shed noted. A small amount of lime had been spilt at the building entrance, which was due to be cleaned. All runoff on the site was being captured and directed to the stormwater pond. The drain socks had been removed from grates and were no longer being used. The pond was operating at a moderately high level and discharging a slightly green flow. Netting had recently been placed over the pond and replanting of vegetation to repair damage from birdlife (Photo 8). A sample was collected from the outlet of the pond, and all results were within expected ranges.

15 June 2021

The site was visited in overcast weather with light rain conditions. The yard was reasonably clean and tidy with no sign of spills or tracking. The stormwater drains were inspected and found to be clear of debris apart from a small section on the northern side of the building, which was pointed out to staff at the time. The wetland was operating as normal, and the new plantings were establishing slowly. The operating level was low and there was a clear, trickle discharge from the pond. There were no odour or dust issues onsite and all consent conditions were being complied with.



Photo 8 View of Ravensdown treatment wetland with recent planting, April 2021

11.2.2 Results of discharge monitoring

The discharge from the pond that treats stormwater from the roof and operation areas was sampled twice during the monitoring period. Results are displayed in Table 46.

Table 46 Ravensdown stormwater sampling results, site STW002097

Parameter	Unit	14 Apr 2021	14 Jun 2021	Consent limits
Temperature	°C	16.6	15.1	-
pH	pH	6.9	7.1	6-9
Conductivity	mS/m	11.8	6.0	-
Suspended solids	g/m ³	12	4	100
Turbidity	FNU	6.1	2.9	-
CBOD	g O ₂ /m ³	2.9	2.5	10
TBOD	g O ₂ /m ³	3.4	3.8	-
Metals (dissolved)				
Copper	g/m ³	-	0.0015	-
Zinc	g/m ³	-	0.005	-
Nutrients				
NH ₃	g/m ³	0.0127	0.0051	0.025*
NH ₄	g/m ³	4	1.42	5
NNN	g/m ³	-	0.71	-
DRP	g/m ³	0.43	0.58	5

*NH₃ limit applies in-stream

All results complied with limits set by the resource consent. Ammoniacal nitrogen (NH₄) concentrations were elevated in the April sample, although still within limits, and were associated with historically high results for this parameter in the discharge. Ravensdown have undertaken a significant upgrade of the wetland system since 2019, which included planting of over 1500 native wetland plants to increase nutrient uptake and retention in the pond. June 2021 results indicate that levels of this contaminant may be beginning to decrease as the planting becomes more established. Suspended solids and dissolved reactive phosphorus concentrations were found to be noticeably lower compared to consented limits and historical results.

11.3 Investigations, interventions, and incidents

In the 2020-2021 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with Ravensdown's conditions in resource consents or provisions in Regional Plans.

11.4 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Table 47.

Table 47 Summary of performance for Ravensdown consent 10513-1

Purpose: To discharge stormwater from a fertiliser storage site onto and into land and into the Mangaone Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practicable option to avoid, remedy or mitigate effects	Inspection and consultation with site operators	Yes
2. Catchment to be limited to a certain size	Inspection and consultation with site operators	Yes
3. Limits on chemical composition of discharge	Observation during inspection and discharge sampling	Yes
4. Limit on effects in receiving water	Observation during inspection, macroinvertebrate sampling and receiving water sampling	Yes – effects in stream not directly attributed to Ravensdown site
5. Maintain contingency plan	Document received	Yes
6. Maintain stormwater management plan	Document received	Yes
7. Notification of changes at the site	Inspection and consultation with site operators	Yes
8. Review conditions	Next option for review in June 2026	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

N/A = not applicable

During the period under review, Ravensdown Fertiliser Co-operative Ltd demonstrated a high level of environmental performance and high level of administrative performance and compliance with its resource consent as defined in Section 1.1.4.

12 Taranaki Sawmills Ltd

12.1 Site description

Taranaki Sawmills Ltd (TSM) has operated a timber treatment plant on Katere Road since 1956 (Figure 15). In 1997, an adjoining site was purchased and developed for painting and packaging, packaging componentry, and a domestic despatch yard, some of which has now been on-sold. About 30 persons are employed at the site.

Timber is treated at two plants. At one plant, timber is treated with copper, chromium and arsenic (CCA), and with boron. At the other plant, light organic solvent preservatives (LOSP) are used.



Figure 15 Aerial view of Taranaki Sawmills Katere Road site and sampling locations.

At the CCA and boron treatment plant, all chemical storage tanks and treatment vessels were historically situated outside of the buildings, within areas that were sealed and bunded for containment of spillage. Contaminated stormwater from bunded and drip pad areas was collected in sumps and recycled back through the treatment process. The CCA process was changed in February 1999 by the addition of a steam fixation step after CCA treatment, known as the CCA Dry process. This resulted in the elimination of drippage after treatment. Previously, CCA treated timber had to be left on the drip pad for seven days, now the timber only needs to be left on the drip pad for 24 hours to ensure that there is no drippage once the wood is removed from the treatment area. There is no discharge to water as a result of the CCA dry process, as blowdown from this process is recycled. During the 2002-2003 year, a roof was constructed over the drip pad, treatment vessels and chemical storage area, thus eliminating the potential for contaminants to be entrained in the stormwater from these areas.

Some timber is pre-treated by steaming to improve the penetration of the CCA solution. After each steam cycle, the vessel is cooled via an external water heat exchanger to reduce turnaround time. The sludge generated in the steamer vessel, and blowdown from the boiler, was discharged to a settling pit at a rate of about 1,000 L/day. The settled wastewater, and about 15,000 L/day of cooling water, was discharged to the Mangaone Stream via a stormwater drain. Sludge that accumulated in the pit was disposed of by a local contractor. During the 2005-2006 year, the condensate from this "steam cracking" of the timber was diverted to sewer. The discharge of cooling water to the Mangaone Stream continued until the 2008-2009 year, during which the cooling water was also diverted to trade waste. No further discharges of process/wastewater from the site to the Mangaone Stream occur following this diversion.

In boron treatment, a vacuum is applied to improve chemical diffusion. The boron treated timber was left under tarpaulins on the drip pad for 14 days for diffusion to complete. An improvement in the boron treatment process was introduced in March 2007. Taranaki Sawmills now employ a dry treatment process using 'Framepro'. The process for 'Framepro' is that the timber is kiln dried before it is sent to the treatment plant. After treatment it dries in a shed on a drip pad until being shipped out.

A new light organic solvent preservative (LOSP) plant was commissioned in February 1999. The treatment chemicals used in the LOSP process are a range of blends containing one or more of the following, in a white spirit solvent; 3-Iodo-2-propynyl-n-butylcarbamate (IPBC), permethrin, Propiconazole (PRCA) and Tebuconazole (TEBA) depending on end use of the timber. At the old LOSP plant, chemical storage tanks were located outside at the northern end of the site in an area that was bunded. The drippage area, which drained to a recycle sump, was also outside. At the new plant, the process is carried out entirely within a building with internal bunds, under computer control to optimise treatment and minimise chemical use. There is no wastewater discharge.

The use of tributyltin oxide at the site ceased in April 2010. Residual tributyltin and CCA have been found in the site surfaces from historical practices. This has been mapped and managed by progressively concreting the affected areas, as discussed in previous Annual/Biennial Reports.

Uncontaminated stormwater, from outside of bunded areas and from roofs, is channelled into two drains that join prior to exiting the site at Katere Road and discharging to the Mangaone Stream.

TSM holds discharge permit **3491-3** to cover discharge of cooling water and wastewater from a timber drying plant and stormwater from a timber treatment site into the Mangaone Stream in the Waiwhakairo catchment. This consent has 17 special conditions, including the standardised sampling requirements.

A copy of the permit is attached in Appendix I.

12.2 Results

12.2.1 Inspections

Three routine inspections were conducted during the monitoring period, on 24 August 2020, 10 February 2021, and 21 June 2021.

24 August 2020

An inspection to assess compliance with resource consent conditions was carried out in overcast weather with heavy rain conditions. The site was clean and tidy with no spills or sheens noted. The stormwater drain was operating at a high capacity at the time, and both east and west drains were discharging into the roadside network. Samples were collected and were within expected parameters. One of the stormwater drains at the rear of the site was slightly blocked, but there were no overflows or unauthorised discharges from the system. There were no dust or odour issues, and the site was compliant at the time of inspection.

10 February 2021

An inspection was conducted in overcast weather with light rain ongoing. The yard was generally tidy, however some housekeeping was required near the paint shed, with paint chip residues noted near the stormwater drains. The filter socks in place on the drains also required maintenance. There was no evidence of spills or sheens (Photo 9). The stormwater system was operating normally, and both east and west drains were discharging at the time. There were no issues with odour or dust on the site, and all consent conditions were being complied with.



Photo 9 View of stored timber on TSM yard

21 June 2021

The site was visited in overcast weather with moderate cool wind conditions. The site was relatively tidy, with no spills noted. One of the stormwater drains was found to be partially obstructed by a tarpaulin, while another had a container over top of the drain, and reminders were given to ensure that these areas were free-draining. Filter socks were in place in the drains, but in need of maintenance. The stormwater system was discharging a clear trickle flow and there were no issues with odour or dust. At the time of inspection, all consent conditions were compliant.

12.2.2 Results of discharge monitoring

Historically the primary sampling point for this site was a combined discharge point on the opposite side of Katere Road (site IND001006). However it was identified by the consent holder that this site could potentially be contaminated with stormwater from Katere Road.

Subsequently two additional sampling sites were established (IND001068 and IND001069) to sample stormwater from TSM at the point of discharge into NPDC's stormwater network. These sites were each sampled twice during the monitoring period. The results are presented in Table 48 and Table 49.

Table 48 TSM stormwater sampling results, site IND001068

Parameter	Unit	24 Aug 2020	14 Jun 2021	Consent limits
Temperature	°C	12.3	15.5	25
pH	pH	6.7	6.9	6-9
Conductivity	mS/m	3.9	2	-
Suspended solids	g/m ³	18	31	100
Turbidity	FNU	14	53	-
TBOD	g O ₂ /m ³	3.6	5.4	-
COD	g O ₂ /m ³	24	35	-
Metals (total)				
Arsenic	g/m ³	0.045	0.055	0.24
Boron	g/m ³	0.025	0.027	3.7
Chromium	g/m ³	0.033	0.051	0.4
Copper	g/m ³	0.024	0.027	-
Tin	g/m ³	0.00103	0.0046	-
Zinc	g/m ³	0.5	0.196	-
Metals (dissolved)				
Copper	g/m ³	0.0145	0.0099	0.088
Zinc	g/m ³	0.45	0.118	0.64
Treatment chemicals				
Dibutyltin	g/m ³	< 0.00006	0.0002	-
Tributyltin	g/m ³	< 0.00005	0.00027	0.0046
Triphenyltin	g/m ³	< 0.00004	< 0.00004	-
Hydrocarbons				
C7 - C9	g/m ³	< 0.10	-	-
C10 - C14	g/m ³	< 0.2	-	-
C15 - C36	g/m ³	< 0.4	-	-
Total HC	g/m ³	< 0.7	-	15*

*HC measured in place of oil & grease

Table 49 TSM stormwater sampling results, site IND001069

Parameter	Unit	24 Aug 2020	14 Jun 2021	Consent limits
Temperature	°C	13.2	15.4	25
pH	pH	6.9	7.1	6-9
Conductivity	mS/m	3.9	3.8	-
Suspended solids	g/m ³	52	124	100
Turbidity	FNU	51	220	-
TBOD	g O ₂ /m ³	3.2	5.3	-
COD	g O ₂ /m ³	26	< 6	-
Metals (total)				
Arsenic	g/m ³	0.021	0.0147	0.24

Parameter	Unit	24 Aug 2020	14 Jun 2021	Consent limits
Boron	g/m ³	0.02	0.028	3.7
Chromium	g/m ³	0.0151	0.0127	0.4
Copper	g/m ³	0.036	0.03	-
Tin	g/m ³	0.0026	0.0022	-
Zinc	g/m ³	0.24	0.62	-
Metals (dissolved)				
Copper	g/m ³	0.0091	0.0043	0.088
Zinc	g/m ³	0.082	0.28	0.64
Treatment chemicals				
Dibutyltin	g/m ³	< 0.00006	< 0.00006	-
Tributyltin	g/m ³	< 0.00005	< 0.00005	0.0046
Triphenyltin	g/m ³	< 0.00004	< 0.00004	-
Hydrocarbons				
C7 - C9	g/m ³	< 0.10	-	-
C10 - C14	g/m ³	< 0.2	-	-
C15 - C36	g/m ³	< 0.4	-	-
Total HC	g/m ³	< 0.7	-	15*

*HC measured in place of oil & grease

Samples taken from both of the sites complied with consent conditions for all parameters. Elevated levels of zinc in the stormwater discharge from both sites continue to be present. It is noted however, that the work TSM have undertaken since the 2019 monitoring year appear to have impacted overall zinc concentration, with no exceedances of the dissolved zinc limit for the first time in two years. It is expected that zinc levels in any stormwater discharges will continue to decline over time.

Monitoring of the light organic solvent pesticides (LOSP) treatment chemicals IPBC, permethrin, PRCA and TEBA was initiated in the 2010-2011 year after TSM changed to using these chemicals rather than tributyltin. Levels of these contaminants have been known to fluctuate over time with the latest results being similar to the median of historical results from TSM discharges. Concentrations of LOSP treatment chemicals in the TSM discharge were sampled on two occasions during the year under review, and on one occasion, samples were also collected from the receiving waters of the Mangaone Stream. The results of both sampling surveys are shown in Table 50.

Table 50 LOSP treatment chemicals detected in TSM stormwater and Mangaone Stream below discharge

Date		24 Aug 2020		14 Jun 2021		
Parameter	Site	IND001068	IND001069	IND001068	IND001069	MGO000145
IPBC	g/m ³	< 0.0002	< 0.0002	< 0.002	< 0.002	< 0.0002
Permethrin	g/m ³	0.00133	0.00148	0.0187	0.014	0.00012
PRCA	g/m ³	0.02	0.028	0.09	0.059	0.00069
TEBA	g/m ³	0.019	0.033	0.086	0.06	0.00074

PRCA, permethrin, and TEBA were detected in the receiving waters, at levels similar to the historical averages for the site downstream of TSM. IPBC was not found downstream of the site.

12.2.3 Results of surface water monitoring

Samples were collected from the receiving waters of the Mangaone Stream below the TSM site on one occasion. The results of this sampling were used to assess the impact of the discharge from the sawmill and any potential effects on the stream (Table 51). Residual levels of tributyltin are frequently detected in the stream below the discharge points, and are associated with historical contamination events. No new discharges of tributyltin have occurred from the TSM site since 2011.

Table 51 Surface water sampling results below TSM discharge, site MGO000145

Parameter	Unit	14 Jun 2021	Consent limits
Temperature	°C	15.4	25
pH	pH	7.0	6-9
Conductivity	mS/m	14.4	-
Suspended solids	g/m ³	25	100
Turbidity	FNU	18.6	-
CBOD	g O ₂ /m ³	1.1	2
Metals (total)			
Arsenic	g/m ³	< 0.0011	0.24
Boron	g/m ³	0.032	3.7
Chromium	g/m ³	0.00113	0.4
Copper	g/m ³	0.0033	-
Zinc	g/m ³	0.0193	-
Metals (dissolved)			
Copper	g/m ³	0.0019	0.088
Zinc	g/m ³	0.0104	0.64
Treatment chemicals			
Dibutyltin	g/m ³	< 0.00006	-
Tributyltin	g/m ³	< 0.00005	0.0046
Triphenyltin	g/m ³	< 0.00004	-

Tributyltin tin was not detected in the Mangaone Stream, and all consented parameters that apply to instream sites (pH, temperature, and CBOD) were within acceptable limits.

12.3 Investigations, interventions, and incidents

In the 2020-2021 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with TSM's conditions in resource consents or provisions in Regional Plans.

12.4 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Table 52.

Table 52 Summary of performance for TSM consent 3491-3

Purpose: To discharge stormwater from a timber treatment site into the Mangaone Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option	Inspection and discussion with consent holder	Yes
2. Exercise of consent in accordance with application information	Inspection and discussion with consent holder	Yes
3. Limits stormwater catchment area	Site inspections	Yes
4. Concentration limits upon potential contaminants in discharge	Chemical sampling	Yes
5. Maintenance of site access	Inspection and sampling	Yes
6. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling, and biomonitoring	Yes
7. Limit on pH and temperature effects and filtered carbonaceous biochemical oxygen demand (CBOD) beyond mix zone	Chemical sampling of the discharge and receiving water, and recording the temperatures at the time of sampling	Yes
8. Maintain and adhere to contingency plan	Reviewed plan received 2018	Yes
9. Maintain and adhere to management plan	Reviewed plan received 2018	Yes
10. Notification of changes at the site	Inspection and consultation with site operators	Yes
11. Provision for review re effects	Next option for review in June 2026	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

N/A = not applicable

During the period under review, Taranaki Sawmills Ltd demonstrated a high level of environmental performance and high level of administrative performance and compliance with its resource consent as defined in Section 1.1.4.

13 Technix Group Ltd

13.1 Site description

The engineering complex of Technix Group Ltd (Technix) is the largest industrial site along the lower Waiwhakaiho River (Figure 16). Situated on the true right bank of the river immediately above its confluence with the Mangaone Stream, the 8.4 ha area of land is bounded by Rifle Range Road, Vickers Road, State Highway 3, and the Mangaone Stream. The development comprises several building complexes, roading and drainage systems.

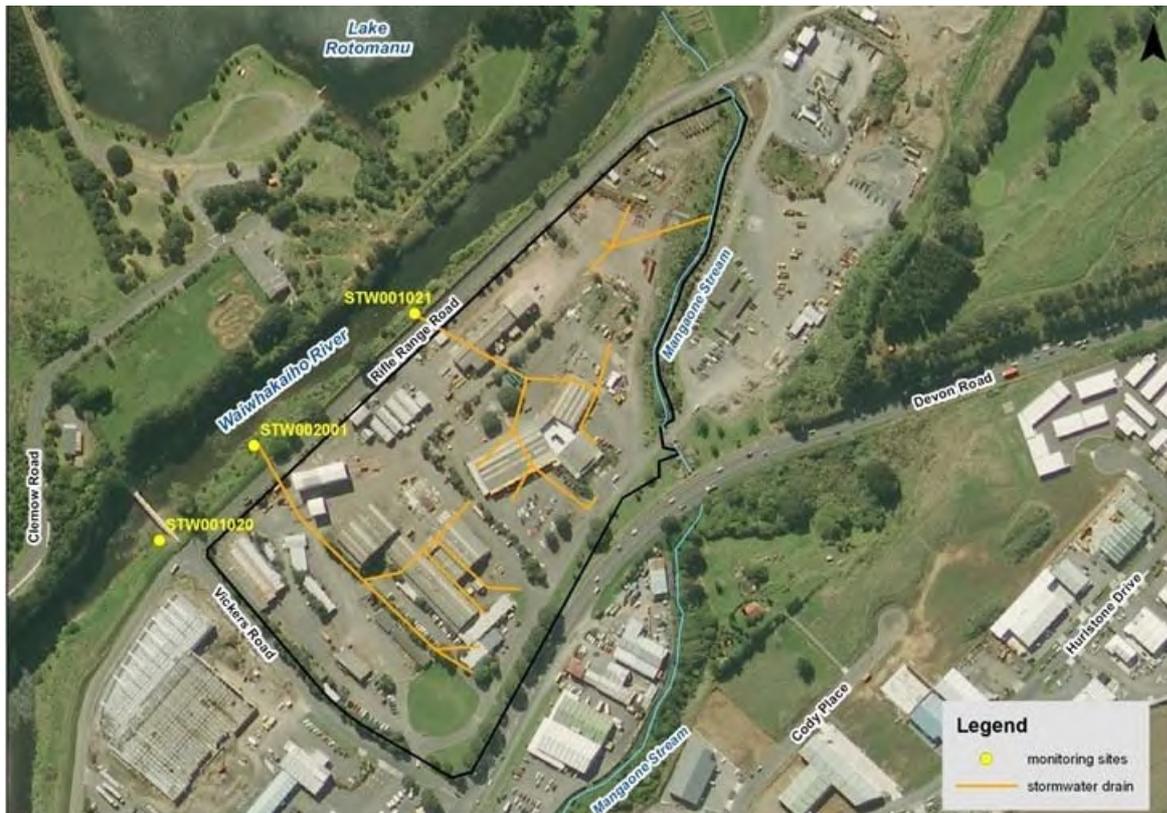


Figure 16 Aerial view of Technix site, drainage system, and sampling locations

Technix Group leases buildings on the site to several tenant companies carrying out a range of activities. Dialog Fitzroy own and operate a significant part of the yard in the centre of the Technix boundary (Figure 17).

The ground surface cover varies from bitumen seal to gravel to grass. There is a large sealed bitumen area in the northern part of the site that was once used as a truck stop.

Stormwater discharges from the site at four main points, three to the Waiwhakaiho River and one to the Mangaone Stream.

The original consented discharges were two discharges to the Waiwhakaiho River from the central areas of the site, and the one to the Mangaone Stream from the eastern area of the site. The other, previously unlicensed, discharge occurs from the western area of the site to the Waiwhakaiho River down Vickers Road, which also serves commercial properties on the opposite side of the road. This discharge point was included in NPDC's consent 5163-2 when it was renewed on 20 November 2007. Also during the 2007-2008 year, prior to the expiry of the consent held for the discharges to the Mangaone Stream (2230), the Council concluded that the activity in this area had become a permitted activity under Rule 23 of the RFWP (which

became operative in 2001) provided the conditions of Rule 23 continued to be adhered to by Technix. Council therefore did not require that this consent was renewed.



Figure 17 View of extent of Technix property (in yellow)

Activities at the site may result in contaminants being discharged to land during the day-to-day tasks. These contaminants may enter water when they become entrained in stormwater, along with contaminants that may be washed off equipment stored in the yard, and the stormwater is then discharged to the Waiwhakaiho River or Mangaone Stream.

The buildings and land-use in the areas owned by Technix include:

- Staff offices and facilities;
- Workshops (machining, plate and general);
- Dangerous goods storage;
- Liquid oxygen tanks;
- Blast and paint storage and
- Blasting and painting sheds (until February 2014).

Contaminants that may be present on the site include:

- Grease and oils (e.g. diesel, petrol, lubricants & hydraulic oils);
- Metals (ferrous and non-ferrous);
- Paint;
- General workshop contaminants (e.g. welding, cuttings and grinding).

The stormwater networks in the centre section of the site run around the perimeter of the buildings before running under the Dialog Fitzroy property and into the Waiwhakaiho River via a stormwater drain

(STW001021). There are multiple sumps along this system to collect any stormwater. The feed pipes have an internal diameter of 150 mm and the discharge pipe has an internal diameter of 225 mm.

This site also has a truck wash bay, which is no longer in use as per the requirements of current consent conditions.

The western area of the site collects stormwater in a series of pipes ranging between 100 mm and 200 mm in diameter. These pipes discharge onto either Vickers or Rifle Range Road and enter NPDC's stormwater network (which discharges into the Waiwhakaiho River).

The northern area of the site is primarily used as a storage yard, with any stormwater collected discharging via a 375 mm concrete stormwater pipe into the Mangaone Stream.

As Technix leases sections within the multiple areas of the site, the specific type of contaminants can change depending on which business leases the section. Technix continues to make all tenants aware of the stormwater resource consent, the conditions of the consent, and the spill contingency plan.

Technix hold consents **9981-1**, **9982-1** and **0291-3** to discharge stormwater from an industrial site into the Waiwhakaiho River and Mangaone Stream. All consents have the standard special conditions as set out in section 1.2. Consent 0291-3 also has a condition prohibiting discharges from the truck wash to the stormwater network.

Copies of each of the consents are attached in Appendix I.

13.2 Results

13.2.1 Inspections

Three routine inspections were conducted at the site during the monitoring period, on 24 September 2020, 10 February 2021, and 21 June 2021.

24 September 2020

An inspection was conducted in overcast weather with light rain and wind conditions. The yard was clean and tidy, and general housekeeping had improved noticeably compared to previous visits. There was no evidence of spills, however a small sheen was noted on the ground near the SteelFab workshop. The stormwater was discharging at the time, and samples were collected from two discharge points to the Waiwhakaiho River, and one to the Mangaone Stream. All samples were within consented limits. There were no issues with odour or dust at the time and all consent conditions were compliant.

10 February 2021

The site was inspected in overcast weather with calm wind conditions. The site was clean and tidy with no sign of spills or sheens. The stormwater system was in good condition with no evidence of unauthorised discharges. There were no offensive or objectionable odours or dust being emitted, and all consent conditions were being complied with at the time of inspection.

21 June 2021

An inspection was carried out in overcast weather with moderate wind conditions. Wet weather had prevailed in the previous days. The site was clean and tidy with no evidence of spills or hydrocarbon sheens. The stormwater system was in good operational condition and discharging a trickle flow to the NPDC network. There were no odour or dust emissions beyond the boundary. At the time of inspection, the site was compliant with resource consent conditions.

13.2.2 Results of discharge monitoring

There are three routine sampling points for monitoring of stormwater discharges from Technix's site. Two are in relation to the Waiwhakaiho River, and the third is in relation to the Mangaone Stream.

Samples were collected from each site on up to two occasions during the period under review.

13.2.2.1 Discharge to Waiwhakaiho River opposite Dialog Fitzroy

This discharge contains stormwater from both the Technix and Dialog Fitzroy sites. Up until 20 February 2014, this combined discharge was covered solely by consent 0291 held by Technix. The partial transfer of consent to Dialog Fitzroy resulted in the Dialog Fitzroy's stormwater being covered by their own consent, 9853 (section 4). The results of sampling are presented in Table 53.

Table 53 Combined Technix/Dialog Fitzroy stormwater sampling results, site STW002001

Parameter	Unit	24 Aug 2020	15 Jun 2021	Consent limits
Temperature	°C	15.3	15.4	-
pH	pH	7.6	7.2	6-9
Conductivity	mS/cm	7.4	4.7	-
Suspended Solids	g/m ³	90	19	100
Turbidity	FNU	102	21	-
Hydrocarbons				
C7-C9	g/m ³	< 0.10	< 0.10	-
C10-C14	g/m ³	< 0.2	< 0.2	-
C15-C36	g/m ³	< 0.4	< 0.4	-
Total HC	g/m ³	< 0.7	< 0.7	15*

*HC measured in place of oil & grease

13.2.2.2 Discharge to Waiwhakaiho River from Vickers Road

This discharge contains stormwater from the south-western end of the Technix site (consent 9881) that discharges via NPDC's stormwater reticulation running along Vickers Road (NPDC consent 5163). The discharge also contains stormwater from Vickers Road itself as reported in section 10. The results of sampling are presented in Table 54.

Table 54 Combined Technix/NPDC stormwater sampling results, site STW001020

Parameter	Unit	24 Aug 2020	14 Jun 2021	RFWP Guideline
Temperature	°C	15.3	15.8	-
pH	pH	7.4	7.2	6-9
Conductivity	mS/m	3.7	4	-
Suspended solids	g/m ³	25	18	100
Turbidity	NTU/FNU	14.8	15.7	-
Hydrocarbons				
C7 - C9	g/m ³	< 0.10	< 0.4	-
C10 - C14	g/m ³	< 0.2	< 1.0	-
C15 - C36	g/m ³	< 0.4	< 2	-
Total HC	g/m ³	< 0.7	< 4	15*

*HC measured in place of oil & grease

13.2.2.3 Discharge to Mangaone Stream from Technix

This discharge contains stormwater from the north eastern end of the Technix site (consent 9882) which is discharged to the Mangaone Stream. The results of sampling of this area are shown in Table 55.

Table 55 Technix stormwater discharge sampling results, site STW001154

Parameter	Unit	24 Aug 2020	Consent limits
Temperature	°C	15.5	-
pH	pH	6.9	6-9
Conductivity	mS/m	7.6	-
Suspended solids	g/m ³	< 3	100
Nutrients			
NH ₃	g/m ³	0.00004	-
NH ₄	g/m ³	0.013	-
DRP	g/m ³	0.015	-
Hydrocarbons			
C7 - C9	g/m ³	< 0.10	-
C10 - C14	g/m ³	< 0.2	-
C15 - C36	g/m ³	< 0.4	-
Total HC	g/m ³	< 0.7	15*

*HC measured in place of oil & grease

Levels of suspended solids, hydrocarbons, and pH at all sites were found to be compliant with consent conditions. There were no effects noted in either the Waiwhakaiho River or Mangaone Stream associated with any of the discharges for the period under review.

13.3 Investigations, interventions, and incidents

In the 2020-2021 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with Technix's conditions in resource consents or provisions in Regional Plans.

13.4 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Table 56, Table 57, and Table 58.

Table 56 Summary of performance for Technix consent 0291-3

Purpose: To discharge stormwater from an industrial site into the Waiwhakaiho River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Best practicable option to prevent or minimise effects	Inspections	Yes
2. Catchment area not to exceed 2.2 ha	Inspections	Yes
3. No discharge to stormwater from truck wash after 31 December 2015	Inspections and liaison with consent holder	Yes

Purpose: To discharge stormwater from an industrial site into the Waiwhakaiho River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
4. Concentration limits upon potential contaminants in discharge	Chemical sampling	Yes
5. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling and biomonitoring	Yes
6. Prepare and maintain Contingency Plan	Up to date as of April 2018	Yes
7. Preparation of Stormwater Management Plan	Up to date as of April 2018	Yes
8. Consent holder to notify Council of significant changes to processes or operations	Inspections and liaison with consent holder	Yes
9. Provision for review of consent	Next option for review in June 2026	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

N/A = not applicable

Table 57 Summary of performance for Technix consent 9981-1

Purpose: To discharge stormwater from an industrial site into the Waiwhakaiho River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Best practicable option to prevent or minimise adverse effects	Inspections	Yes
2. Catchment area not to exceed 1.8 ha	Inspections	Yes
3. Concentration limits upon potential contaminants in discharge	Chemical sampling	Yes
4. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection, receiving water sampling and biomonitoring	Yes
5. Prepare and maintain Contingency Plan	Up to date as of April 2018	Yes
6. Preparation of Stormwater Management Plan	Up to date as of April 2018	Yes
7. Consent holder to notify Council of significant changes to processes or operations	Liaison with consent holder	Yes
8. Provision for review of consent	Next option for review in June 2026	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

N/A = not applicable

Table 58 Summary of performance for Technix consent 9982-1

Purpose: To discharge stormwater from an industrial site into the Mangaone Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Best practicable option to prevent or minimise adverse effects	Inspections	Yes
2. Catchment area not to exceed 1.3 ha	Inspections	Yes
3. Concentration limits upon potential contaminants in discharge	Sampling	Yes
4. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling and biomonitoring	Yes
5. Prepare and maintain Contingency Plan	Up to date as of April 2018	Yes
6. Preparation of Stormwater Management Plan	Up to date as of April 2018	Yes
7. Consent holder to notify Council of significant changes to processes or operations	Liaison with consent holder	Yes
8. Provision for review of consent	Next option for review in June 2026	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

N/A = not applicable

During the period under review, Technix Group Ltd demonstrated a high level of environmental performance and high level of administrative performance and compliance with their resource consents as defined in Section 1.1.4.

14 Waste Management NZ Ltd

14.1 Site description

Waste Management NZ Ltd (Waste Management) operate a refuse transfer depot on Katere Road, New Plymouth (Figure 18). Activities on the site include the receipt and temporary storage of general refuse (non-hazardous solid waste). The site does not use or store any hazardous substances. Refuse is deposited onto a transfer pad on site by truck or from smaller bins. Sorting takes place into recyclables-glass cardboard and plastic. Most refuse is loaded onto a truck and driven to a landfill near Marton.

The refuse storage area is usually cleared at the commencement of each day's activities, but on occasions there is excess refuse left within the storage area over night. This is the first refuse to be loaded the next morning. Empty used bins are stored on the wash pad which is connected to the New Plymouth District Council (NPDC) trade waste system. These bins are then washed with a water blaster and the runoff is directed to the trade waste system. Washed bins are then generally moved to the yard where they are stored until required in the future.



Figure 18 Aerial view of Waste Management site and sampling location

Waste Management holds consent **10430-1** to discharge stormwater from a waste depot into an unnamed tributary of the Mangaone Stream. This consent contains nine conditions, eight of which are the standard special conditions as set out in Section 1.2. Condition four sets out the discharge contaminant limits, including carbonaceous biochemical oxygen demand.

A copy of the permit is attached to this report in Appendix I.

14.2 Results

14.2.1 Inspections

Three routine inspections were conducted during the monitoring period, on 24 September 2020, 14 April 2021, and 21 June 2021.

24 September 2020

An inspection was conducted in overcast weather with light rain conditions. The site was relatively clean and tidy, with no evidence of spills or hydrocarbon sheens. The stormwater drains were clear of debris and free flowing. The vegetation along the boundary fence had been removed, allowing for better access to sampling points. There was little to no windblown rubbish outside the boundary and no odour or dust issues noted. At the time of inspection, all consent conditions were being complied with.

14 April 2021

The site was inspected in warm, overcast weather with moderate rainfall ongoing. The site was clean and tidy with no rubbish noted in the stormwater drains or around the site perimeter (Photo 10). The yard was in need of sweeping, which had already been scheduled and was awaiting contractors for completion. The stormwater management plan was in the process of being updated. There were no odour or dust issues, and the site was compliant with consent conditions.



Photo 10 View of Waste Management yard, April 2021

21 June 2021

A site inspection was carried out in overcast weather with moderate wind conditions. The site was in need of sweeping following the recent heavy rain and strong winds. Very little rubbish was noted on the boundary

and the stormwater system was operating as normal. There were no odour or dust issues to note, and at the time of inspection the site was compliant with resource consent conditions.

14.2.2 Results of discharge monitoring

Sampling of the Waste Management stormwater discharge was undertaken one occasion at site STW002098. Lack of access to the sampling site prevented a second sample being collected in June 2021. The results are given in Table 59.

Table 59 Waste Management stormwater sampling results, site STW002098

Parameter	Unit	24 Aug 2020	Consent limits
Temperature	°C	15.2	-
pH	pH	7.1	6-9
Conductivity	mS/m	6.4	-
Suspended solids	g/m ³	43	-
Turbidity	NTU	6.9	-
CBOD	g O ₂ /m ³	6	20*
TBOD	g O ₂ /m ³	4	-
Nutrients			
NH ₃	g/m ³	0.00098	0.025
NH ₄	g/m ³	0.23	-
DRP	g/m ³	0.045	-
Hydrocarbons			
C7 - C9	g/m ³	< 0.10	-
C10 - C14	g/m ³	< 0.2	-
C15 - C36	g/m ³	< 0.4	-
Total HC	g/m ³	< 0.7	15*

*CBOD limit of 2 g/m³ applies in-stream. HC measured in place of oil & grease

The samples collected complied with the carbonaceous biochemical oxygen demand limit, oil and grease limit, and pH limits set by the consent, and were within historical ranges for the site.

14.3 Investigations, interventions, and incidents

In the 2020-2021 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with Waste Management's conditions in resource consents or provisions in Regional Plans.

14.4 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Table 60.

Table 60 Summary of performance for Waste Management consent 10430-1

Purpose: To discharge stormwater from a waste depot into an unnamed tributary of the Mangaone Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practicable option to avoid, remedy or mitigate effects	Inspection and consultation with site operators	Yes
2. Leachate to be diverted from stormwater by certain date	Inspection and consultation with site operators	Yes
3. Limit on catchment size	Inspection and consultation with site operators	Yes
4. Limits on chemical composition of discharge	Observation during inspection and discharge sampling	Yes
5. Limit on effects in receiving water	Observation during inspection and sampling	Yes
6. Maintain contingency plan	Document received	Yes
7. Operate site in accordance with Management Plan	Document received	Yes
8. Notification of changes at the site	Inspection and consultation with site operators	Yes
9. Review conditions	Next option for review in June 2023	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

N/A = not applicable

During the period under review, Technix Group Ltd demonstrated a high level of environmental performance and high level of administrative performance and compliance with its resource consent as defined in Section 1.1.4.

15 Surface water quality

15.1 Chemical sampling surveys

The results of chemical analysis of the receiving water for the period under review given in the subsections below. Refer to Section 1.3.4 for the sampling strategy. Monitoring locations are shown in Figure 1.

15.1.1 Waiwhakaiho River wet weather survey

The lower Waiwhakaiho River was sampled at four points under wet weather discharge monitoring conditions in June 2021:

Merrilands Domain (site code WKH000800): At the riffle just upstream of the swimming area in the Waiwhakaiho River at the Merrilands Domain, about 5.4 km from the coast. This is the upstream, or control site with respect to NPDC's Burton Street stormwater discharge.

Constance Street (site code WKH000920): At the first bend below Devon Road bridge, about 2.6 km from the river mouth. This is the upstream, or control site, with respect to monitoring discharges to the lower Waiwhakaiho River from New Plymouth industrial area including the groundwater discharge from the Bewley Road landfill.

Opposite Firth's (site code WKH000925): On the eastern side, upstream of the site of the old concrete ford opposite Firth Industries, about 540 m below Constance Street and 280 m below the confluence with McLeod's Drain. This was effectively the lower mixing zone boundary for the discharge from McLeod's Drain (consent 3138), which serves the largest catchment in the Fitzroy area, including the fertiliser depot (consent 3140) and rail yard (consent 1735). The ford was removed in April 1997 as part of flood protection works.

Above Mangaone (site code WKH000942): Immediately above the confluence with the Mangaone Stream and any tidal saline influence, beside the eastern bank opposite Lake Rotomanu, about 1,300 m from the river mouth. This is the downstream monitoring site for discharges from Firth (consent 0392), Dialog Fitzroy (consent 0021 and 9853), and the Technix operations along Rifle Range Road (consents 0291, 9981).

With the exception of very minor increases in the concentration of suspended solids and turbidity, there was no discernible trend of increasing contaminant concentrations between the up and downstream receiving waters (Table 61).

Table 61 Results of wet weather monitoring of lower Waiwhakaiho River, 15 June 2021

		WKH000800	WKH000920	WKH000925	WKH000942
Parameter	Unit	1140	0955	1010	1055
Temperature	°C	13.4	15.3	13.2	13.2
pH	pH	7.3	7.3	7.3	7.4
Conductivity	mS/m	7.5	7.9	7.9	7.8
Suspended solids	g/m ³	27	8	12	15
Turbidity	FNU	14.4	3.7	4.5	7.5
Fluoride	g/m ³		< 0.05	< 0.05	< 0.05
Nutrients					
NH ₃	g/m ³	0.00052	0.00033	0.00035	0.00035
NH ₄	g/m ³	0.098	0.055	0.068	0.065
NNN	g/m ³	-	0.54	-	0.5
DRP	g/m ³	0.043	0.022	0.022	0.022

		WKH000800	WKH000920	WKH000925	WKH000942
Parameter	Unit	1140	0955	1010	1055
Hydrocarbons					
C7 - C9	g/m ³	-	< 0.10	-	-
C10 - C14	g/m ³	-	< 0.2	-	-
C15 - C36	g/m ³	-	< 0.4	-	-
Total HC	g/m ³	-	< 0.7	-	-

The highest concentrations of ammoniacal nitrogen (NH₄) and unionised ammonia (NH₃) were well below the ANZECC trigger guideline of 0.9 g/m³ and the RFWP guideline of 0.025 g/m³. Instream levels of dissolved reactive phosphorus (DRP) downstream of the industrial area were found to be below the 0.03-0.15 g/m³ range that may support algal growths. Of note is the upstream site, WKH000800, which was within the DRP concentration range that supported algal growth. This result is likely attributed to agricultural activities higher in the catchment.

15.1.2 Mangaone Stream wet weather survey

The Mangaone Stream was sampled at five points under wet weather discharge monitoring conditions in June 2021:

Egmont Road (site code MGO000050): the uppermost site at Egmont Road Bridge.

Downstream of NPDC mid Katere Road (site code MGO000075): a site established in 2007 approximately 10 m downstream of the NPDC mid Katere Road stormwater discharge. This site also acts as an upstream "control site" for TSM's timber treatment site.

Above old Ravensdown (site code MGO000148): a site established in 1996 immediately above the main stormwater drain of the Devon 662 depot (and also above the confluence of the Mangamiro Stream). This site was primarily established to enable differentiation of the influence of major tributaries below Egmont Road, particularly the Puremu and Manganaha Streams which flow through Colson Road landfill, from that of discharges from the Devon 662 (old Ravensdown) site.

Katere Road bridge (site code MGO000153): below the discharge from Devon 662 site, and at the end of the mixing zone specified in the company's consent 3865.

Rifle Range Road (site code MGO000190): the bottom site at the Rifle Range Road Bridge, immediately above the Waiwhakaiho confluence and about 50 m below the discharge point of Downer's site.

During this monitoring period, weather constraints prevented a full sampling run from being completed in one day, with sampling undertaken on 14 and 15 June 2021.

Table 62 Results of wet weather monitoring of Mangaone Stream, 14-15 June 2021

		MGO000050	MGO000075	MGO000148	MGO000153	MGO000190
Parameter	Unit	1000	1040	1300	1400	1050
Temperature	°C	14.5	14.6	14.8	14.8	14.6
pH	pH	7.0	6.9	7.1	7.1	7.2
Conductivity	mS/m	16	15	12.5	13.8	15.8
Suspended solids	g/m ³	12	21	25	37	16
Turbidity	FNU	8.5	15.8	19.9	34	15.1
CBOD (dissolved)	g/m ³	-	1.2	1.1	-	-
Metals (dissolved)						

		MGO000050	MGO000075	MGO000148	MGO000153	MGO000190
Parameter	Unit	1000	1040	1300	1400	1050
Copper	g/m ³	0.0013	0.0021	0.0024	-	0.0016
Zinc	g/m ³	0.0023	0.0089	0.026	-	0.0152
Nutrients						
NH ₃	g/m ³	-	0.0002	-	0.00049	-
NH ₄	g/m ³	-	0.083	-	0.156	-
NNN	g/m ³	-	-	0.7	-	-
DRP	g/m ³	-	0.007	0.015	0.017	-

DRP was very slightly elevated downstream of the Devon 662 site (MGO000153), however this increase was less than recorded in previous years. DRP concentrations appear to be reducing at this site as a result of the demolition and remediation works that are ongoing.

CBOD concentrations (where measured) during the monitoring year were also found to be low and within RFWP guideline limits.

Tributyltin was not detected in the water column downstream of the TSM discharge during the monitoring period. Three of the replacement treatment chemicals now in use, TEBA, PRCA, and permethrin were found to be present in the stream (section 12.2.3).

Metal and metalloid concentrations are monitored in the Mangaone Stream to determine what, if any, effects may be occurring due to the discharges from TSM and other industrial discharges. Sources of these contaminants include (to varying extents), the industrial sites and other non-point sources such as run-off from roads.

Low level analyses for zinc and copper were also performed on samples taken at the Egmont Road site (MGO000050) to monitor the effects of stormwater discharged upstream of the industries monitored under this programme, from McKechnie Aluminium Solutions Ltd as part of their compliance monitoring programme. It is noted that historically, copper and brass were also processed at this site.

15.2 Freshwater biomonitoring

15.2.1 Macroinvertebrate surveys

The Council collected streambed macroinvertebrates at five sites in the Mangaone Stream and three sites in the Waiwhakaiho River on 18 January 2021 and 25 March 2021, in order to assess whether discharges from the Lower Waiwhakaiho Industrial area had had any adverse effects on the macroinvertebrate communities of these streams (Figure 19). Macroinvertebrates were identified and the number of different types of taxa counted (taxa richness), and MCI and SQMCI scores were calculated for each site.

The MCI is a measure of the overall sensitivity of the macroinvertebrate community to the effects of nutrient pollution in streams. It is based on the presence/absence of taxa with varying degrees of sensitivity to pollution. The SQMCI takes into account taxa abundance as well as sensitivity to pollution, and may reveal more subtle changes in communities. Significant differences in either the MCI or the SQMCI between sites indicate the degree of adverse effects (if any) of the discharges being monitored and enable the overall health of the macroinvertebrate communities to be determined.

The reports both concluded that the results from the surveys indicate that the discharges from the Fitzroy industrial areas were not having a significant effect on the macroinvertebrate communities in the Waiwhakaiho River. However, the taxa richness and MCI scores indicate that a pollution event had likely occurred upstream of the industrial area prior to the surveys. The Mangaone Stream sites showed a highly

significant decline in MCI and taxa richness in the middle reaches, which may be due in part to chronic pollution from historic sites but also indicates that a more recent discharge lowering water quality has also occurred.

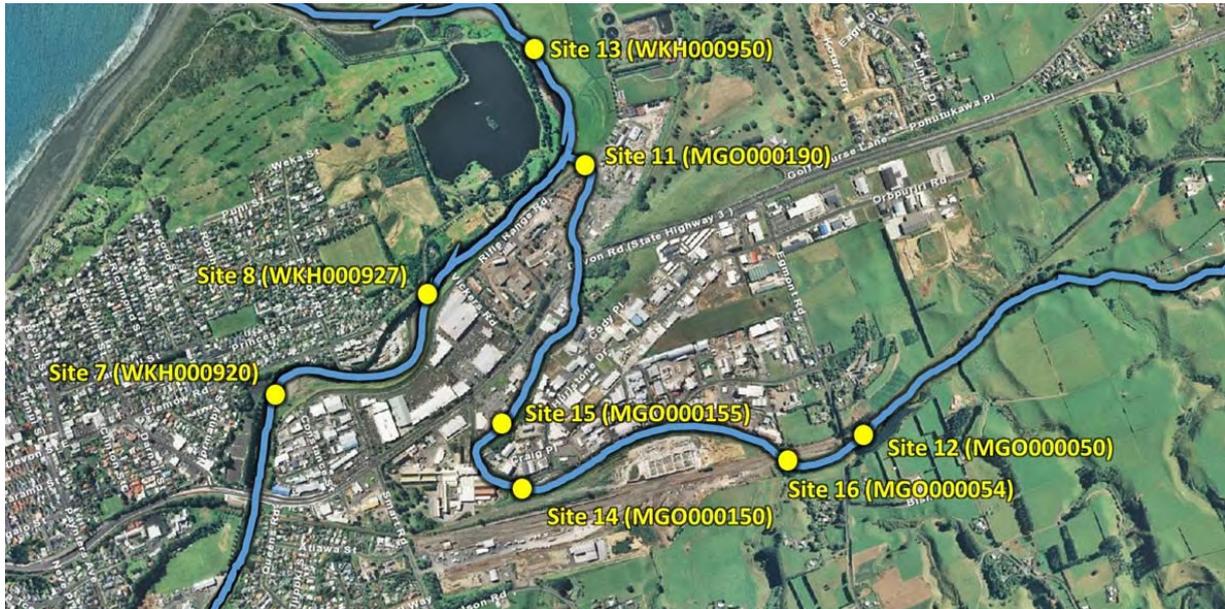


Figure 19 Biomonitoring sites in the Lower Waiwhakaiho Catchment

15.2.1.1 Macroinvertebrate survey of 18 January 2021

The control site (7) in the Waiwhakaiho River had the highest macroinvertebrate richness and, along with site 13, the highest MCI score. Site 8 showed a decrease of 8 taxa and 16 MCI units compared to the control. This indicates a discharge or pollution event may have caused a decline in macroinvertebrate health at site 8. Taxa richness is the most robust index when ascertaining whether a macroinvertebrate community has been exposed to toxic discharges. Macroinvertebrates when exposed to toxic chemicals may die or deliberately drift downstream thus potentially lowering taxa richness at a site. Because site 13 has similar scores to the control site, it appears that any potential effects causing a decline at site 8 are localized to that area. The effects may lessen downstream due to dilution and mixing further down the river.

Taxa richness among the five Mangaone Stream generally declined in a downstream direction. The upper site had moderate taxa richness with a steady decline in richness downstream to low richness at site 15. Site 11 recorded moderately low taxa richness. Like the preceding survey, the low taxa richness, while not extremely low, suggested that the lower Mangaone Stream communities had potentially been subjected to mild pollution or potentially were recovering from more severe pollution.

The MCI scores for the Mangaone Stream sites indicated that site 12, 16, and 11 were in 'fair' health, while sites 14 and 15 were in 'poor' health. The control site, site 11, and site 16 had similar MCI scores while site 14 showed a noticeable decline and site 15 showed a significant decline compared to the control. However, all sites either matched or exceeded their respective historic median MCI scores. This indicates that there had been a significant impact in the mid-reaches of the Mangaone, although this may have been caused in part by pollution from historic events. Alternatively this may result from ongoing pollution, which may be from the same source as indicated in previous surveys.

SQMCI takes into account macroinvertebrate abundances and can be more sensitive than the MCI. The SQMCI scores for the Waiwhakaiho River sites indicated communities were in 'very poor' health at all sites. This is a significant decline compared to the previous survey and is an indication that there may be upstream discharges or pollution events causing the decline.

The SQMCI scores for the Mangaone Stream sites were congruent with the MCI results, however there were no significant declines when comparing impact sites to the control site. There was however a significant drop in SQMCI between site 16 and site 15 of 0.9 units. This indicates a potential continuous or repetitive incident of pollution in the mid reach of the Mangaone stream.

Overall, the results indicated that discharges from industrial areas may have caused localized negative effect on the macroinvertebrate communities in the Mangaone Stream (site 15) and lower Waiwhakaiho River (site 8). The Mangaone Stream had a significant decline in macroinvertebrate indices at site 15 and a noticeable decline at site 14 compared to the upstream control site. Site 8 in the Waiwhakaiho also showed a significant decrease in MCI compared with the control site. Because all sites across the survey had macroinvertebrate health metrics that were similar or higher than respective historical median values, it is likely that continuous and chronic discharges are contributing to the pattern of decline observed in this report and previous reports at the impacted sites.

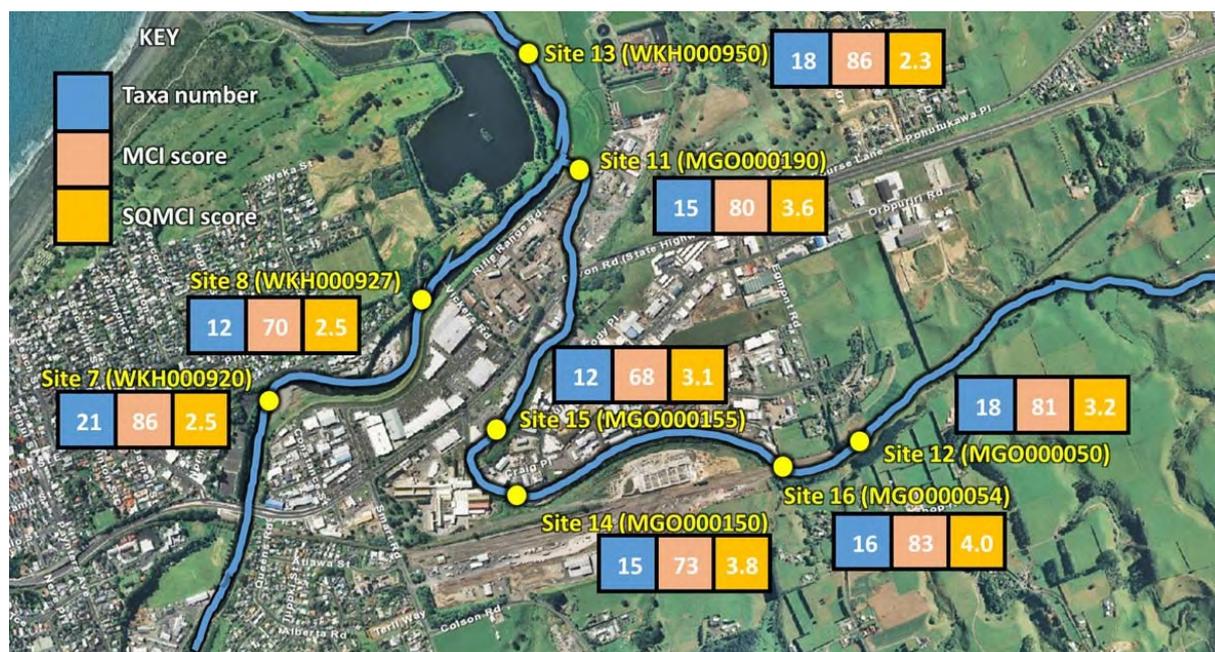


Figure 20 Biomonitoring sites in the Waiwhakaiho River Catchment with taxa number, MCI scores and SQMCI scores for each site, 18 January 2021

15.2.1.2 Macroinvertebrate survey of 25 March 2021

Taxa richness at sites 7, 8 and 13 in the Waiwhakaiho River ranged between 13 and 17 taxa, increasing in a downstream direction. These numbers were slightly lower than long term medians at all three sites. MCI scores at sites 7 and 8 in the Waiwhakaiho River indicated 'fair' macroinvertebrate community health, while the MCI score recorded at site 13 was reflective of 'poor' health. MCI scores decreased in a downstream direction by 5 MCI units between sites 7 and 13, which was insignificant. SQMCI scores were similar between sites, ranging between 3.2 and 3.6 units. Overall, these results indicated that discharges from the industrial area were not having a significant negative effect on the macroinvertebrate communities of the lower Waiwhakaiho River.

Taxa richness was low to moderate in the Mangaone Stream. 'Control' site 12 recorded 16 taxa which was similar to the median for the site. Taxa richness then decreased in a downstream direction, with sites 16, 14 and 15 recording 10, six and five taxa respectively. The furthestmost downstream site 11 recorded 10 taxa. Taxa richness was lower than historic medians at all sites, substantially at sites 16, 14 and 15. Taxa richness was also lower than that recorded previously at all four sites. Site 14 recorded a taxa richness equal to the lowest recorded for the site to date, and site 15 recorded the lowest ever taxa richness for the site to date.

MCI scores in the Mangaone Stream were reflective of 'very poor' to 'poor' macroinvertebrate community health. 'Control' site 12 and nearby downstream site 16 recorded the highest MCI scores of 74 and 78 units respectively. The MCI then decreased significantly by 15 units between sites 16 and 14. Site 15 recorded an MCI score reflective of 'very poor' health and was the lowest MCI score of the five Mangaone Stream sites surveyed. There was evidence of nutrient enrichment occurring in the lower Mangaone Stream which was most likely caused by inputs from various sites in the middle reaches. It is possible that nutrient contamination in the groundwater surrounding the old Ravensdown site has also contributed to the lowering of MCI score at site 15. A significant increase in MCI score was recorded between sites 15 and 11 of 12 MCI units. However, the macroinvertebrate community was relatively depauperate at site 11, with all but two taxa recorded as 'rare'.

SQMCI scores ranged between 3.2 and 4.3 units and decreased in a downstream direction. The 'control' site 12 recorded a 'fair' SQMCI score of 4.3 units, while the downstream sites all recorded SQMCI scores reflective of 'poor' macroinvertebrate community health. However, only site 11 recorded an SQMCI score significantly lower than that recorded at 'control' site 12 (by 1.1 units), while the remaining scores were not significantly different from one another.

Overall, the results indicated that discharges from the industrial area were not having a significant negative effect on the macroinvertebrate communities of the lower Waiwhakaiho River. The Mangaone Stream sites indicated a highly significant decline in MCI and taxa richness in the middle reaches, which may be due in part to chronic pollution from historic sites but also indicates that a more recent discharge lowering water quality has also occurred. Groundwater inputs may have also contributed to some of the deterioration recorded immediately downstream of the old fertiliser depot in the lower reaches of the stream.

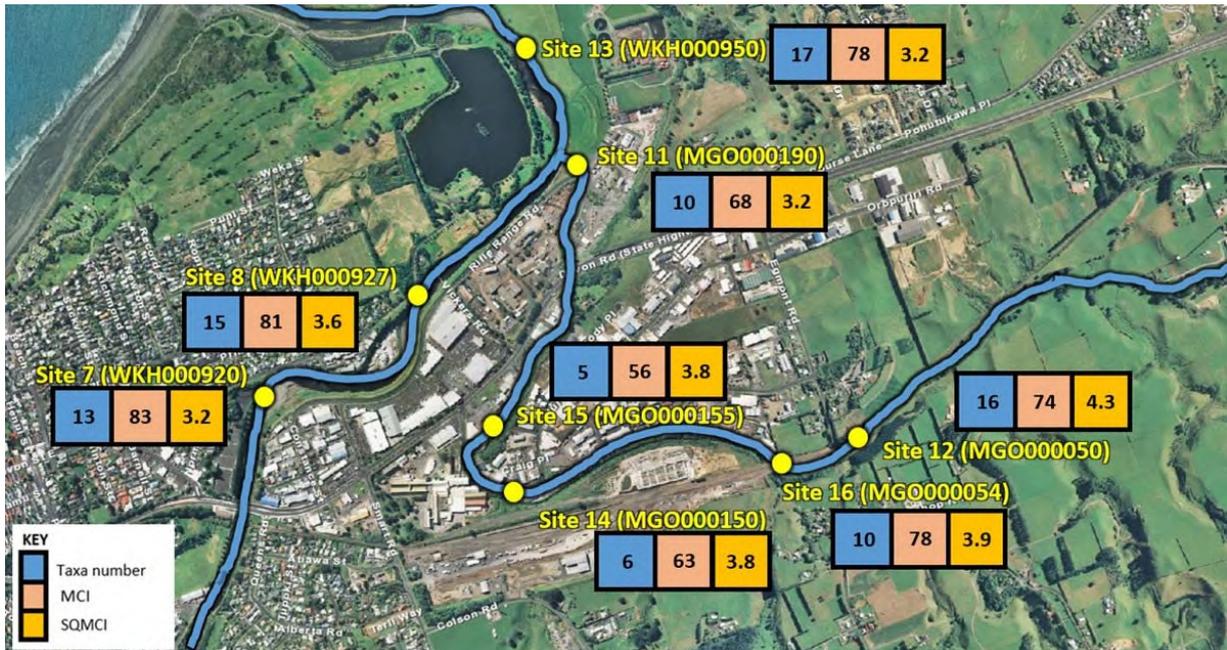


Figure 21 Biomonitoring sites in the Waiwhakaiho River Catchment with taxa number, MCI scores and SQMCI scores for each site, 25 March 2021

Copies of biomonitoring reports for this site are available from the Council upon request.

16 Discussion

16.1 Discussion of site performance

A total of 61 site visits were made to consent holders in the Lower Waiwhakaiho Catchment during the monitoring year under review:

- 57 routine compliance monitoring inspections
- One inspection to follow up on enforcement action
- Three visits to provide advice and information

Three of the routine site inspections (5%) resulted in non-compliances and further enforcement action.

In general, sites were found to be relatively clean and well-maintained. General housekeeping, site sweeping, windblown refuse, drain cleaning and sediment controls were the most frequently mentioned areas requiring attention as noted by Inspecting Officers. Staff onsite were generally compliant and carried out required works in appropriate timeframes. Spills, sheens, and leaks noted onsite were dealt with at the time of each visit, and multiple consent holders undertook significant upgrades and/or repairs to equipment and plant on each site as required. These works included installation of new sediment treatment systems, resurfacing and yard sealing, and regular updating of site stormwater management and spill contingency plans.

With one exception, the site performance for each of the consent holders during the year was of an acceptable standard, and is reflected in the low volume of public complaints and incidents recorded for this catchment (a total of two complaints received over the 12-month monitoring period).

16.2 Environmental effects of exercise of consents

Council water quality surveys of both the Mangaone Stream and the lower Waiwhakaiho River showed that the concentrations of contaminants were generally relatively stable throughout the length of the catchment. The primary contaminants of concern were metals and metalloids, nutrients (nitrogen and phosphorus), sulphates, suspended sediment, and both chemical and biological oxygen demand. Of these, the nutrient values showed slight increases between upstream and downstream sites, and the source of these has been well identified in previous monitoring reports.

Metals and metalloid concentrations fluctuated throughout the catchment, and in-stream values were closely related to proximity to the source (site stormwater discharges). All results for the period under review were within ANZECC and Regional Fresh Water Plan (RFP) guidelines.

Suspended solids, commonly sourced from yard dust and vehicle tracking, were the most frequently found contaminant of concern in site stormwater discharges. Samples collected from surface water sites, however, did not show any significant visual or chemical effects related to these discharges, indicating they were not having any measureable impact on the waterways.

All other contaminants in both surface and groundwater were, on average, within consented limits and New Zealand Drinking Water Standards guidelines. There was one exception of sulphate concentration in a groundwater bore immediately down gradient of the Devon 662 site, however this result was within the expected range for this contaminant at this site.

16.3 Evaluation of performance

Tabular summaries of each consent holders' compliance record for the period under review are set out in their individual sections of this report.

17 Recommendations

17.1 Recommendations from the 2019-2020 Annual Report

In the 2019-2020 Annual Report, it was recommended:

1. THAT in monitoring of consented activities at AML Limited in the 2020-2021 year continue at the same level as in 2019-2020.
2. THAT for 2020-2021, the programme for Devon 662 Limited Partnership remains similar to that programmed for the 2019-2020 period.
3. THAT monitoring of discharges from Dialog Fitzroy Ltd in the 2020-2021 year continue at the same level as in 2019-2020.
4. THAT monitoring of consented activities at Downer EDI Works Ltd in the 2020-2021 year remain similar to that in 2019-2020.
5. THAT monitoring of consented activities at Envirowaste Services Ltd in the 2020-2021 year remain similar to that in 2019-2020.
6. THAT monitoring of discharges from Firth Industries Ltd in the 2020-2021 year remain similar to that programmed in 2019-2020.
7. THAT monitoring of discharges from Freight and Bulk Transport Holdings Ltd in the 2020-2021 year remain similar to that programmed in 2019-2020.
8. THAT the programme for monitoring Nankervis Family Trust be dis-established.
9. THAT monitoring of discharges covered by consents held by New Plymouth District Council in the 2020-2021 period continues at similar a level to that undertaken in the 2019-2020 period.
10. THAT monitoring of discharges from New Zealand Railways Corporation Ltd and KiwiRail Holding Ltd in the 2020-2021 period remain similar to that programmed in the 2019-2020 period.
11. THAT monitoring of discharges from Ravensdown Fertiliser Co-operative Ltd in the 2020-2021 period continue at a similar level as that undertaken in the 2019-2020 period.
12. THAT monitoring programme for discharges from Taranaki Sawmills Ltd in the 2020-2021 period continue at a similar level as that undertaken in the 2019-2020 period.
13. THAT monitoring of discharges from Technix Group Ltd in the 2020-2021 period continue at a similar level as that undertaken in the 2019-2020 period.
14. THAT monitoring of discharges from Waste Management NZ Ltd's site during 2020-2021 remains similar to that programmed for the 2019-2020 period.
15. THAT should there be issues with environmental or administrative performance with any of the consent holders in 2020-2021, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.

These recommendations were subsequently implemented.

17.2 Alterations to monitoring programmes for 2021-2022

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

- the extent of information already made available through monitoring or other means to date;
- its relevance under the RMA;
- the Council's obligations to monitor consented activities and their effects under the RMA;
- the record of administrative and environmental performances of the consent holder; and

- reporting to the regional community.

The Council also takes into account the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki exercising resource consents.

It is proposed that the monitoring programmed for all consented discharges in the lower Waiwhakaiho catchment in the 2021-2022 year continues at a similar level to that programmed for 2020-2021. It is also proposed that of monitoring of discharges from Nankervis Family Trust site be discontinued as the resource consent has been surrendered.

It should be noted that the proposed programme represents a reasonable and risk-based level of monitoring for the sites in question. The Council reserves the right to subsequently adjust the programme from that initially prepared, should the need arise if potential or actual non-compliance is determined at any time during 2021-2022.

17.3 Recommendations

1. THAT in monitoring of consented activities at AML Limited in the 2021-2022 year continue at the same level as in 2020-2021.
2. THAT for 2021-2022, the programme for Devon 662 Limited Partnership remains similar to that programmed for the 2020-2021 period.
3. THAT monitoring of discharges from Dialog Fitzroy Ltd in the 2021-2022 year continue at the same level as in 2020-2021.
4. THAT monitoring of consented activities at Downer EDI Works Ltd in the 2021-2022 year remain similar to that in 2020-2021.
5. THAT monitoring of consented activities at Envirowaste Services Ltd in the 2021-2022 year remain similar to that in 2020-2021.
6. THAT monitoring of discharges from Firth Industries Ltd in the 2021-2022 year remain similar to that programmed in 2020-2021.
7. THAT monitoring of discharges from Freight and Bulk Transport Holdings Ltd in the 2021-2022 year remain similar to that programmed in 2020-2021.
8. THAT monitoring of discharges covered by consents held by New Plymouth District Council in the 2021-2022 period continues at similar a level to that undertaken in the 2020-2021 period.
9. THAT monitoring of discharges from KiwiRail Holding Ltd and New Zealand Railways Corporation Ltd in the 2021-2022 period remain similar to that programmed in the 2020-2021 period.
10. THAT monitoring of discharges from Ravensdown Fertiliser Co-operative Ltd in the 2021-2022 period continue at a similar level as that undertaken in the 2020-2021 period.
11. THAT monitoring programme for discharges from Taranaki Sawmills Ltd in the 2021-2022 period continue at a similar level as that undertaken in the 2020-2021 period.
12. THAT monitoring of discharges from Technix Group Ltd in the 2021-2022 period continue at a similar level as that undertaken in the 2020-2021 period.
13. THAT monitoring of discharges from Waste Management NZ Ltd's site during 2021-2022 remains similar to that programmed for the 2020-2021 period.
14. THAT should there be issues with environmental or administrative performance with any of the consent holders in 2021-2022, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.

Glossary of common terms and abbreviations

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

ANZECC	Australia New Zealand Environment and Conservation Council
As*	Arsenic.
Biomonitoring	Assessing the health of the environment using aquatic organisms.
BOD	Biochemical oxygen demand. A measure of the presence of degradable organic matter, taking into account the biological conversion of ammonia to nitrate.
BODF	Biochemical oxygen demand of a filtered sample.
Bund	A wall around a tank to contain its contents in the case of a leak.
CBOD	Carbonaceous biochemical oxygen demand. A measure of the presence of degradable organic matter, excluding the biological conversion of ammonia to nitrate.
COD	Chemical oxygen demand. A measure of the oxygen required to oxidise all matter in a sample by chemical reaction.
Conductivity	Conductivity, an indication of the level of dissolved salts in a sample, measured at 25°C and expressed in mS/cm.
Cu*	Copper.
DO	Dissolved oxygen.
DRP	Dissolved reactive phosphorus.
EEL	An environmental exposure limit (EEL) establishes the maximum concentration of an ecotoxic substance that is allowable in a particular environmental medium (for example, water, soil or sediment). This includes the deposition of a substance onto surfaces (for example via spray drift).
F	Fluoride.
FNU	Formazin nephelometric units, a measure of the turbidity of water
Fresh	Elevated flow in a stream, such as after heavy rainfall.
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.
HC	Hydrocarbon. Also expressed as the relevant solvent e.g. C7-C9, C10-C14, C15-C36
IBC	Intermediate bulk container, a square 1000L plastic tank, generally encased in a steel cage.
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.
Incident register	The incident register contains a list of events recorded by the Council on the basis that they may have the potential or actual environmental consequences that may represent a breach of a consent or provision in a Regional Plan.

IPBC	Iodopropynyl Butyl Carbamate– carbamate based fungicide used for treating timber.
LOSP	Light organic solvent preservative- a class of wood treatment compounds that include PRCA, TEBA and IPBC.
L/s	Litres per second.
m ²	Square Metres.
MCI	Macroinvertebrate community index; a numerical indication of the state of biological life in a stream that takes into account the sensitivity of the taxa present to organic pollution in stony habitats.
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.
mS/cm	Millisiemens per centimetre.
NH ₄	Ammonium, normally expressed in terms of the mass of nitrogen (N).
NH ₃	Unionised ammonia, normally expressed in terms of the mass of nitrogen (N).
NNN	Nitrate-nitrite nitrogen, normally expressed in terms of the mass of nitrogen (N).
NTU	Nephelometric Turbidity Unit, a measure of the turbidity of water.
O&G	Oil and grease, defined as anything that will dissolve into a particular organic solvent (e.g. hexane). May include both animal material (fats) and mineral matter (hydrocarbons).
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.
PRCA	Propiconazole- A triazole fungicide used to treat timber.
Resource consent	Refer Section 87 of the RMA. Resource consents include land use consents (refer Sections 9 and 13 of the RMA), coastal permits (Sections 12, 14 and 15), water permits (Section 14) and discharge permits (Section 15).
RMA	<i>Resource Management Act 1991</i> and including all subsequent amendments.
SS	Suspended solids.
SQMCI	Semi quantitative macroinvertebrate community index.
TEBA	Tebuconazole- A triazole fungicide used to treat timber.
Temp	Temperature, measured in °C (degrees Celsius).
Turb	Turbidity, expressed in NTU or FNU.
TP	Total Phosphorus.
Zn*	Zinc.

*an abbreviation for a metal or other analyte may be followed by the letters 'As', to denote the amount of metal recoverable in acidic conditions. This is taken as indicating the total amount of metal that might be solubilised under extreme environmental conditions. The abbreviation may alternatively be followed by the letter 'D', denoting the amount of the metal present in dissolved form rather than in particulate or solid form. For further information on analytical methods, contact a Science Services Manager.

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Appendix I

Resource consents held by Companies in the Lower Waiwhakaiho River and Mangaone Stream catchments

(in alphabetical order)

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

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. Permits authorising the abstraction of water are issued by the Council under Section 87(d) of the RMA.

Water discharge permits

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations. Permits authorising discharges to water are issued by the Council under Section 87(e) of the RMA.

Air discharge permits

Section 15(1)(c) of the RMA stipulates that no person may discharge any contaminant from any industrial or trade premises into air, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations. Permits authorising discharges to air are issued by the Council under Section 87(e) of the RMA.

Discharges of wastes to land

Sections 15(1)(b) and (d) of the RMA stipulate that no person may discharge any contaminant onto land if it may then enter water, or from any industrial or trade premises onto land under any circumstances, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations. Permits authorising the discharge of wastes to land are issued by the Council under Section 87(e) of the RMA.

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. Land use permits are issued by the Council under Section 87(a) of the RMA.

Coastal permits

Section 12(1)(b) of the RMA stipulates that no person may erect, reconstruct, place, alter, extend, remove, or demolish any structure that is fixed in, on, under, or over any foreshore or seabed, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations. Coastal permits are issued by the Council under Section 87(c) of the RMA.

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

Name of
Consent Holder: AML Limited [Trading as Allied Concrete]
 P O Box 3318
 NEW PLYMOUTH

Consent Granted 30 July 2008
Date:

Conditions of Consent

Consent Granted: To discharge stormwater and treated wastewater from
 truck washing at a concrete batching plant into the
 Mangaone Stream in the Waiwhakaiho catchment at or
 about (NZTM) 1696910E-5677375N

Expiry Date: 1 June 2026

Review Date(s): June 2014, June 2020 and/or within 3 months of receiving
 a notification under special condition 9

Site Location: 67 Hurlstone Drive, Bell Block

Legal Description: Lot 1 DP 17583 Blk II Paritutu SD

Catchment: Waiwhakaiho

Tributary: Mangaone

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 conditions within 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 maximum stormwater catchment area shall be no more than 5880 m².
3. Any above ground hazardous substances storage areas shall be bunded with drainage to the wastewater treatment system, and not directly to the stormwater catchment.
4. Concentrations of the following components shall not be exceeded in the discharge:

Component	Concentration
suspended solids	100 g/m ³
oil and grease	15 g/m ³

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

5. After allowing for reasonable mixing, within a mixing zone extending 50 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 Mangaone 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.

Consent 4539-2

6. After allowing for reasonable mixing, within a mixing zone extending 50 metres downstream of the discharge point, the discharge shall not, either by itself or in combination with other discharges, give rise to an increase in pH of greater than 0.5, or a pH outside the range of 6.0 to 8.0 within the receiving waters of the Mangaone Stream.
7. The consent holder shall maintain, and adhere to, a contingency plan detailing 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 spillage or discharge.
8. Within three months of the granting of this consent, the consent holder shall prepare and maintain an operation and management plan. This plan shall be adhered to at all times and shall, to the satisfaction of the Chief Executive, Taranaki Regional Council, document how the site is to be managed in order to minimise the contaminants that become entrained in the stormwater. The plan shall include but not necessarily be limited to:
 - a) the loading, unloading and storage of materials;
 - b) maintenance of conveyance systems;
 - c) general housekeeping; and
 - d) management of the wastewater treatment system.
9. The consent holder shall notify the Chief Executive, Taranaki Regional Council, prior to making any changes in the processes undertaken at the site, or the chemicals used or stored on site, which could alter the nature of the discharge. 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 worknotification@trc.govt.nz. Notification by fax or post is acceptable if the consent holder does not have access to email.
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:
 - a) during the month of June 2014 and/or June 2020; and/or
 - b) within 3 months of receiving a notification under special condition 9 above,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 July 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: Devon 662 Limited Partnership
PO Box 11057
Palm Beach
Papamoa 3151

Decision Date (Review): 6 August 2020

Commencement Date (Review): 6 August 2020 (Granted Date: 3 May 2017)

Conditions of Consent

Consent Granted: To discharge stormwater from a fertiliser storage depot onto and into land and into the Mangaone Stream and into the Waiwhakaiho River

Expiry Date: 1 June 2026

Review Date(s): June 2021, June 2022, June 2023, June 2024, June 2025 and in accordance with special condition 11

Site Location: Corner of Devon Road & Smart Road, Glen Avon

Grid Reference (NZTM) 1696554E-5676954N *discharge point 1 (Mangaone Stream)*
1696112E-5677289N *discharge point 2 (Waiwhakaiho River)*

Catchment: Waiwhakaiho

Tributary: Mangaone

*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 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 stormwater discharged shall be from a catchment area not exceeding 7.5 hectares located on land within the yellow boundary as indicated in Appendix 1 of this consent.
3. Constituents of the discharge shall meet the standards shown in the following table.

<u>Constituent</u>	<u>Standard</u>
pH	Within the range 6.0 to 9.0
suspended solids	Concentration not greater than 100 gm ⁻³
oil and grease	Concentration not greater than 15 gm ⁻³
dissolved reactive phosphorus	Concentration not greater than 30 gm ⁻³

This condition shall apply at sampling sites IND004002 (NZTM 1696241E-5677096N) and site STW002003 (NZTM1696554E-5676954N).

4. From 1 April 2021 the consent holder shall ensure that there is always clear and safe all-weather access to a point where the discharge can be sampled to check compliance with condition 3 above.
5. After allowing for reasonable mixing, within a mixing zone extending; 10 metres downstream of sampling site STW002003 and 200 metres downstream of site IND004002's final discharge point (at NZTM 1696277E-56773387N), each 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; and
 - f) an unionised ammonia concentration exceeding 0.025 g/m³.

Consent 3865-4.1

6. The consent holder shall maintain and regularly update a 'Contingency Plan' that details measures and procedures that will be undertaken to prevent, and to avoid environmental effects from, a spillage or any discharge of contaminants not authorised by this consent. The plan and any amended versions shall be provided to the Chief Executive of the Taranaki Regional Council.
7. 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 is to be managed to minimise the contaminants that become entrained in the stormwater and shall include as minimum:
 - a) the loading and unloading of materials;
 - b) general housekeeping; and
 - c) management of any stormwater treatment systems.

A Stormwater Management Plan template is available in the Environment section of the Taranaki Regional Council's web site www.trc.govt.nz.

8. The consent holder shall maintain groundwater bores listed in the table below in a manner that allows access and sampling.

TRC site code	Easting	Northing
GND1217	1696177	5677046
GND1218	1696238	5677091
GND2346	1696356	5677108
GND0517	1696412	5677149
GND0518	1696297	5676965

9. The consent holder shall maintain reasonable and safe foot access to the following stormwater sampling sites.

TRC site code	Easting	Northing
STW002003	1696554	1696554
IND004002	5676954	5676954

10. 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, the chemicals used or stored on site, or any development and/or remediation 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.

Consent 3865-4.1

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:
- a) annually during the month of June until 2025;
 - b) within 3 months of receiving a notification under special condition 10 above;

for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 6 August 2020

For and on behalf of
Taranaki Regional Council

A D McLay
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: Dialog Fitzroy Limited
Private Bag 2053
New Plymouth 4342

Decision Date: 12 March 2015

Commencement Date: 12 March 2015

Conditions of Consent

Consent Granted: To discharge stormwater from an industrial site into the
Waiwhakaiho River

Expiry Date: 1 June 2032

Review Date(s): June 2020, June 2026 and in accordance with special
condition 10

Site Location: 691 Devon Road, Bell Block

Legal Description: Lot 2 DP 470783 (Discharge source & site)

Grid Reference (NZTM) 1696451E-5677694N

Catchment: Waiwhakaiho

*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 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 stormwater discharged shall be from a catchment area not exceeding 3.3 ha.

Note: For the purpose of this condition the catchment area defined in this condition is a total for resource consent 0021-4.0 and 9853-2.0.

3. There shall be no discharge of contaminants from hydrotesting activities into the stormwater network.
4. The consent holder shall notify the Chief Executive, Taranaki Regional Council in writing at least 24 hours prior to undertaking any hydrotesting activities outside of the workshop. Notification shall include the location and date of the proposed discharge, and shall be emailed to worknotification@trc.govt.nz.
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 100 gm ⁻³
oil and grease	Concentration not greater than 15 gm ⁻³
chloride	Concentration not greater than 50 gm ⁻³

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

6. After allowing for reasonable mixing, within a mixing zone extending 50 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.
7. The consent holder shall maintain and regularly update a 'Contingency Plan' that details measures and procedures to be undertaken to prevent spillage or any discharge of contaminants not authorised by this consent. The plan shall be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity as being adequate to avoid, remedy or mitigate the environmental effects of such an event.

Consent 0021-4.0

8. The site shall be operated in accordance with a 'Stormwater 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 but not be limited to:
 - a) Identification of sources of contaminants,
 - b) Methods that will be practised to ensure contaminants entering stormwater is at a practical minimum,
 - c) Methods that will be practised to ensure contaminants from hydrotesting activities will be prevented from entering stormwater;
 - d) the loading and unloading of materials;
 - e) maintenance of conveyance systems;
 - f) general housekeeping; and
 - g) management of any interceptor system.
9. 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. 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.
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:
 - a) during the month of June 2020 and/or June 2026 and/or
 - b) within 3 months of receiving a notification under special condition 9 above;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.

Transferred at Stratford on 30 August 2019

For and on behalf of
Taranaki Regional Council

A D McLay
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: Dialog Fitzroy Limited
Private Bag 2053
New Plymouth 4342

Decision Date: 12 March 2015

Commencement Date: 12 March 2015

Conditions of Consent

Consent Granted: To discharge stormwater from an industrial site into the
Waiwhakaiho River

Expiry Date: 1 June 2032

Review Date(s): June 2020, June 2026 and in accordance with special
condition 10

Site Location: 691 Devon Road, Bell Block

Legal Description: Lot 2 DP 470783 (Discharge source & site)

Grid Reference (NZTM) 1696577E-5677800N

Catchment: Waiwhakaiho

*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 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 stormwater discharged shall be from a catchment area not exceeding 3.3 ha.

Note: For the purpose of this condition the catchment area defined in this condition is a total for resource consent 0021-4.0 and 9853-2.0.

3. There shall be no discharge of contaminants from hydrotesting activities into the stormwater network.
4. The consent holder shall notify the Chief Executive, Taranaki Regional Council in writing at least 24 hours prior to undertaking any hydrotesting activities outside of the workshop. Notification shall include the location and date of the proposed discharge, and shall be emailed to worknotification@trc.govt.nz.
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 100 gm ⁻³
oil and grease	Concentration not greater than 15 gm ⁻³
chloride	Concentration not greater than 50 gm ⁻³

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

6. After allowing for reasonable mixing, within a mixing zone extending 50 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.
7. The consent holder shall maintain and regularly update a 'Contingency Plan' that details measures and procedures to be undertaken to prevent spillage or any discharge of contaminants not authorised by this consent. The plan shall be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity as being adequate to avoid, remedy or mitigate the environmental effects of such an event.

Consent 9853-2.0

8. The site shall be operated in accordance with a 'Stormwater 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 but not be limited to:
 - a) Identification of sources of contaminants,
 - b) Methods that will be practised to ensure contaminants entering stormwater is at a practical minimum,
 - c) Methods that will be practised to ensure contaminants from hydrotesting activities will be prevented from entering stormwater;
 - d) the loading and unloading of materials;
 - e) maintenance of conveyance systems;
 - f) general housekeeping; and
 - g) management of any interceptor system.
9. 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. 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.
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:
 - a) during the month of June 2020 and/or June 2026 and/or
 - b) within 3 months of receiving a notification under special condition 9 above;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.

Transferred at Stratford on 30 August 2019

For and on behalf of
Taranaki Regional Council

A D McLay
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: Downer EDI Works Limited
PO Box 272
New Plymouth 4340

Decision Date: 20 May 2015

Commencement Date: 20 May 2015

Conditions of Consent

Consent Granted: To discharge treated stormwater and minor amounts of treated air scrubber waste water from an asphalt manufacturing plant onto land and into the Mangaone Stream

Expiry Date: 1 June 2032

Review Date(s): June 2020, June 2026 and in accordance with special condition 8

Site Location: Rifle Range Road, New Plymouth

Legal Description: Sec 4 SO 436795 (Discharge source & site)

Grid Reference (NZTM) 1696712E-5677949N

Catchment: Waiwhakaiho

Tributary: Mangaone

*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 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 stormwater discharged shall be from a catchment area not exceeding 6.5 Ha.
3. 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 100 gm ⁻³
total recoverable hydrocarbons	Concentration not greater than 15 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.

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. The consent holder shall maintain and regularly update a 'Contingency Plan' that details measures and procedures that will be undertaken to prevent, and to avoid environmental effects from, a spillage or any discharge of contaminants not authorised by this consent. The plan shall be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity.
6. 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 is to be managed to minimise the contaminants that become entrained in the stormwater and shall include as a minimum:
 - a) the loading and unloading of materials;
 - b) general housekeeping; and
 - c) management of the treatment systems.

Consent 3917-3.0

7. 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. 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.
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:
 - a) during the month of June 2020 and/or June 2026; and/or
 - b) within 3 months of receiving a notification under special condition 7 above;

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 20 May 2015

For and on behalf of
Taranaki Regional Council

A D McLay
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: Envirowaste Services Limited
Private Bag 92810
Penrose
Auckland 1642

Decision Date: 6 May 2015

Commencement Date: 6 May 2015

Conditions of Consent

Consent Granted: To discharge stormwater from an industrial site into the
Puremu Stream and an unnamed tributary of the Mangaone
Stream

Expiry Date: 1 June 2032

Review Date(s): June 2020, June 2026 and in accordance with special
condition 9

Site Location: 31 Colson Road, New Plymouth

Legal Description: Lot 1 DP 3582, Pt Sections 144 and 145 Hua District, Pt Lot 1 DP
2210, Pt Purakau A2 2B, Pt Lot DP 8654, Pt Sections 19 Blk VI
Paritutu SD (Discharge source & site)

Grid Reference (NZTM) 1696639E-5676673N (Discharge point 1)
1696993E-5676758N (Discharge point 2)

Catchment: Waiwhakaiho

Tributary: Puremu
Mangaone

*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 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 stormwater discharged shall be from an area not exceeding 4.93 ha and as shown in the attached plan.
3. 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 100 gm ⁻³
oil and grease	Concentration not greater than 15 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.

4. At the point at which the discharge enters the Mangaone Stream, 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. The consent holder shall maintain and regularly update a 'Contingency Plan' that details measures and procedures that will be undertaken to prevent, and to avoid environmental effects from, a spillage or any discharge of contaminants not authorised by this consent. The plan shall be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity.
6. 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 is to be managed to minimise the contaminants that become entrained in the stormwater and shall include as minimum:
 - a) the loading and unloading of materials;
 - b) general housekeeping; and
 - c) management of the stormwater system.

Consent 10109-1.0

7. 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. 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.
8. This consent shall lapse on 30 June 2020, 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:
 - a) during the month of June 2020 and/or June 2026 and/or
 - b) within 3 months of receiving a notification under special condition 7 above;

for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 6 May 2015

For and on behalf of
Taranaki Regional Council

A D McLay
Director - Resource Management



Figure 1 - Stormwater catchment area permitted by this consent (in yellow)

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

Name of
Consent Holder: Firth Industries Limited
PO Box 3122
New Plymouth 4341

Decision Date: 21 July 2015

Commencement Date: 21 July 2015

Conditions of Consent

Consent Granted: To discharge stormwater and treated wastewater into the
Waiwhakaiho River

Expiry Date: 1 June 2032

Review Date(s): June 2020, June 2026 and in accordance with special
condition 10

Site Location: Clemow Road, Fitzroy

Legal Description: Lot 1 DP 10146 Lot 2 DP 15134 & Sec 219 Hua Dist
(Discharge source & site)

Grid Reference (NZTM) 1696258E-5677519N

Catchment: Waiwhakaiho

*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 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 stormwater discharged shall be from an area not exceeding 1.618 Ha.
3. All stormwater shall be directed for treatment through the stormwater treatment system for discharge in accordance with the special conditions of this permit.
4. Constituents of the discharge shall meet the standards shown in the following table.

Constituent	Standard
suspended solids	Concentration not greater than 100 gm ⁻³
oil and grease	Concentration not greater than 15 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.

5. After allowing for reasonable mixing, within a mixing zone extending 50 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) many significant adverse effects on aquatic life;
 - f) a pH of less than 6.0 or greater than 9.0;
 - g) a increase of pH greater than 0.5.
6. The consent holder shall maintain and regularly update a 'Contingency Plan' that details measures and procedures that will be undertaken to prevent, and to avoid environmental effects from, a spillage or any discharge of contaminants not authorised by this consent. The plan shall be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity.

Consent 0392-4.0

7. By 21 October 2015 the consent holder shall prepare an updated 'Management Plan' to be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity. The plan shall detail how the site is to be managed to minimise the contaminants that become entrained in the stormwater and shall include as minimum:
 - a) the loading and unloading of materials;
 - b) general housekeeping;
 - c) design drawings and specifications for proposed upgrades to the wastewater treatment system and site improvements as set out in pre-design documents submitted in support of application 0392-4.0 by Firth Industries Limited on 3rd and 4th March 2015;
 - d) a schedule of time frames for the construction and commissioning of proposed wastewater treatment system and site improvements;
 - e) a schedule of inspections and maintenance of wastewater and stormwater treatment systems; and
 - f) any extra stilt controls and stormwater management to be undertaken during construction of the upgrades.
8. By 22 February 2016 the consent holder shall undertake site improvements and upgrades to the wastewater treatment system as set out in the management plan required by condition seven. After 22 February 2016 wastewater shall not be included in the stormwater discharge.
9. 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, site improvement construction, and or change in treatment systems. 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.
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:
 - a) during the month of June 2020 and/or June 2026;
 - b) within 3 months of receiving a notification under special condition 9 above;

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 21 July 2015

For and on behalf of
Taranaki Regional Council

A D McLay
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: Freight & Bulk Transport Limited
PO Box 472
New Plymouth 4340

Decision Date: 5 June 2015

Commencement Date: 5 June 2015

Conditions of Consent

Consent Granted: To discharge stormwater onto and into land and into the
Mangaone Stream

Expiry Date: 1 June 2032

Review Date(s): June 2020, June 2026 and in accordance with special
condition 9

Site Location: 69 Katere Road, New Plymouth

Legal Description: Lot 1 DP 13577 Lot 2 DP 17884 & Sec 184 Hua Dist Blk VI
& Paritutu SD & Lot 2 DP 9418 Pt Lot 1 DP 9418
(Discharge source & site)

Grid Reference (NZTM) 1697103E – 5677252N
1697061E – 5677209N
1697033E – 5677144N

Catchment: Waiwhakaiho

Tributary: Mangaone

*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 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 stormwater discharged shall be from an area not exceeding 1.77 Ha.
3. Constituents of the discharge shall meet the standards shown in the following table.

<u>Constituent</u>	<u>Standard</u>
pH	Within the range 6.0 to 9.0
suspended solids	Concentration not greater than 100 gm ⁻³
oil and grease	Concentration not greater than 15 gm ⁻³
carbonaceous biochemical oxygen demand	Concentration not greater than 15 gm ⁻³

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

4. After allowing for reasonable mixing, within a mixing zone extending 30 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 Mangaone 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; and
 - f) an unionised ammonia concentration of greater the 0.025 g/ m³-N.
5. The consent holder shall maintain and regularly update a 'Contingency Plan' that details measures and procedures that will be undertaken to prevent, and to avoid environmental effects from, a spillage or any discharge of contaminants not authorised by this consent. The plan shall be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity.

Consent 10008-1.0

6. The site shall be operated in accordance with an up to date '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 is to be managed to minimise the contaminants that become entrained in the stormwater and shall include as minimum:
 - a) the loading and unloading of materials;
 - b) general housekeeping;
 - c) management of the treatment systems; and
 - d) timeframes for any proposed improvements.

Note: A Stormwater Management Plan template is available in the Environment section of the Taranaki Regional Council's web site www.trc.govt.nz.

7. 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. 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.
8. This consent shall lapse on 30 June 2020 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:
 - a) during the month of June 2020 and/or June 2026
 - b) within 3 months of receiving a notification under special condition 7 above;

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 5 June 2015

For and on behalf of
Taranaki Regional Council

A D McLay
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: KiwiRail Holdings Limited
 PO Box 593
 Wellington 6140

Decision Date: 31 March 2017

Commencement Date: 31 March 2017

Conditions of Consent

Consent Granted: To discharge stormwater into the Waiwhakaiho River

Expiry Date: 1 June 2026

Review Date(s): June 2020 and in accordance with special condition 8

Site Location: Smart Road, New Plymouth

Grid Reference (NZTM) 1696090E-5677290N

Catchment: Waiwhakaiho

*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 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 stormwater discharged shall be from an area not exceeding 4.8 hectares.
3. Constituents in 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 100 gm ⁻³
Oil and grease	Concentration not greater than 15 gm ⁻³
Ammoniacal nitrogen	Concentration not greater than 3 gm ⁻³
Dissolved reactive phosphate	Concentration not greater than 1 gm ⁻³

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

4. That after allowing for reasonable mixing, within a mixing zone extending 100 metres downstream of the discharge point, the discharge shall not, either by itself or in combination with other discharges, give rise to any of the following effects in the receiving waters:
 - 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.
5. That the consent holder shall maintain a contingency plan, to the satisfaction of the Chief Executive, Taranaki Regional Council, outlining measures and procedures to be undertaken to prevent spillage or accidental discharge of contaminants, and the procedures to be carried out should such a spillage occur.

Consent 3528-3.0

6. The consent holder shall operate 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 is to be managed to minimise the contaminants that become entrained in the stormwater and shall include as minimum:
- a) the loading and unloading of materials;
 - b) maintenance of leased property;
 - c) general housekeeping; and
 - d) management of the interceptor system.

Note: A Stormwater Management Plan template is available in the Environment section of the Taranaki Regional Council's web site www.trc.govt.nz.

7. 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 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.
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:
- a) during the month of June 2020;
 - b) within 3 months of receiving a notification under special condition 7 above.

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 31 March 2017

For and on behalf of
Taranaki Regional Council

A D McLay
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 Zealand Railways Corporation
 P O Box 593
 WELLINGTON 6140

Consent Granted 31 July 2009
Date:

Conditions of Consent

Consent Granted: To discharge stormwater from the Smart Road Rail
 Terminal into an unnamed tributary of the Mangaone
 Stream, and into the Mangaone Stream in the
 Waiwhakaiho catchment at or about (NZTM)
 1696529E-5676921N

Expiry Date: 1 June 2026

Review Date(s): June 2014, June 2020

Site Location: Smart Road, New Plymouth

Legal Description: Pt Sec 144 & 145 Hua Dist, Pt Lot 1 DP 2210 & Pt Lot 2
 DP 8654

Catchment: Waiwhakaiho

Tributary: Mangaone

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 stormwater discharged shall be from a catchment area not exceeding 11.28ha.
3. By 30 September 2009, where goods are on site in excess of 3 days, any above ground hazardous substances storage areas shall be bunded with drainage to sumps, or discharged via a three stage interceptor and stop valve such that the flow can be isolated in the event of a spill.
4. Constituents of the discharge shall meet the standards shown in the following table.

<u>Constituent</u>	<u>Standard</u>
pH	Within the range 6.0 to 9.0
suspended solids	Concentration not greater than 100 gm ⁻³
Oil and Grease	Concentration not greater than 15 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.

5. After allowing for reasonable mixing, within a mixing zone extending to the Katere Road Bridge (NZTM 1696444E-5676696N) 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 1735-3

6. The consent holder shall maintain a contingency plan, which shall be reviewed at not more than 2 yearly intervals. The contingency plan shall be adhered to in the event of a spill or emergency and shall, to the satisfaction of the Chief Executive, Taranaki Regional Council, detail measures and procedures to be undertaken to prevent spillage or accidental discharge of contaminants not authorised by this consent and measures to avoid, remedy or mitigate the environmental effects of such a spillage or discharge.
7. By 30 September 2009, the consent holder shall prepare and maintain a stormwater management plan. This plan shall be adhered to at all times and shall, to the satisfaction of the Chief Executive, Taranaki Regional Council document how the site is to be managed in order to minimise the contaminants that become entrained in the stormwater. The plan shall include but not necessarily be limited to:
 - a) the loading and unloading of materials;
 - b) maintenance of conveyance systems;
 - c) general housekeeping; and
 - d) management of the interceptor system;and shall be reviewed at not more than 2 yearly intervals.
8. This consent shall lapse on 30 September 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.
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 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 31 July 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

Consent Granted
Date: 10 June 2008

Conditions of Consent

Consent Granted: To discharge stormwater from the Katere and
Waiwhakaiho industrial areas into the Mangaone Stream
via multiple outfalls between Egmont Road and the
confluence with the Waiwhakaiho River at or about (NZTM)
1697233E-5677145N, 1697032E-5677145N,
1696882E-5677087N, 1696734E-5676990N,
1696545E-5677175N, 1696755E-5677622N,
1696757E-5677671N, 1696771E-5677957N, and
1696777E-5677965N

Expiry Date: 1 June 2026

Review Date(s): June 2010, June 2014, June 2020

Site Location: Katere Road, New Plymouth

Legal Description: Various

Catchment: Waiwhakaiho

Tributary: Mangaone

*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 adverse effects on the environment from the exercise of this consent.
2. The consent holder shall prevent, where possible, or mitigate any erosion occurring as a result of the exercise of this consent.
3. 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 Mangaone 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.

Consent 1275-3

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 2010 and/or 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 10 June 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

Decision Date: 16 March 2016

Commencement Date: 16 March 2016

Conditions of Consent

Consent Granted: To discharge leachate from a former landfill site into
groundwater, adjacent to the Waiwhakaiho River

Expiry Date: 1 June 2032

Review Date(s): June 2020, June 2026

Site Location: Devon Road, Constance Street/Vickers Road,
New Plymouth

Grid Reference (NZTM) 1696236E-5677324N

Catchment: Waiwhakaiho

*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 not cause groundwater to breach the standards shown in the following table.

Constituent	Standard
Total Ammonia	Concentration not greater than 25 mg/L
Dissolved reactive phosphorus	Concentration not greater than 0.065 mg/L
pH	Within the range 6.5 to 8.5

2. 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 Waiwhakaiho downstream of the sampling site WKH000925:
 - 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;
 - f. a concentration of unionised ammonia greater than 0.0025 g/m³ -N.
3. The consent holder shall ensure that the three piezometers situated at the Bewley Road site are maintained for monitoring purposes (sites GND0548, GND0555, GND0556).
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 2020 and/or June 2026, 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 March 2016

For and on behalf of
Taranaki Regional Council

A D McLay
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 10 June 2008
Date:

Conditions of Consent

Consent Granted: To discharge stormwater from the Waiwhakaiho industrial area into the Waiwhakaiho River via multiple outfalls between the State Highway 3 bridge and the confluence with the Mangaone Stream at or about (NZTM)
1695807E-5676977N, 1695902E-5677235N,
1696113E-5677288N, 1696233E-5677323N,
1696377E-5677616N, 1696472E-5677706N,
1696539E-5677767N, 1696573E-5677800N,
1696611E-5677837N, and 1696683E-5677904N

Expiry Date: 1 June 2026

Review Date(s): June 2010, June 2014, June 2020

Site Location: Rifle Range Road, New Plymouth

Legal Description: Various

Catchment: Waiwhakaiho

*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 adverse effects on the environment from the exercise of this consent.
2. The consent holder shall prevent, where possible, or mitigate any erosion occurring as a result of the exercise of this consent.
3. After allowing for reasonable mixing, within a mixing zone extending 50 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 Waiwhakaiho River:
 - 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 5163-2

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 2010 and/or 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 10 June 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: Ravensdown Limited
PO Box 16921
Hornby
Christchurch 8441

Decision Date (Review): 6 August 2020

Commencement Date 6 August 2020 (Granted Date: 2 February 2018)
(Review):

Conditions of Consent

Consent Granted: To discharge stormwater from a fertiliser storage site onto
and into land and into the Mangaone Stream

Expiry Date: 1 June 2032

Review Date(s): June 2026 and in accordance with special condition 9

Site Location: Katere Road, Avon, New Plymouth

Grid Reference (NZTM) 1697034E-5677049N

Catchment: Waiwhakaiho

Tributary: Mangaone

*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 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 stormwater discharged shall only be from the area shown on the plan attached as Appendix 1.
3. Constituents of any discharges to the Mangaone Stream or MacLeod's Drain that arise as a result of the exercise of this consent shall meet the standards shown in the following table.

<u>Constituent</u>	<u>Standard</u>
pH	Within the range 6.0 to 9.0
total recoverable oil and grease	Concentration not greater than 15 gm ⁻³
CBOD (carbonaceous biochemical oxygen demand)	10 gm ⁻³
dissolved reactive phosphorus	5 gm ⁻³
suspended solids	100 gm ⁻³
ammoniacal nitrogen	5 gm ⁻³

4. From 1 April 2021 the consent holder shall ensure that there is always clear and safe all-weather access to a point where the discharge can be sampled to check compliance with condition 3 above.
5. 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;
 - f) a rise in dissolved carbonaceous biochemical oxygen of greater than 2.0 g/m³; and
 - g) un-ionised ammonia exceeding 0.025 g/m³.
6. Within 3 months of the consent being granted the consent holder shall submit and regularly update a 'Contingency Plan' that details measures and procedures that will be undertaken to prevent, and to avoid environmental effects from, a spillage or any discharge of contaminants not authorised by this consent. The plan and any amended versions shall be provided to the Chief Executive of the Taranaki Regional Council.

Consent 10513-1.1

7. Within 3 months of the consent being granted 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 is to be managed to minimise the contaminants that become entrained in the stormwater and shall include as minimum:
- a) the loading and unloading of materials;
 - b) general housekeeping; and
 - c) management of the interceptor systems and trade waste catchment areas.

Note: A Stormwater Management Plan template is available in the Environment section of the Taranaki Regional Council's web site www.trc.govt.nz.

8. 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.
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:
- a) during the month of June 2020 and/or June 2026;
 - b) within 3 months of receiving a notification under special condition 8 above; and/or
 - c) for the purposes of reviewing the discharge standards, contaminant limits and sampling points once development on the site has been completed.

for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 6 August 2020

For and on behalf of
Taranaki Regional Council

A D McLay
Director - Resource Management

Appendix 1: Stormwater discharged shall be from the area shown in yellow



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

Name of
Consent Holder: Taranaki Sawmills Limited
PO Box 7145
Fitzroy
New Plymouth 4341

Decision Date 12 March 2021

Commencement Date 12 March 2021

Conditions of Consent

Consent Granted: To discharge stormwater from a timber treatment site into
the Mangaone Stream

Expiry Date: 1 June 2038

Review Date(s): June 2026, June 2032

Site Location: 47 & 53 Katere Road, Waiwhakaiho

Grid Reference (NZTM) 1696875E-5677077N

Catchment: Waiwhakaiho

Tributary: Mangaone

*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 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 the application. In the case of any contradiction between the documentation submitted in support of this application and the conditions of this consent, the conditions of this consent shall prevail.
3. The maximum stormwater catchment area shall be no more than 2.3 Hectares.
4. 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 100 gm ⁻³
oil and grease	Concentration not greater than 15 gm ⁻³
Arsenic	Concentration not greater than 0.24g/m ³
Copper (dissolved)	Concentration not greater than 0.088 g/m ³
Chromium	Concentration not greater than 0.4 g/m ³
Tributyltin	Concentration not greater than 0.0046 g/m ³
Zinc (dissolved)	Concentration not greater than 0.64 g/m ³

These standards 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.

5. The consent holder shall ensure that there is always clear and safe all-weather access to a point where the discharge can be sampled to check compliance with condition 6 above.
6. After allowing for reasonable mixing, within a mixing zone extending 30 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 waters of the Mangaone 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.

Consent 3491-3.0

7. After allowing for reasonable mixing within a mixing zone extending 30 metres downstream of the discharge point, the discharge shall not, either by itself or in combination with other discharges, give rise to a filtered carbonaceous 5 day biochemical oxygen demand of more than 2 g/m³ an increase of greater than 0.5 pH increment, or a pH outside the range of 6.0 to 9.0 within the receiving waters of the Mangaone Stream.
8. The consent holder shall maintain and regularly review a 'Contingency Plan' that details measures and procedures that will be undertaken in the event of a spillage or any discharge of contaminants not authorised by this consent. The plan shall be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity as being adequate to avoid, remedy or mitigate the environmental effects of such an event
9. The site shall be operated in accordance with a 'Management Plan'. The plan shall detail how the site is managed to minimise the contaminants that become entrained in the stormwater, and generally ensure that the conditions of this consent will be met. It shall include as minimum:
 - a) the loading and unloading of materials;
 - b) maintenance of conveyance systems;
 - c) general housekeeping; and
 - d) management of the stormwater system.The Management Plan shall be made available to a Taranaki Regional Council Enforcement Officer upon request.
10. 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. Unless the Chief Executive advises that an alternative method is required this notice shall be served by completing and submitting the 'Notification of work' form on the Council's website (<http://bit.ly/TRCWorkNotificationForm>).
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 2026 and/or June 2032, 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 March 2021

For and on behalf of
Taranaki Regional Council



A D McLay
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: Technix Group Limited
Private Bag 2222
New Plymouth 4342

Decision Date: 24 October 2014

Commencement Date: 24 October 2014

Conditions of Consent

Consent Granted: To discharge stormwater from an industrial site into the
Waiwhakaiho River

Expiry Date: 01 June 2032

Review Date(s): June 2020, June 2026 and in accordance with special
condition 9

Site Location: 691 Devon Road, Bell Block

Legal Description: Lot 2 DP 20360 (Discharge source & site)

Grid Reference (NZTM) 1696623E-5677733N

Catchment: Waiwhakaiho

*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 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 stormwater discharged shall be from a catchment area not exceeding 2.2 ha.
3. After 31 December 2015 there shall be no discharge from the truckwash to the stormwater network.
4. 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 100 gm ⁻³
oil and grease	Concentration not greater than 15 gm ⁻³
chloride	Concentration not greater than 50 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.

5. After allowing for reasonable mixing, within a mixing zone extending 50 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.
6. The consent holder shall maintain and regularly update a 'Contingency Plan' that details measures and procedures that will be undertaken to prevent, and to avoid environmental effects from, a spillage or any discharge of contaminants not authorised by this consent. The plan shall be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity.

Consent 0291-3.0

7. Within three months of the granting of this consent, the site shall be operated in accordance with a 'Stormwater 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) identification of sources of contaminants,
 - b) methods that will be practised to ensure contaminants entering stormwater is at a practical minimum,
 - c) the loading and unloading of materials;
 - d) maintenance of conveyance systems;
 - e) general housekeeping; and
 - f) management of the interceptor system.
8. 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.
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:
 - a) during the month of June 2020 and/or 2026 and/or
 - b) within 3 months of receiving a notification under special condition 8 above and/or
 - c) within 3 months of receiving the Stormwater Management Plan under special condition 7 above.

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 24 October 2014

For and on behalf of
Taranaki Regional Council



A D McLay
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: Technix Group Limited
Private Bag 2222
New Plymouth 4342

Decision Date: 24 October 2014

Commencement Date: 24 October 2014

Conditions of Consent

Consent Granted: To discharge stormwater from an industrial site into the
Waiwhakaiho River

Expiry Date: 01 June 2032

Review Date(s): June 2020, June 2026 and in accordance with special
condition 8

Site Location: 691 Devon Road, Bell Block

Legal Description: Lot 1 DP 20360 (Discharge source & site)

Grid Reference (NZTM) 1696449E-5677553N

Catchment: Waiwhakaiho

*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 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 stormwater discharged shall be from a catchment area not exceeding 1.8 ha.
3. Constituents of the discharge shall meet the standards shown in the following table.

<u>Constituent</u>	<u>Standard</u>
pH	Within the range 6.0 to 9.0
suspended solids	Concentration not greater than 100 gm ⁻³
oil and grease	Concentration not greater than 15 gm ⁻³
chloride	Concentration not greater than 50 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.

4. After allowing for reasonable mixing, within a mixing zone extending 50 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. The consent holder shall maintain and regularly update a 'Contingency Plan' that details measures and procedures that will be undertaken to prevent, and to avoid environmental effects from, a spillage or any discharge of contaminants not authorised by this consent. The plan shall be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity.

Consent 9981-1.0

6. Within three months of the granting of this consent, the site shall be operated in accordance with a 'Stormwater 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) identification of sources of contaminants,
 - b) methods that will be practised to ensure contaminants entering stormwater is at a practical minimum,
 - c) the loading and unloading of materials;
 - d) maintenance of conveyance systems;
 - e) general housekeeping; and
 - f) management of the interceptor system.
7. 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.
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:
 - a) during the month of June 2020 and/or 2026 and/or
 - b) within 3 months of receiving a notification under special condition 7 above and/or
 - c) within 3 months of receiving the Stormwater Management Plan under special condition 6 above

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 24 October 2014

For and on behalf of
Taranaki Regional Council



A D McLay
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: Technix Group Limited
Private Bag 2222
New Plymouth 4342

Decision Date: 24 October 2014

Commencement Date: 24 October 2014

Conditions of Consent

Consent Granted: To discharge stormwater from an industrial site into the
Mangaone Stream

Expiry Date: 01 June 2032

Review Date(s): June 2020, June 2026 and in accordance with special
condition 8

Site Location: 691 Devon Road, Bell Block

Legal Description: Lot 1 DP 20360 (Discharge source & site)

Grid Reference (NZTM) 1696748E-5677890N

Catchment: Waiwhakaiho

Tributary: Mangaone

*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 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 stormwater discharged shall be from a catchment area not exceeding 1.3 ha.
3. 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 100 gm ⁻³
oil and grease	Concentration not greater than 15 gm ⁻³
chloride	Concentration not greater than 50 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.

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. The consent holder shall maintain and regularly update a 'Contingency Plan' that details measures and procedures that will be undertaken to prevent, and to avoid environmental effects from, a spillage or any discharge of contaminants not authorised by this consent. The plan shall be approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity.

Consent 9982-1.0

6. Within three months of the granting of this consent, the site shall be operated in accordance with a 'Stormwater 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) identification of sources of contaminants,
 - b) methods that will be practised to ensure contaminants entering stormwater is at a practical minimum,
 - c) the loading and unloading of materials;
 - d) maintenance of conveyance systems;
 - e) general housekeeping; and
 - f) management of the interceptor system.
7. 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. 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.
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:
 - a) during the month of June 2020 and/or 2026 and/or
 - b) within 3 months of receiving a notification under special condition 7 above and/or
 - c) within 3 months of receiving the Stormwater Management Plan under special condition 6 above

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 24 October 2014

For and on behalf of
Taranaki Regional Council



A D McLay
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: Waste Management NZ Limited
PO Box 7128
New Plymouth 4341

Decision Date: 27 October 2017

Commencement Date: 27 October 2017

Conditions of Consent

Consent Granted: To discharge stormwater from a waste depot into an unnamed tributary of the Mangaone Stream

Expiry Date: 1 June 2032

Review Date(s): June 2018, June 2019 and June 2020 and 3-yearly thereafter, and in accordance with special condition 9

Site Location: 86 Katere Road, New Plymouth

Grid Reference (NZTM) 1697274E-5677140N

Catchment: Waiwhakaiho

Tributary: Mangaone

*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 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. From 15 January 2018:
 - a) no leachate overflow from the refuse storage area or any other part of the site shall enter the unnamed tributary of the Mangaone Stream; and
 - b) a sediment interceptor, such as a sump, shall be installed downstream of existing sump A1.
3. The stormwater discharged shall only be from the area shown on the plan attached as Appendix 1.
4. Constituents of the discharge sampled at WM4 (shown in the plan attached as Appendix 2 and at approximate grid reference 1697214E-5677143N) shall meet the standards shown in the following table.

Constituent	Standard
pH	Within the range 6.0 to 9.0
total recoverable oil and grease	Concentration not greater than 15 gm ⁻³
CBOD (carbonaceous biochemical oxygen demand)	20 gm ⁻³

5. 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;
 - f) unionised ammonia to exceed 0.025 gm⁻³; and
 - g) filtered carbonaceous biochemical oxygen demand to exceed 2.0.
6. Within 3 months of the consent being granted the consent holder shall submit and regularly update a 'Contingency Plan' that details measures and procedures that will be undertaken to prevent, and to avoid environmental effects from, a spillage or any discharge of contaminants not authorised by this consent. The plan and any amended versions shall be provided to the Chief Executive of the Taranaki Regional Council.

Consent 10430-1.0

7. Within 3 months of the consent being granted 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 is to be managed to minimise the contaminants that become entrained in the stormwater and shall include as minimum:
- a) the loading and unloading of materials;
 - b) general housekeeping; and
 - c) management of the interceptor systems and trade waste catchment areas.

Note: A Stormwater Management Plan template is available in the Environment section of the Taranaki Regional Council's web site www.trc.govt.nz.

8. 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.
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:
- a) during the month of June 2018, 2019 and 2020 and 3-yearly thereafter;
 - b) within 3 months of receiving a notification under special condition 8 above; and/or
 - c) for the purposes of reviewing the discharge standards, contaminant limits and sampling points once development on the site has been completed.

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 October 2017

For and on behalf of
Taranaki Regional Council

A D McLay
Director - Resource Management

Appendix 1: Area of stormwater discharge shown in blue.



Appendix 2: Location of sampling points

