

South Taranaki District Council
Eltham, Hawera, Kaponga, Manaia, Patea, Opunake
and Otakeho Landfills
Monitoring Programmes
Annual Report
2018-2019

Technical Report 2019-18

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Executive summary

South Taranaki District Council (STDC) holds consents to cover the discharge of leachate and stormwater from seven closed landfills. The landfills are at Kaponga and Manaia in the Waiokura catchment, Patea in the Patea catchment, Opunake in the Otahi catchment, Hawera in the Tangahoe catchment, Otakeho in the Taikatu catchment, and Eltham in the Waingongoro catchment.

This report for the period July 2018 to June 2019 describes the monitoring programme implemented by the Taranaki Regional Council (the Council) to assess STDC's environmental and consent compliance performance during the period under review. The report also details the results of the monitoring undertaken and assesses the environmental effects of STDC's activities at the Eltham, Hawera, Manaia, Opunake and Patea landfills. Triennial monitoring of the Kaponga or Otakeho closed landfills was not scheduled to take place during the year under review.

STDC holds 10 resource consents, consisting of eight discharge of stormwater and/or leachate to water consents, one discharge to air consent, and one land use consent. These consents include a total of 62 conditions setting out the requirements that STDC must satisfy.

During the monitoring period, STDC demonstrated an overall high level of environmental performance.

To monitor compliance with these conditions during the 2018-2019 year, Council staff conducted nine inspections, took 31 discharge and receiving environment samples, and conducted three biomonitoring surveys.

One incident was recorded by the Council in regards to these landfill sites during the monitoring year. This was in relation to the closed Manaia landfill. At an inspection, two water troughs were found to have been installed on the cap. One of the troughs was located in the middle of a stormwater swale, with the potential to impact stormwater drainage and reduce the integrity of the cap. There was stock damage to the cap around the other trough and a feed pad located on the cap had also resulted in stock damage. This non-compliance with consent was resolved promptly.

During the year, STDC demonstrated a high level of environmental and administrative performance in relation to the Eltham, Hawera, Patea and Opunake closed landfill consents as defined in Section 1.1.5.

During the year, STDC demonstrated a good level of environmental and a high level of administrative performance in relation to the Manaia closed landfill consent as defined in Section 1.1.5.

During the year, the environmental performance and administrative performance of STDC was not assessed in relation to the Kaponga or Otakeho closed landfill consents.

For reference, in the 2018-2019 year, consent holders were found to achieve a high level of environmental performance and compliance for 83% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 13% of the consents, a good level of environmental performance and compliance was achieved.

In terms of overall environmental and compliance performance by the consent holder over the last several years, this report shows that the consent holder's performance remains at a high level in the year under review.

This report includes recommendations for the 2019-2020 year, including a recommendation relating to an optional review of consent 3953-4.

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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 2018 to June 2019 by the Taranaki Regional Council (the Council) on the monitoring programme associated with resource consents held by South Taranaki District Council (STDC) for closed municipal landfills in the district. STDC maintains seven closed landfills, which are located in Eltham, Hawera, Kaponga, Manaia, Opunake, Otakeho and Patea.

This report covers the results and findings of the monitoring programmes implemented by the Council in respect of the consents held by STDC that relate to discharges to water and air from the Eltham, Hawera, Kaponga, Manaia, Opunake, and Patea landfills. The monitoring programmes in place for the Kaponga and Otakeho closed landfills are intermittent programmes, implemented on a triennial basis. The programme for Otakeho will next be implemented in the 2019-2020 year, while the Kaponga closed landfill will next be monitored during the 2020-2021 year.

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 STDC's use of water, land and air, and is the 30th combined annual report by the Council for STDC.

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 STDC for the closed landfills in their district;
- the nature of the monitoring programme in place for the period under review.

Each of the closed landfills is then discussed in a separate section (**Sections 2 to 8**)

In each **subsection 1** (e.g. Section 2.1) there is a general description of the landfilled site and its discharges, an aerial photograph or map showing the location of the former landfill, and an outline of the matters covered by the water discharge permit.

Subsection 2 presents the results of monitoring of the STDC's activities at each of the sites during the period under review, including scientific and technical data.

Subsection 3 discusses the results, their interpretation, and their significance for the environment in the immediate vicinity of the site under discussion.

Subsection 4 presents recommendations to be implemented in the 2019-2020 monitoring year.

Section 9 contains a summary of recommendations to be implemented in the 2019-2020 monitoring year.

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

1.1.3 The Resource Management Act 1991 and monitoring

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

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

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

1.1.4 Incidents, investigations, and interventions

The monitoring programme for the year was based on what was considered to be an appropriate level of monitoring, review of data, and liaison with STDC. During the year matters may arise which require additional activity by the Council, for example provision of advice and information, or investigation of potential or actual causes of non-compliance or failure to maintain good practices. A pro-active approach, that in the first instance avoids issues occurring, is favoured.

For all significant compliance issues, as well as complaints from the public, the Council maintains a database record. The record includes events where the individual/organisation concerned has itself notified the Council. Details of any investigation and corrective action taken are recorded for non-compliant events.

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

1.1.5 Evaluation of environmental and administrative performance

Besides discussing the various details of the performance and extent of compliance by the consent holder, this report also assigns them a rating for their environmental and administrative performance during the period under review.

Environmental performance is concerned with actual or likely effects on the receiving environment from the activities during the monitoring year. Administrative performance is concerned with the consent holder's approach to demonstrating consent compliance in site operations and management including the timely provision of information to Council (such as contingency plans and water take data) in accordance with consent conditions.

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

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

Environmental Performance

High: No or inconsequential (short-term duration, less than minor in severity) breaches of consent or regional plan parameters resulting from the activity; no adverse effects of significance noted or likely in the receiving environment. The Council did not record any verified unauthorised incidents involving significant environmental impacts and was not obliged to issue any abatement notices or infringement notices in relation to such impacts.

Good: Likely or actual adverse effects of activities on the receiving environment were negligible or minor at most. There were some such issues noted during monitoring, from self reports, or in response to unauthorised incident reports, but these items were not critical, and follow-up inspections showed they have been dealt with. These minor issues were resolved positively, co-operatively, and quickly. The Council was not obliged to issue any abatement notices or infringement notices in relation to the minor non-compliant effects; however abatement notices may have been issued to mitigate an identified potential for an environmental effect to occur.

For example:

- High suspended solid values recorded in discharge samples, however the discharge was to land or to receiving waters that were in high flow at the time;
- Strong odour beyond boundary but no residential properties or other recipient nearby.

Improvement required: Likely or actual adverse effects of activities on the receiving environment were more than minor, but not substantial. There were some issues noted during monitoring, from self reports, or in response to unauthorised incident reports. Cumulative adverse effects of a persistent minor non-compliant activity could elevate a minor issue to this level. Abatement notices and infringement notices may have been issued in respect of effects.

Poor: Likely or actual adverse effects of activities on the receiving environment were significant. There were some items noted during monitoring, from self reports, or in response to unauthorised incident reports. Cumulative adverse effects of a persistent moderate non-compliant activity could elevate an 'improvement required' issue to this level. Typically there were grounds for either a prosecution or an infringement notice in respect of effects.

Administrative performance

High: The administrative requirements of the resource consents were met, or any failure to do this had trivial consequences and were addressed promptly and co-operatively.

Good: Perhaps some administrative requirements of the resource consents were not met at a particular time, however this was addressed without repeated interventions from the Council staff. Alternatively adequate reason was provided for matters such as the no or late provision of information, interpretation of 'best practical option' for avoiding potential effects, etc.

Improvement required: Repeated interventions to meet the administrative requirements of the resource consents were made by Council staff. These matters took some time to resolve, or remained unresolved at the end of the period under review. The Council may have issued an abatement notice to attain compliance.

Poor: Material failings to meet the administrative requirements of the resource consents. Significant intervention by the Council was required. Typically there were grounds for an infringement notice.

For reference, in the 2018-2019 year, consent holders were found to achieve a high level of environmental performance and compliance for 83% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 13% of the consents, a good level of environmental performance and compliance was achieved.¹

1.2 Process description

STDC maintained seven closed municipal landfills in the South Taranaki District during the 2018-2019 period (Figure 1). All these sites have a long history of waste disposal and, as older facilities, do not have engineered liners. Landfills of this nature are designated as Class B landfills in the MfE publication Module 2: Hazardous Waste Guidelines, Landfill Waste Acceptance Criteria and Landfill Classification (2004). The number of open landfills in the district steadily decreased over a number of years and there have been no operating landfills in the South Taranaki district since the Patea landfill closed in 2007.

Currently the only general municipal landfill in operation in the Taranaki region is the Colson Road landfill, which is operated by the New Plymouth District Council as a regional facility.

1.3 Resource consents

STDC holds 10 resource consents the details of which are summarised in the table below.

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

Table 1 Summary of the STDC closed municipal landfill consents and their key dates

Landfill site	Consent number	Purpose	Review	Expiry
Eltham	3387-3	To discharge stormwater and leachate from the former Eltham landfill site into the Managwhero Stream in the Waingongoro catchment	-	1 June 2023
Hawera	0444-4	To discharge up to 2,800 m ³ /day of leachate and stormwater from the closed Matangara landfill, Hawera, to groundwater and into an unnamed tributary of the Tawhiti Stream in the Tangahoe catchment	-	Expired - S.124 Protection
	5831-2	To divert an unnamed tributary of the Tawhiti Stream	June 2022	1 June 2034
Kaponga	3459-3	To discharge stormwater and leachate from the former Kaponga landfill site into an unnamed tributary of the Waiokura Stream	-	1 June 2023
Manaia	3952-2	To discharge leachate and stormwater from the closed Manaia landfill and from composting operations into the Waiokura Stream	-	1 June 2023
Opunake	0526-4	To discharge stormwater and leachate from the closed Opunake landfill into the Otahi Stream	June 2024	1 June 2029

¹ The Council has used these compliance grading criteria for 15 years. They align closely with the 4 compliance grades in the MfE Best Practice Guidelines for Compliance, Monitoring and Enforcement, 2018

Landfill site	Consent number	Purpose	Review	Expiry
Otakeho	3953-4	To discharge leachate and stormwater from the closed Otakeho Municipal Landfill onto and into land where it may enter water	June 2020	1 June 2022
Patea	0427-3	To discharge surface water and leachate from the Patea municipal landfill into an unnamed tributary of the Patea River	-	1 June 2022
	7268-1	To discharge stormwater and sediment onto and into land and into an unnamed tributary of the Patea River from earthworks associated with the closure of the Patea landfill	-	1 June 2022
	4636-2	To discharge emissions into air from the Patea municipal landfill	-	1 June 2022

1.4 Monitoring programme

1.4.1 Introduction

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

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

The monitoring programme for the landfill sites consisted of four primary components, which are described in Sections 1.4.2 to 1.4.5. The type and number of environmental monitoring elements carried out at each site are summarised in Table 2.

Table 2 Council monitoring activity in relation to the STDC closed municipal landfills in the year under review

Landfill	Catchment	Biological surveys	Inspections	Samples taken
Eltham	Waingongoro	2	1	0
Hawera	Tawhiti	0	1	15
Kaponga	Waiokura	Next monitored 2020-2021		
Manaia	Waiokura	0	2	6
Otakeho	Taikatū	Next monitored 2019-2020		
Opunake	Otahi	1	2	4
Patea	Patea	0	3	6
Total		3	9	31

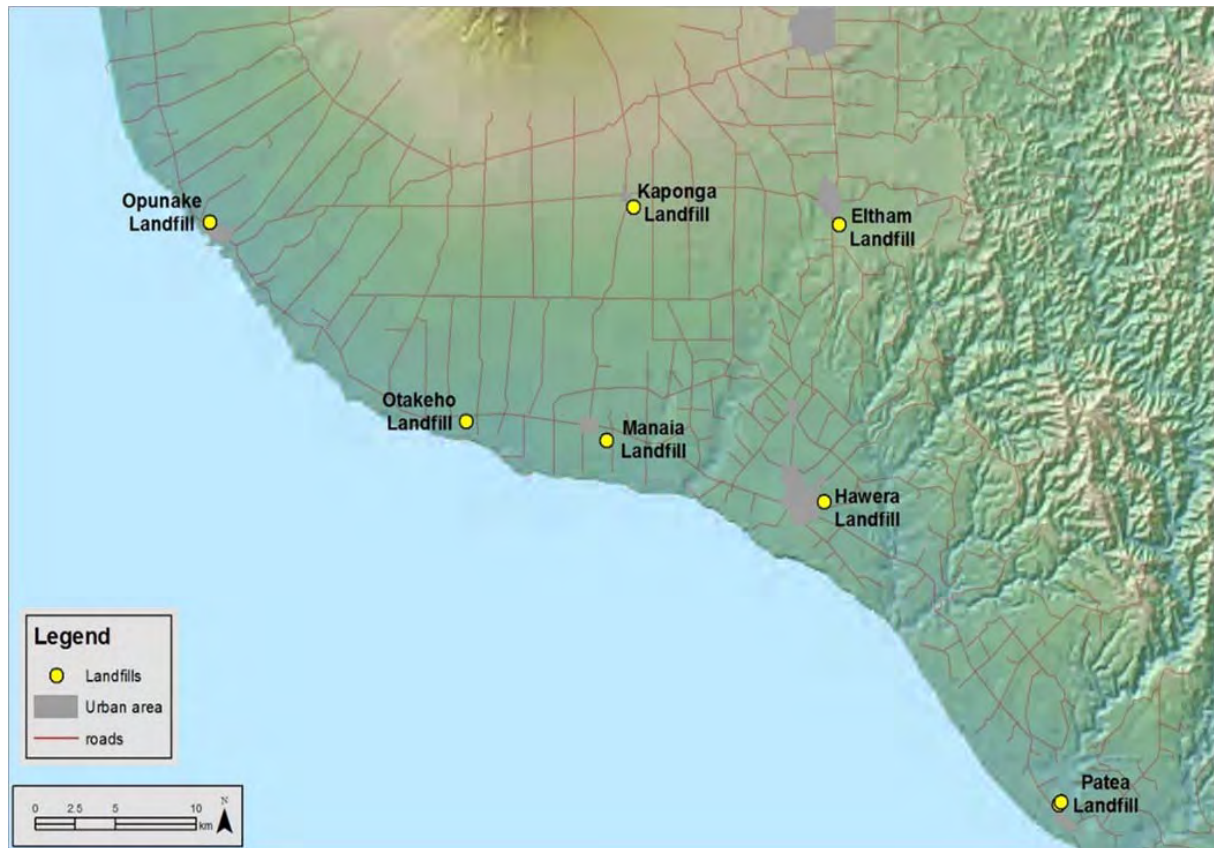


Figure 1 Regional map of STDC closed landfills

1.4.2 Programme liaison and management

There is generally a significant investment of time and resources by the Council in:

- ongoing liaison with resource consent holders over consent conditions and their interpretation and application;
- in discussion over monitoring requirements;
- preparation for any consent reviews, renewals or new consent applications;
- advice on the Council's environmental management strategies and content of regional plans; and
- consultation on associated matters.

1.4.3 Site inspections

A total of nine inspections were undertaken focusing on stormwater and silt control, and the condition of landfill caps. Sources of data being collected by the consent holder were identified and accessed, so that performance in respect of operation, internal monitoring, and supervision could be reviewed by the Council.

1.4.4 Chemical sampling

Discharges and the receiving waters associated with the landfills were sampled during the monitoring period as described in Table 2. A total of 31 samples were collected and analysed for various water quality parameters depending on the site.

1.4.5 Biomonitoring surveys

Biomonitoring surveys were performed in conjunction with the Eltham landfill/wastewater treatment plant and the Opunake landfill programme to assess if the discharges of leachate and stormwater were having any effect on aquatic ecosystems.

2 Eltham landfill

2.1 Introduction

2.1.1 Site description

This landfill used to service the township of Eltham and surrounding rural areas but was closed in 1992 due to exhaustion of landfill capacity. The 0.71 ha site is located on Castle Street, just downstream of the Eltham oxidation ponds (Figure 2). The area is generally well rehabilitated, with the majority of the area grassed. The landfill is monitored by the Council under the Eltham wastewater treatment plant/Eltham landfill combined monitoring programme.

Historically the water quality in the Mangawhero Stream was quite poor due to the discharges from the Eltham wastewater treatment plant and it was difficult to fully access any impact from the landfill on the stream. Generally no deterioration in water quality was found when comparing upstream and downstream sites.

Now that the Eltham wastewater treatment plant pumps its effluent to the Hawera wastewater treatment plant, the water quality in the Mangawhero Stream has improved and monitoring has been reduced.



Figure 2 Eltham landfill and sampling sites

2.2 Resource consents

2.2.1 Water discharge permit

STDC holds water discharge permit 3387-3 to cover the discharge of leachate and stormwater from Eltham landfill into the Mangawhero Stream. This permit was issued by the Council on 17 March 2005 under Section 87(e) of the RMA. It is due to expire on 1 June 2023.

2.3 Results

2.3.1 Inspection

15 October 2018

The landfill cap remains intact and the paddocks are regularly grazed. No leachate or odours were detected at the time of the inspection. No adverse environmental effects from the closed landfill were noted.

2.3.2 Biomonitoring

Two biomonitoring surveys were undertaken during the period under review, undertaken in October 2018 and March 2019. These surveys were conducted primarily as part of the monitoring programme for the Eltham wastewater treatment plant. However, these surveys also include sites upstream and downstream of the landfill to monitor for potential effects from this site.

The results of both surveys undertaken during the period under review indicated that there were no impacts from leachate from the closed landfill on the macroinvertebrate communities of the lower Mangawhero Stream.

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

2.3.3 Investigations, interventions, and incidents

In the 2018-2019 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with conditions in resource consents relating to the Eltham landfill or provisions in Regional Plans.

2.4 Discussion

2.4.1 Discussion of site performance

The site has been closed for approximately 25 years and no incidents or complaints were logged by Council during the year under review. The consent holder has a management and contingency plan in place for the site.

2.4.2 Environmental effects of exercise of consents

In the past it has been difficult to accurately gauge the effects associated with the discharge of leachate from the Eltham landfill. This was because any effect that the leachate may have had on the Mangawhero Stream was masked by the discharge of wastes from the Eltham wastewater treatment plant. However, the works to pump Eltham's wastewater treatment plant discharge to Hawera's wastewater treatment plant were completed approximately six years ago, and the water quality in the Mangawhero Stream has been showing some improvement. The results of the macroinvertebrate surveys indicate that the presence of the landfill is having very little effect on water quality.

2.4.3 Evaluation of performance

A tabular summary of STDC's compliance record at Eltham landfill for the year under review is set out in Table 3.

Table 3 Summary of performance for Eltham closed landfill consent 3387-3

Purpose: To discharge stormwater and leachate from the former Eltham landfill site into the Mangawhero Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. STDC shall adopt the best practicable option	Programme management and inspection	Yes
2. STDC shall prepare and maintain a site contingency plan	Programme management	Yes
3. The site and associated water shall be monitored	Inspection and biological monitoring	Yes
4. Discharges from the site shall not cause adverse environmental effects	Inspection and biological monitoring	Yes
5. Optional review provision	No further opportunity 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 under review, STDC demonstrated a high level of environmental and high level of administrative performance in relation to the Eltham landfill consent as defined in Section 1.1.5.

2.4.4 Recommendations from the 2017-2018 Annual Report

In the 2017-2018 Annual Report, it was recommended:

1. THAT in the first instance, the monitoring of discharges from the closed landfill at Eltham continues at the same level as in 2017-2018.
2. THAT should there be any issues with environmental or administrative performance in the 2018-2019, monitoring of the closed landfill at Eltham may be adjusted to reflect any additional investigation or intervention as found necessary.

Recommendation one was implemented, while it was not considered necessary to carry out additional investigations or interventions as per recommendation two.

2.4.5 Alterations to monitoring programmes for 2019-2020

In designing and implementing the monitoring programmes for 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 for 2019-2020, the programme remains unchanged from 2018-2019.

It should be noted that the proposed programme represents a reasonable and risk-based level of monitoring for the site in question. The Council reserve 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 2019-2020.

2.5 Recommendations

1. THAT in the first instance, the monitoring of discharges from the closed landfill at Eltham in the 2019-2020 year continue at the same level as in 2018-2019.
2. THAT should there be any issues with environmental or administrative performance in 2019-2020, monitoring of the closed landfill at Eltham may be adjusted to reflect any additional investigation or intervention as found necessary.

3 Hawera landfill

3.1 Introduction

3.1.1 Site description

The Matangara Road municipal landfill was used for domestic waste disposal for the Hawera District. A small unnamed tributary of the Tawhiti Stream flowed down a deep gully (approximately 30 m) from the north-west to the south-east of the landfill site. The stream was directed into a 750 mm pipe and waste was deposited into the landfill over the pipe, shown as a dashed line on Figure 3. The stream exits the culvert where it discharges into a roadside drain (later referred to as the roadside tributary) that runs adjacent to Matangara Road. The roadside tributary flows into the Tawhiti Stream approximately 400 m downstream of the culvert.

The landfill closed in September 1998, and STDC reinstated the site. Leachate is captured via leachate collection lines in the landfill and is pumped to the Hawera wastewater treatment plant from a pump station located near the upstream end of the culvert under the landfill as illustrated in Figure 2 (RTP001008).

Groundwater monitoring has shown that some leachate is entering the groundwater in the immediate vicinity of the site, but this appears to be having only a very minor effect at the southern boundary of the site.

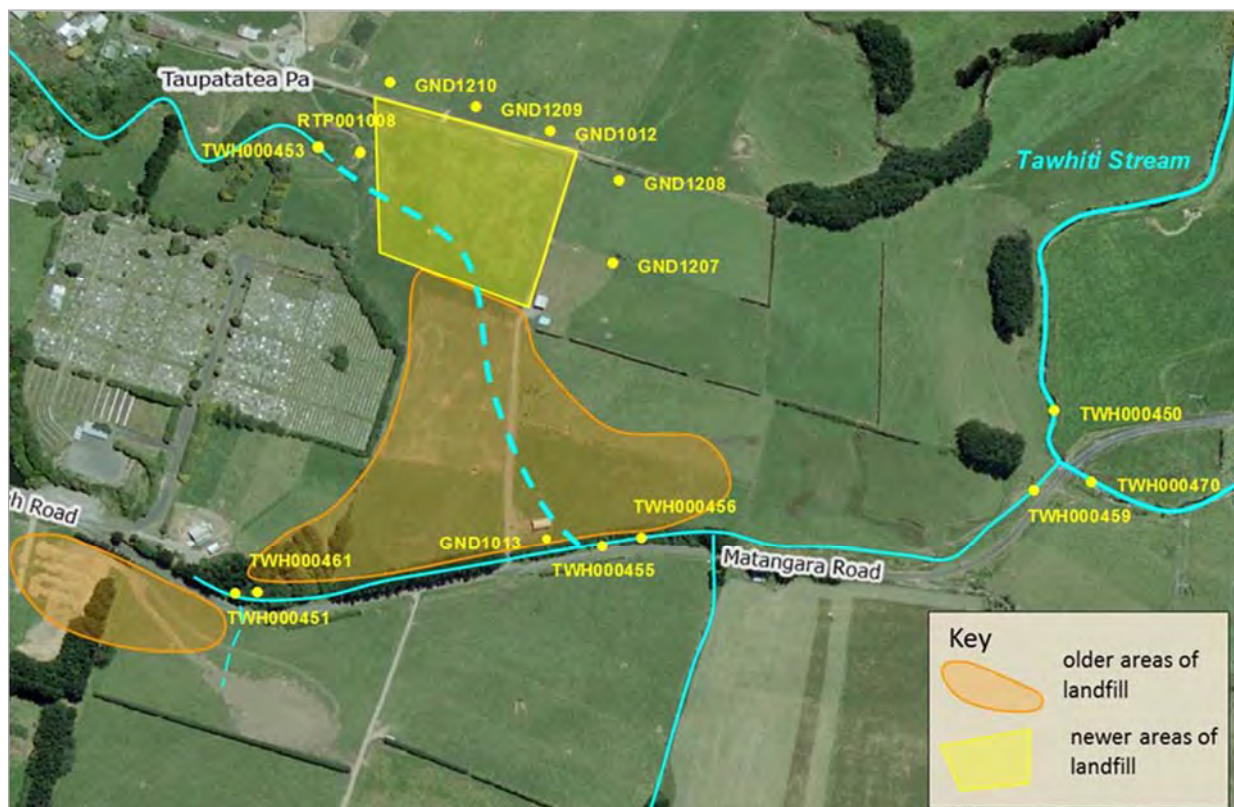


Figure 3 Aerial view of Hawera landfill and sampling sites

3.2 Resource consents

3.2.1 Land use permit

STDC holds land use permit 5831-2 to divert an unnamed tributary of the Tawhiti Stream. This permit was issued by the Council on 28 June 2001, was renewed on 28 June 2016, and is due to expire on 1 June 2034.

3.2.2 Water discharge permit

STDC holds water discharge permit 0444-4 to cover the discharge of leachate and stormwater from Hawera landfill onto and into groundwater and an unnamed tributary of the Tawhiti Stream. This permit was issued by the Council on 28 June 2001 under Section 87(e) of the RMA. It is expired on 1 June 2016.

As an application to renew this consent was received prior to 1 March 2016 (more than three months prior to the expiry of the consent), under Section 124 of the RMA, STDC can continue to manage the closed site under the conditions of the expired consent until a decision is made on the renewal.

3.3 Results

3.3.1 Inspection

One inspection was undertaken during the period under review, as programmed.

13 May 2019

The inspection was conducted in fine weather with a light south east-wind. The cap had not been recently grazed and was well-grassed, and although damp underfoot following recent wet weather, there were no signs of ponding. It was intact, with no slumping, cracking or erosion noted. The batters were tidy and well-maintained.

The stormwater drains were well defined and free-flowing. Minor ponding was observed around the south-eastern corner following recent rain. All stormwater was being captured and directed to the stormwater system.

The leachate system was tidy and operational with no sign of spills or overflows. The leachate pump was operating, and no odours were detected in the vicinity. The site was unoccupied and fully secure with permanent fencing. No odour or dust issues were noted.

3.3.2 Results of discharge monitoring

Two leachate samples were collected at the leachate sump (site RTP001008) during the year under review. The results are presented in Table 4 and the location of the sampling site is shown in Figure 3.

Results indicate that waste in the landfill is still actively degrading and releasing contaminants. The high chloride, chemical oxygen demand and ammoniacal nitrogen concentrations are typical values for landfill leachate and, as expected, these contaminants are gradually trending down over time (Figure 4, Figure 5, and Figure 6). All of the results obtained during the year under review were below the maximum values previously recorded, although a number were above the historical medians, particularly at the time of the February survey.

Table 4 Chemical analysis of the Hawera landfill leachate samples

Parameter	Unit	16 August 2018	18 February 2019	All Data (given where N >5)		
				Min	Max	Median
Alkalinity Total	g/m ³ CaCO ₃	570	900	130	1310	929
Ammoniacal nitrogen	g/m ³ N	43	108	0.308	176	120
Un-ionised ammonia	g/m ³	0.83	0.35	0.00022	1.26	0.28
Chloride	g/m ³	96	240	41	1,100	283
Chromium Dissolved	g/m ³	0.0006	0.0013	<0.03	<0.03	<0.03
Conductivity @ 25°C ^	mS/m	134	246	44	319	228
Dissolved reactive phosphorus	g/m ³ P	<0.04	<0.004	0.002	0.030	0.004
Filtered COD*	g/m ³	76	126	11	290	116
Iron Acid Soluble	g/m ³	21	31	0.38	71.8	33.1
Mercury Total	g/m ³	<0.00008	<0.00008	<0.0001	0.0016	<0.0001
Nitrite/nitrate nitrogen	g/m ³ N	0.18	0.12	<0.01	3.97	0.04
pH	pH	7.7	6.9	6.4	7.6	6.8
Temperature	°C	15.6	17.8	12.9	36.2	16.8
Zinc Dissolved	g/m ³	0.0024	0.0014	<0.005	0.086	0.008

* COD was mistakenly measured as total rather than filtered during the current monitoring period, historical data is for filtered

^ Historical data for conductivity is at 20°C

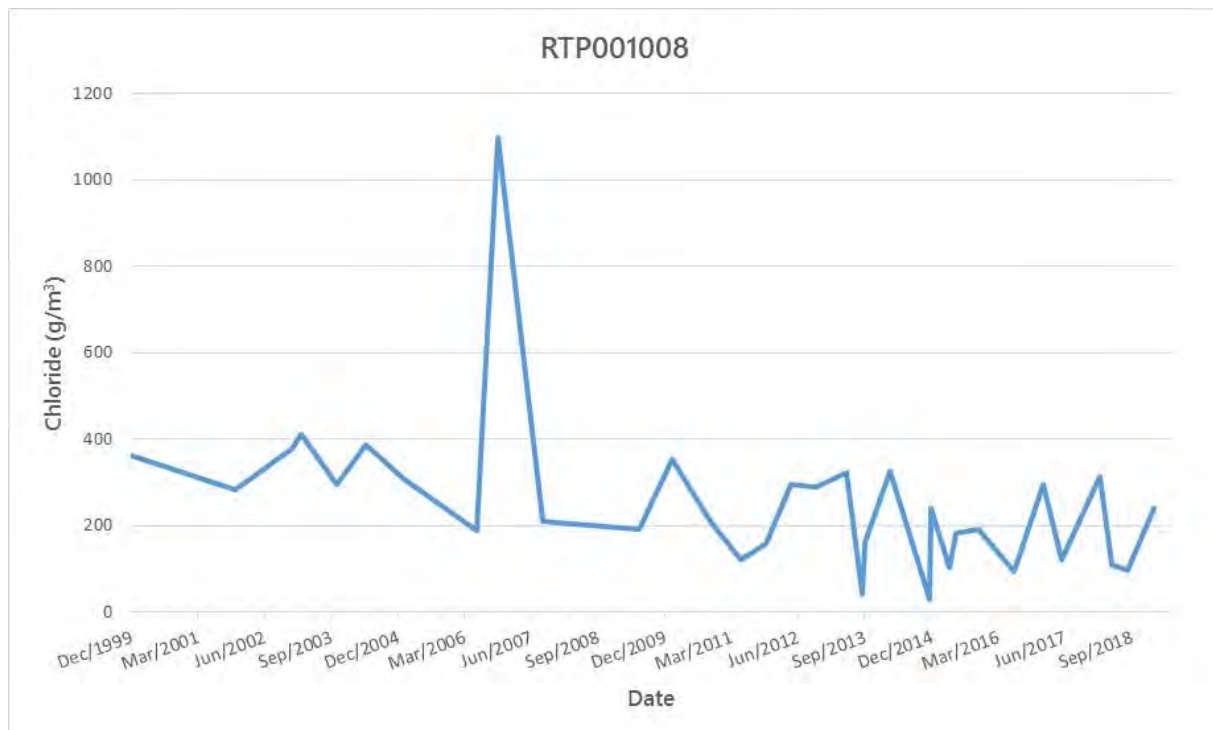


Figure 4 Hawera landfill leachate chloride concentration; 1999-2019

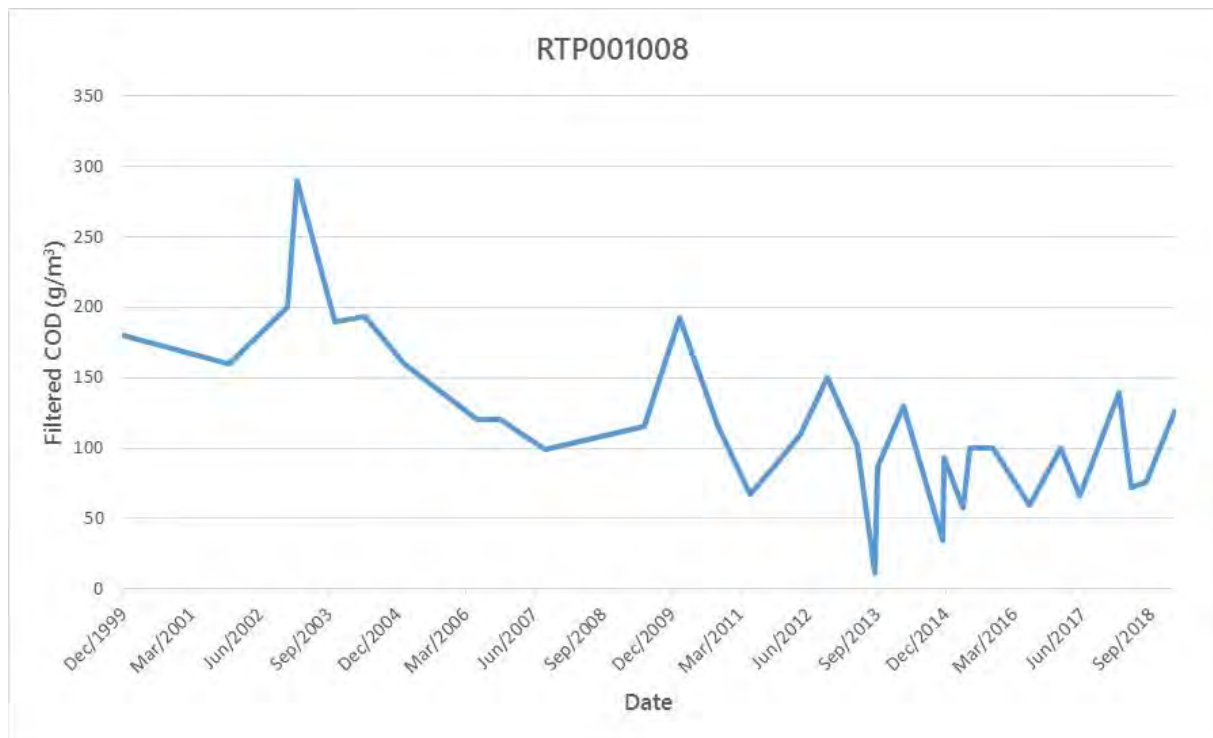


Figure 5 Hawera landfill leachate filtered chemical oxygen demand; 1999-2019

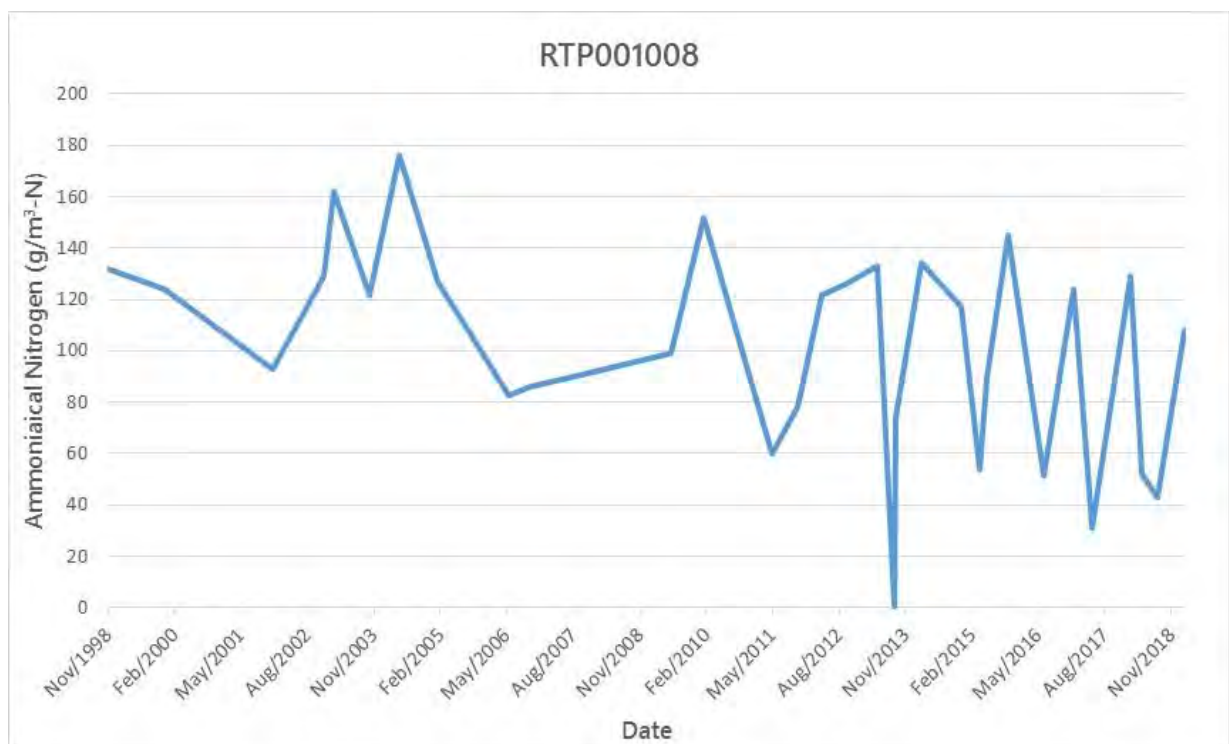


Figure 6 Hawera landfill leachate ammoniaal nitrogen, 1998-2019

As most of this leachate is pumped to the Hawera wastewater treatment plant, the majority of the contaminants found in these samples have no direct effect on surface waters near the site. However, they do give an indication of the contaminant concentration's present in the subsurface flows that have the potential to enter groundwater at this site, due to the lack of an engineered liner. It is noted that most of the contaminants show a distinct seasonal variation.

3.3.3 Results of groundwater monitoring

Two groundwater surveys were undertaken during the year under review. The results of the chemical analyses are set out in Table 5.

Table 5 Chemical analyses of groundwater samples from the bores at Hawera landfill

Parameter	Unit	GND1012		GND1013	
		16 Aug 2018	18 Feb 2019	16 Aug 2018	18 Feb 2019
Alkalinity	g/m ³ CaCO ₃	560	520	95	122
Chloride	g/m ³	94	86	23	24
Filtered COD	g/m ³	51	44	<12	<12
Conductivity @ 25°C	mS/m	143	140	35.1	37.1
Dissolved reactive phosphorus	g/m ³	< 0.004	0.147	< 0.004	< 0.004
Acid soluble iron	g/m ³	65	41	<0.02	< 0.02
Level	m	4.055	4.215	3.185	3.645
Unionised ammonia	g/m ³	0.152	0.080	0.00008	< 0.000012
Ammoniacal nitrogen	g/m ³ N	54	46	0.015	< 0.010
Nitrite/nitrate nitrogen	g/m ³ N	0.011	5.3	5.6	3.0
pH	pH	6.9	6.7	7.2	6.5
Temperature	°C	16.1	16.2	14.7	15.8
Dissolved zinc	g/m ³	0.0015	0.0019	0.0017	0.0015

* COD was mistakenly measured as total rather than filtered during the current monitoring period, historical data is for filtered

As with previous monitoring periods, bore GND1012 exhibits elevated levels of landfill contamination indicators, such as increased chlorides, alkalinity, iron, and ammoniacal nitrogen. This bore is immediately adjacent to, and down gradient of the landfill footprint, and in recent years has contained a similar level of contaminants to the leachate as indicated by the relative alkalinity, conductivity and chemical oxygen demands. It is noted that bore GND1013 is further from the most recently landfilled areas and as a result has far lower levels of these landfill indicator species (Figure 7, Figure 8 and Figure 9).

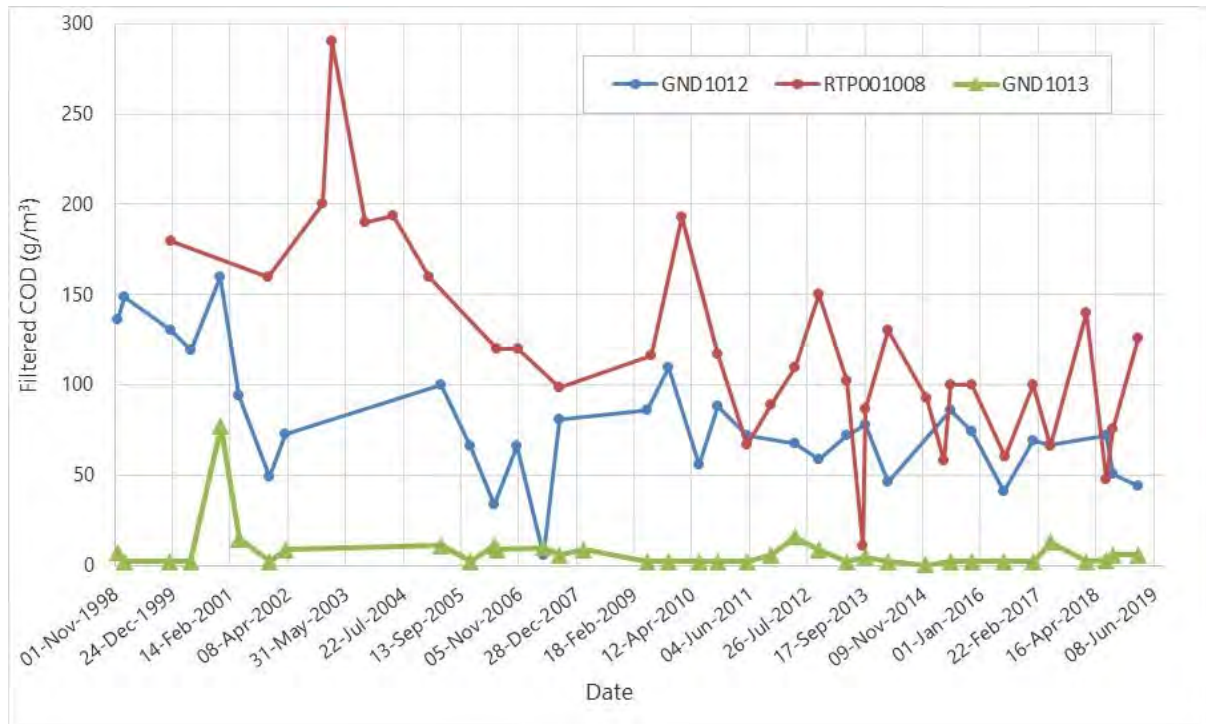


Figure 7 Comparison of filtered chemical oxygen demand between GND1012, GND1013 and RTP001008

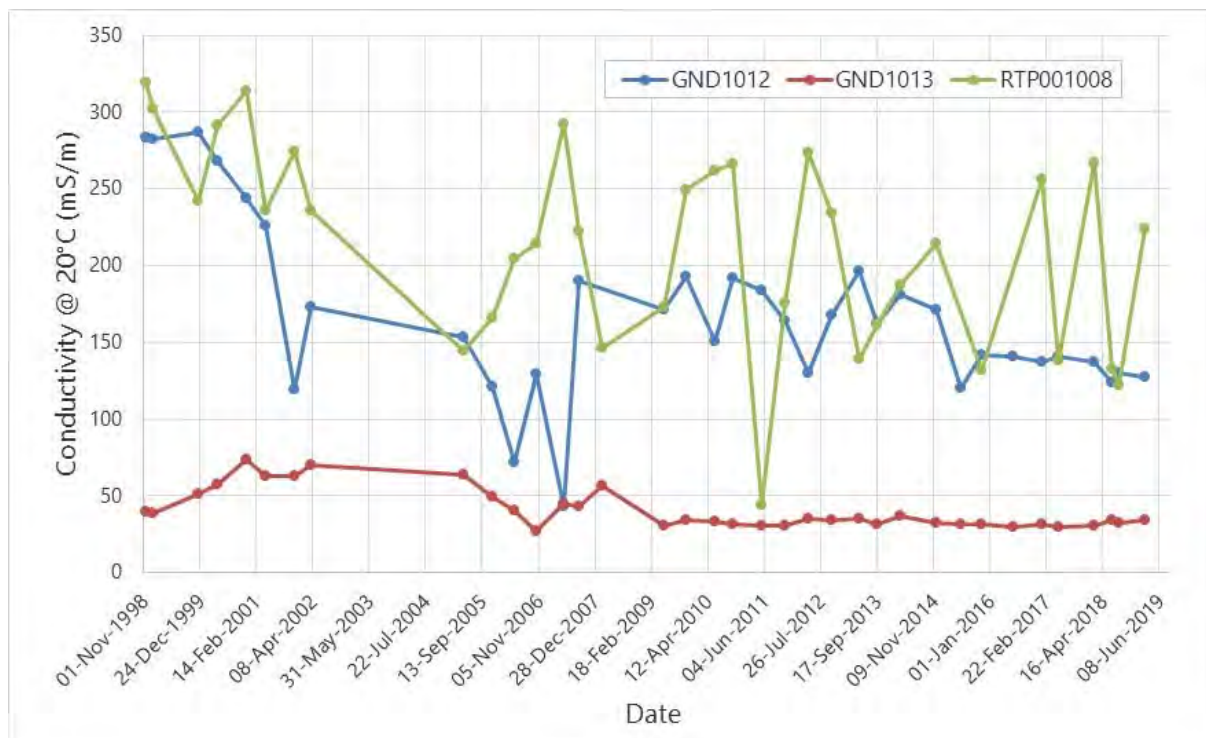


Figure 8 Comparison of conductivity between GND1012, GND1013 and RTP001008

* conductivity is now measured @25°C and results from June 2018 have been converted to 20°C for the graph

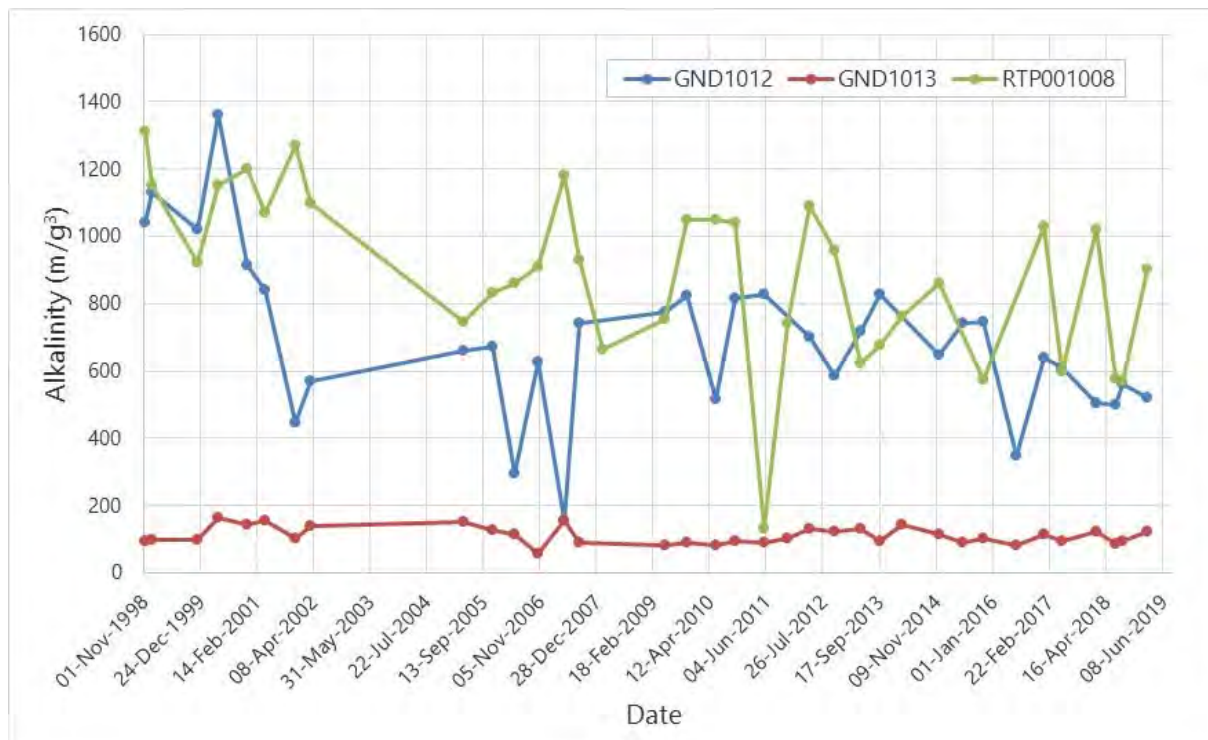


Figure 9 Comparison of alkalinity between GND1012, GND1013 and RTP001008

3.3.4 Results of surface water monitoring

Nine surface water sites (Figure 3) were sampled on one occasion during the period under review. The results of the chemical analysis of these samples are given in Table 6.

The discharge from the landfill tributary culvert contains elevated levels of ammoniacal nitrogen, BOD, iron and alkalinity when compared to the upstream landfill tributary site (TWH000453); this may indicate that some landfill contamination is seeping into the culvert as it passes under the landfill.

The roadside tributary shows moderate levels of contamination, mostly in the form of BOD, iron and ammoniacal nitrogen. Historically, the uppermost monitoring site in the roadside tributary has been found to contain similar levels of contaminants to the landfill tributary at the culvert outlet, which is unsurprising given the extent of historical filling in the area as shown in Figure 3. During the year under review, monitoring showed that the levels of BOD, unionised ammonia and ammoniacal nitrogen were elevated in relation to the landfill tributary, which may have been as a result to the high rainfall and agricultural activities around the headwaters of the roadside tributary.

During the year under review, the water quality results from the Tawhiti Stream sites show that the inflow from the roadside tributary is not having a significant effect on the water quality in the Tawhiti Stream at the consent compliance point (THW000470). Although the, BOD, conductivity, ammoniacal nitrogen and unionised ammonia were elevated in the roadside tributary above the confluence with the stream, these parameters were found to have reduced in the stream downstream of the confluence.

It is however noted that it is likely that there are also groundwater flows from the landfill area towards the stream to the north-west of the site. At this stage there are no monitoring sites upstream of these potential groundwater inflows, and so TWH000450 may not be a true control site for monitoring of this landfill.

This situation and the potential implications will be considered more during the consent renewal process.

Table 6 Chemical analysis of surface water in the vicinity of the Hawera landfill site, 13 November 2018

Parameter	Unit	Roadside tributaries upstream of landfill tributary			Landfill tributary		Roadside tributary downstream of landfill tributary		Tawhiti Stream	
		TWH000451 20m u/s of SW drain	TWH000461 SW trib in-flow culvert*	TWH000452 u/s landfill culvert	TWH000453 10 m u/ s of landfill	TWH000455 Discharge from culvert under landfill	TWH000456 50 m d/s of landfill culvert	TWH000459 10 m u/s confluence	TWH000450 u/s of Matangara Road and roadside tributary	TWH000470 d/s of Matangara Road and roadside tributary
Alkalinity	g/m ³	128	-	114	80	111	110	91	68	71
BOD	g/m ³	5.2	-	1.1	1.0	2.8	2.6	2.0	1.4	1.3
Conductivity @25°C	mS/m	40.1	-	39.8	29.4	39.5	38.7	35.6	28.5	29.2
Dissolved reactive phosphorus	g/m ³	0.007	-	< 0.004	0.008	< 0.004	< 0.004	0.009	0.043	0.038
Acid soluble iron	g/m ³	5.4	-	2.0	0.9	3.0	2.9	1.8	0.8	1.0
Unionised ammonia	g/m ³ -N	0.0188	-	0.0080	0.00071	0.0071	0.0085	0.0157	0.0026	0.0043
Ammoniacal nitrogen	g/m ³ -N	2.8	-	1.19	0.056	0.87	1.52	0.52	0.055	0.105
Nitrate/nitrite nitrogen	g/m ³	0.56	-	1.43	1.68	1.69	1.84	1.41	2.2	2.1
pH	pH	7.4	-	7.4	7.6	7.5	7.3	8.0	8.2	8.1
Temperature	Deg C	14.4	-	14.5	16.1	14.4	14.5	17.1	17.0	16.9
Dissolved zinc	g/m ³	<0.0010	-	0.0158	0.0095	0.0170	0.0141	0.0040	<0.0010	<0.0010

* sample not collected from TWH000461 as there was no safe access to the site

3.3.5 Investigations, interventions, and incidents

In the 2018-2019 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with STDC's conditions in the Hawera landfill resource consents or provisions in Regional Plans.

3.4 Discussion

3.4.1 Discussion of site performance

In general, the Hawera landfill was well managed and the consent holder has a management and contingency plan in place for the site. The final cap appeared in good condition and was found to be well grassed at the time of the inspections. The leachate collection system was found to be functional, and there were no issues noted at the inspections that might indicate significant flow obstructions in the culvert under the landfill.

3.4.2 Environmental effects of exercise of consents

The physicochemical monitoring associated with consent 0444 indicates the leachate discharge from the landfill shows some minor effects on the water quality in the culvert flowing below the landfill, and on water quality in the roadside tributary. Despite this, the landfill is having no significant effect on the water quality of the Tawhiti Stream.

Groundwater in the immediate vicinity of the deposited refuse is affected by the presence of the landfill, but no significant effects were detected in the adjacent waterways monitored.

3.4.3 Evaluation of performance

A tabular summary of STDC's compliance record at Hawera landfill for the year under review is set out in Table 7 and Table 8.

Table 7 Summary of performance for Hawera closed landfill leachate consent 0444-4

Purpose: To discharge up to 2,800 m³/day of leachate and stormwater from the closed Matangara landfill, Hawera, to groundwater and into an unnamed tributary of the Tawhiti Stream in the Tangahoe catchment		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Best practicable option to prevent or minimise any likely adverse effects on the environment	Inspection and water sampling	Yes
2. Maintain adequate capping and vegetative cover	Inspection	Yes
3. Provide a landfill post-closure management plan	Programme management	Yes
4. Adhere to the landfill management plan	Programme management	Yes
5. Maintain drains, ponds and contours on site to minimise unwanted water movement and ponding on site	Inspection	Yes
6. Maintain the leachate collection system	Inspection	Yes

Purpose: To discharge up to 2,800 m³/day of leachate and stormwater from the closed Matangara landfill, Hawera, to groundwater and into an unnamed tributary of the Tawhiti Stream in the Tangahoe catchment		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
7. Mixing zone shall extend 20 m downstream from point of discharge	N/A	N/A
8. Discharge shall not adversely affect the receiving waters	Inspection and water sampling	Yes
9. Monitoring of groundwater, surface water and leachate	Water sampling	Yes
10. Monitoring bores shall be maintained	Inspection	Yes
11. Optional review provision re contamination of the unnamed tributary of the Tawhiti Stream	Not required	N/A
12. Optional review provision re environmental effects	Consent has expired	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 8 Summary of performance for Hawera closed landfill culvert/diversion consent 5831-2

Purpose: To divert an unnamed tributary of the Tawhiti Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Diversion pipe to be kept as clear as is practicable	Not assessed	N/A
2. Obstruction of fish passage prohibited	Not assessed	N/A
3. Optional review provision re environmental effects	Provision for optional review in June 2022	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		N/A
Overall assessment of administrative performance in respect of this consent		N/A

N/A = not applicable

During the year, STDC demonstrated a high level of environmental and administrative performance in relation to the Hawera landfill consents as defined in Section 1.1.5.

3.4.4 Recommendations from the 2017-2018 Annual Report

In the 2017-2018 Annual Report it was recommended:

1. THAT in the first instance, monitoring of discharges from Hawera landfill in the 2018-2019 year remains unchanged from the 2017-2018 monitoring programme. However, it is noted that the appropriateness of the groundwater and surface water monitoring will be reviewed as part of the consent renewal process.
2. THAT should there be any issues with environmental or administrative performance in the 2018-2019, monitoring of the closed Hawera landfill may be adjusted to reflect any additional investigation or intervention as found necessary.

The monitoring programme was unchanged and the consent renewal process is continuing.

3.4.5 Alterations to monitoring programmes for 2019-2020

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

- the extent of information already made available through monitoring or through 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 performance 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 for 2019-2020, the programme remains unchanged. However, it is proposed that it be noted that the appropriateness of the groundwater and surface water monitoring be reviewed as part of the consent renewal process.

It should be noted that the proposed programme represents a reasonable and risk-based level of monitoring for the site in question. The Council reserve 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 2019-2020.

3.5 Recommendations

1. THAT in the first instance, monitoring of discharges from Hawera landfill in the 2019-2020 year remains unchanged from the 2018-2019 monitoring programme. However, it is noted that the appropriateness of the groundwater and surface water monitoring will be reviewed as part of the consent renewal process.
2. THAT should there be any issues with environmental or administrative performance in the 2019-2020, monitoring of the closed Hawera landfill may be adjusted to reflect any additional investigation or intervention as found necessary.

4 Kaponga landfill

4.1 Introduction

4.1.1 Site description

STDC (previously as Eltham District Council) operated the Kaponga landfill from the 1970's to 1993. The Kaponga landfill site is located in a gully that also has a wetland fed by a number of springs emanating from within the landfill (Figure 10). This landfill closed in 1993. The cap has been covered by pasture for over a decade and the site is now part of a dairy farm. On closure, the site was sown in suitable pasture grasses to ensure rapid stormwater runoff and minimise percolation through the capping layer. Raupo growth on the lower face of the reinstated surface provides some natural attenuation of leachate and hence gives protection to the Waiokura Stream.

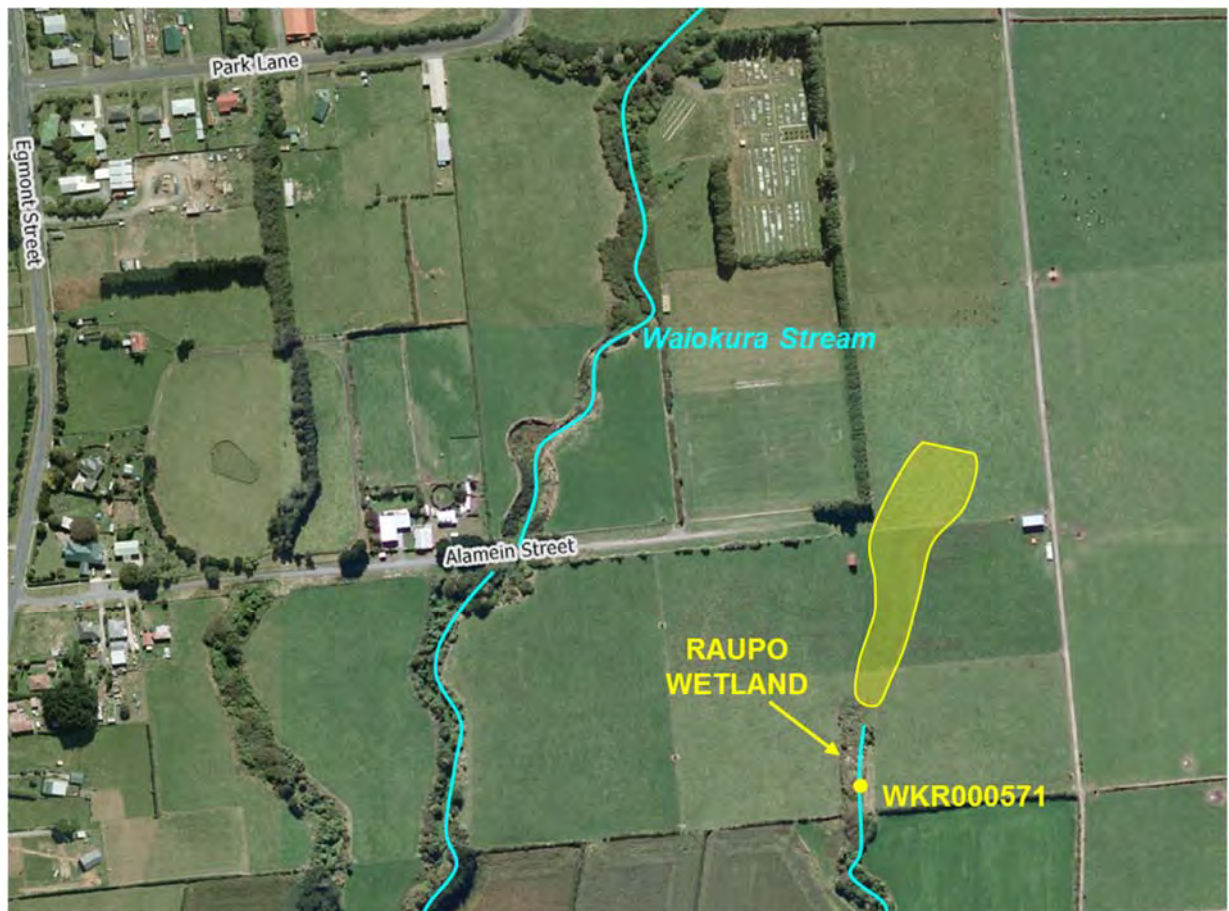


Figure 10 Aerial view of the Kaponga landfill site

4.2 Resource consents

4.2.1 Water discharge permit

STDC holds water discharge permit 3459-3 to cover the discharge of leachate and stormwater from Kaponga landfill into an unnamed tributary of the Waiokura Stream. This permit was issued by the Council on 17 March 2005 under Section 87(e) of the RMA. It is due to expire on 1 June 2023.

4.3 Results

Monitoring of this site is scheduled to be undertaken on a triennial basis, with the programme next scheduled to be implemented in the 2020-2021 year. Therefore no inspections or sampling were undertaken during the period under review.

4.3.1 Investigations, interventions, and incidents

In the 2018-2019 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with STDC's conditions in the Kaponga landfill resource consents or provisions in Regional Plans.

4.4 Discussion

4.4.1 Evaluation of performance

A tabular summary of STDC's compliance record for the Kaponga landfill for the year under review is set out in Table 9.

Table 9 Summary of performance for Kaponga closed landfill stormwater and leachate consent 3459-3

Purpose: To discharge stormwater and leachate from the former Kaponga landfill site into an unnamed tributary of the Waiohura Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practice	Inspection	N/A
2. Prepare and maintain a site contingency plan	Plan on file from August 2013	N/A
3. Monitor ground and surface water on and near the site	Inspection	N/A
4. Maintain all stormwater and leachate collection systems	Inspection	N/A
5. No adverse impact on aquatic life	Inspection	N/A
6. Optional review provision re environmental effects	No further provision for review	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		N/A
Overall assessment of administrative performance in respect of this consent		N/A

N/A = not applicable

During the year, the environmental and administrative performances of STDC in relation to the Kaponga closed landfill consent were not assessed.

4.4.2 Recommendations from the 2017-2018 Annual Report

In the 2017-2018 Annual Report it was recommended:

1. THAT in the first instance, the Kaponga landfill triennial monitoring programme remains in place with monitoring next scheduled for the 2020-2021 period.

2. THAT should there be any issues with environmental or administrative performance in the 2018-2021, monitoring of the Kaponga landfill may be adjusted to reflect any additional investigation or intervention as found necessary.

These recommendations were implemented.

4.4.3 Alterations to monitoring programmes for 2019-2020

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 for 2019-2020, the programme remains unchanged.

It should be noted that the proposed programme represents a reasonable and risk-based level of monitoring for the site 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 2019-2020.

4.5 Recommendations

1. THAT in the first instance, the Kaponga landfill triennial monitoring programme remains in place with monitoring next scheduled for the 2020-2021 period.
2. THAT should there be any issues with environmental or administrative performance in the 2019-2020, monitoring of the Kaponga landfill may be adjusted to reflect any additional investigation or intervention as found necessary.

5 Manaia landfill

5.1 Introduction

5.1.1 Site description

The Manaia community landfill was in operation from the 1980s and STDC has held consent 3952, which authorises the discharge of both leachate and stormwater from the site, since 1991. The landfill used to service the township of Manaia and the surrounding rural areas exclusively. However with the closure of the Matangara landfill (Hawera) in June 1998 and the Opunake landfill in November 1999, the landfill's catchment expanded to service these other areas until it closed in June 2006.

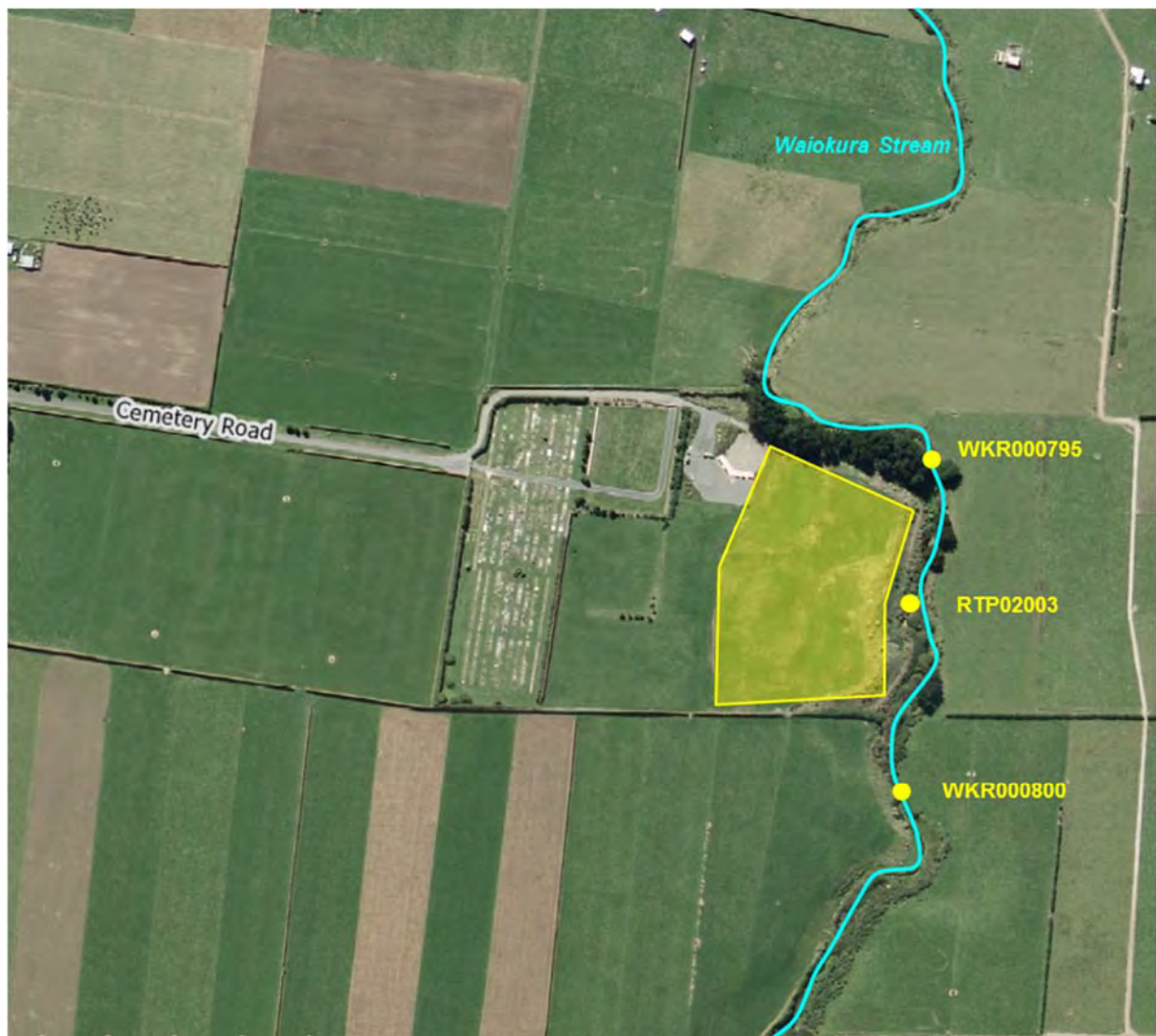


Figure 11 Aerial view of Manaia landfill showing sampling sites and landfill footprint

5.2 Resource consents

5.2.1 Water discharge permit

STDC holds water discharge permit 3952-2 to cover the discharge of leachate and stormwater from Manaia landfill into the Waiokura Stream. This permit was issued by the Council on 20 June 2005 under Section 87(e) of the RMA. It is due to expire on 1 June 2023.

5.3 Results

5.3.1 Inspections

Two inspections were carried out during the monitoring year. The inspections focused on the condition of the cap and the management of stormwater and leachate.

20 September 2018

The site was inspected in warm, fine weather with light wind conditions. The cap was in excellent condition. It was obvious that the cap had not been grazed for some time, as the pasture was at knee height in places. No slumping or erosion on the cap was evident, water troughs were in correct working order and there was no refuse exposed.

The stormwater drains were clear of obstructions and dry. The leachate drains were clear and dry, with no ponding observed. All flow was contained. The northern and eastern drains were well-maintained, clear of gorse and free-flowing. The leachate pond was stagnant and not discharging at the time of the inspection. The Waiokura Stream was slightly turbid brown, with a moderate, swift flow.

The batters were being grazed, and there was minor stock damage from tracking and rubbing. Site signage and security measures were intact and in place. Fencing at the site was permanent and in good condition. No odour or dust issues were noted.

17 April 2019

The site was inspected in fine weather with a light south-east wind. The cap was relatively dry underfoot and had been recently grazed by dairy cows. Two water troughs had been installed on the cap, one of which was located in the middle of the stormwater swale on the north western cap area. This had the potential to impact stormwater drainage and reduce the integrity of the cap. Some stock damage was noted in the vicinity of the other water trough, as well as to the south where a temporary feed pad appeared to have been located (Photos 1 and 2). The loss of vegetative cover in these areas had the potential to create localised ponding and reduce the integrity of the cap.

The batters were intact and vegetated, and appeared to have been recently grazed. No slumping, cracking, or exposed refuse was noted on either the cap or batters. The stormwater drains were well-defined and dry underfoot despite recent wet weather and grazing. No ponding or signs of recent flow were observed. The leachate drains were dry and no discharge was observed. The leachate pond was stagnant with a relatively low level.

Signage and fencing were intact and permanent. The boundary fencing on the cap had recently been replaced and was in excellent condition. The transfer station was tidy and unoccupied at the time, with no windblown refuse. No odour or dust issues were noted.



Photo 1 Stock damage around a water trough on Manaia landfill cap, 17 April 2019



Photo 2 Stock damage to Manaia landfill cap on feed pad site, 17 April 2019

5.3.2 Results of discharge and receiving environment monitoring

During the year under review samples were collected from the leachate pond and the Waiokura Stream upstream and downstream of the landfill (Figure 11) on two occasions. The results are presented in Table 10.

Table 10 Chemical analysis of discharge and receiving waters at Manaia landfill

		20 September 2018			17 April 2019		
Parameter	Unit	WKR000795 u/s landfill	Leachate RTP002003	WKR000800 d/s of landfill	WKR000795 u/s landfill	Leachate RTP002003	WKR000800 d/s of landfill
Alkalinity	g/m ³ CaCO ₃	-	-	-	62	320	62
BOD	g/m ³	-	-	-	0.7	3.5	0.9
Conductivity @ 25°C	mS/m	28.1	102.5	28.4	29.6	99.0	29.6
Dissolved reactive phosphorus	g/m ³ P	-	-	-	0.053	<0.004	0.055
Acid soluble iron	g/m ³	-	-	-	<0.4	<0.4	<0.4
Unionised ammonia	g/m ³ N	0.00030	0.023	0.00048	0.00047	0.0119	0.00114
Ammoniacal nitrogen	g/m ³ N	0.022	2.4	0.037	0.031	0.95	0.084
Nitrite/nitrate nitrogen	g/m ³ N	-	-	-	3.0	0.084	3.0
pH	pH	7.7	7.5	7.8	7.8	7.7	7.8
Suspended solids	g/m ³	-	-	-	<3	14	3
Temperature	Deg.C	13.8	16.6	13.0	12.4	12.9	12.0
Dissolved zinc	g/m ³	<0.0010	0.0059	<0.0010	<0.0010	0.0048	<0.0010

On both sampling occasions results generally showed little change in water quality between the upstream and downstream sites. This is consistent with historical data and indicates that the presence of the landfill is having little, if any, effect on water quality in the Waiokura Stream. Unionised ammonia concentrations were well below the 0.025 g/m³ guideline given in the Regional Freshwater Plan to protect aquatic ecosystems that may be subjected to long term exposure.

5.3.3 Investigations, interventions, and incidents

Table 11 below sets out details of any incidents recorded, additional investigations, or interventions required by the Council in relation to the Manaia closed landfill during the 2018-2019 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 11 Incidents, investigations, and interventions summary table

Date	Details	Compliant (Y/N)	Enforcement Action Taken?	Outcome
17/04/2019	During routine monitoring it was discovered that the lessee had installed water troughs on the capped area in locations that could impact stormwater runoff. Poor stock management had resulted in damage to the cap around the trough and feed-pad areas.	N	Explanation requested	Works undertaken to remove the trough and relocate this and the feed-pad away from the cap. Stormwater drains reinstated.

5.4 Discussion

5.4.1 Discussion of site performance

During the majority of the year under review, the site was found to be compliant with consent conditions.

During the final inspection of the year it was observed that the lessee had installed water troughs on the cap. One of which was located in the middle of a stormwater swale, with the potential to impact stormwater drainage and reduce the integrity of the cap. There was stock damage to the cap around the other one and a feed pad located on the cap had also resulted in stock damage. STDC arranged for the relocation of the troughs and feed pad away from the capped area.

5.4.2 Environmental effects of exercise of consents

There was little variation in water quality in the Waiokura Stream above and below the landfill site, and this is comparable to historical data. The results gathered in this and previous monitoring periods, indicate that the presence of the landfill is not causing any significant adverse effects on the receiving environment.

5.4.3 Evaluation of performance

A tabular summary of STDC's compliance record at Manaia landfill for the year under review is set out in Table 12.

Table 12 Summary of performance for Manaia consent 3952-2

Purpose: To discharge leachate and stormwater from the closed Manaia landfill and from composting operations into the Waiokura Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. STDC shall adopt the best practicable option	Programme management	Yes
2. STDC shall prepare a site contingency plan	Plan on file dated August 2013	Yes
3. Prepare a landfill management plan	Programme management	Yes
4. STDC shall notify the Council of changes to plans prior to changes	No changes made	Yes

Purpose: To discharge leachate and stormwater from the closed Manaia landfill and from composting operations into the Waiokura Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
5. Monitor site, ground and surface water on and near the site	Water sampling	Yes
6. Install leachate and stormwater collection, treatment and discharge systems	Inspections	Some issues with cap damage
7. Limits on BOD and NH ₃ in the Waiokura Stream	Water sampling	Yes
8. 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		Good
Overall assessment of administrative performance in respect of this consent		High

N/A = not applicable

During the year, STDC demonstrated a good level of environmental and high level of administrative performance in relation to the Manaia landfill consent as defined in Section 1.1.5.

5.4.4 Recommendations from the 2017-2018 Annual Report

In the 2017-2018 Annual Report, it was recommended:

1. THAT in the first instance, the monitoring of discharges from the closed landfill at Manaia in the 2018-2019 year continues at the same level as in 2017-2018.
2. THAT should there be issues with environmental or administrative performance in 2018-2019, monitoring of the Manaia landfill may be adjusted to reflect any additional investigation or intervention as found necessary.

These recommendations were implemented.

5.4.5 Alterations to monitoring programmes for 2019-2020

In designing and implementing the monitoring programmes for 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 administrative and environmental performance 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 for 2019-2020, the monitoring programme remains unchanged.

It should be noted that the proposed programme represents a reasonable and risk-based level of monitoring for the site 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 2019-2020.

5.5 Recommendations

1. THAT in the first instance, the monitoring of discharges from the closed landfill at Manaia in the 2019-2020 year continues at the same level as in 2018-2019.
2. THAT should there be issues with environmental or administrative performance in 2019-2020, monitoring of the Manaia landfill may be adjusted to reflect any additional investigation or intervention as found necessary.

6 Opunake landfill

6.1 Introduction

6.1.1 Site description

The Opunake landfill was operational from 1979, closing in 1999 with the expiry of the 20 year lease of the land. The landfill site is located on Whitcombe Road, and was used to service the township of Opunake and the surrounding rural areas. Waste from Rahotu and Pungarehu was also disposed of at the landfill. The 4.73 ha site was initially operated in an uncontrolled manner for many years with a significant amount of rubbish being burnt. In 1990 a ban on fires was imposed and the site began to operate under restricted hours. In 1999 STDC submitted a landfill closure plan and had the site reinstated.



Figure 12 Aerial view of Opunake landfill footprint and sampling sites

6.2 Resource consents

6.2.1 Water discharge permit

STDC holds water discharge permit 0526-4 to discharge stormwater and leachate from the closed Opunake landfill into the Otahi Stream. This permit was issued by the Council on 28 November 2018 under Section 87(e) of the RMA. It is due to expire on 1 June 2029.

6.3 Results

6.3.1 Inspections

Two compliance monitoring inspections were carried out at the closed Opunake landfill during the year under review.

20 September 2018

An inspection was conducted in warm, fine weather with light winds. The cap was intact and slightly wet underfoot in places following a period of rain prior. This was being grazed at the time of the inspection with around 15 young bulls noted. Some minor stock damage was observed, localized in areas around gateways, while the rest of the cap and batters were well-vegetated. Water troughs were full but not overflowing. No slumping, cracking, or exposed refuse was noted.

The stormwater system on the cap was dry, but there was significant ponding in the southern corner adjacent to the discharge point. The drains were stagnant. The leachate drains were clear of obstructions and full of water. There was no discharge into the Otahi Stream.

Fencing onsite was intact and permanent. There was good access available to all sampling sites. No odour or dust issues were noted.

17 April 2019

An inspection was conducted in fine weather with light south east-winds. The cap and batters were intact and well-grassed with no slumping, cracking or exposed refuse noted. The cap was being grazed by light stock, and showed no signs of damage, particularly around water troughs and gateways. The water troughs were well-maintained and showed no sign of overflows or leaks. The batters were tidy and showed signs of recent weed control.

The stormwater drains were clear and unobstructed, with no sign of flow following recent wet weather. Slight ponding was observed in the leachate drain immediately adjacent to the discharge point. All leachate was being contained by the drainage system.

Fencing was permanent and intact. No odour or dust issues were noted.

6.3.2 Results of discharge and receiving environment monitoring

6.3.2.1 Surface water

Samples were collected from the leachate drain, and the Otahi Stream at sites above, below and adjacent to the landfill on 30 August 2017 (Figure 12). The results are presented in Table 13.

There was very little difference in water quality between sites upstream and downstream of the landfill and the water quality at the downstream site was good, complying with consent conditions with regards to unionised ammonia, ammoniacal nitrogen, pH and dissolved zinc. As in the previous monitoring year, it is noted that the levels of unionised ammonia and ammoniacal nitrogen in the leachate discharge are atypically high. Levels of unionised ammonia were the highest on record for this site, while ammoniacal nitrogen was slightly lower than the high recorded in 2017-2018, but well above the median of 2.1. This can most likely be attributed to stock grazing the batters, and the associated stock effluent entering the leachate, rather than the breakdown of landfill material. As the leachate discharges at a slow rate, the amount of dilution available in the Otahi Stream ensures that the level of contaminants in the stream remain at an acceptable level.

These results, and those from previous years, indicate that the presence of the landfill is not having a significant adverse effect on surface water quality.

Table 13 Chemical analysis of receiving water samples taken at Opunake closed landfill, 20 September 2018

Parameter	Units	RTP002002 Leachate	OTH000310 u/s of landfill	OTH000320 Adjacent to landfill	OTH000340 d/s of landfill
Alkalinity	g/m ³ CaCO ₃	610	65	65	64
Biochemical oxygen demand	g/m ³	4.3	0.5	0.5	0.5
Conductivity @ 25°C	mS/m	161	27.2	27.3	27.1
Dissolved reactive P	g/m ³	< 0.004	0.032	0.033	0.038
Acid soluble iron	g/m ³	< 0.4	0.4	0.4	0.5
Unionised ammonia	g/m ³ N	0.73	0.0006	0.0005	0.0004
Ammoniacal nitrogen	g/m ³ N	18.9	0.014	0.013	0.013
pH	pH	7.9	8.2	8.2	8.0
Temperature	Deg.C	22.3	15.1	15.1	15.3
Dissolved zinc	g/m ³	0.191	<0.0010	<0.0010	0.0023

6.3.3 Biomonitoring

A biological survey was performed on 30 January 2019 in the Otahi Stream to determine whether or not the discharge of leachate to the stream had any detrimental effects upon the communities of the stream.

Overall, there was no evidence that the macroinvertebrate communities of the Otahi Stream had suffered any recent adverse effects as a result of the leachate discharge from the closed Opunake landfill, with similar taxa richness, SQMCI scores and community composition between the two sites, and a significant improvement in MCI score downstream of the landfill compared with historical results.

A copy of the biomonitoring report for this site is available from the Council upon request.

6.3.4 Investigations, interventions, and incidents

In the 2018-2019 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with STDC's conditions in the Opunake landfill resource consent or provisions in Regional Plans.

6.4 Discussion

6.4.1 Discussion of site performance

The landfill has been closed for several years and has reverted to pasture. In general, the Opunake landfill was well managed, and the consent holder has a management and contingency plan in place for the site.

6.4.2 Environmental effects of exercise of consents

The results of inspections, water sampling, and biomonitoring did not indicate that the presence of the closed landfill was having any adverse effects on the environment.

6.4.3 Evaluation of environmental performance

A tabular summary of STDC's compliance record at the Opunake landfill for the year under review is set out in Table 14.

Table 14 Summary of performance for Opunake closed landfill stormwater and leachate consent 0526-4

Purpose: To discharge stormwater and leachate from the closed Opunake landfill into the Otahi Stream		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. STDC shall adopt the best practicable option	Programme management and inspections	Yes
2. Landfill cap and stormwater and leachate drainage systems to be maintained	Inspections	Yes
3. Site operated in accordance with a 'Management Plan'	Management Plan received July 2019	Yes
4. Standards in water quality downstream	Water sampling	Yes
5. There shall be no adverse impact on aquatic life as a result of discharges	Inspections and water sampling	Yes
6. Optional review provision	Provision for optional review in June 2024	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, STDC demonstrated a high level of environmental and administrative performance in relation to the Opunake landfill consent as defined in Section 1.1.5.

6.4.4 Recommendations from the 2017-2018 Annual Report

In the 2017-2018 Annual Report it was recommended:

1. THAT in the first instance, monitoring of discharges from Opunake landfill in the 2018-2019 year continues at the same level as in 2017-2018.
2. THAT should there be any issues with the environmental or administrative performance in 2018-2019, monitoring of the Opunake landfill may be adjusted to reflect any additional investigation or intervention as found necessary.

Recommendation one was implemented, while it was not considered necessary to carry out additional investigations or interventions as per recommendation two.

6.4.5 Alterations to monitoring programmes for 2019-2020

In designing and implementing the monitoring programmes for 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 performance 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 for 2019-2020, the monitoring programme remains unchanged.

It should be noted that the proposed programme represents a reasonable and risk-based level of monitoring for the site 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 2019-2020.

6.5 Recommendations

1. THAT in the first instance, monitoring of discharges from Opunake landfill in the 2019-2020 year continues at the same level as in 2018-2019.
2. THAT should there be any issues with the environmental or administrative performance in 2019-2020, monitoring of the Opunake landfill may be adjusted to reflect any additional investigation or intervention as found necessary.

7 Otakeho landfill

7.1 Introduction

7.1.1 Site description

The Otakeho landfill (Figure 13) was a small uncontrolled landfill that STDC closed in 1991. STDC at the time also applied for a consent to discharge leachate and stormwater into the Taikatu Stream. This consent was renewed in 2000, 2005, and recently in November 2018. The consent allows for discharge of leachate and stormwater to land where it may enter water.

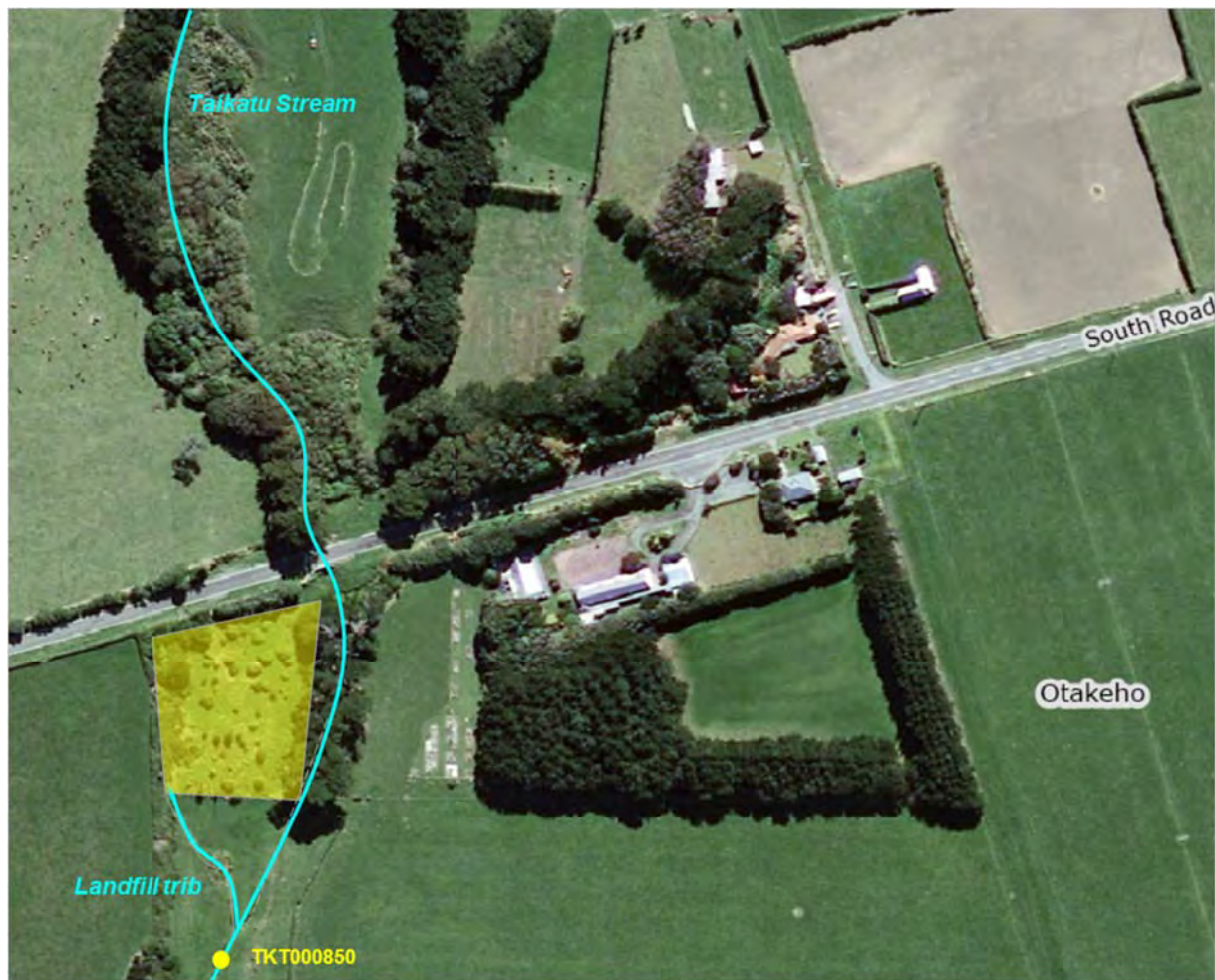


Figure 13 Aerial image of Otakeho landfill and monitoring site in the Taikatu Stream

7.2 Resource consent

7.2.1 Water discharge permit

STDC holds water discharge permit **3953-4** to cover the discharge of leachate and stormwater from the closed Otakeho landfill onto and into land in the vicinity of the unnamed tributary of the Tawhiti Stream. This permit was issued by the Council on 6 November 2018 under Section 87(e) of the RMA. The consent is due to expire on 1 June 2022.

7.3 Results

Monitoring of this site is scheduled to be undertaken on a triennial basis, with the programme next scheduled to be implemented in the 2019-2020 year. Therefore no inspections or sampling were undertaken during the period under review.

7.3.1 Investigations, interventions, and incidents

In the 2018-2019 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, relating to the Otakeho closed landfill, either conditions in the resource consent or provisions in Regional Plans.

7.4 Discussion

7.4.1 Evaluation of performance

A tabular summary of STDC's compliance record at the Otakeho landfill for the year under review is set out in Table 15.

Table 15 Summary of performance for Otakeho closed landfill stormwater and leachate consent 3953-4

<i>Purpose: To discharge leachate and stormwater from the closed Otakeho Municipal Landfill onto and into land where it may enter water</i>		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. BPO to prevent or minimise any likely adverse effects on the environment	Inspections	N/A
2. Landfill cap and stormwater and leachate drainage systems maintained	Inspections	N/A
3. Operation of site in accordance with 'Management Plan'	Management Plan received July 2019	Yes
4. Standards to be met in receiving waters below mixing zone	Sampling	N/A
5. Effects not to be caused in receiving waters	Inspections and sampling	N/A
6. Optional review provision re environmental effects	Optional review in June 2020, recommendation attached	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		N/A
Overall assessment of administrative performance in respect of this consent		N/A

N/A = not applicable

During the year, the environmental and administrative performances of STDC in relation to the Otakeho closed landfill consent were not assessed.

7.4.2 Recommendations from the 2017-2018 Annual Report

In the 2017-2018 Annual Report it was recommended:

1. THAT in the first instance, the Otakeho landfill triennial monitoring programme remains in place with monitoring next scheduled to be implemented in the 2019-2020 period.
2. THAT should there be issues with environmental or administrative performance in 2018-2020, monitoring of the Otakeho landfill may be adjusted to reflect any additional investigation or intervention as found necessary.

Recommendation one was implemented, while additional investigations or interventions were not considered necessary as per recommendation two.

7.4.3 Alterations to monitoring programmes for 2018-2019

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

- the extent of information made 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 performance 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 for 2019-2020, the monitoring programme remains unchanged.

It should be noted that the proposed programme represents a reasonable and risk-based level of monitoring for the site 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 2019-2020.

7.4.4 Exercise of optional review of consent

Resource consent 3953-4 provides for an optional review of the consent in June 2020. Condition 6 allows the Council to review the consent, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment.

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

7.5 Recommendations

1. THAT in the first instance, the Otakeho landfill triennial monitoring programme remains in place with monitoring next scheduled to be implemented in the 2019-2020 period.
2. THAT should there be issues with environmental or administrative performance in 2019-2020, monitoring of the Otakeho landfill may be adjusted to reflect any additional investigation or intervention as found necessary.
3. THAT the option for a review of resource consent 3953-4 in June 2020, as set out in condition 6 of the consent, not be exercised, on the grounds that the current conditions are adequate.

8 Patea landfill

8.1 Introduction

8.1.1 Site Description

Prior to 1991, the Patea landfill was a largely uncontrolled landfill servicing the residents of Patea. In 1992 STDC applied for resource consents to continue operating the landfill under the RMA. The landfill continued to operate until December 2007 and was then covered with a light clay cap. Full landfill closure works commenced in August 2008 and were completed in November of the same year.

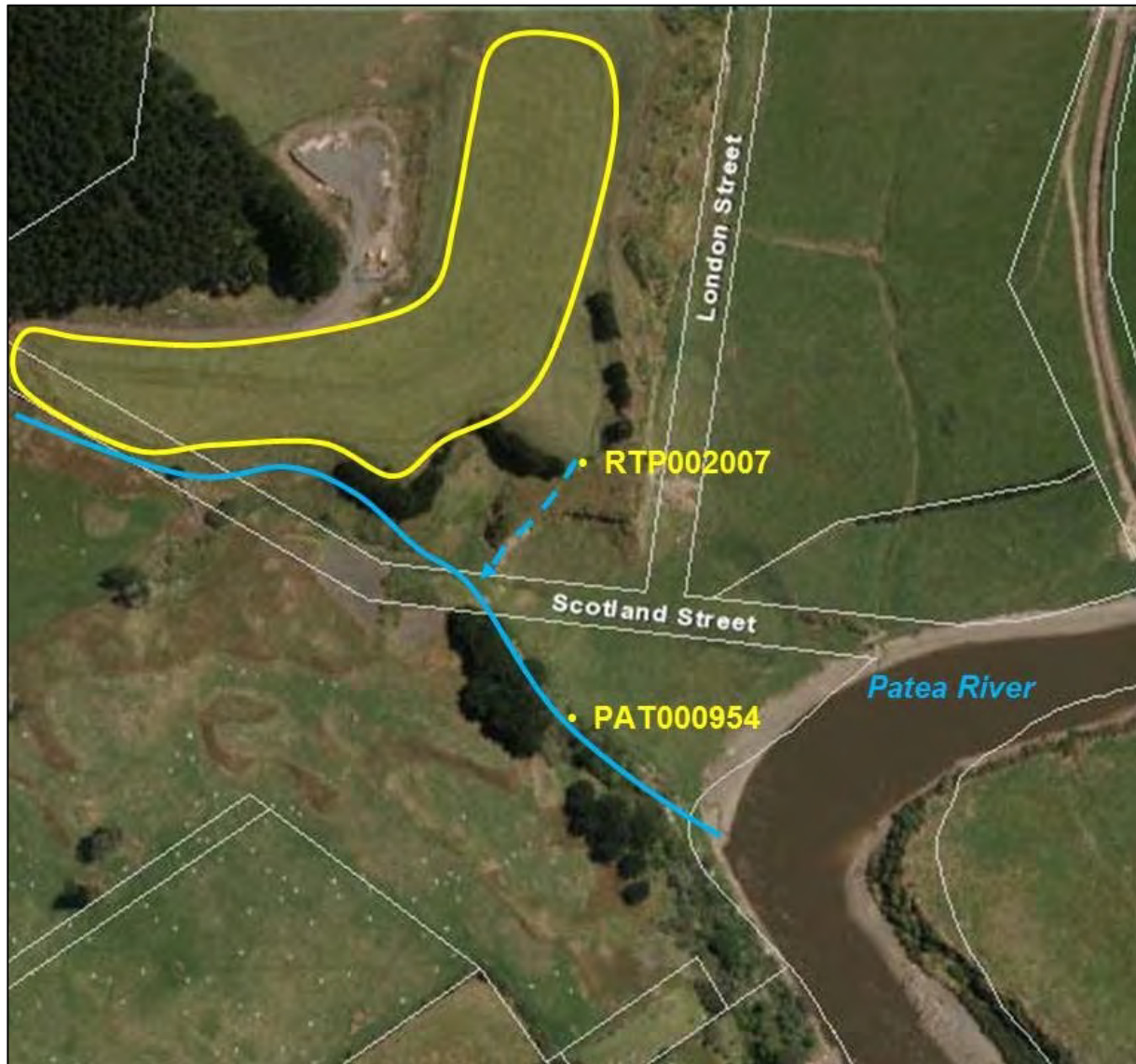


Figure 14 Aerial view of the landfill at Patea showing sampling sites (landfill footprint in yellow)

8.2 Resource consents

8.2.1 Water discharge permits

STDC holds water discharge permit 0427-3 to cover the discharge of leachate and stormwater from the Patea landfill into an unnamed tributary of the Patea River. This permit was issued by the Council on 16 December 2003 under Section 87(e) of the RMA. It is due to expire on 1 June 2022.

STDC holds water discharge permit 7268-1 to cover the discharge of stormwater from earthworks associated with the closure of Patea landfill into an unnamed tributary of the Patea River. This permit was issued by the Council on 26 March 2008 under Section 87(e) of the RMA. It is due to expire on 1 June 2022.

8.2.2 Air discharge permit

STDC holds air discharge permit 4636-2 to cover discharge emissions into the air from Patea municipal landfill. This permit was issued by the Council on 16 December 2003 under Section 87(e) of the RMA. It is due to expire on 1 June 2022.

8.3 Results

8.3.1 Inspections

The Patea landfill site was visited three times during the monitoring period.

23 August 2018

An inspection was carried out during wet weather conditions. All perimeter stormwater drains were flowing freely and the leachate interceptor pits were full and discharging. The landfill cap and stormwater embankments were intact, with no signs of slumping. Cattle had not caused any significant pugging to the capped area over the winter period. No odours were noted. No visual environmental issues were noted in the receiving waters downstream.

6 December 2018

An inspection was carried out after heavy rainfall. All perimeter drains were flowing and discharging to the treatment ponds prior to the leachate interceptor pit. The lower leachate interceptor pit was full and discharging into the unnamed tributary. No visual environmental issues were noted in regards to leachate. The landfill cap remained fully intact, with no signs of slumping. Grazing appeared to have been appropriately managed at the site. There were no odours noted at the time of the inspection.

13 May 2019

An inspection was carried out at the landfill site during heavy rainfall. All perimeter stormwater collection drains were flowing and discharging to the lower leachate interceptor pit. The interceptor pit was full and overflowing to the unnamed tributary. No visual environmental issues were noted with regards to leachate. The land fill cap was fully intact and showing no signs of slumping. No exposed inorganic material was observed. The paddocks had not recently been grazed. No odours were noted.

8.3.2 Discharge and receiving water monitoring

During the 2018-2019 period six water samples were taken at the site. The leachate/stormwater (RTP002007), upstream (PAT000950) and downstream of the landfill (PAT00954) were sampled. The location of the sampling sites is shown in Figure 14 and the results from the chemical analysis of these samples are set out in Table 16.

Table 16 Chemical analysis of samples taken in the vicinity of the Patea closed landfill site

Parameter	Unit	23 August 2018			13 May 2019		
		RTP002007 leachate	PAT000950 upstream	PAT000954 downstream	RTP002007 leachate	PAT000950 upstream	PAT000954 downstream
Alkalinity	g/m ³ CaCO ₃	165	96	114	96	104	115
BOD	g/m ³	1.9	<0.4	0.9	3.3	1.9	2.5
Conductivity @ 25°C	mS/m	39.5	57.6	58.1	33.2	64.8	60.6
Acid soluble iron	g/m ³	1.3	1.6	1.8	<0.4	0.9	2.4
Unionised ammonia	g/m ³ N	0.031	0.0138	0.024	0.00015	0.0047	0.00166
Ammoniacal nitrogen	g/m ³ N	3.80	1.18	1.63	0.023	0.460	0.185
pH	g/m ³	7.6	7.7	7.8	7.4	7.6	7.5
Temperature	°C	10.7	13.7	13.0	14.0	14.2	14.2
Dissolved zinc	g/m ³	0.0028	0.0015	0.0052	0.042	<0.0010	0.0019

The results indicate that there was some contamination in the collected leachate in the form of elevated alkalinity, BOD, ammoniacal nitrogen and unionised ammonia levels.

In the tributary, the unionised ammonia concentration approached the 0.025 g/m³ guideline on 23 August, reaching 0.024 g/m³ downstream of the landfill. The guideline is given in the Regional Freshwater Plan to protect aquatic ecosystems that may be subjected to long term exposure.

Any discharges to the Patea River are unlikely to have a significant adverse effect due to minor levels of contaminants found and the large dilution potential available.

8.3.3 Investigations, interventions, and incidents

In the 2018-2019 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with the STDC's conditions in the Patea landfill resource consents or provisions in Regional Plans.

8.4 Discussion

8.4.1 Discussion of site performance

The site was found to be well vegetated with no evidence of stock damage to the cap. There were no odour or leachate issues found at the time of inspection.

8.4.2 Environmental effects of exercise of consents

Leachate will continue to generate at the site for some time and this generally seeps out to land via the bluff on the western edge of the land filled area. The information gathered during the period under review indicates that the landfill's presence is unlikely to be having any significant effect on the environment.

8.4.3 Evaluation of performance

A tabular summary of STDC's compliance record for the Patea landfill for the year under review is set out in Tables 17 to 19.

Table 17 Summary of performance for Patea closed landfill stormwater and leachate consent 0427-3

Purpose: To discharge surface stormwater and leachate from the Patea municipal landfill into an unnamed tributary of the Patea River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Prepare and maintain a site contingency plan	Plan on file dated August 2013	Yes
2. Prepare and maintain a landfill management plan	Programme management	Yes
3. Advise of any changes being made to the management plan or the site contingency plan	No changes during period under review	Yes
4. Comply with information submitted in support of application	Programme management	Yes
5. Monitor ground and surface water on and near the site	Water sampling	Yes
6. Maintain all stormwater and leachate collection systems	Inspections	Yes
7. No adverse impact on aquatic life	Inspections and water sampling	Yes
8. Adopt the best practicable option to prevent or minimise any likely adverse effects on the environment	Programme management	Yes
9. Optional review provision re environmental effects	No further opportunities for review	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 18 Summary of performance for Patea closed landfill air discharge consent 4636-2

Purpose: To discharge emissions into the air from the Patea municipal landfill activities		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Prepare and maintain a site contingency plan	Plan on file dated August 2013	Yes
2. Prepare and maintain a landfill operations and management plan	Programme management	Yes

Purpose: To discharge emissions into the air from the Patea municipal landfill activities		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
3. Advise of any changes being made to the operations and management plan or the site contingency plan	No changes during period under review	Yes
4. No material shall be burnt on site	Inspections	Yes
5. Comply with information submitted in support of application	Programme management	Yes
6. Prevent or minimise any likely adverse effects on the environment	Inspections	Yes
7. Optional review provision re environmental effects	No further opportunities for review	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 19 Summary of performance for Patea closed landfill stormwater and sediment consent 7268-1

Purpose: To discharge stormwater and sediment onto and into land and into an unnamed tributary of the Patea River from earthworks associated with the closure of the Patea Landfill		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practicable option	Not monitored during period under review	N/A
2. Exercise consent in accordance with application	Not monitored during period under review	N/A
3. Notify before exercising consent	Not monitored during period under review	N/A
4. Take reasonable steps to minimise effects	Not monitored during period under review	N/A
5. Reinstatement and stabilisation as soon as possible	Not monitored during period under review	N/A
6. A lapse condition	N/A	N/A
7. Optional review provision re environmental effects	No further opportunities for review	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		N/A –consent no longer exercised
Overall assessment of administrative performance in respect of this consent		

N/A = not applicable

During the year, STDC demonstrated a high level of environmental and a high level of administrative performance in relation to the Patea landfill consents as defined in Section 1.1.5.

8.4.4 Recommendations from the 2017-2018 Annual Report

In the 2017-2018 Annual Report, it was recommended:

1. THAT in the first instance, the monitoring of discharges from the closed Patea landfill in the 2018-2019 year remains unchanged from that of 2017-2018.
2. THAT should there be issues with environmental or administrative performance in 2018-2019, monitoring of the Patea landfill may be adjusted to reflect any additional investigation or intervention as found necessary.

Recommendation one was implemented, while additional investigations or interventions were not considered necessary as per recommendation two.

8.4.5 Alterations to monitoring programmes for 2019-2020

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 for 2019-2020, the monitoring programme remains unchanged.

It should be noted that the proposed programme represents a reasonable and risk-based level of monitoring for the site 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 2019-2020.

8.5 Recommendations

1. THAT in the first instance, the monitoring of discharges from the closed Patea landfill in the 2019-2020 year remains unchanged from that of 2018-2019.
2. THAT should there be issues with environmental or administrative performance in 2019-2020, monitoring of the Patea landfill may be adjusted to reflect any additional investigation or intervention as found necessary.

9 Summary of recommendations

1. THAT in the first instance, the monitoring of discharges from the closed landfill at Eltham in the 2019-2020 year continue at the same level as in 2018-2019.
2. THAT should there be any issues with environmental or administrative performance in 2019-2020, monitoring of the closed landfill at Eltham may be adjusted to reflect any additional investigation or intervention as found necessary.
3. THAT in the first instance, monitoring of discharges from Hawera landfill in the 2019-2020 year remains unchanged from the 2018-2019 monitoring programme. However, it is noted that the appropriateness of the groundwater and surface water monitoring will be reviewed as part of the consent renewal process.
4. THAT should there be any issues with environmental or administrative performance in the 2019-2020, monitoring of the closed Hawera landfill may be adjusted to reflect any additional investigation or intervention as found necessary.
5. THAT in the first instance, the Kaponga landfill triennial monitoring programme remains in place with monitoring next scheduled for the 2020-2021 period.
6. THAT should there be any issues with environmental or administrative performance in the 2019-2020, monitoring of the Kaponga landfill may be adjusted to reflect any additional investigation or intervention as found necessary.
7. THAT in the first instance, the monitoring of discharges from the closed landfill at Manaia in the 2019-2020 year continues at the same level as in 2018-2019.
8. THAT should there be issues with environmental or administrative performance in 2019-2020, monitoring of the Manaia landfill may be adjusted to reflect any additional investigation or intervention as found necessary.
9. THAT in the first instance, monitoring of discharges from Opunake landfill in the 2019-2020 year continues at the same level as in 2018-2019.
10. THAT should there be any issues with the environmental or administrative performance in 2019-2020, monitoring of the Opunake landfill may be adjusted to reflect any additional investigation or intervention as found necessary.
11. THAT in the first instance, the Otakeho landfill triennial monitoring programme remains in place with monitoring next scheduled to be implemented in the 2019-2020 period.
12. THAT should there be issues with environmental or administrative performance in 2019-2020, monitoring of the Otakeho landfill may be adjusted to reflect any additional investigation or intervention as found necessary.
13. THAT the option for a review of resource consent 3953-4 in June 2020, as set out in condition 6 of the consent, not be exercised, on the grounds that the current conditions are adequate.
14. THAT in the first instance, the monitoring of discharges from the closed Patea landfill in the 2019-2020 year remains unchanged from that of 2018-2019.
15. THAT should there be issues with environmental or administrative performance in 2019-2020, monitoring of the Patea landfill 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:

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, usually measured at 25°C and expressed in mS/m.
DO	Dissolved oxygen.
DRP	Dissolved reactive phosphorus.
g/m ³	Grams per cubic metre, and equivalent to milligrams per litre (mg/L). In water, this is also equivalent to parts per million (ppm), but the same does not apply to gaseous mixtures.
Incident	An event that is alleged or is found to have occurred that may have actual or potential environmental consequences or may involve non-compliance with a consent or rule in a regional plan. Registration of an incident by the Council does not automatically mean such an outcome had actually occurred.
Intervention	Action/s taken by Council to instruct or direct actions be taken to avoid or reduce the likelihood of an incident occurring.
Investigation	Action taken by Council to establish what were the circumstances/events surrounding an incident including any allegations of an incident.
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.
L/s	Litres per second.
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.
mS/m	Millisiemens per metre.
Mixing zone	The zone below a discharge point where the discharge is not fully mixed with the receiving environment. For a stream, conventionally taken as a length equivalent to 7 times the width of the stream at the discharge point.
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).
pH	A numerical system for measuring acidity in solutions, with 7 as neutral. Numbers lower than 7 are increasingly acidic and higher than 7 are increasingly alkaline. The

scale is logarithmic i.e. a change of 1 represents a ten-fold change in strength. For example, a pH of 4 is ten times more acidic than a pH of 5.

Physicochemical	Measurement of both physical properties (e.g. temperature, clarity, density) and chemical determinants (e.g. metals and nutrients) to characterise the state of an environment.
Resource consent	Refer Section 87 of the RMA. Resource consents include land use consents (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.
Temp	Temperature, measured in °C (degrees Celsius).

For further information on analytical methods, contact a Science Services Manager.

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Appendix I

Resource consents held by STDC (in alphabetical order)

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

Landfill site	Consent number	Purpose	Review	Expiry
Eltham	3387-3	To discharge stormwater and leachate from the former Eltham landfill site into the Managwhero Stream in the Waingongoro catchment	-	1 June 2023
Hawera	0444-4	To discharge up to 2,800 m ³ /day of leachate and stormwater from the closed Matangara landfill, Hawera, to groundwater and into an unnamed tributary of the Tawhiti Stream in the Tangahoe catchment	-	Expired - S.124 Protection
	5831-2	To divert an unnamed tributary of the Tawhiti Stream	June 2022	1 June 2034
Kaponga	3459-3	To discharge stormwater and leachate from the former Kaponga landfill site into an unnamed tributary of the Waiokura Stream	-	1 June 2023
Manaia	3952-2	To discharge leachate and stormwater from the closed Manaia landfill and from composting operations into the Waiokura Stream	-	1 June 2023
Opunake	0526-4	To discharge stormwater and leachate from the closed Opunake landfill into the Otahi Stream	June 2024	1 June 2029
Otakeho	3953-4	To discharge leachate and stormwater from the closed Otakeho Municipal Landfill onto and into land where it may enter water	June 2020	1 June 2022
Patea	0427-3	To discharge surface water and leachate from the Patea municipal landfill into an unnamed tributary of the Patea River	-	1 June 2022
	7268-1	To discharge stormwater and sediment onto and into land and into an unnamed tributary of the Patea River from earthworks associated with the closure of the Patea landfill	-	1 June 2022
	4636-2	To discharge emissions into air from the Patea municipal landfill	-	1 June 2022

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.

Eltham

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

Name of
Consent Holder: South Taranaki District Council
Private Bag 902
HAWERA

Consent Granted
Date: 17 March 2005

Conditions of Consent

Consent Granted: To discharge stormwater and leachate from the former
Eltham landfill site into the Mangawhero Stream in the
Waingongoro catchment at or about GR: Q20:223-949

Expiry Date: 1 June 2023

Review Date(s): June 2011, June 2017

Site Location: Castle Street, Eltham

Legal Description: Lot 1 DP 9279 Blk X Ngaere SD

Catchment: Waingongoro

Tributary: Mangawhero

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. Within three months of granting this consent the consent holder shall prepare and maintain a site contingency plan to the satisfaction of the Chief Executive, Taranaki Regional Council, outlining measures and procedures undertaken to prevent spillage or accidental discharge of contaminants and procedures carried out should such spillage or discharge occur.
- 3. The consent holder shall monitor the site and adjacent surface and groundwaters to the satisfaction of the Chief Executive, Taranaki Regional Council.
- 4. Any discharge shall not, in the opinion of the Chief Executive, Taranaki Regional Council, cause nor be likely to cause any significant adverse effects on aquatic life or receiving water quality.
- 5. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2011 and/or June 2017, 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 17 March 2005

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Hawera

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

Name of
Consent Holder: South Taranaki District Council
Private Bag 902
HAWERA

Consent Granted
Date: 28 June 2001

Conditions of Consent

Consent Granted: To discharge up to 2800 cubic metres/day of leachate and stormwater from the closed Matangara Landfill, Hawera, to groundwater and into an unnamed tributary of the Tawhiti Stream in the Tangahoe catchment at or about GR: Q21:214-788

Expiry Date: 1 June 2016

Review Date(s): June 2004, June 2010

Site Location: former Matangara Landfill, Matangara Road, Hawera

Legal Description: Lot 2 DP 20563 Lot 2 DP 20819 Blk VI Hawera SD

Catchment: Tangahoe

Tributary: Tawhiti

Consent 0444-4

General conditions

- a) That on receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
 - i) the administration, monitoring and supervision of this consent; and
 - ii) charges authorised by regulations.

Special conditions

- 1) The consent holder shall at all times adopt the best practicable option, as defined in the Resource Management Act 1991, to prevent or minimise any or likely adverse effects on the environment associated with the discharges of leachate and/or stormwater from the site.
- 2) The consent holder shall maintain an adequate landfill capping and vegetative cover on the site to the satisfaction of the Chief Executive, Taranaki Regional Council.
- 3) The consent holder shall provide a landfill post-closure management plan to the satisfaction of the Chief Executive, Taranaki Regional Council by 1 December 2001; such plan to address site security, litter control, vegetation cover, stormwater diversion, leachate control, site contouring, and cover placement and compaction, in addition to any other matters relevant to the exercise of this consent.
- 4) The consent holder shall adhere to the landfill management plan insofar as it concerns the exercise of this consent at all times.
- 5) The consent holder shall maintain stormwater drains, the sediment detention pond, and/or ground contours at the site, in order to minimise stormwater movement across, or ponding on the site.
- 6) The consent holder shall maintain the leachate collection system at the site in order to minimise leachate discharges to the environment at the site.
- 7) The mixing zone in each condition of this consent shall extend for a distance of 20 metres downstream of the point of the discharge of leachate and stormwater at the confluence of the unnamed tributary of the Tawhiti Stream and the Tawhiti Stream.
- 8) After allowing for reasonable mixing the consent holder shall ensure that the discharge shall not give rise to any of the following effects in the receiving waters of the Tawhiti Stream:
 - a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended material;
 - b) any conspicuous change in colour or visual clarity;
 - c) any emission of objectionable odour;
 - d) the rendering of fresh water unsuitable for consumption by farm animals;
 - e) any significant adverse effects on aquatic life.
- 9) Monitoring of surface waters, groundwater and leachate on or in the vicinity of the site shall be undertaken to the satisfaction of the Chief Executive, Taranaki Regional Council.

Consent 0444-4

- 10) The two existing monitoring bores shall be maintained to the satisfaction of the Chief Executive, Taranaki Regional Council.
- 11) In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may review any or all of the conditions of this consent in June each year after this consent was granted, should further chemical sampling of the unnamed tributary of the Tawhiti Stream reveal levels of contamination resulting in significant adverse environmental effects.
- 12) 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 2004 and/or June 2010, 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 28 June 2001

For and on behalf of
Taranaki Regional Council

Director-Resource Management

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

Name of
Consent Holder: South Taranaki District Council
Private Bag 902
Hawera 4640

Decision Date: 28 June 2016

Commencement Date: 28 June 2016

Conditions of Consent

Consent Granted: To divert an unnamed tributary of the Tawhiti Stream

Expiry Date: 1 June 2034

Review Date(s): June 2019, June 2022, June 2025, June 2028

Site Location: Matangara Road, Hawera

Grid Reference (NZTM) 1711330E-5617098N (inlet of diversion)
1711522E-5616758N (outlet of diversion)

Catchment: Tangahoe

Tributary: Tawhiti

*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 ensure that the diversion pipe is as clear as is practicable of any blockages.
2. The structure shall not obstruct fish passage.
3. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2019 and/or June 2022 and/or June 2025 and/or June 2028, 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 28 June 2016

For and on behalf of
Taranaki Regional Council

A D McLay
Director - Resource Management

Kaponga

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

Name of
Consent Holder: South Taranaki District Council
Private Bag 902
HAWERA

Consent Granted
Date: 17 March 2005

Conditions of Consent

Consent Granted: To discharge stormwater and leachate from the former
Kaponga landfill site into an unnamed tributary of the
Waiokura Stream at or about GR: P20:095-960

Expiry Date: 1 June 2023

Review Date(s): June 2011, June 2017

Site Location: Alamein Street, Kaponga

Legal Description: Sec 77 Blk XI Kaupokonui SD

Catchment: Waiokura

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. Within three months of granting this consent the consent holder shall prepare and maintain a site contingency plan to the satisfaction of the Chief Executive, Taranaki Regional Council, outlining measures and procedures undertaken to prevent spillage or accidental discharge of contaminants and procedures carried out should such a spillage or discharge occur.
- 3. The consent holder shall monitor the site and adjacent surface and groundwaters to the satisfaction of the Chief Executive, Taranaki Regional Council.
- 4. The consent holder shall install and monitor the leachate and stormwater diversion, collection, treatment and discharge systems, to the satisfaction of the Chief Executive, Taranaki Regional Council.
- 5. Any discharge shall not, in the opinion of the Chief Executive, Taranaki Regional Council, cause nor be likely to cause any significant adverse effects on aquatic life or receiving water quality.
- 6. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2011 and/or June 2017, 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,

Consent 3459-3

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 17 March 2005

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Manaia

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

Name of
Consent Holder: South Taranaki District Council
Private Bag 902
HAWERA 4640

Change To
Conditions Date: 29 October 2008 [Granted: 20 January 2005]

Conditions of Consent

Consent Granted: To discharge leachate and stormwater from the closed
Manaia landfill and from composting operations into the
Waiokura Stream at or about (NZTM)
1697799E-5620638N

Expiry Date: 1 June 2023

Review Date(s): June 2011, June 2017

Site Location: Cemetery Road, Manaia

Legal Description: Pt Sec 23 Blk VII Waimate SD

Catchment: Waiokura

*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

Conditions 1 – 6 [unchanged]

- 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. Within three months of granting this consent the consent holder shall prepare and maintain a site contingency plan to the satisfaction of the Chief Executive, Taranaki Regional Council, outlining measures and procedures undertaken to prevent spillage or accidental discharge of contaminants and procedures carried out should such a spillage or discharge occur.
- 3. Within three months of granting this consent the consent holder shall prepare and maintain a landfill management plan to the satisfaction of the Chief Executive, Taranaki Regional Council, and shall adhere to such a plan in so far as it concerns the exercise of this consent at all times.
- 4. The consent holder shall advise the Taranaki Regional Council one month prior to any changes being made to the landfill management plan and/or the site contingency plan referred to in special conditions 3 and 4. Should the Taranaki Regional Council wish to review either of these plans, one month's notice shall be provided to the consent holder.
- 5. The consent holder shall monitor the site and adjacent surface water and ground water to the satisfaction of the Chief Executive, Taranaki Regional Council.
- 6. The consent holder shall install and maintain leachate and stormwater diversion, collection, treatment and discharge systems, to the satisfaction of the Chief Executive, Taranaki Regional Council.

[Condition 7 – changed]

7. That after reasonable mixing, any discharge from the closed landfill or composting operations shall not cause Waiohira Stream to exceed the following parameters;
- a rise in biochemical oxygen demand of 2.0 g/m³
 - unionised ammonia of 0.025 g/m³

[Condition 8-unchanged]

8. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2011 and/or June 2017, 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 29 October 2008

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Opunake

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

Name of
Consent Holder: South Taranaki District Council
Private Bag 902
Hawera 4640

Decision Date 28 November 2018

Commencement Date 28 November 2018

Conditions of Consent

Consent Granted: To discharge stormwater and leachate from the closed
Opunake landfill into the Otahi Stream

Expiry Date: 1 June 2029

Review Date(s): June 2024

Site Location: Whitcombe Road, Opunake

Grid Reference (NZTM) 1673060E-5633373N

Catchment: Otahi

*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 landfill cap and stormwater and leachate drainage systems shall be maintained in a manner that:
 - a) prevents ponding and erosion;
 - b) minimises stormwater infiltration into the cap and/or filled area;
 - c) retains a reasonable cover of appropriate vegetation;
 - d) ensures water troughs do not leak or overflow; and
 - e) ensures stormwater is adequately diverted and/or drained away from the landfill cap.
3. The site shall be operated in accordance with a 'Management Plan' prepared by the consent holder within 3 months of granting of this consent, 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) specifying the consent holder's monitoring schedule for the site;
 - b) maintenance of the landfill cap to minimise erosion, ponding and stormwater infiltration;
 - c) maintenance and management of the stormwater drains on and around the landfill to ensure stormwater is adequately diverted and/or drained away from the landfill cap.
4. After reasonable mixing the receiving waters downstream of the discharge shall meet the following standards:
 - a) unionised ammonia concentration less than 0.025 g/m³;
 - b) ammoniacal nitrogen level concentration less than 0.9 g/m³;
 - c) pH within the range of 6.0 and 9.0; and
 - d) dissolved zinc concentration less than or equal to 0.05 g/m³.
5. The discharge shall not cause the following effects in the receiving waters after reasonable mixing:
 - 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. 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 2024 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 28 November 2018

For and on behalf of
Taranaki Regional Council

A D McLay
Director - Resource Management

Otakeho

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

Name of
Consent Holder: South Taranaki District Council
Private Bag 902
Hawera 4640

Decision Date 6 November 2018

Commencement Date 6 November 2018

Conditions of Consent

Consent Granted: To discharge leachate and stormwater from the closed
Otakeho Municipal Landfill onto and into land where it may
enter water

Expiry Date: 1 June 2022

Review Date(s): June 2020

Site Location: State Highway 45, Otakeho

Grid Reference (NZTM) 1689033E-5621752N

Catchment: Taikatu

*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 landfill cap and stormwater and leachate drainage systems shall be maintained in a manner that:
 - a) prevents ponding and erosion;
 - b) minimises stormwater infiltration into the cap and/or filled area; and
 - c) ensures stormwater is adequately diverted and/or drained away from the landfill cap.
3. The site shall be operated in accordance with a 'Management Plan' prepared by the consent holder within 3 months of granting of this consent, 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) specifying the consent holders monitoring schedule for the site;
 - b) maintenance of the landfill cap to minimise erosion, ponding and stormwater infiltration;
 - c) maintenance and management of the stormwater drains on and around the landfill to ensure stormwater is adequately diverted and/or drained away from the landfill cap.
4. After reasonable mixing the receiving waters downstream of the discharge shall meet the following standards:
 - a) unionised ammonia concentration less than 0.025 g/m³;
 - b) ammoniacal nitrogen level concentration less than 0.9 g/m³;
 - c) pH within the range of 6.0 and 9.0; and
 - d) dissolved zinc concentration less than or equal to 0.05 g/m³.
5. The discharge shall not cause the following effects in the receiving waters after reasonable mixing:
 - 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. 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, 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 November 2018

For and on behalf of
Taranaki Regional Council

A D McLay
Director - Resource Management

Patea

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

Name of
Consent Holder: South Taranaki District Council
Private Bag 902
HAWERA

Consent Granted
Date: 16 December 2003

Conditions of Consent

Consent Granted: To discharge surface stormwater and leachate from the
Patea municipal landfill into an unnamed tributary of the
Patea River at or about GR: Q21:360-611

Expiry Date: 1 June 2022

Review Date(s): June 2010, June 2016

Site Location: Patea Municipal Landfill, Scotland Street, Patea

Legal Description: Lot 1 DP 20064 Pt Sec 8 Patea Sbrn All DP 3495 Town of
Patea Blk VII Carlyle SD

Catchment: Patea

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. Within three months of granting of this consent the consent holder shall prepare and maintain a site contingency plan to the satisfaction of the Chief Executive, Taranaki Regional Council, outlining measures and procedures undertaken to prevent spillage or accidental discharge of contaminants and procedures carried out should such a spillage or discharge occur. This shall be reviewed by the Council on an annual basis.
- 2. Within three months of granting of this consent the consent holder shall prepare and maintain a landfill operations and management plan to the satisfaction of the Chief Executive, Taranaki Regional Council, and shall adhere to such a plan in so far as they concern the exercise of this consent at all times. This shall be reviewed by the Council on an annual basis.
- 3. The consent holder shall advise the Taranaki Regional Council one month prior to any changes being made to the operation and management plan and/or site contingency plan. Should the Taranaki Regional Council wish to review either of these plans, one month's notice shall be provided to the consent holder.
- 4. The exercise of this resource consent shall be carried out in general accordance with the information submitted in support of the application [2705].
- 5. The monitoring of the site and adjacent surface and groundwaters shall be to the satisfaction of the Chief Executive, Taranaki Regional Council
- 6. The leachate and stormwater diversion, collection, treatment and discharge systems shall be maintained to the satisfaction of the Chief Executive, Taranaki Regional Council.
- 7. Any discharge shall not, in the opinion of the Chief Executive, Taranaki Regional Council, cause nor be likely to cause any significant adverse effects on aquatic life or receiving water quality.
- 8. 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 actual or potential effect on the environment arising from any discharge at the site.

Consent 0427-3

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 2010 and/or June 2016, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 16 December 2003

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: South Taranaki District Council
Private Bag 902
HAWERA

Consent Granted
Date: 16 December 2003

Conditions of Consent

Consent Granted: To discharge emissions into the air from the Patea
municipal landfill activities at or about GR: Q21:360-611

Expiry Date: 1 June 2022

Review Date(s): June 2010, June 2016

Site Location: Patea Municipal Landfill, Scotland Street, Patea

Legal Description: Lot 1 DP 20064 Pt Sec 8 Patea Sbrn All DP 3495 Town of
Patea Blk VII Carlyle SD

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. Within three months of granting of this consent the consent holder shall prepare and maintain a site contingency plan to the satisfaction of the Chief Executive, Taranaki Regional Council, outlining measures and procedures undertaken to prevent spillage or accidental discharge of contaminants and procedures carried out should such a spillage or discharge occur. This shall be reviewed by the Council on an annual basis.
- 2. Within three months of granting of this consent the consent holder shall prepare and maintain a landfill operations and management plan to the satisfaction of the Chief Executive, Taranaki Regional Council, and shall adhere to such a plan in so far as they concern the exercise of this consent at all times. This shall be reviewed by the Council on an annual basis.
- 3. The consent holder shall advise the Taranaki Regional Council one month prior to any changes being made to the operation and management plan and/or site contingency plan. Should the Taranaki Regional Council wish to review either of these plans, one month's notice shall be provided to the consent holder.
- 4. No material is to be burnt at the landfill site.
- 5. The exercise of this resource consent shall be carried out in general accordance with the information submitted in support of the application [2707].
- 6. 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 actual or potential effect on the environment arising from any discharge at the site.

Consent 4636-2

7. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2010 and/or June 2016, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 16 December 2003

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: South Taranaki District Council
Private Bag 902
HAWERA 4640

Consent Granted
Date: 26 March 2008

Conditions of Consent

Consent Granted: To discharge stormwater and sediment onto and into land
and into an unnamed tributary of the Patea River from
earthworks associated with the closure of the Patea
Landfill at or about 2636144E-6161215N

Expiry Date: 1 June 2022

Review Date(s): June 2010, June 2016

Site Location: Patea Landfill, Scotland Street, Patea

Legal Description: All DP 3495

Catchment: Patea

*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 exercise of this consent shall be undertaken generally in accordance with the documentation submitted in support of application 4931. In the case of any contradiction between the documentation submitted in support of application 4931 and the conditions of this consent, the conditions of this consent shall prevail.
- 3. The consent holder shall notify the Chief Executive, Taranaki Regional Council, in writing at least seven days prior to the exercise of this consent. Notification shall include the consent number and a brief description of the activity consented and be emailed to worknotification@trc.govt.nz. Notification by fax or post is acceptable only if the consent holder does not have access to email.
- 4. The consent holder shall take all reasonable steps to:
 - a. minimise the amount of sediment discharged to the stream;
 - b. minimise the amount of sediment that becomes suspended in the stream; and
 - c. mitigate the effects of any sediment in the stream.

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

- 5. All earthwork areas shall be stabilised vegetatively or otherwise as soon as is practicable immediately following completion of soil disturbance activities.
- 6. This consent shall lapse on the expiry of five years after the date of issue of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

Consent 7268-1

7. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2010 and/or June 2016, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 26 March 2008

For and on behalf of
Taranaki Regional Council

Director-Resource Management

