New Plymouth District Council
Eltham Central Landfill
Baseline Monitoring Programme
Annual Report
2019-2020

Technical Report 2020-33

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Executive summary

In 1996 the South Taranaki District Council (STDC) instigated plans to establish a large landfill in the Eltham area. The (proposed) Central landfill site is situated in the Waingongoro catchment on Rotokare Road, approximately two kilometres south of Eltham. The purpose of this site was originally to accept waste from the South Taranaki and Stratford Districts. The plan was changed to allow for a regionalised approach to waste disposal and the site is now currently a potential option as the replacement regional landfill once the facility at Colson Road, New Plymouth has reached capacity. The management of the delivery and operation of the facility, and the associated consents were transferred to New Plymouth District Council (NPDC) during the year under review. The Colson Road landfill closed to general waste in August 2019. However the use of the Central Landfill was put on hold and Taranaki's waste is currently being disposed of out of the region. This report for the period July 2019 to June 2020 describes the baseline monitoring programme implemented by the Taranaki Regional Council (the Council), in anticipation of the site's eventual use as a landfill.

NPDC holds a total of five consents which contain a total of 87 special conditions. These consents cover all aspects of the construction and operation of the landfill. At present none of the consents held by NPDC in relation to landfill construction and operation have been exercised. The lapse dates of the consents were also extended to December 2025 during the period under review to allow for an extended interim period prior to exercise.

During the monitoring period the environmental performance of NPDC at the Central landfill was not assessed as the consents are yet to be exercised.

Consent conditions specify that baseline monitoring of the ground and surface receiving waters is to be undertaken to obtain data for comparison to that to be gathered from compliance monitoring surveys when the landfill will have commenced operations. In the 2016-2017 year the Council was informed that site establishment was commencing. This report outlines the progress that had been made towards site establishment prior to the project being put on hold, the consents held by NPDC for this site, reports on the baseline monitoring activities carried out in the 2019-2020 period, and discusses these results along with the previously obtained monitoring results.

As some baseline monitoring had been undertaken for a number of years, and there had been uncertainty around if and when the consents might be exercised, monitoring had been scaled back to consist of only the collection and analysis of six surface water samples per year between the 2014-2015 and 2016-2017 years.

For the 2017-2019 years, the baseline monitoring was increased significantly with the expectation that the site would become operational late in the 2018-2019 year. Although the project was put on hold in the middle of the 2018-2019 year, due the significant increase in the number of monitoring sites, and lack of information on the natural variability at them, this increased level of monitoring was continued for surface water monitoring during the 2019-2020 year, as the project may yet recommence. Therefore, the Council's monitoring programme for the year under review included three water samples collected for physicochemical analysis and two biomonitoring surveys of the receiving waters.

The monitoring has shown that surface water quality is generally comparable to that found during previous monitoring periods and was indicative of good water quality when compared to that expected in similar streams in the area. The only exception to this is the occasional high faecal coliform count. During the year under review, high faecal coliform results were recorded in March 2020. No incidents were recorded by the Council in regards to the consents included in this programme during the period under review.

During the 2017-2018 monitoring year the Council liaised closely with STDC around the detailed requirements of the consent, changes to best practice guidelines and health and safety requirements since the consents were granted and how these requirements can be accommodated through adaptive landfill

design. This work is predominantly considered to be outside the scope of the baseline monitoring programme. However where this related directly to relevant consent conditions and/or there were resultant changes to the baseline monitoring programme, they have been included in this report. This is to provide some continuity and an indication of the further work required should the project proceed.

No rating is given for environmental or administrative performance as the project was on hold for the year under review.

This report includes recommendations for the 2020-2021 year.

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1 Introduction

1.1 Compliance monitoring programme reports and the Resource Management Act 1991

1.1.1 Introduction

This report is for the period July 2019 to June 2020 by the Taranaki Regional Council (the Council) on the monitoring programme associated with resource consents held by the New Plymouth District Council (NPDC) for a proposed regional landfill. NPDC has consents to establish and operate a landfill situated on Rotokare Road, two kilometres south of Eltham in the Waingongoro catchment.

The report includes the results and findings of the baseline monitoring programme implemented by the Council in respect of the consents held by NPDC that relate to damming, diverting and installing structures in tributaries of the Waingongoro Stream, and discharges to water, air and land associated with the establishment and operation of a proposed regional landfill in the Waingongoro catchment. It is noted that this report is for baseline environmental monitoring of the existing environment at the site as none of the consents associated with the landfilling activities have been exercised. The report does however provide a brief summary of the work that has been undertaken towards preparing the site for the landfill establishment, prior to the project being put into abeyance during the 2018-2019 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 the Central landfill's use of water, land and air, and is the 11th combined annual report by the Council for the site.

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 though annual programmes;
- the resource consents held by NPDC for the Central landfill;
- the nature of the monitoring programme in place for the period under review; and
- a description of the activities and operations conducted in the Waingongoro catchment.

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

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

Section 4 presents recommendations to be implemented in the 2020-2021 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 Evaluation of environmental and administrative performance

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

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

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

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

Environmental Performance

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

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

For example:

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

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

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

Administrative performance

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

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

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

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

For reference, in the 2019-2020 year, consent holders were found to achieve a high level of environmental performance and compliance for 81% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 17% of the consents, a good level of environmental performance and compliance was achieved.[1]

1.2 Process description

STDC originally identified a proposed landfill site in Eltham at Rotokare Road, on the east side of State Highway 3, approximately two kilometres south of the Eltham Township (Figure 1). The site of the proposed landfill is a 92 ha farm that is owned by STDC and will continue to be farmed until construction of the landfill commences. The original concept was that the landfilling operation would utilise approximately 5 ha of the site at any one time and the site was estimated to have a capacity of 2,200,000 m^3. Access to the site is proposed to be from Rotokare Road. The concept was that the proposed landfill would be a fully engineered facility with a 1.5 mm high density poly ethylene (HDPE) liner laid over a 600 mm layer of

[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

compacted clay. Leachate will be collected by leachate lines and transferred to the sewer pipeline that runs between the Eltham oxidation ponds and the Hawera waste water treatment plant (WWTP).

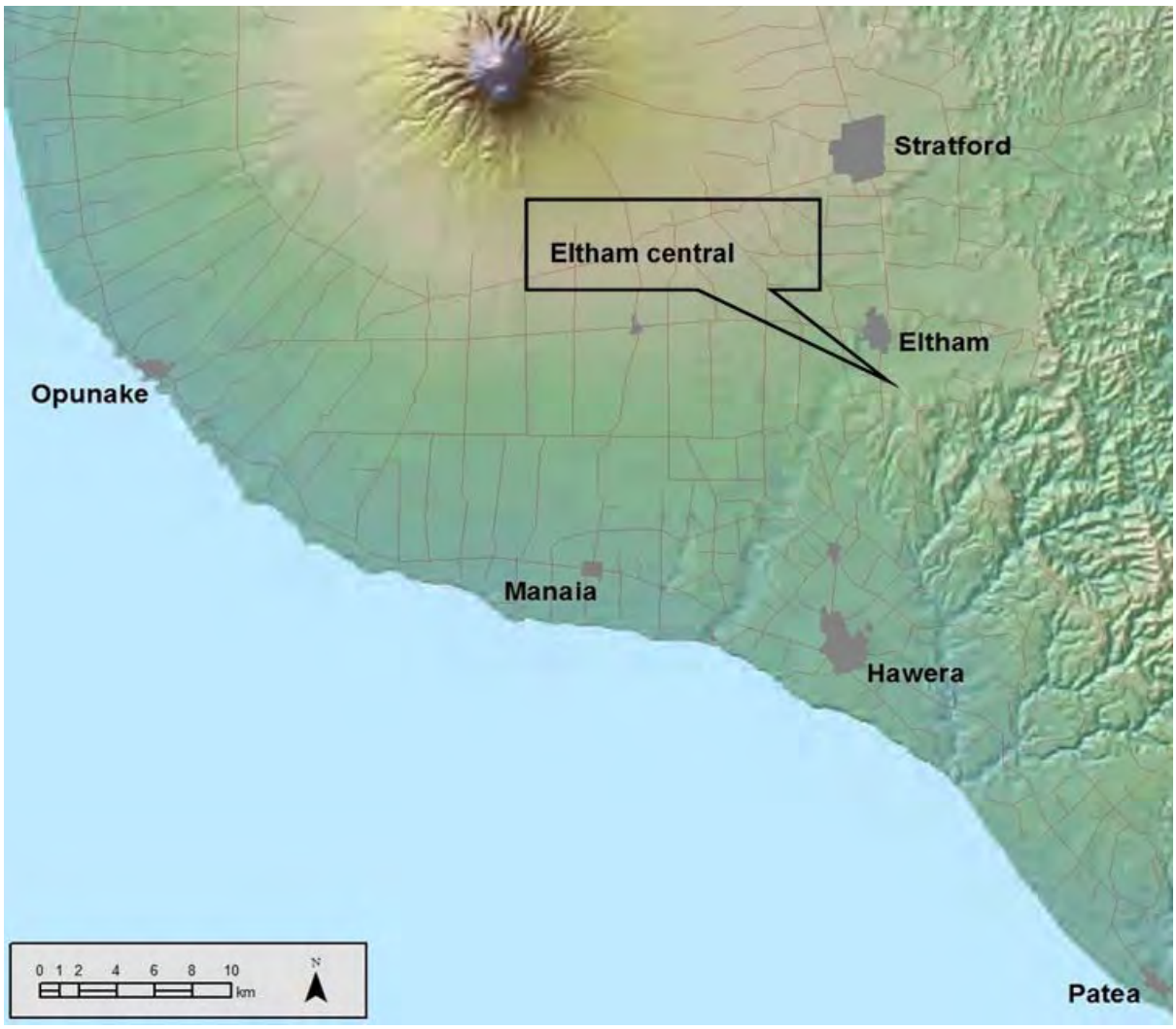

Figure 1 Regional map of Taranaki showing the location of the Central landfill site

Consents 5347, 5348, 5349, 5350, and 5351 were granted on 15 March 2000 with the expectation that, within three years, landfill space available to STDC at other landfill sites in the district would be full and that the Eltham site would commence operation (exercise of consent) within the five year lapse period set in the consents for the site.

However, during the intervening period, a plan was developed and agreed on by the three district councils in the region that saw a regionalised approach to waste management being implemented by the district councils. Part of this plan was to route all municipal waste in the region to Colson Road landfill in New Plymouth, with the eventual closure of all other municipal landfills in the region. The plan called for Central landfill to be commissioned to take over as the regional landfill for Taranaki when the Colson Road landfill approached its projected capacity.

In July 2005 the STDC was granted changes to consent conditions to increase the consent lapse periods from 5 years to 20 years. These changes allowed for the extended timeframes resulting from the change of designation from proposed district to proposed regional landfill.

During 2016-2017, the Council was advised that planning for the establishment of the new landfill was commencing and work on the road re-alignment in the vicinity of the SH3 and Rotokere Road junction began. An agreement was also reached between the three district councils that the day to day works required for the establishment and operation of the landfill would be administered by the NPDC.

During 2018-2019 the Council was advised that the project would not be progressing at this stage. The lapse date on the consents was extended to 21 December 2025 to align with the lapse dates on the designation in the proposed South Taranaki District Plan Decisions Version 2016, and the consents were transferred to NPDC.

Photo 1 Central landfill site (north westerly view from the east side of the site)

Photo 2 Central landfill site (westerly view from the east side of the site)

Photo 3 Central landfill site (south westerly view from the east side of the site)

As can been seen by the photos, the site itself consists of a large bowl shaped valley, which makes it well suited to use as a landfill site. The proposed landfill foot print is in the shape of a horseshoe and contains the headwaters of two unnamed tributaries that eventually feed into the Waingongoro River, approximately two kilometres northwest of the site. The northern landfill tributary is permanently flowing and has some established riparian planting. The southern tributary is currently ephemeral and the sediment ponds serving the stage one and two areas will be at the headwaters of this landfill tributary. Several groundwater bores and freshwater sampling sites have been established for the purposes of baseline monitoring (Figure 3 and Figure 4).

1.2.1 Site enabling works

During the 2017-2018 year, a number of matters were progressed relating to the site establishment. These included:

- Continuation of the Neighbourhood Liaison Group meetings;
- Additional technical investigations at the site to inform the design;
- Consultation on changes to the draft design and detailed design;
- Consultation on the draft Operation and Management Plan;
- The granting of addition consents to allow the Stage 1 enabling works to commence;
- Commencement of the Stage 1 enabling works; and
- More intensive baseline monitoring.

During the 2018-2019 year a decision was made that the landfill would not be progressed at this stage in favour of disposing of the waste outside the Region. This new arrangement commenced in August 2019 and meanwhile the site was appropriately contoured and stabilised so that land could be returned to pasture (Photo 4 to Photo 8).

The Council was advised that there will be a review of this arrangement in the 2021-2022 year, with the potential that work at the site may recommence after this review, so that the site can be prepared to accept waste in July 2024, if required.

In the 2018-2019 year, monitoring of the earthworks consent 10501-1 that is carried out under a different monitoring programme found that the site had been satisfactorily stabilised such that the sediment control ponds could be removed.

Photo 4 Central Landfill, 3 July 2018 – northern side of southern gully

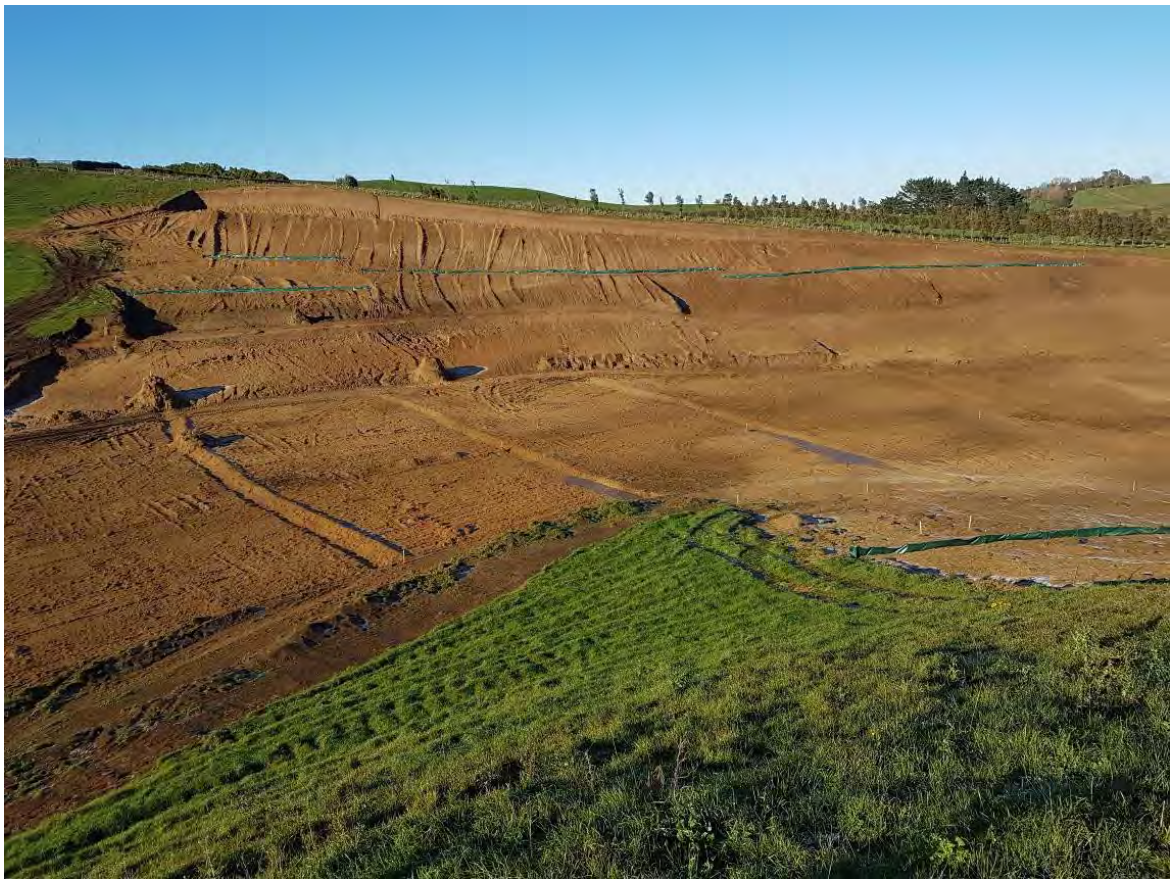

Photo 5 Central Landfill, 3 July 2018 – southern side of southern gully

Photo 6 Central Landfill, 12 June 2019 – southern side of southern gully after stabilisation

Photo 7 Central Landfill, 12 June 2019 – eastern side

Photo 8 Central Landfill, 12 June 2019 – along northern side of northern gully

1.3 Resource consents

NPDC holds five resource consents, the details of which are summarised in the table below. Summaries of the conditions attached to each permit are set out in Section 3 of this report.

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

Table 1 Summary of resource consents held by the NPDC for the proposed Central landfill

Consent number	Purpose	Commencement	Review	Expires
Water discharge permits				
5349-1.3	To discharge stormwater	14 December 2017	June 2023	June 2034
Air discharge permit				
5348-1.3	To discharge emissions into the air	24 August 2017	June 2023	June 2034
Discharges of waste to land				
5347-1.2	To discharge contaminants onto and into land	24 August 2017	June 2023	June 2034
Land use permits				
5350-1.2	To dam and divert water	24 August 2017	June 2023	June 2034
5351-1.2	To erect, place and maintain structures in the beds of the unnamed tributaries	24 August 2017	June 2023	June 2034

The above consents were originally granted in March 2000. In the 2016-2017 year the Council advised that a review was required on the consents for the following reasons:

- Conditions 27, 19, 19, 10, and 12 of the respective consents provided for the Council to review consent conditions for the purpose of assessing the effectiveness of conditions in avoiding, remedying or mitigating adverse effects on the environment from the discharges of contaminants permitted by these consents.
- The original consents were issued based on an Assessment of Environmental Effects and draft Management Plan compiled in May 1998. Although the most recent versions of the consents were granted in July 2005, only the potential effects of the variation sought at this time (expanding the area from which the refuse would originate from) were able to be considered.
- Council was aware that there were likely to be a number of changes to the design, construction and operation of the landfill that had not yet been finalised.
- There have been new National Environmental Standards[2] and disposal to land guidelines[3] released since the consent conditions were drafted.
- There is no General Condition (d) on any of the consents so references to it are not needed.

The Council therefore determined that the current conditions on the consents may not be adequate to deal with potential adverse effects on the environment. Also, that they may not be aligned with current best practice and expected levels of environmental performance. The consent conditions provided for a notice of review to be served during June 2017, but all the information required to undertake the review was not yet available. STDC, the consent holder at this time, was therefore advised that the Council would be reviewing the consents to provide additional review opportunities, allowing for reviews to be undertaken in an appropriate and timely manner as the landfill design progresses. The additional review opportunities included in all the consents were December 2017, June 2018 and June 2019. The reviewed consents were granted on 24 August 2017.

Applications for a variation to all fives consents were received on 22 May 2019. The variation applied for was an extension on the lapse date from March 2020 to 21 December 2025 to align with the lapse dates on the designation in the proposed South Taranaki District Plan Decisions Version 2016. The application was made under Section 125(1)(b) of the RMA. Applications were also received at this time to transfer the consents from STDC to New Plymouth District Council (NPDC). The varied consents were granted in NPDC's name on 2 July 2019.

Two additional permits were issued to STDC in May 2017, one to allow for the extension of a culvert in the tributary of the Waingongoro Stream tributary (**10428-1**), and one to allow for the discharge of stormwater from the earthworks (**10418-1**). These consents both relate to the road widening and re-alignment required by the New Zealand Transport Agency to provide safe access to Rotokere Road, rather than to the development of the landfill site itself. Two consents were also granted on 23 November 2017, one to discharge stormwater and sediment arising from earthworks onto land (**10501-1**), and one to install a culvert in an unnamed tributary of the Waingongoro River, including the associated disturbance of the stream bed (**10502-1**). These consents relate to the first stage of enabling works on the landfill site, including construction of the access road into the property and the replacement of an existing culvert under the proposed access road. The consents themselves are not covered in this annual report, as they are monitored under the short term culvert/earthworks monitoring rounds, rather than being included in this compliance

[2] Resource Management (National Environmental Standards for Air Quality) Regulations 2004

[3] Waste Management Institute of New Zealand (April 2016): Technical Guidelines for Disposal to Land

monitoring programme. However, any issues occurring that may have had the potential to affect the baseline conditions in the receiving waters will be discussed in this report.

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 proposed Central landfill site consisted of three primary components.

1.4.2 Programme liaison and management

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

- ongoing liaison with resource consent holders over consent conditions and their interpretation and application;
- 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 Chemical sampling

In previous years, the Council has undertaken baseline monitoring of the groundwater in the vicinity of the site, and of the quality of the neighbours water supplies. This monitoring has been put in abeyance until it is confirmed that the landfill will go ahead. Water level loggers are present in eight bores, and collection of the data from these loggers is continuing.

During the year under review, the Council undertook baseline monitoring of the water quality upstream and downstream of the future discharge point(s).

Three of the surface water sites included in this programme were those that had been monitored for a small range of basic parameters for 14 years (Figure 2). An additional three sites (Figure 3) were added to the programme during the 2017-2018 year, due to the then planned construction of Stage 1, in the headwaters of the ‘southern ephemeral’ tributary, with all sites then being tested for a comprehensive range of contaminants that can be associated with discharges from landfills. One dry weather survey of these sites was undertaken during the year under review.

1.4.4 Biomonitoring surveys

Biological surveys were performed on two occasions in an unnamed tributary of the Waingongoro River. Three of the sites were established sites, used on 11 occasions previously to gather baseline data prior to the establishment of the proposed Central landfill. An additional two sites were added during the 2017-2018 period, due to the then planned construction of Stage 1 in the headwaters of the ‘southern ephemeral’ tributary. Samples were collected from the new sites on both surveys during the year under review.

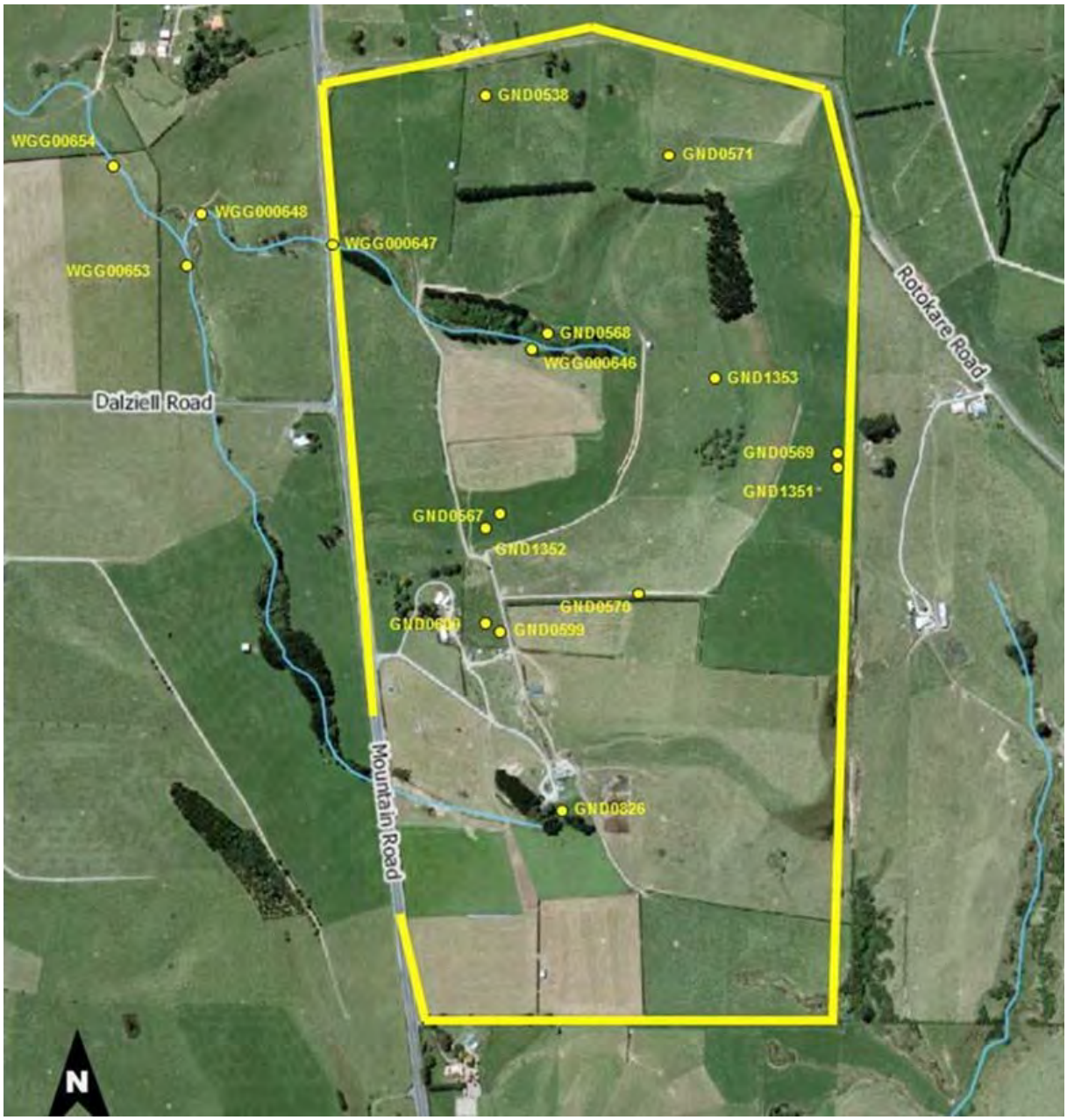

Figure 2 Aerial view of the Central landfill site and sampling points, up to June 2017

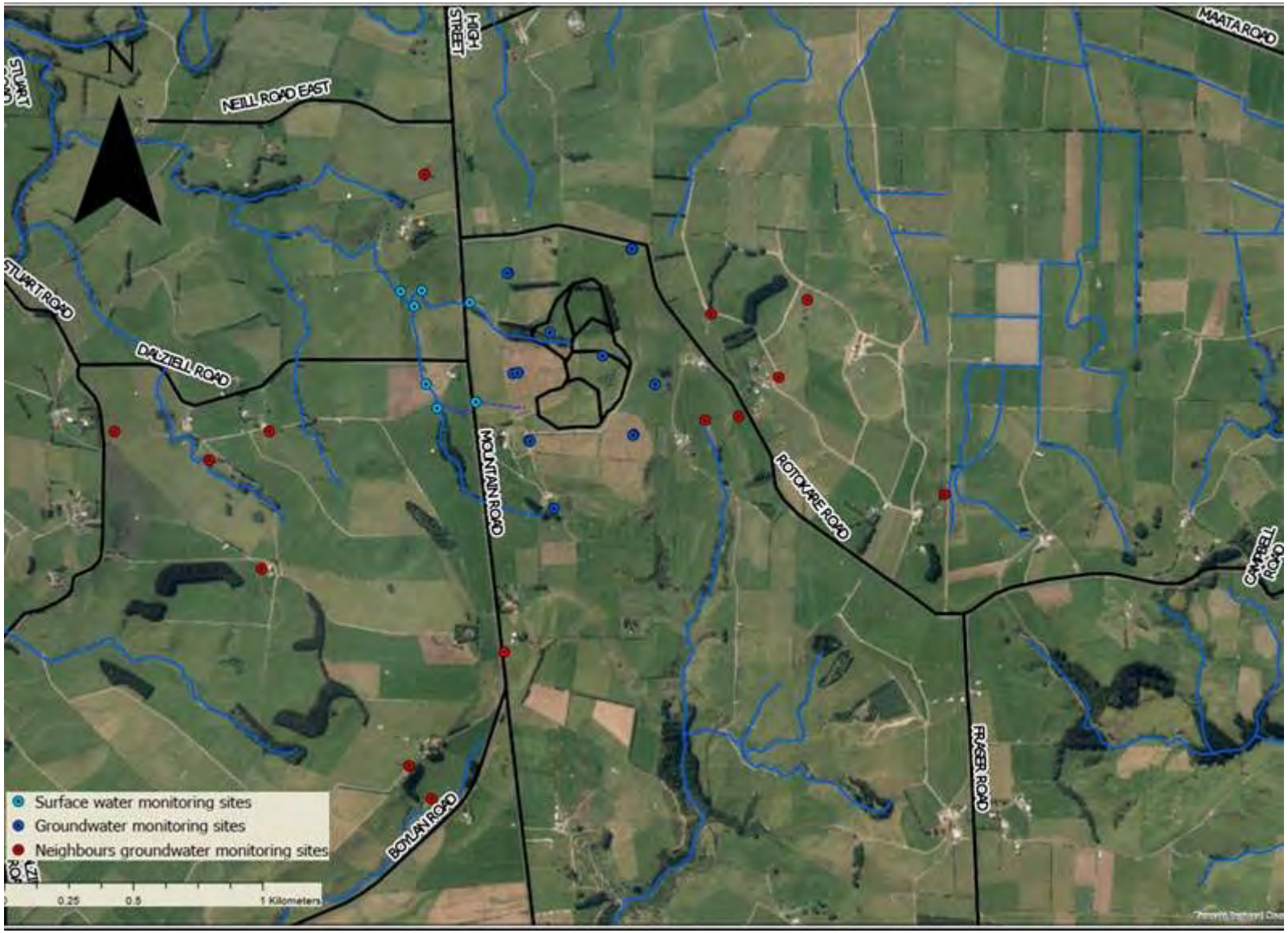

Figure 3 Increased Central landfill monitoring network, July 2017 onward

2 Results

2.1 Programme management and liaison

During the 2017-2018 year, there were a series of meetings held with the STDC design team and their consultants, along with the technical expert supporting the Council as required by the consents (for example condition 3 of consent 5347).

The meetings and associated liaison occurred on a regular basis from July 2017 to May 2018. During this period the initial draft design, additional testing (e.g. compaction and infiltration rate), the final design and operation and management plans were developed, and the Stage 1 enabling works commenced. The initial draft design showed that the slopes proposed for the sides of the landfill, the cap contour and liner details provided in the concept plans provided with the initial applications, presented health and safety implications and/or did not meet current best practice. The STDC design team kept the Council fully informed of the changes that would have to be made to the build design and sought confirmation that these would be acceptable with respect to a variation and/or review of the conditions of the consent and environmental performance. The neighbourhood liaison meetings required by the consents also commenced, with the neighbours kept abreast of changes to the design and the proposed stage preparation ground work schedule. Their comments were sought prior to moving to the next stage of the design work. Areas of particular relevance to the neighbours were discussed and these included the road re-alignment feedback, the changed contour of the cap, and the screen planting.

Council was advised on 24 May 2018 that the decision had been made to stop the enabling works in order to undertake stabilisation works for the winter. The site was to be monitored by the contractors during the winter and work was expected to recommence in October 2018.

In the 2018-2019 year, the Council was advised that the project would not be continuing at this stage. Therefore the liaison and consultation meetings were put in abeyance, and will not recommence unless a decision is made to proceed with landfill construction.

2.2 Water

2.2.1 Results of surface water monitoring

A survey of six sites was undertaken during dry weather conditions on one occasion (18 March 2020). The sampling sites are shown in Figure 4 and the results for selected parameters are presented in Table 2. Under the dry weather, low flow conditions prevailing at this time of the sampling survey it was found that the recently introduced sampling sites WGG000649, WGG000650 and WGG000651 were dry, and therefore no samples could be obtained from these locations.

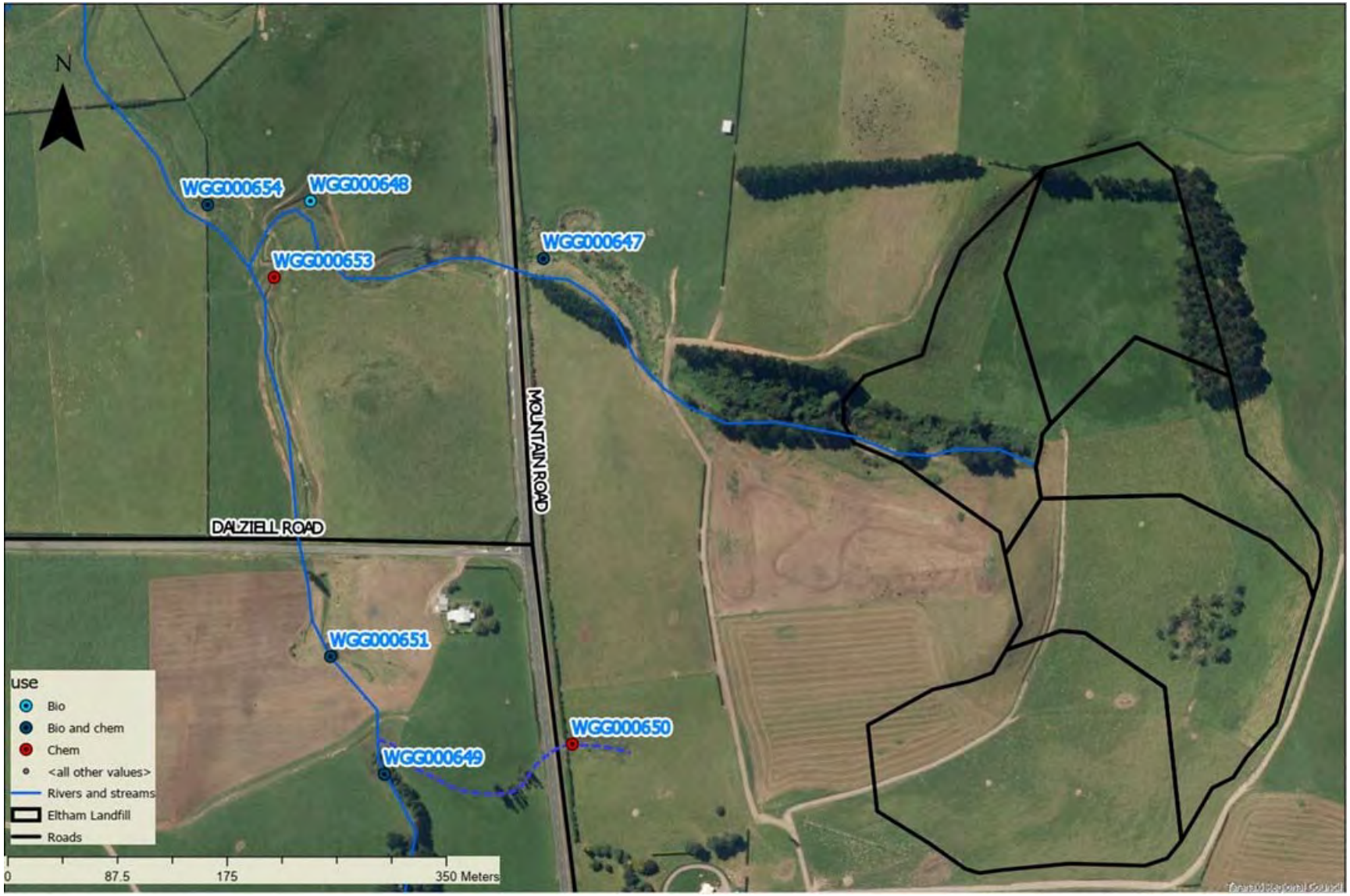

Figure 4 Central landfill surface water monitoring sites

Table 2 Results of surface water sampling at the Central landfill, 18 March 2020

Parameter	Unit	18 March 2020					
		WGG000649 250m u/s Dalziell road	WGG000650 Ephemeral landfill trib d/s of site	WGG000651 75m u/s Dalziell road	WGG000653 u/s landfill trib	WGG000647 landfill trib d/s of site	WGG000654 200m d/s S.H.3
Alkalinity	g/m^3	-	-	-	63	57	58
BODCF	g/m^3	-	-	-	<1.0	<1.0	<1.0
Conductivity	mS/m@25°C	-	-	-	24.9	25.3	24.6
Dissolved copper	g/m^3	-	-	-	<0.0005	0.0005	<0.0005
Total copper	g/m^3	-	-	-	0.00065	0.00161	0.00103
Dissolved oxygen	g/m^3	-	-	-	7.35	0.62	8.32
Dissolved reactive phosphorus	g/m^3	-	-	-	0.019	0.014	0.013
Faecal coliforms	per/100ml	-	-	-	2,100	1,400	4,000
Dissolved iron	g/m^3	-	-	-	0.05	0.05	0.04
Total iron	g/m^3	-	-	-	0.92	0.68	0.60
Hardness	g/m^3-$CaCO_3$	-	-	-	75	72	71
Unionised ammonia	g/m^3-N	-	-	-	0.00034	0.00007	0.00018
Ammoniacal nitrogen	g/m^3-N	-	-	-	0.065	0.018	0.031
Dissolved Manganese	g/m^3				0.105	0.056	0.029
Nitrate/nitrite nitrogen	g/m^3-N	-	-	-	4.4	4.1	3.7
Nitrite nitrogen	g/m^3-N	-	-	-	0.027	0.008	0.023
pH	pH	-	-	-	7.3	7.1	7.3
Suspended solids	g/m^3	-	-	-	15	18	11
Temperature	Deg °C	-	-	-	13.3	12.2	13.0
Dissolved zinc	g/m^3	-	-	-	<0.0010	<0.0010	<0.0010
Total zinc	g/m^3	-	-	-	0.0038	0.0014	0.0019
SVOC's	g/m^3	-	-	-	ND	ND	ND
VOC	g/m^3	-	-	-	ND	ND	ND
Pesticides	g/m^3	-	-	-	ND	ND	ND

The results for most of the surface water in these small tributaries are as expected for the site and surrounds in its current use (dairy farming).

From a baseline monitoring perspective, it is noted that there continue to be occasional high faecal coliform results found in the main tributary that are above the levels permitted by the landfill consent (1,000 cfu/100 ml). During the year under review, the northern landfill tributary also contained elevated faecal coliforms during these very low flow conditions. The low flow conditions are also reflected in the low dissolved oxygen concentration of the spring fed northern landfill tributary.

The levels of zinc, copper, and dissolved reactive phosphorus were low and stable, as were the levels for alkalinity, conductivity and filtered carbonaceous biochemical oxygen demand (BODCF). The results from

this monitoring period are, for the most part, comparable to those found over previous monitoring periods and generally indicate typical water quality for this type of waterbody.

There were again no volatile and semi-volatile organic compounds (VOC's and SVOC's), organo-nitrogen or phosphorus pesticides detected at any of the sites at the time of the sampling survey.

Historical surface water data for the proposed landfill site for selected parameters are shown in Figure 5 to Figure 9.

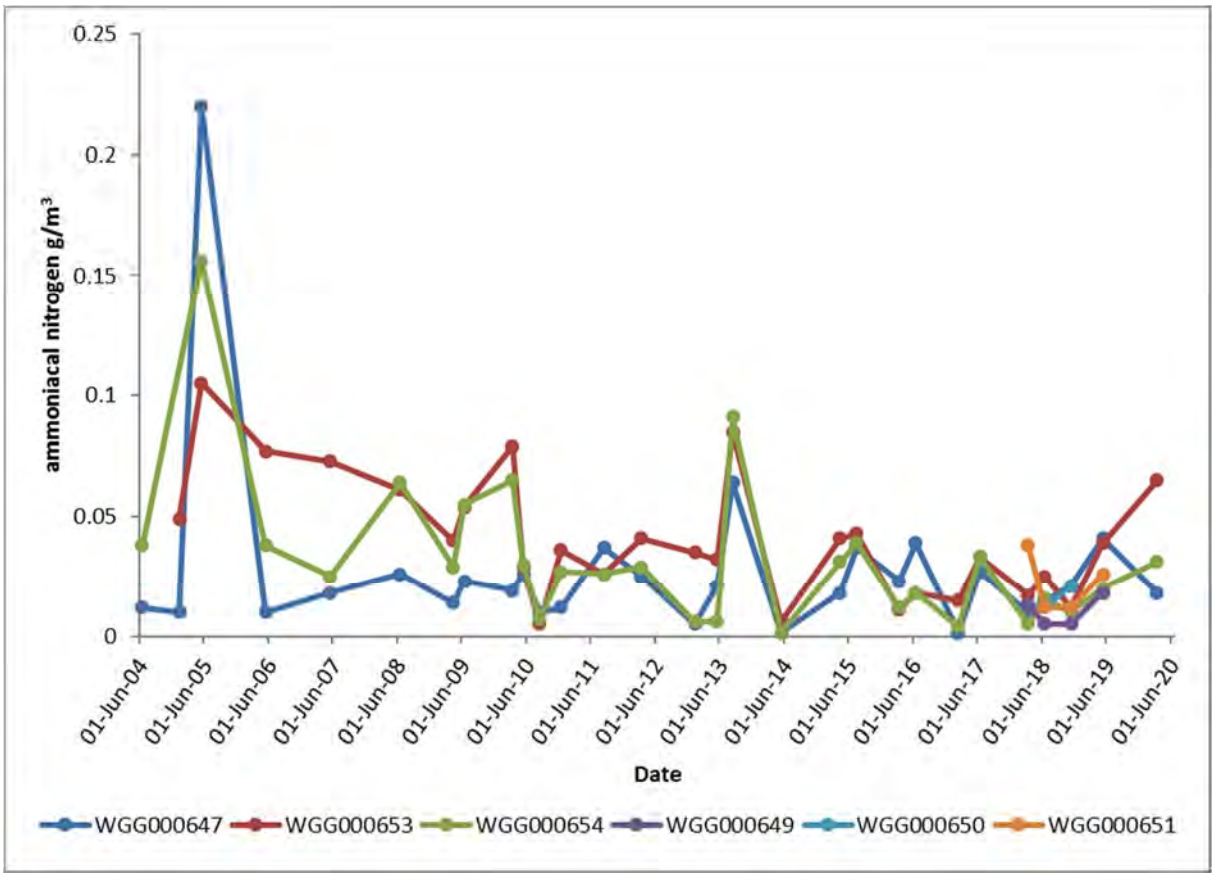

Figure 5 Ammoniacal nitrogen levels found in surface water at the Central landfill site, 2004-2020

Figure 5 illustrates comparative fluctuations in the levels of ammoniacal nitrogen at all sites. All the results are for surface water sites in pastoral areas, and when taken in conjunction with pH and temperature measurements, the highest level of free ammonia found to date at any of the sites is 0.0012 g/m^3 (WGG000653, January 2013 and WGG000651, 6 March 2018). This is well within the 0.025 g/m^3 guideline for aquatic ecosystem protection.

The level of suspended solids (Figure 6) also fluctuate over time with a range of <2 to 250 g/m^3 recorded over all the sites. The unnamed tributaries on this site are generally small, clear running, low energy brooks with silty beds. Some of the monitoring sites are very slow flowing under low flow conditions and can become covered in duck weed at some sites. With increased rainfall the suspended solids level in these tributaries can rise quite quickly as silt is stirred up from the beds and edges of the streams, entraining it in the flow. There were some elevated suspended solids found in previous monitoring periods, one across all sites related to a fresh, and the other at site WGG000654 taken during the road re-alignment works in June 2017. Barring these exceptions, the overall the level of suspended solids indicates good water quality in the stream system.

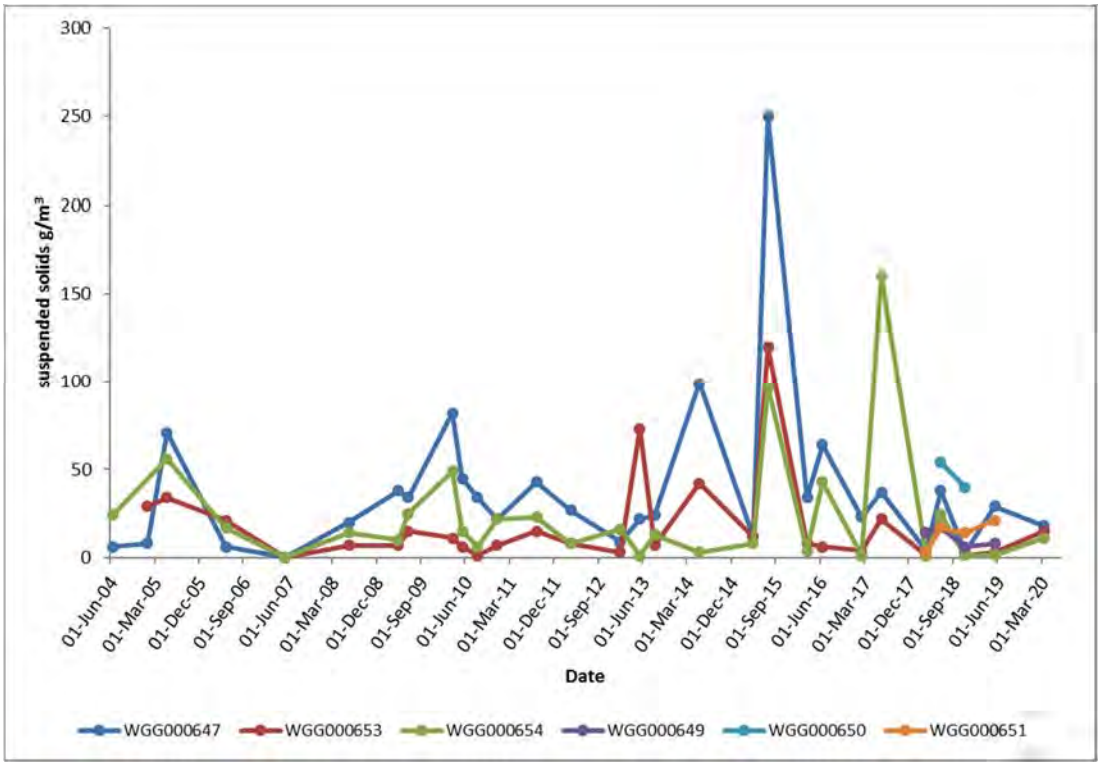

Figure 6 Suspended solids levels found in surface water at the Central landfill site, 2004-2020

Apart from a slight comparative spike in conductivity levels in the results for June 2008 in the downstream sites, the overall levels had appeared to be quite stable (Figure 7). All but two results were in the 20-30 mS/m @ 25°C range, indicating only moderate to low levels of dissolved ions in this stream system. During the 2017-2019 years, 12 of the 22 results were greater than 30.0 mS/m @ 25°C, three of which were samples collected from the sites that have been monitored since 2004. During the year under review, all three results were below this value.

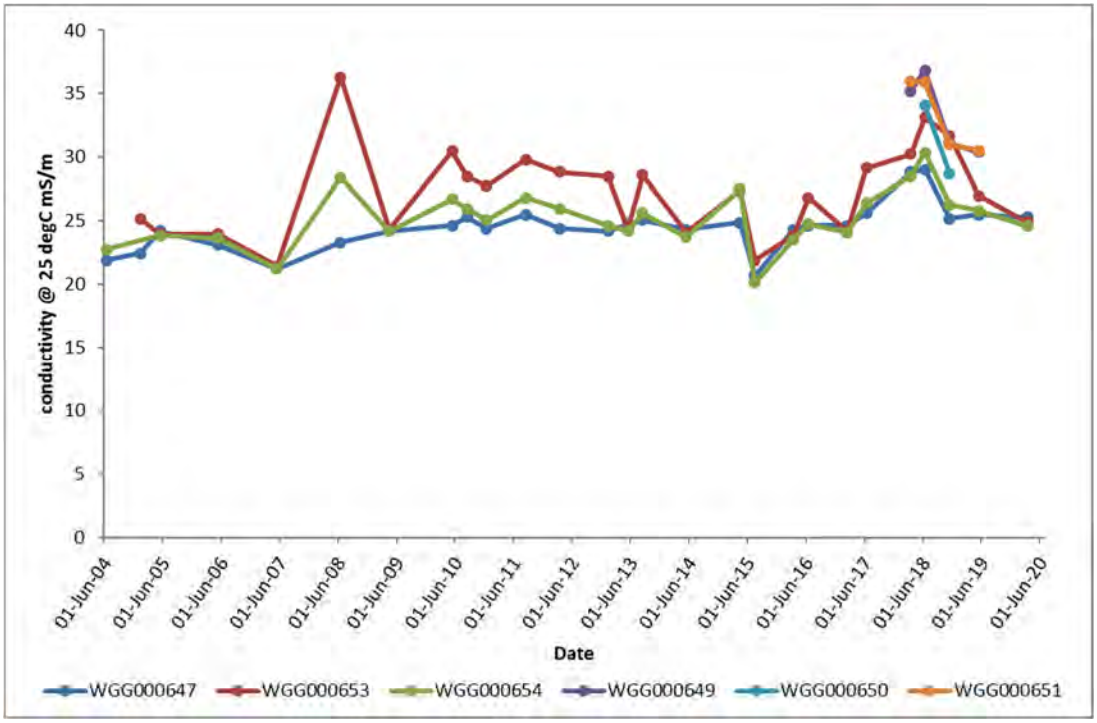

Figure 7 Conductivity levels found in surface water at the Central landfill site, 2004-2020

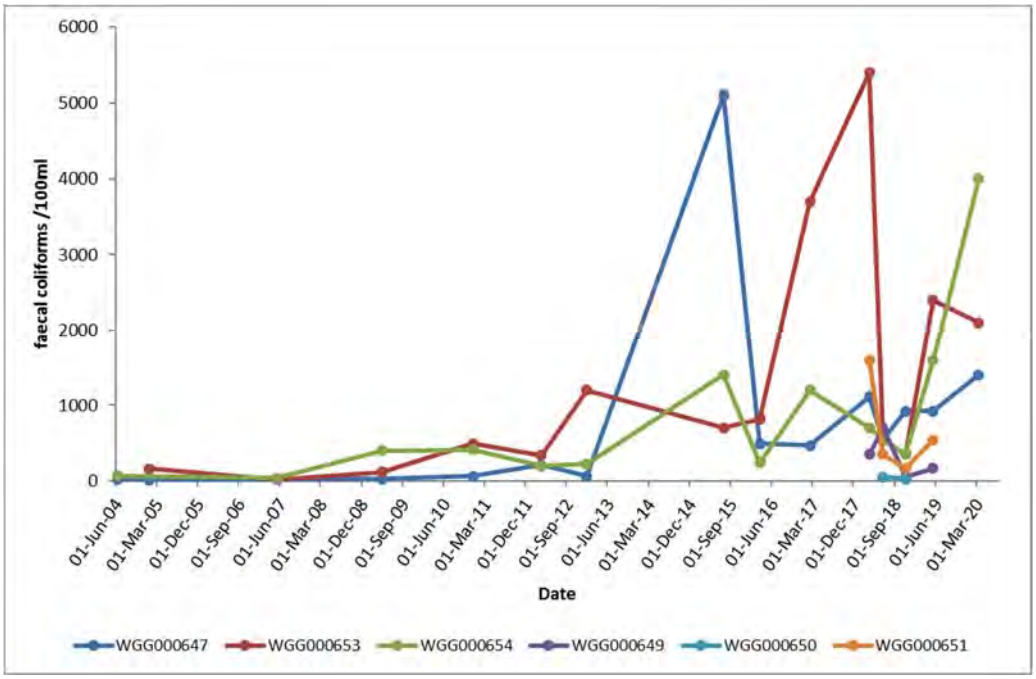

Figure 8 Faecal coliform counts found in surface water at the Central landfill site, 2004-2020

In terms of nitrate/nitrite nitrogen, the concentrations are typical of relatively small and sometimes slow flowing tributaries in an agricultural setting, and are not considered excessive from an environmental perspective. It is noted that the largest variations have been observed at the three recently established monitoring sites.

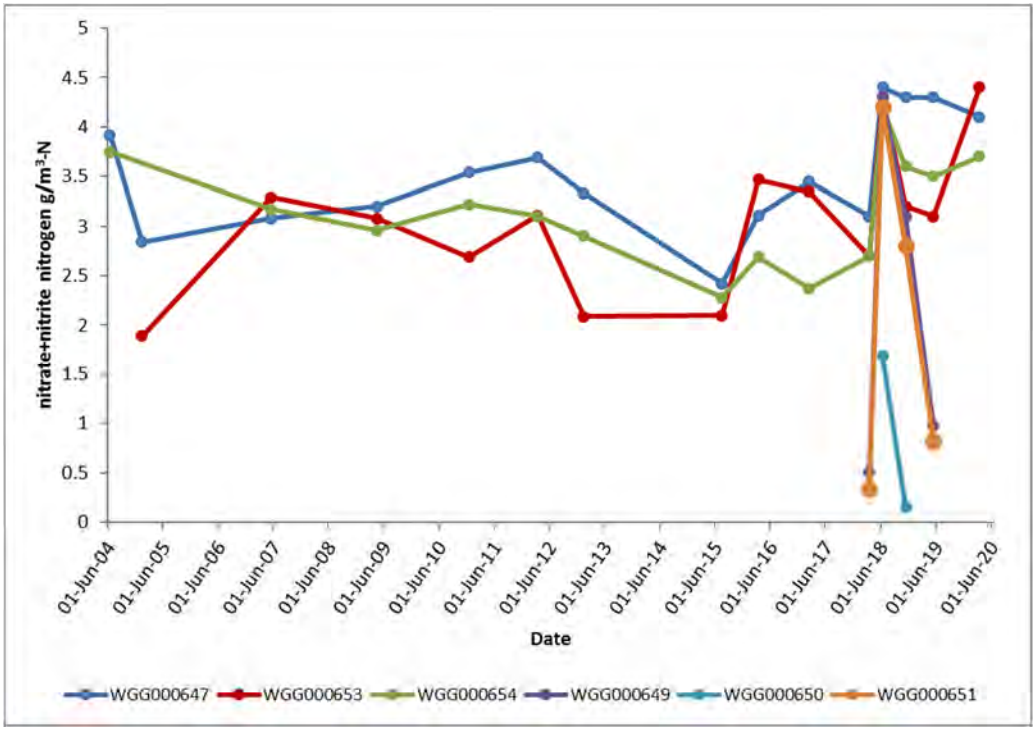

Figure 9 Nitrate/nitrite nitrogen found in surface water at the Central landfill site, 2004-2020

Overall water quality downstream of the proposed landfill site is quite good and is comparable to that expected in similar streams in the area. Looking at the data set for the longer term monitoring sites, the concentrations of ammoniacal nitrogen, conductivity and faecal coliforms are generally found to be higher at site WGG000653, upstream of the northern landfill tributary (with the exception of the faecal coliforms in

the northern landfill tributary in July 2015). The newly introduced sampling sites aimed to isolate potential effects from the southern ephemeral tributary that is downstream of Stage 1 of the landfill have been found to have a higher ammoniacal nitrogen and conductivity than site WGG000653 on occasion. It is noted that there may be an emerging trend of increasing conductivity and faecal coliforms in the pre landfilling condition of the tributaries.

2.2.2 Groundwater monitoring

Monitoring of groundwaters at the site commenced in 2005. However, with no imminent date of commencement of the activity, this monitoring was put in abeyance in 2014, with a view to resuming this monitoring two years prior to construction activities commencing at the site. As it was anticipated that the landfill would be accepting waste some time just prior to June 2019, the baseline groundwater monitoring was increased significantly during the 2017-2018 year, based on the recommendations of the 2016-2017 year, which are summarised below.

The nature of the baseline monitoring that needed to be undertaken to add to the baseline data already collected was assessed as follows:

- Parameters for baseline monitoring needed to include those listed in the consent for on-going monitoring, those deemed necessary for groundwater characterisation, and those identified as possible landfill contaminants. Baseline monitoring should be carried out as early as feasible and be carried out during summer and winter to capture any seasonal differences.
- All bores needed to be surveyed to provide accurate ground reduced levels (GRL) and casing heights to allow for ongoing groundwater flow monitoring in the target aquifers.
- Water level monitoring needed to be undertaken at least quarterly in the majority of bores to monitor seasonal effects and at 15 minute intervals, using downhole loggers, in at least three (shallow, moderate, deep) bores to provide a more comprehensive dataset.

Consent 5347 requires quarterly monitoring of the bores shown in the application documentation, with an additional bore to be installed down gradient of the leachate pond. The application documentation was reviewed and it was identified that this amounted to a minimum of 15 bores. The consent is also specific about the parameters that need to be monitored on a quarterly and/or annual basis. Work was undertaken during the 2016-2017 year in an attempt to locate all of the bores specified in the application and assess their condition. The activities and revisions to the baseline monitoring programme with respect to the groundwater monitoring locations is discussed further in section 2.2.2.1 with the results of the baseline groundwater monitoring undertaken to date discussed in the following sections.

Once consent 5347 is exercised the monitoring of groundwater will need to be undertaken on a quarterly basis as per good practice guidelines and condition 17 of consent 5347.

2.2.2.1 Groundwater monitoring bores

The original groundwater monitoring bores were installed for geotechnical and engineering purposes such as groundwater level and flow direction determination, and it was previously considered that there may have been be sufficient water level data collected already to serve this purpose. For a number of years, it was considered that the existing bores could, in the short term, remain in their current state and be dealt with once it was confirmed that the site would be developed for landfilling.

In previous annual reports it was noted that, prior to the exercise of the consents, many of the bores required maintenance and in some cases may need relining or re-drilling. It was noted that many of the bores are likely to be sitting within the proposed landfill footprint and would have to be retired appropriately to prevent them becoming a potential conduit for contaminants to enter groundwater.

Condition 17 of consent 5347 requires that all 14 bores identified in the application information (Appendix IV), and at least one additional bore down gradient of the leachate storage pond, are monitored. During the 2016-2017 year, the site was visited to reassess the condition of the bores and to attempt to locate all 14 bores. The consent requirements and recommendations contained in previous annual reports were also evaluated. Only seven of the original bores were located that were, or could easily be made, fit for the purpose of monitoring groundwater levels and quality, with some of the bores requiring maintenance to make them useable. New monitoring bores were drilled and old bores reconditioned as required. Bore GND0567, which was required for monitoring under the air discharge consent rather than for groundwater quality purposes, was decommissioned to allow for the installation of a sediment detention pond.

In August and September 2017, STDC installed 12 new groundwater monitoring wells and renovated six old wells at the proposed landfill site. Bores GND0568, GND0569, GND0599, GND0600, GND1351 and GND1353 were renovated. This involved gently developing each well with compressed air, repairing/replacing the steel upstand and pouring a cement pad around the wellhead. The bore details are given in Table 3 and their locations shown in Figure 10.

Table 3 Groundwater monitoring bore locations required by consent 5347

Bore Name	STDC Name	Coordinates (NZTM) (Taradise)		Ground reduced level masl	Depth	Screened/slotted interval	Depth Range
		Eastings	Northings		mbgl	mblg	
GND0568	BH2	1712127	5631551	206.76	10.1	4.2-10.1	Shallow
GND0569	BH1	1712534	5631349	228.55	35.6	27.5-35.0	Shallow
GND0600	BH7a	1712046	5631130	217.77	20.1	16.3-19.3	Shallow
GND0826	-	1712142	5630866	-	24.2*	-	Shallow
GND1351	BH1a	1712534	5631349	228.48	12	3.0 - 12.0	Shallow
GND1353	BH6	1712331	5631460	209.53	13	9.2 - 12.2	Shallow
GND2693	new	1712448	56311501	250.34	10	5.5 – 8	Shallow
GND2696	new	1711961	5631781	215.00	10	5.5 – 7.5	Shallow
GND2699	new	1712441	5631875	218.10	11	4.8 - 10	Shallow
GND2702	new	1711984	5631391	217.87	18	6.5 – 18	Shallow
GND2692	new	1712449	5631152	250.34	40	36 – 38	Intermediate
GND2695	new	1711963	5631782	215.05	41	22.9 – 38.8	Intermediate
GND2698	new	1712444	5631875	218.14	49	37 – 48	Intermediate
GND2701	new	1712001	5631394	218.01	49	40.5 – 47.5	Intermediate
GND0599	BH7	1712050	5631128	250.33	83	78.5 - 81.5	Deep
GND2691	new	1712451	5631153	215.07	83	74 - 80	Deep
GND2694	new	1711965	5631782	218.12	75	68.5 – 72.5	Deep
GND2697	new	1712446	5631875	217.95	79	71 – 74	Deep
GND2700	new	1712004	5631394	206.76	75	65 – 72.5	Deep

Key: * - to be confirmed

Figure 10 Central landfill groundwater monitoring bore locations, 2017-2019

The 2016-2017 Annual Report listed the bores that would need to be appropriately abandoned as the project progressed. These are given in Table 4, with the bores to be monitored, to be abandoned and those Council attempted to locate at the site visit are also depicted in Figure 11. The monitoring sites within the landfill footprint are to be decommissioned only when that stage needs to be developed for accepting waste.

During the site enabling works carried out during the year under review some of these bores were appropriately abandoned. Three holes have been decommissioned to date. The decommissioning involved digging a 0.5 m deep square hole around each well head, removing the PVC liner, cutting the steel casing off below ground level, then filling each well and its surrounding hole with cement slurry. It is important to keep a record of the bores that will be under the landfill footprint and of the decommissioning of these bores should the landfill go ahead, due to the risks associated with leakage via otherwise inadequately decommissioned bores under the landfill.

Table 4 Groundwater bores to be appropriately retired and their status as at June 2020

Bore Name	STDC Name	Estimated Coordinates (NZTM)		Shown in consent application documentation (appendix 10 Figure 4 of AEE)	Depth Range (m)	Comments
		Eastings	Northings			
GND0570	BH4	1712142	5630866	Yes	20.3	Bore couldn't be found as it is located in a very overgrown area. Headworks may have been destroyed
-	-	Refer to Appendix IV		Yes	Unknown	Couldn't find a bore in this location. Figure 4 shows the bore about 40 m to west of BH4
-	-	1712396	5630956	Yes	Unknown	Couldn't find a bore in this location
-	-	1712299	5631174	Yes	Unknown	Couldn't find a bore in this location. Figure 4 shows located in stage 3, south of borrow area
GND1352	BH3a	1712093	5631275	Yes	Deep	Decommissioned Oct 2017
Unknown	-	Inside landfill footprint		No	Unknown	Tidy, closed and capped bore not on map or recorded in TRC database. Will require abandonment
GND0538	-	1712043	5631837	No	37.3 m	In a turnip field, determined it would probably have been destroyed during ploughing, or may be incorrect coordinates on GIS
GND0571	BH5	1711888	5631716	Yes	28.0 m	Damaged. Not useable
-	-	Refer to Appendix IV		Yes	Unknown	On figure 4 –stage 5/6 border towards the south west of stage 5, in the borrow area. A pipe/hose was found going into the ground, but no sign of the bore
-	-	1712298	5631522	No	Unknown	RL 209.30 m
-	-	1712325	5631460	No	Unknown	RL 210.30 m
-	-	1712293	5631311	No	Unknown	RL 217.62 m
-	-	1712333	5631350	No	Unknown	RL 215.55 m

Bore Name	STDC Name	Estimated Coordinates (NZTM)		Shown in consent application documentation (appendix 10 Figure 4 of AEE)	Depth Range (m)	Comments
		Eastings	Northings			
-	-	1712228	5631283	No	Unknown	RL 213.75 m

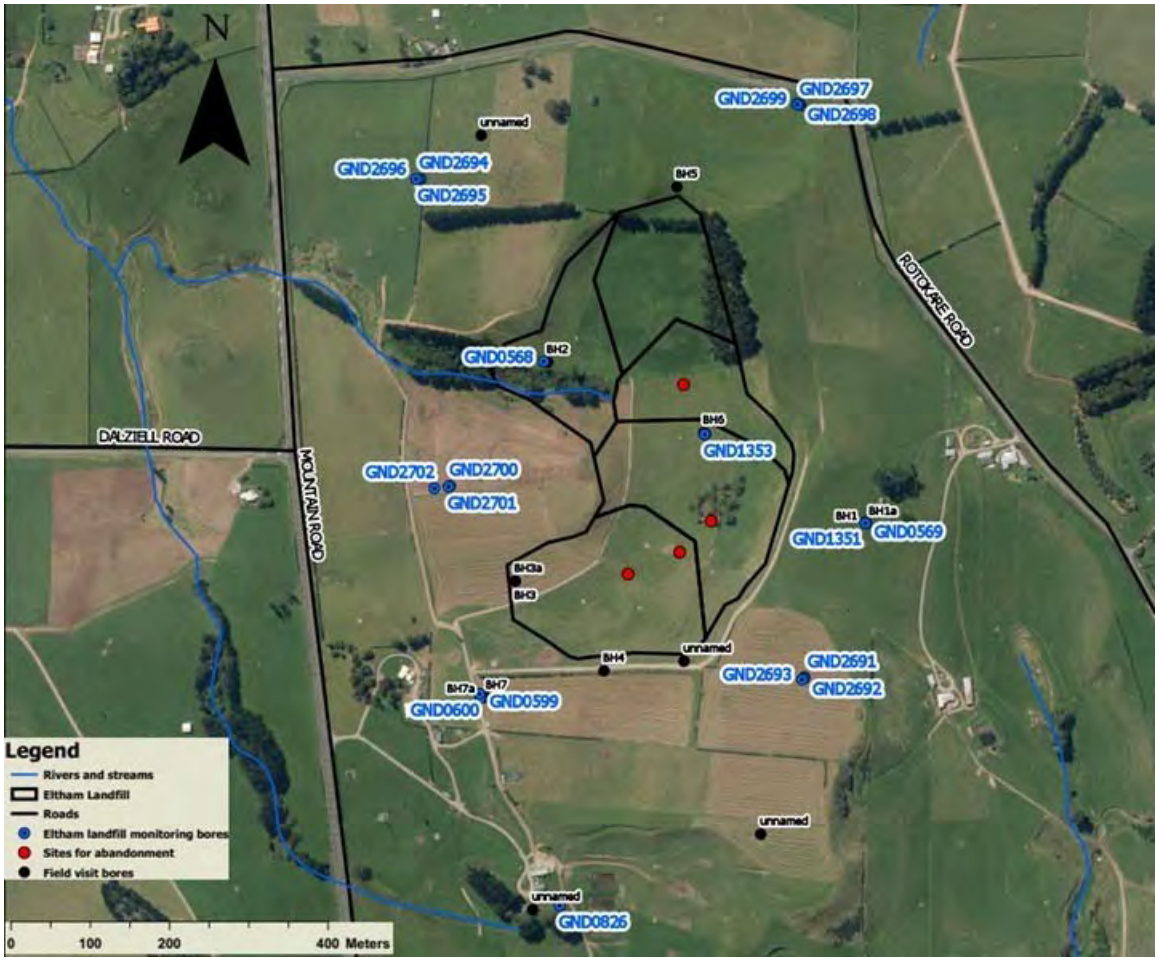

Figure 11 The location of the bores to be monitored and abandoned, and those investigated during the 2016-2017 site visit

The bores referred to in the air discharge consent 5348 are given in Table 5. The Stage 1 enabling works required BH3 to be abandoned and therefore the appropriate bores for this monitoring, to satisfy the intent of the consent conditions, will be determined when the consents are reviewed/varied prior to waste disposal taking place.

Table 5 Bores for monitoring required by consent 5348-1

Bore Name	STDC Name	Coordinates (NZTM)		Status	Depth	Screened/slotted interval	Depth Range
		Eastings	Northings		m	m	
GND0569	BH1	1712534	5631349		35.6	27.5-35.0	Shallow
GND0567	BH3	1712087	5631271	Decommissioned	-	-	24.0

2.2.2.2 Baseline groundwater monitoring programme

A comprehensive monitoring programme was designed to provide an indication of baseline groundwater flow and quality in the vicinity of the proposed landfill footprint, with the chemical parameters monitored and the reasons for their inclusion outlined in section 1.4.3.

The selected groundwater monitoring sites have been separated into shallow, intermediate and deep, depending on the actual drilled depth of each bore, with additional bores installed during 2017, designed to fill any gaps in monitoring depth (Table 3) and provide good spatial coverage of the area surrounding the proposed landfill (Figure 10). The monitoring sites should provide for reasonable and practicable coverage of the shallow, intermediate and deeper aquifers in the vicinity of the footprint and enable any future assessment of change in flow or quality to be robust.

2.2.2.3 Baseline groundwater elevations

Groundwater level loggers are installed into GND2691, GND2692, and GND2693 up gradient of the landfill footprint and GND2700, GND2701 and GND2702 down gradient of the landfill footprint. Groundwater loggers are also installed in GND0599 and GND0600 up gradient of the landfill and have provided continuous groundwater level data since 2013 as part of the Council's regional State of Environment (SEM) monitoring programme.

Groundwater elevations indicate that the predominant groundwater flow follows topographical effects, with all intervals generally exhibiting higher groundwater elevations in the lower lying areas in the base of the topographic depression. All three intervals also show a seasonal response with groundwater elevations increasing in response to rainfall. The range and speed of the response differs between bores with some bores showing significantly greater fluctuations and a more rapid seasonal response than others.

The greatest fluctuations are generally seen in bores located at higher altitudes in the north (GND2697, GND2698 and GND2699) and south (GND2691, GND2692 and GND2693) of the site where seasonal highs and lows are exaggerated due to groundwater flow away from the steeper topography.

The range of groundwater levels in each bore is shown in Table 6 below. The central and eastern shallow, intermediate and deep bores all fluctuate between 1 and 4 m which is consistent with that of other bores that intercept shallow aquifers cross the region. The seasonal response in all bores indicates a degree of connectivity between the three aquifer intervals. The shallow bores at higher altitudes in the north and south of the site exhibit a similar pattern. The deep and intermediate bores at higher altitudes north and south of the site show a greater seasonal response between 1.8 and 18.5 m. The greater response is a result of groundwater flowing towards the lower lying areas under gravitational forces.

The data since 1 July 2017 are shown graphically below. The data for GND2692 for the previous monitoring year appears erroneous. The unusual changes in the water level at the site are likely a result of either a faulty logger (which has now been replaced) or disturbance to the bore from site works in close proximity to the bore. Figure 12, Figure 13 and Figure 14 display the range of groundwater elevations by location. Figure 15 and Figure 16 demonstrate that the shallow and deeper aquifers in the vicinity of the proposed landfill both respond to rainfall. Figure 17 has been provided to show that although all intervals respond to rainfall the range and speed of the response is generally determined by depth with the deeper bores showing a slower more subdued response than the shallower bores when not affected by steep gradients..

Table 6 Summary of bore details and range of groundwater elevation change

Bore id.	GRL	Topography	area	Depth	Date monitoring commenced	Monitoring type	Lowest GWL (m ASL)	Highest GWL (m ASL)	Type	Groundwater level range (m)	Response type
GND0568	206.76	low	central	10.1	22/11/2017	manual	201.19	201.99	shallow	0.8	seasonal
GND1353	209.53	low	central	13	22/11/2017	manual	201.96	205.76	shallow	3.8	seasonal
GND2694	215.07	low	north west	75	11/10/2017	manual	192.68	194.2	Deep	1.52	seasonal
GND2695	215.05	low	north west	41	11/10/2017	manual	200.27	204.52	Intermediate	4.25	seasonal
GND2696	215	low	north west	10	11/10/2017	manual	204	205.77	shallow	1.77	seasonal
GND2700	217.95	moderate	central	75	11/10/2017	continuous	193.63	195.16	Deep	1.53	seasonal
GND2701	218.01	moderate	central	49	11/10/2017	continuous	193.69	195.65	Intermediate	1.96	seasonal
GND2702	217.87	moderate	central	18	11/10/2017	continuous	200.4	203.5	shallow	3.1	seasonal
GND1351	228.48	high	east	12	22/11/2017	manual	220.3	222.31	shallow	2.01	seasonal
GND0569	228.55	high	east	35.6	22/11/2017	manual	203.45	207.41	shallow	3.96	seasonal
GND0599	217.87	moderate	south east	83	17/12/1996	continuous	191.17	193.01	Deep	1.84	seasonal
GND0600	217.77	moderate	south east	20.1	26/11/1996	continuous	200.38	204.38	shallow	4.0	seasonal
GND2697	218.12	moderate	north	79	11/10/2017	manual	195.2	211.04	Deep	15.84	seasonal and gravity
GND2698	218.14	moderate	north	49	11/10/2017	manual	198.79	211.09	Intermediate	12.3	seasonal and gravity
GND2699	218.1	moderate	north	11	11/10/2017	manual	207.4	211.36	shallow	3.96	seasonal and gravity
GND2691	250.33	high	south	83	11/10/2017	continuous	223.94	230.45	Deep	6.51	seasonal and gravity
GND2692	250.34	high	south	40	11/10/2017	continuous	224.8	243.39	Intermediate	18.59	seasonal and gravity
GND2693	250.34	high	south	10	23/04/2018	continuous	241.19	245.88	shallow	4.69	seasonal and gravity

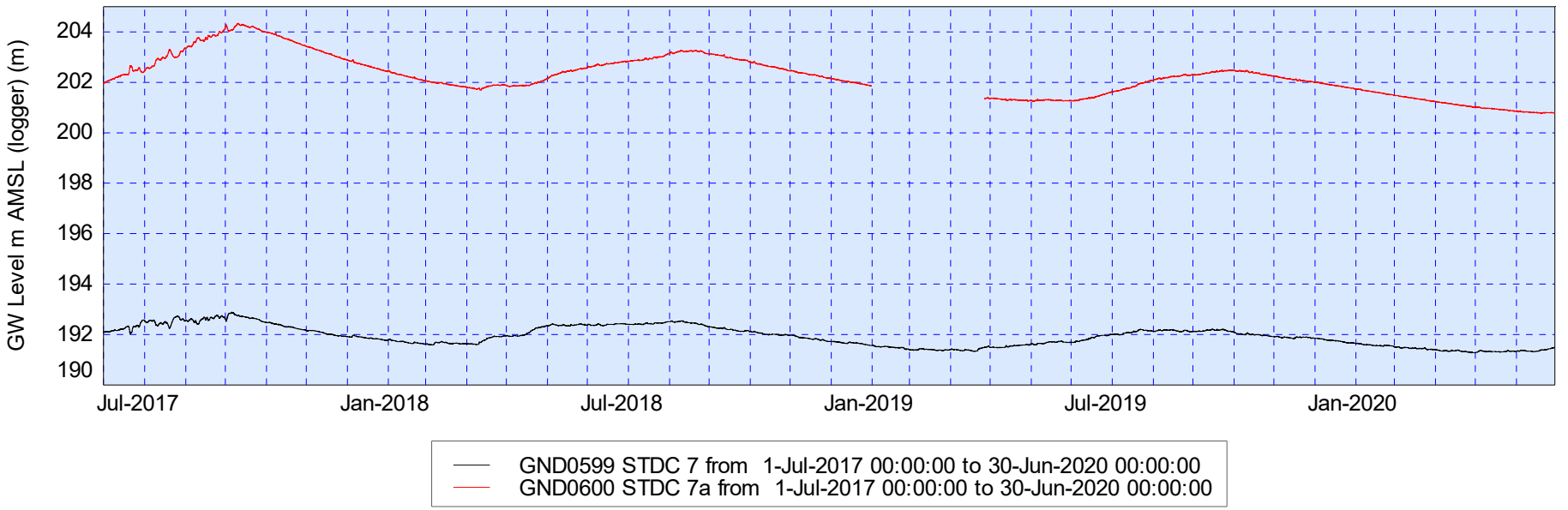

Figure 12 Groundwater elevations GND0599 and GND0600-located south east of the site at moderate elevations

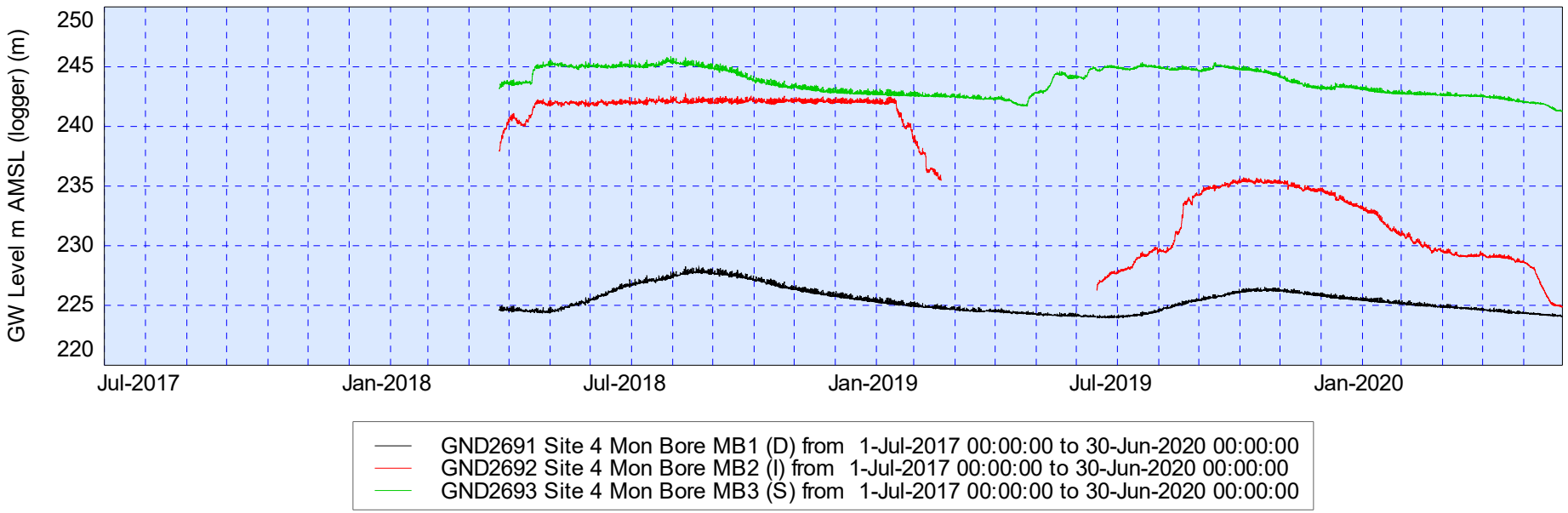

Figure 13 Groundwater elevations GND2691, GND2692 and 2693-located south east of the site at higher altitudes

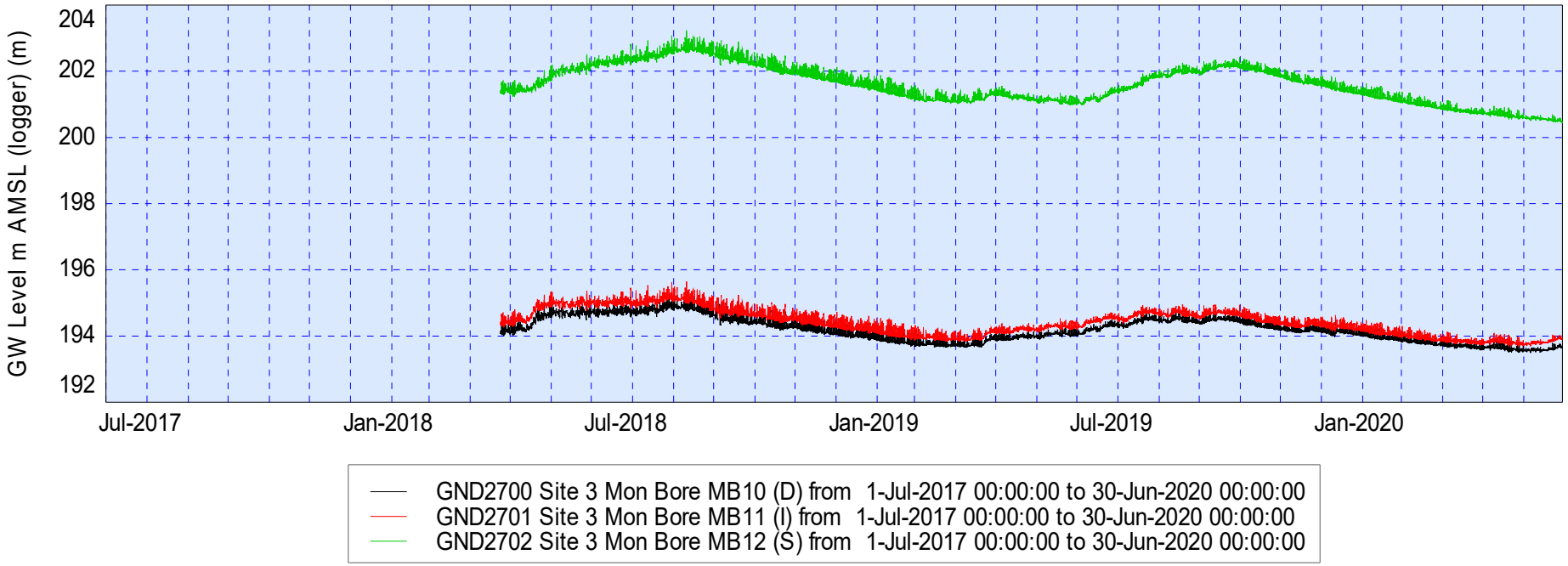

Figure 14 Groundwater elevations GND2700, GND2701 and GND2703-located centrally at the site at moderate altitude

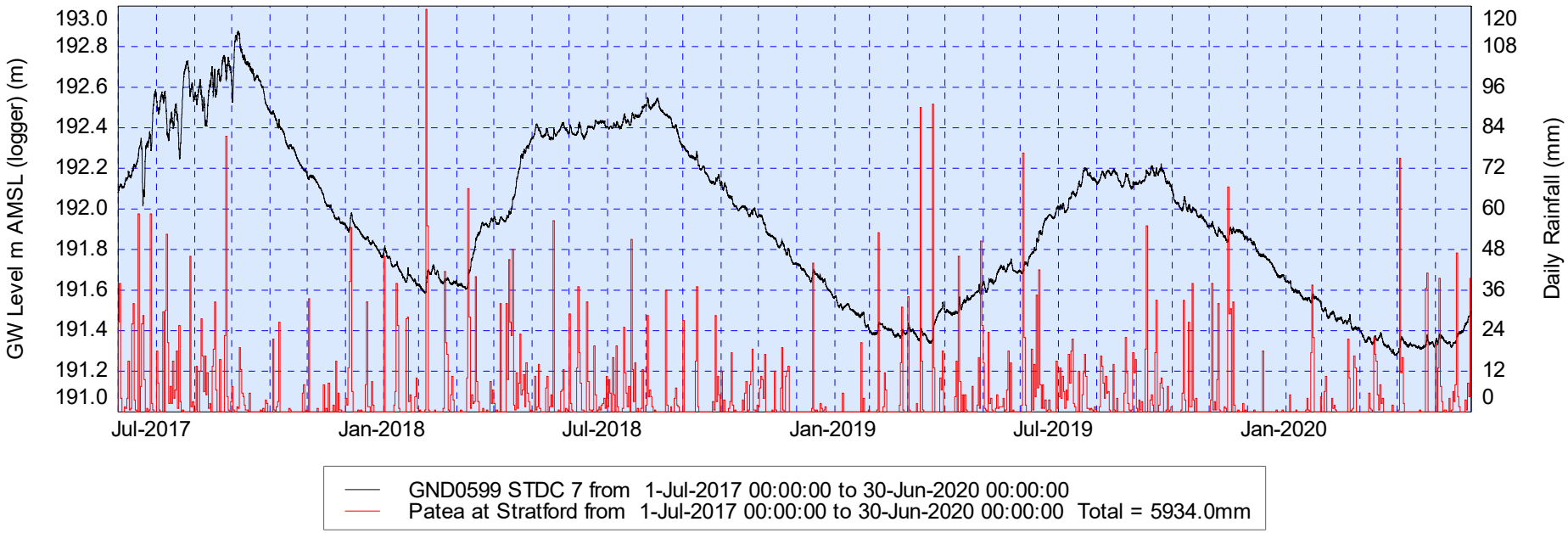

Figure 15 Groundwater elevations in the deep bore GND0599 in comparison to rainfall

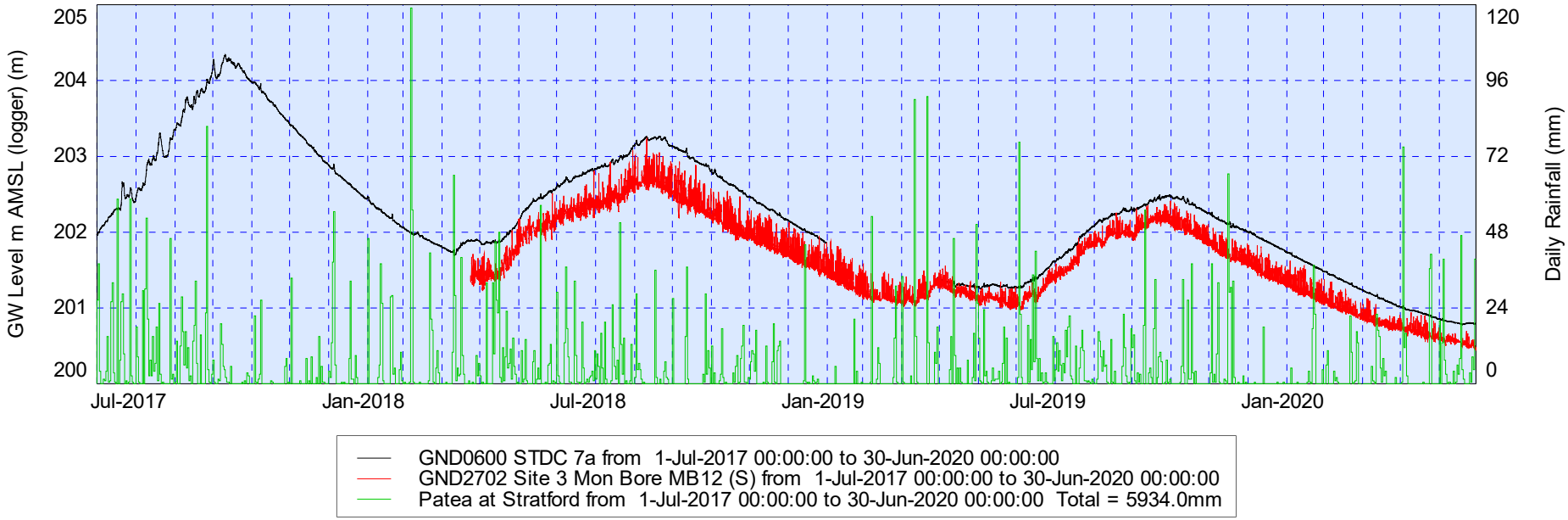

Figure 16 Groundwater elevations in the shallow bores GND2702 and GND0600 in comparison to rainfall

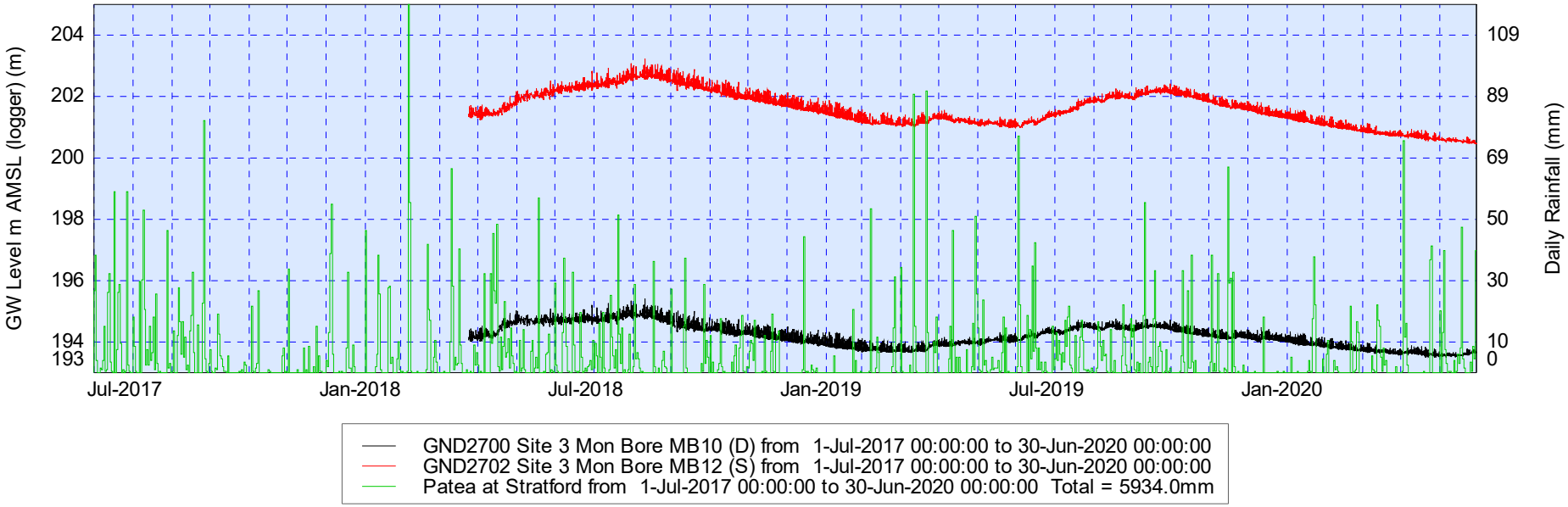

Figure 17 Groundwater elevations in GND2702 and GND2700 located at the centre of the site at moderate altitudes in comparison to rainfall

2.2.2.4 Baseline groundwater quality

The groundwater quality monitoring has been put in abeyance until the Council is given an indication that the project is going to recommence. The suite of shallow, intermediate and deep groundwater monitoring bores were last sampled in October 2018 and April 2019, when they were analysed for a comprehensive suite of baseline parameters. The results gathered to date for selected parameters are presented in the graphs in the following sections.

The data gathered since monitoring commenced indicates the following:

- There is no clear distinction in groundwater quality between shallow, intermediate and deep groundwater bores;
- There is no clear distinction between water quality reported in spring (high groundwater levels) and autumn (low groundwater levels) across the site as a whole. Shallow bores GND0600, , GND2694, and GND2702 and deep bore GND2691 exhibit some slight changes in water quality between spring and autumn, which may be linked to seasonal effects;
- The majority of bores exhibit generally stable water quality; and
- More data is required to establish the extent of any seasonal or depth related trends. This will be collected in quarterly monitoring of all the bores for one year prior to the commencement of the activity.

2.2.2.5 Chemical parameters

Chemical monitoring of the groundwater had been put in abeyance until two years prior to the construction activities commencing. Groundwater monitoring recommenced in the 2017-2018 year, and was continued in the 2018-2019 year prior to be being put into abeyance again.

The graphs provided in Figure 18 to Figure 21 illustrate the trends over time for selected parameters. The data collected so far is baseline data prior to any consented activity at the site. The variations in groundwater quality can therefore be considered as natural, or at most, the results of pressures exerted on groundwater quality by the grazing and dairying activities currently undertaken at the site.

Conductivity levels over the whole site generally range between 16.5 and 38.5 mS/m@25°C (15 and 35 mS/m @20°C). This indicates that the groundwater generally has relatively low levels of dissolved solids and that groundwater quality is quite good in this regard. For those bores with a larger dataset, over the period that the groundwater has been monitored, the conductivity level for each bore also generally appears to be relatively stable (Figure 18). The exceptions to this were bores GND0599 and GND0600, which have exhibited a tendency to increase over time. Further sampling during the 2018-2019 year supported this finding in GND0600, however there was a reduction in the conductivity of the samples from GND0599. Based on the (up to) four samples collected from these sites during the 2017-2019 years, bores GND0600, GND2691, GND2694, and GND2702 appear to show the larger seasonal variations in conductivity, however further monitoring will be required to confirm this. There was a significant reduction in the conductivity found in GND2699 between October 2017 and October 2018, but the bore has been dry on both April sampling rounds.

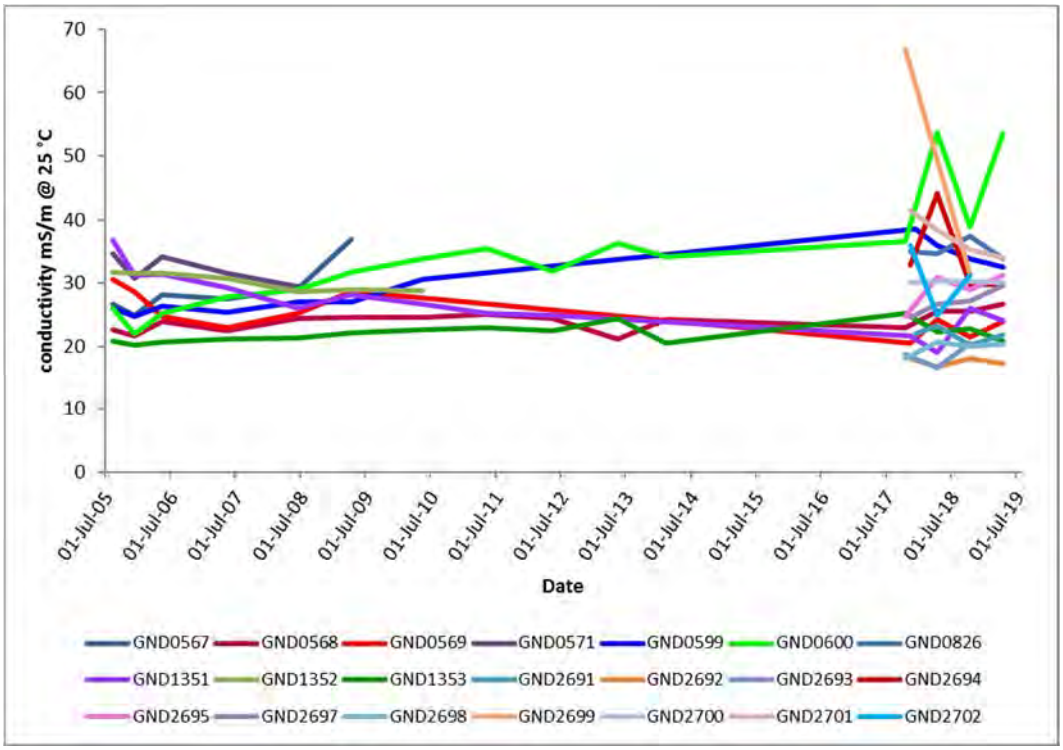

Figure 18 Conductivity found in the groundwater at Central landfill

Nitrite and nitrate levels show some variability with some sites showing increases and others showing decreases in concentration (Figure 19). Bore GND0599 has had very low and stable levels of nitrite/nitrate (and a higher pH) when compared to the other sites. However, this bore is far deeper than the other older bores (83 m). The highest nitrate/nitrite nitrogen concentration was found in bore GND0600, which has continued to be above the calculated maximum acceptable value for drinking water of 11.3 g/m^{3}-N from April 2009 onwards. This bore is located south west of the landfill footprint and is a shallow bore that is topographically relatively low below an area of grazing land that is approximately 9 ha.

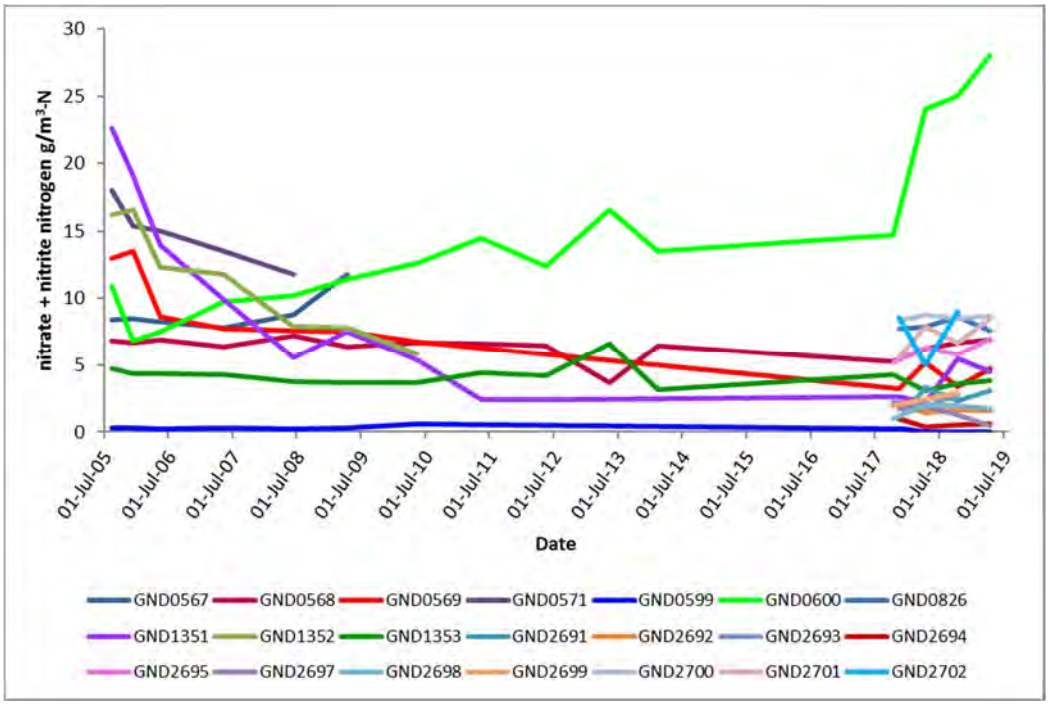

Figure 19 Nitrate/nitrite levels found in the groundwater at Central landfill

The baseline monitoring therefore shows some impact from the agricultural activities occurring up gradient of GND0600. It should be noted however that there are no known drinking water bores in the immediate vicinity of this monitoring location.

It is also noted that there are some elevations observed in shallow, intermediate and deep bores, which may support the possibility of interconnectivity between the various aquifer intervals in some locations.

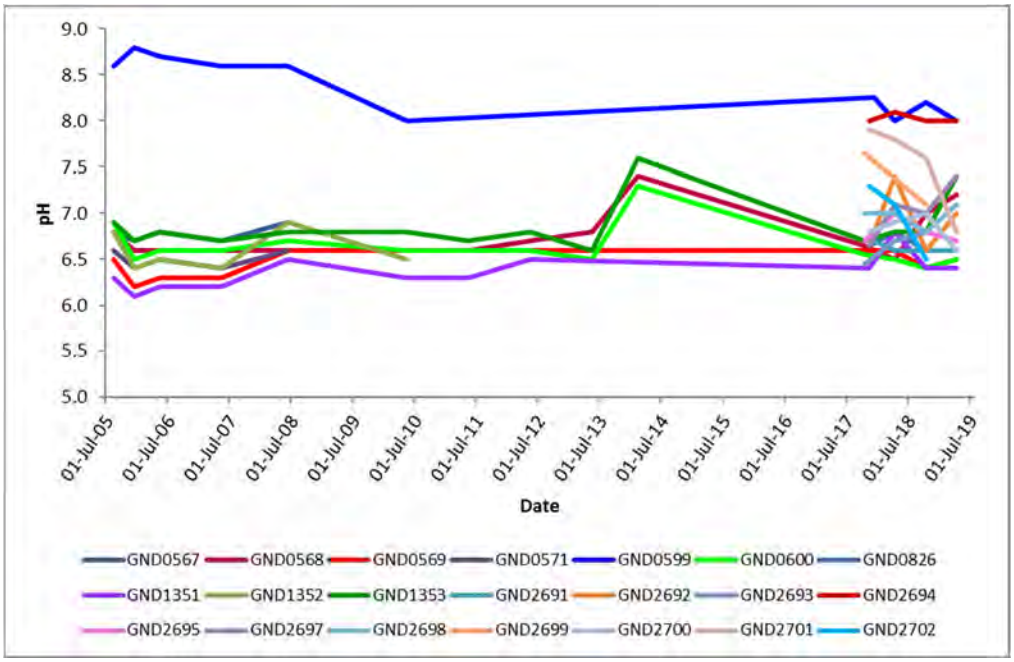

Figure 20 pH found in the groundwater at Central landfill

As the graph in Figure 20 shows, the pH level of the shallow aquifer appears generally quite stable over time for the bore with the longer monitoring history. The deeper original bore (GND0599) exhibits a significantly higher pH, as does the new deep bore GND2694. The new intermediate bore GND2701 exhibited a high pH in the initial sampling, however this has dropped notably from 7.9 to 6.8.

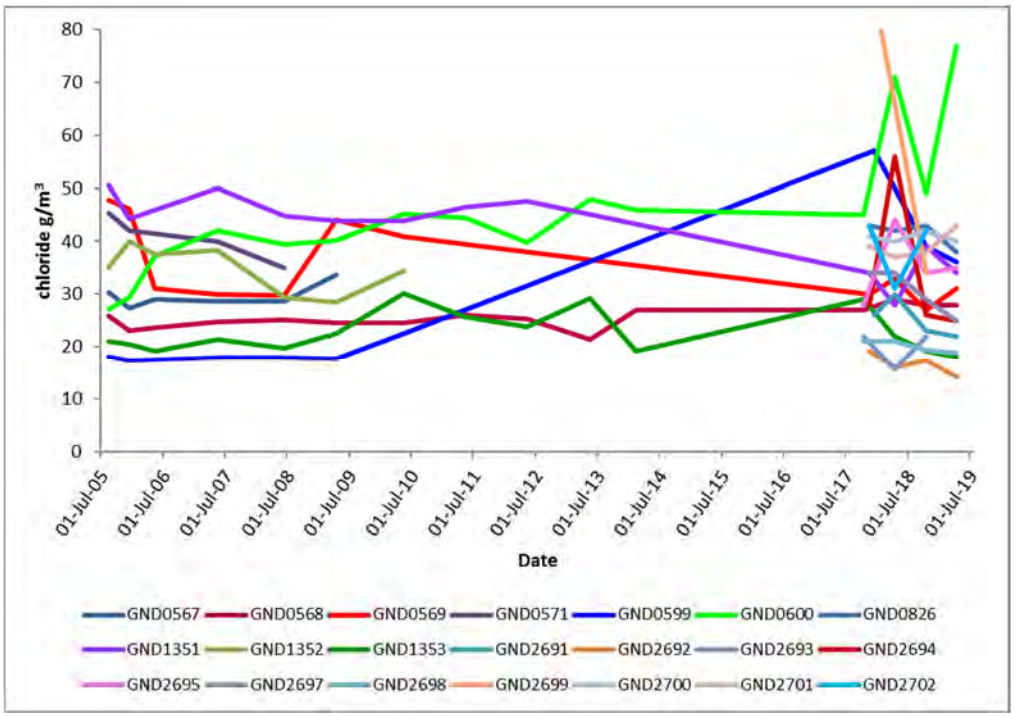

Figure 21 Chloride levels found in the groundwater at Central landfill

Chlorides and hardness are in the normal ranges for Taranaki groundwater (Figure 21). It is noted that there had appeared to be a trend of increasing chlorides pre-landfilling in bores GND0599 and GND0600, with the possibility of large seasonal variations at sited GND0600 and GND2694. During the second year of more comprehensive monitoring (2018-2019), there had been a notable decrease in the chloride concentration in GND0599 and GND2701, with only GND0600 continuing to show a large seasonal variation.

There have been no organonitrogen or phosphorus pesticides, or semi volatile organic compounds detected in any of the samples collected from any of the bores. In terms of gasses in groundwater, methane and toluene have been detected occasionally in some bores. The presence of methane and toluene at the low levels found indicates the presence of immature hydrocarbons (peats), likely to have been deposited in this former ox bow lake. In the October 2018 and April 2019 surveys there were low levels of some trihalomethanes detected in GND2697 and chloroform in GND0291.

2.2.3 Monitoring of neighbouring water supplies

Condition 17 (h) of consent 5347-1 requires the annual sampling and testing of surface water supplies and bores on neighbouring properties, and condition 20 (d) requires that the consent holder provides an alternative supply in the case of any of these becoming significantly affected. For this reason, the neighbourhood water supply monitoring commenced during the 2017-2018 year, so that it could be determined if any of the supplies had become significantly affected after the landfill became operational. At the time of the application, there were 16 water supplies on the neighbouring properties. As the consent was granted over 16 years ago, and consultation with the neighbourhood liaison committee had commenced, the owners of the surrounding properties were visited during the initial sampling survey in 2017-2018 to update the water supply records. It was confirmed that there were no groundwater or surface water supplies on two of the properties, and three of the water supplies on record no longer existed. During the 2018-2019 monitoring period, samples were collected from the remaining 13 sites shown in Figure 22. The samples were analysed for the parameters that would be required by the consent: alkalinity, ammonia-N, benzene, boron, chloride, COD, conductivity, iron, pH, manganese, nitrate-N, nitrite-N, and zinc. In addition to these parameters, bacterial testing in the form of an *E.Coli* count was also undertaken on each of the water supplies. This monitoring was also put into abeyance pending confirmation that the project will be recommencing.

Historical baseline monitoring (2017-2019) has found that some of the water supplies exceeded guideline values and/or drinking water maximum acceptable values for *E.Coli* and/or nitrate-N, which is not uncommon for shallow groundwater in an agricultural area. As per the 2017-2018 year, the affected bores were GND2775, and GND2787. In the case of GND2787, the pH was also outside the guideline range. It is also noted that some of the bores contained iron and/or ammoniacal nitrogen concentrations above the guidelines set for aesthetic reasons (GND1312 and GND2476). As the Council was effectively contracted by STDC to undertake this monitoring, it has previously been agreed that they would notify the landowners. The results were forwarded to STDC. A copy of Chapter 19 of the drinking water guidelines, which provides information and advice for small, individual and roof water supplies, has previously been forwarded to STDC.

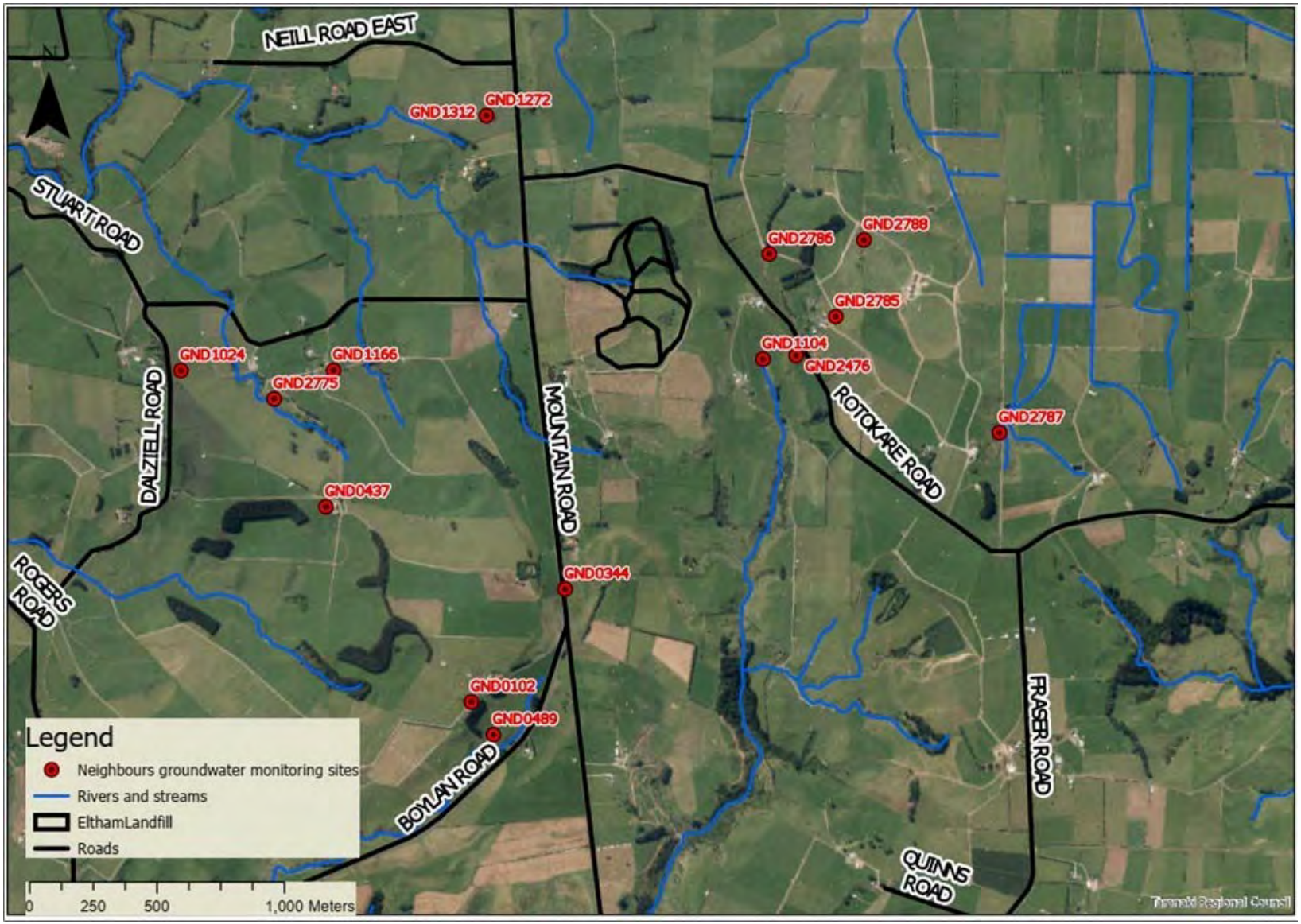

Figure 22 Location of neighbours' water supplies

2.2.4 Biological monitoring

The Council's 'kick-sampling' technique and a combination of the 'kick-sampling' and 'vegetation-sweep' sampling techniques were used at five sites to collect streambed macroinvertebrates from two unnamed tributaries of the Waingongoro River on two occassions. This has provided baseline data to assess any impacts the development and remediation of the Eltham Central Landfill site may have had in these unnamed tributaries. Samples were processed to provide number of taxa (richness), MCI, and SQMCI scores for each site.

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

Taxa richness is the most robust index when determining whether a macroinvertebrate community has been exposed to toxic discharges. When exposed to toxic discharges, macroinvertebrates may die and be swept downstream or may deliberately drift downstream as an avoidance mechanism (catastrophic drift).

06 November 2019

This survey recorded moderately low taxa richness, with a range of 9-12 taxa across the five sites. Macroinvertebrate community composition varied across the five sites surveyed, but was generally dominated by lower scoring 'moderately sensitive' and 'tolerant' taxa, typical of small, macrophyte dominated, soft-bottomed farmland streams.

MCI scores were reflective of 'poor' macroinvertebrate community health at sites WGG000647, WGG000648 and WGG000654 and 'fair' health at sites WGG000649 and WGG000651. The MCI score recorded at site WGG000651, (downstream of the confluence with the 'southern ephemeral' tributary), was significantly higher than the MCI scores recorded at the remaining four sites, and was significantly higher than the previous survey score, the median for the site and the median score recorded by 'control' sites in similar streams at comparable altitudes. The MCI scores recorded at the remaining four sites were not significantly different to one another, nor were they significantly different to previous survey scores or respective site medians. With the exception of site WGG000651, no other site recorded an MCI significantly different to the median score recorded by 'control' sites in similar streams at comparable altitudes.

Site WGG000651 recorded an SQMCI score reflective of 'good' macroinvertebrate health, while the remaining sites recorded scores reflective of 'fair' health. Sites WGG000647 and WGG0000651 recorded the highest SQMCI scores of 4.9 and 5.5 units respectively, which were not significantly different to one another, while the score of 5.5 units was significantly higher than the remaining SQMCI scores. At site WGG000649, the SQMCI score was similar to the previous survey score, while the remaining sites recorded SQMCI scores significantly higher than the previous survey scores. Compared to site medians, site WGG000651 recorded a significantly higher SQMCI score, while the remaining site scores were similar to their respective medians.

Overall, the results of this November 2019 survey were indicative of 'poor' to 'fair' biological health in the two unnamed tributaries of the Waingongoro River. This was consistent with previous surveys carried out in relation to Eltham Central landfill, which have recorded communities dominated by lower scoring 'moderately sensitive' and 'tolerant' taxa, typical of small, macrophyte dominated, soft-bottomed farmland streams. Macroinvertebrate metrics were not significantly different between sites, with the exception being site WGG000651, which recorded an MCI score significantly higher than the remaining sites and an SQMCI score significantly higher than three out of four other sites. In comparison to the median scores recorded at 'control' sites, in streams at comparable altitudes, the results of this survey were generally similar to, or better than expected, although taxa richness was low at all five sites. In summary, the results of this survey

provided no evidence that activities associated with the development or remediation of the Eltham Central Landfill site had affected the macroinvertebrate communities in the two unnamed tributaries of the Waingongoro River.

24 February 2020

This survey recorded moderately low taxa richness, with a range of 10-16 taxa across the five sites. Macroinvertebrate community composition varied across the five sites surveyed, but was generally dominated by lower scoring 'moderately sensitive' and 'tolerant' taxa, typical of small, macrophyte dominated, soft-bottomed farmland streams.

MCI scores were reflective of 'poor' macroinvertebrate community health at site WGG000648 and 'fair' macroinvertebrate community health at the remaining four sites surveyed. The MCI score recorded at site WGG000649 (upstream of the confluence with the 'southern ephemeral' tributary), was significantly higher than the MCI scores recorded at sites WGG000647, WGG000648 and WGG000654, while the MCI score recorded at site WGG000651 was significantly higher than that recorded at site WGG000648. The MCI scores recorded at sites WGG000649 and WGG000651 were both significantly higher than the median 'control' score, while the remaining sites recorded MCI scores that were not significantly different to this score. In comparison to the previous survey scores, site WGG000649 was the only site to record a significantly higher MCI score. No other significant differences between previous and current MCI results was recorded. In comparison to medians, sites WGG000649 and WGG000651 recorded significantly higher MCI scores in the current survey.

All five sites recorded SQMCI scores reflective of 'fair' macroinvertebrate health, and there were no significant differences between sites. In comparison to the previous survey, site WGG000651 was the only site to record a significantly lower SQMCI score. There were no significant differences between site medians and the current SQMCI scores at any of the five sites surveyed.

Overall, the results of this February 2020 survey were indicative of 'poor' to 'fair' biological health in the two unnamed tributaries of the Waingongoro River. Results were consistent with previous surveys carried out in relation to Eltham Central landfill, which have recorded communities dominated by lower scoring 'moderately sensitive' and 'tolerant' taxa typical of small, macrophyte dominated, soft-bottomed farmland streams. Macroinvertebrate metrics were not significantly different between sites, with the exceptions of site WGG000649, (which recorded an MCI score significantly higher than those recorded at sites WGG000647, WGG000648 and WGG000654), and site WGG000651, (which recorded an MCI score significantly higher than that recorded at site WGG000648). Taxa richness was low, however MCI and SQMCI scores were generally similar to or better than those recorded by 'control' sites, in similar streams at a comparable altitude. The results of this survey provided no evidence that activities associated with the development or remediation of the Eltham Central Landfill site had significantly negatively affected the macroinvertebrate communities in two unnamed tributaries of the Waingongoro River.

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

2.3 Air monitoring

No air monitoring was carried out during the 2019-2020 year.

Once the Central landfill commences operations an air quality monitoring programme will be implemented to monitor dust deposition, particulate matter, methane levels, hydrogen sulphide levels and odour. However, it is noted that the consent holder is required to undertake landfill gas dispersion modelling prior to the discharge consents being exercised.

To support this modelling, STDC has had a weather station in place at the site since 2000. However, it was been ascertained that the initial data was not suitable for the purpose of odour dispersion modelling, as the

weather station was only serviced once per year. This matter was raised with the consent holder and they undertook to collect more robust data prior to the site being developed, as per condition 11 of consent 5348-1. A proposed location for a new station was confirmed as acceptable to the Council in July 2014, and it was installed as proposed, however this was subsequently struck by lightning. STDC consulted with Council regarding the specifications required for the data collection from a further new weather station, and the installation was completed in October 2016. Council has been advised that annual calibration of the site is undertaken by their consultants, and that routine maintenance is undertaken by the Rural Fire Service. The monitoring programme was updated during 2017-2018 to include a review of the data collected and an annual inspection of the weather station to confirm that it is being adequately maintained. The site was visited on 29 August 2017. The system was found to be generally acceptable, however there was further action required with respect to the wind speed/direction. It was found that the wind arm was pointing at magnetic North instead of true North, and that this would require either a correction to be applied to the data, or for the wind arm position to be corrected. It is recommended that monitoring of this aspect of the programme is put in abeyance until Council receives notification that the site will be proceeding.

It is noted, that since the consents were granted an Air Quality National Environmental Standard has come into effect. This standard requires that the landfill gas generated from a landfill of this size is collected and either flared, or used as a fuel for generating electricity. This requirement impacts on both the design concept provided to Council at the time of the consent application, and the assessment of environmental effects. As such, the conditions of the current consent will need to be reviewed and/or changed prior to the exercise of the consent.

Photo 9 Central landfill weather station, September 2017

2.4 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 NPDC. During the year matters may arise which require additional activity by the Council, for example provision of advice and information, or investigation of potential or actual 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).

In the 2019-2020 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with NPDC's conditions in resource consents or provisions in Regional Plans.

3 Discussion

3.1 Discussion of site performance

The Central landfill site baseline results are not remarkable in themselves. Surrounding farming activities exert subtle and varying pressures on surface water and groundwater quality as would be expected. The results show that there are no unusually high values for any given water quality indicator, with the exception of the occasional high faecal coliform count. Water quality overall is good for the headwaters of small stream tributaries in a dairying catchment, however, there may be an emerging trend of increasing conductivity and faecal coliform counts upstream of the northern landfill tributary.

STDC had initiated the Neighbourhood Liaison Group meetings and employed the Technical Expert to support the Council as required by consent. There was good consultation occurring between STDC and both the neighbours and the Council during the 2017-2018 year as the design, operational plans and site enabling works progressed. It is expected that a similar level of consultation will re-commence with NPDC if a decision is made that the project will go ahead.

3.2 Evaluation of performance

A tabular summary of the consent holder's compliance record for the year under review is set out in Table 7 to Table 11.

Table 7 Summary of performance for discharge to land consent 5347-1.3

Purpose: ***To discharge contaminants onto and into land at the South Taranaki District Council Central Landfill, Eltham***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. The consent holder shall prepare and comply with a landfill management plan. Plan to be updated at least every two years	To be provided prior to exercise of consent	Draft plan previously reviewed by Council
2. The consent holder and all staff shall adhere to the management plan	Consent not exercised	N/A
3. The consent holder shall meet cost of a technical advisor on development and operations	Technical Adviser previously provided, and will be re-engaged if the project goes ahead	N/A
4. The consent holder shall construct a landfill liner to given specifications and provide for the collection of leachate	Consent not exercised. Liner design updated to current best practice during early part of detailed design phase. Consent change required	N/A
5. The landfill liner must be certified by a registered engineer	Consent not exercised	N/A
6. The consent holder shall keep records of wastes accepted	Consent not exercised	N/A
7. Certain wastes to be handled by specified guidelines.	Consent not exercised	N/A

Purpose: *To discharge contaminants onto and into land at the South Taranaki District Council Central Landfill, Eltham*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
8. Contaminated soils accepted at site shall be covered as soon as practical	Consent not exercised	N/A
9. Appointment of person to control entry of waste to the site	Consent not exercised	N/A
10. Certain wastes not to be accepted	Consent not exercised	N/A
11. Other special wastes to meet certain criteria	Consent not exercised	N/A
12. Wastes that do not meet TCLP test or exceed certain contaminant limits not to be accepted	Consent not exercised	N/A
13. Special waste to be handled as specified	Consent not exercised	N/A
14. Measures to prevent contaminants entering surrounding land	Consent not exercised	N/A
15. Compact and cover waste to certain specifications	Consent not exercised	N/A
16. Supply report on stage closure in relation to compliance with condition 15	Consent not exercised	N/A
17. Provide, comply with and maintain an annual monitoring plan	To be provided at least six months prior to exercise of consent Baseline monitoring requirements reviewed and increased for 2017-2018. Monitoring plan was being drafted by STDC The Technical Advisor has also been appointed	Baseline monitoring in progress
18. Results of consent holder monitoring to be supplied annually by 31 August	Consent not exercised	N/A
19. Prevent surface run-off into tributaries	Consent not exercised	N/A
20. Undertake review and remedial actions should leachate cause contamination	Consent not exercised	N/A
21. Inspect landfill for leachate breakout at least once a month	Consent not exercised	N/A
22. Keep records on any remedial actions taken	Consent not exercised	N/A

Purpose: *To discharge contaminants onto and into land at the South Taranaki District Council Central Landfill, Eltham*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
23. Keep records on any investigations and engineering works	Consent not exercised	N/A
24. Liaise and meet with Neighbourhood Liaison Group	Consent not due to be exercised yet, however meetings were previously held at more than the required frequency. These will recommence if project goes ahead	Yes
25. Lapse provision	Lapse date extended to extend to 21 December 2025	N/A
26. Limits areas from which refuse can originate from, to Taranaki including Mokau and Awakino	Consent not exercised	N/A
27. Review condition	Next optional review in June 2023	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**N/A**
Overall assessment of administrative performance in respect of this consent		**N/A**

Table 8 Summary of performance for air discharge consent 5348-1

Purpose: *To discharge emissions into the air from landfilling activities at the South Taranaki District Council Central Landfill, Eltham*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. The consent holder shall prepare and comply with a landfill management plan. Plan to be updated at least every two years	To be provided three months prior to exercise of consent	Draft plan previously reviewed by Council
2. The consent holder shall adopt best practical option	Consent not exercised	N/A
3. Discharges not to result in objectionable or offensive odours or airborne contaminants beyond the boundary	Consent not exercised	N/A
4. Discharges not to result in objectionable or offensive levels of dust, beyond the boundary	Consent not exercised	N/A
5. Dust controlled on access roads and landfill	Consent not exercised	N/A
6. No burning of waste at the site	Consent not exercised	N/A
7. No composting of waste at the site	Consent not exercised	N/A

Purpose: *To discharge emissions into the air from landfilling activities at the South Taranaki District Council Central Landfill, Eltham*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
8. No extraction venting of landfill gas within 200 metres of site boundary	Consent not exercised	N/A
9. Avoid discharges of waste or contaminants to the surrounding environment	Consent not exercised	N/A
10. Provide, comply with and maintain an annual monitoring plan	To be provided at least six months prior to exercise of consent	Baseline monitoring in progress
11. Establish meteorological station and use data to undertake dispersion modelling	Consent not exercised. Inspection and liaison with consent holder in 2017-2018 – 12 months data required commencing within one year of exercise of consent. To re-commence monitoring if project is to go ahead	Weather station replaced and relocated in 2017-2018. Data quality to be assessed. More data required
12. Modelling to be done to parameters supplied in appendix 10 of the application	Review of Council records – 12 months data required commencing within one year of exercise of consent	N/A-modelling not done yet
13. Keep records on any complaints received relating to air discharges	Consent not exercised	N/A
14. Provide results of monitoring plan, complaints and meteorological data annually by 31 August	Consent not exercised	N/A
15. Keep records of any site investigations and engineering works	Consent not exercised	N/A
16. Liaise and meet with a Neighbourhood Liaison Group	Liaison with consent holder – consent not exercised, however in 2017-2018 meetings were held at more than the required frequency. The Technical Advisor had also been appointed. Will recommence if project I to go ahead	Yes
17. Lapse provision	Lapse date extended to extend to 21 December 2025	N/A
18. Limits areas from which refuse can originate from. Taranaki including Mokau and Awakino	Liaison with consent holder – consent not exercised	N/A
19. Review condition	Next optional review in June 2023	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**N/A**
Overall assessment of administrative performance in respect of this consent		**N/A**

Table 9 Summary of performance for stormwater discharge consent 5349-1

Purpose: ***To discharge up to 15,000 m³/day of uncontaminated stormwater and 4,000 m³/day of treated stormwater from the South Taranaki District Council Central Landfill, Eltham, onto and into land and into an unnamed tributary of the Waingongoro River***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. The consent holder shall prepare and comply with a landfill management plan. Plan to be updated at least every two years	To be provided prior to exercise of the consent	Draft plan reviewed by Council
2. No leachate to be discharged	Consent not exercised	N/A
3. Leachate storage lagoon bunded to prevent stormwater infiltration	Consent not exercised	N/A
4. Adopt best practical option	Consent not exercised	N/A
5. No direct discharge of contaminated stormwater to receiving waters	Consent not exercised	N/A
6. Stormwater treatment pond be installed	Consent not exercised	N/A
7. Discharge not give rise to certain effects in receiving waters	Consent not exercised	Baseline monitoring in progress
8. Contaminants in receiving waters not to exceed certain limits	Consent not exercised	Baseline monitoring in progress
9. System designed to minimise erosion in channels	Consent not exercised	N/A
10. System designed to minimise land instability	Consent not exercised	N/A
11. Rehabilitation of any land made unstable	Consent not exercised	N/A
12. Minimise disturbance of riparian plants and undertake planting as set out in application	Consent not exercised	N/A
13. Provide, comply with and maintain an annual monitoring plan	Review of Council records – to be provided at least six months prior to exercise of consent Baseline monitoring requirements increased for 2017-2019 years The Technical Advisor had also been appointed, and will be re-engaged if project is to go ahead	Baseline monitoring in progress
14. Results of consent holder monitoring to be supplied	Consent not exercised	N/A
15. Design and construction of system to be certified by registered engineer	Consent not exercised	N/A

Purpose: *To discharge up to 15,000 m^3/day of uncontaminated stormwater and 4,000 m^3/day of treated stormwater from the South Taranaki District Council Central Landfill, Eltham, onto and into land and into an unnamed tributary of the Waingongoro River*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
16. Liaise and meet with Neighbourhood Liaison Group	Consent not exercised, however meetings were held at more than the required frequency in 2017-2018 and will recommence if project goes ahead	Yes
17. Lapse provision	Lapse date extended to extend to 21 December 2025	N/A
18. Limits areas from which refuse can originate from to Taranaki including Mokau and Awakino	Consent not exercised	N/A
19. Review condition	Next optional review in June 2025	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**N/A**
Overall assessment of administrative performance in respect of this consent		**N/A**

Table 10 Summary of performance for dam and diversion consent 5350-1

Purpose: *To dam and divert water around the South Taranaki District Council Central Landfill, Eltham, in the headwaters of an unnamed tributary of the Waingongoro River*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. The consent holder shall prepare and comply with a landfill management plan. Plan to be updated at least every two years	To be provided three months prior to exercise of consent	Draft plan reviewed by Council
2. System designed to minimise erosion in channels	Consent not exercised	N/A
3. System designed to minimise land instability	Consent not exercised	N/A
4. Rehabilitation of any land made unstable	Consent not exercised	N/A
5. Provide, comply with and maintain an annual monitoring plan	To be provided at least six months prior to exercise of consent	Baseline monitoring in progress
6. Design and construction of system to be certified by registered engineer	Consent not exercised	N/A
7. Liaise and meet with Neighbourhood Liaison Group	Consent not exercised, however meetings were held at more than the required frequency in 2017-2018 and will recommence if project goes ahead. The Technical Advisor had also been appointed. Will recommence if project I to go ahead	N/A

Purpose: *To dam and divert water around the South Taranaki District Council Central Landfill, Eltham, in the headwaters of an unnamed tributary of the Waingongoro River*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
8. Lapse provision	Lapse date extended to extend to 21 December 2025	N/A
9. Limits areas from which refuse can originate from to Taranaki including Mokau and Awakino	Inspection and liaison with consent holder – consent not exercised	N/A
10. Review condition	Next optional review in June 2023	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**N/A**
Overall assessment of administrative performance in respect of this consent		**N/A**

Table 11 Summary of performance for structures consent 5351-1

Purpose: *To erect, place and maintain structures in the beds of unnamed tributaries of the Waingongoro River for the construction and maintenance of the South Taranaki District Council Central Landfill, Eltham*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. The consent holder shall prepare and comply with a landfill management plan. Plan to be updated at least every two years	To be provided three months prior to exercise of consent	Draft plan reviewed by Council
2. Construction and maintenance not give rise to certain effects	Consent not exercised	N/A
3. Structures designed to minimise land instability	Consent not exercised	N/A
4. Rehabilitation of any eroded areas	Consent not exercised	N/A
5. Minimise disturbance of riparian plants and undertake planting as set out in application	Consent not exercised	N/A
6. Provide, comply with and maintain an annual monitoring plan	To be provided at least six months prior to exercise of consent	Baseline monitoring in progress
7. Design and construction of system to certified by registered engineer	Consent not exercised	N/A
8. Removal of structures and reinstatement when structures no longer required	Consent not exercised	N/A

Purpose: *To erect, place and maintain structures in the beds of unnamed tributaries of the Waingongoro River for the construction and maintenance of the South Taranaki District Council Central Landfill, Eltham*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
9. Liaise and meet with Neighbourhood Liaison Group	Consent not exercised, however meetings were held at more than the required frequency in 2017-2018 and will recommence if project goes ahead. The Technical Advisor had also been appointed. Will recommence if project I to go ahead	Yes
10. Lapse provision	Lapse date extended to extend to 21 December 2025	N/A
11. Limits areas from which refuse can originate from to Taranaki including Mokau and Awakino	Consent not exercised	N/A
12. Review condition	Next optional review in June 2023	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**

No rating is given for environmental and administrative performance as the project was on hold for the year under review.

3.3 Recommendations from the 2018-2019 Annual Report

In the 2018-2019 Annual Report, it was recommended:

1. THAT in the first instance, monitoring of consented activities at Central landfill in the 2019-2020 year be amended from that undertaken in 2018-2019, by putting the groundwater and weather station verification monitoring into abeyance, and reducing the surface water sampling frequency and range of parameters determined.
2. THAT should there be issues with environmental or administrative performance in 2019-2020, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.

Recommendation 1 was implemented. Recommendation 2 did not require implementing.

3.4 Alterations to monitoring programmes for 2020-2021

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 2020-2021 the monitoring remains at this reduced level until notification is received that the project is going ahead.

It should be noted that the proposed programme represents a reasonable and risk-based level of monitoring for the site(s) 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 2020-2021.

4 Recommendations

1. THAT in the first instance, monitoring of consented activities at Central landfill in the 2020-2021 year continue at the same level as in 2019-2020
2. THAT should there be issues with environmental or administrative performance in 2020-2021, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.

Glossary of common terms and abbreviations

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

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.
CBOD	Carbonaceous biochemical oxygen demand. A measure of the presence of degradable organic matter, excluding the biological conversion of ammonia to nitrate.
cfu	Colony forming units. A measure of the concentration of bacteria usually expressed as per 100 millilitre sample.
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.
E.coli	Escherichia coli, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre sample.
FC	Faecal coliforms, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre sample.
Fresh	Elevated flow in a stream, such as after heavy rainfall.
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.
GIS	Geographical information system. A system designed to capture, store, manipulate, manage, and present spatial or geographic data. It can be used to visualize, question, analyse, and interpret data to understand relationships, patterns, and trends.
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.
m^2	Square Metres.

MCI	Macroinvertebrate community index; a numerical indication of the state of biological life in a stream that takes into account the sensitivity of the taxa present to organic pollution in stony habitats.
Mixing zone	The zone below a discharge point where the discharge is not fully mixed with the receiving environment. For a stream, conventionally taken as a length equivalent to 7 times the width of the stream at the discharge point.
MPN	Most Probable Number. A method used to estimate the concentration of viable microorganisms in a sample.
mS/m	Millisiemens per metre.
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).
NO_3	Nitrate, normally expressed in terms of the mass of nitrogen (N).
NTU	Nephelometric Turbidity Unit, a measure of the turbidity of water.
O&G	Oil and grease, defined as anything that will dissolve into a particular organic solvent (e.g. hexane). May include both animal material (fats) and mineral matter (hydrocarbons).
pH	A numerical system for measuring acidity in solutions, with 7 as neutral. Numbers lower than 7 are increasingly acidic and higher than 7 are increasingly alkaline. The scale is logarithmic i.e. a change of 1 represents a ten-fold change in strength. For example, a pH of 4 is ten times more acidic than a pH of 5.
Physicochemical	Measurement of both physical properties (e.g. temperature, clarity, density) and chemical determinants (e.g. metals and nutrients) to characterise the state of an environment.
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	*Resource Management Act 1991* and including all subsequent amendments.
SS	Suspended solids.
SQMCI	Semi quantitative macroinvertebrate community index.
Taradise	Council geographical information system.
Temp	Temperature, measured in °C (degrees Celsius).
Turb	Turbidity, expressed in NTU.

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

Bibliography and references

Centre for Advanced Engineering, University of Canterbury (2000): *Landfill Guidelines- Towards Sustainable Waste Management in New Zealand*.

Ministry for the Environment. 2018. Best Practice Guidelines for Compliance, Monitoring and Enforcement under the Resource Management Act 1991. Wellington: Ministry for the Environment.

South Taranaki District Council (2005): *Application for Variations and Extensions to Existing Resource Consents for Eltham Landfill*.

South Taranaki District Council (1998): *Proposed Central Landfill, Eltham- Application for South Taranaki District Council and Taranaki Regional Council*.

Taranaki Regional Council (1996): *Baseline Environmental Report for the Proposed South Taranaki District Council (Eltham) Landfill*.

Taranaki Regional Council (September 2012): *Biomonitoring of an unnamed tributary of the Waingongoro River which drains the proposed Eltham Central landfill site, May 2012*. Internal Memorandum KS010.

Taranaki Regional Council (April 2020): *Biomonitoring of two unnamed tributaries of the Waingongoro River in relation to the Eltham Central Landfill, November 2019*. Internal Memorandum BZ119.

Taranaki Regional Council (April 2020): *Biomonitoring of two unnamed tributaries of the Waingongoro River in relation to the Eltham Central Landfill, February 2020*. Internal Memorandum BZ129.

Taranaki Regional Council (2020): *South Taranaki District Council Eltham Central landfill Baseline Monitoring Programme Annual Report 2018-2019*. Technical Report 19-79.

Taranaki Regional Council (2019): *South Taranaki District Council Eltham Central landfill Baseline Monitoring Programme Annual Report 2017-2018*. Technical Report 18-91.

Taranaki Regional Council (2017): *South Taranaki District Council Eltham Central landfill Baseline Monitoring Programme Annual Report 2016-2017*. Technical Report 17-36.

Taranaki Regional Council (2016): *South Taranaki District Council Eltham Central landfill Baseline Monitoring Programme Annual Report 2015-2016*. Technical Report 16-72.

Taranaki Regional Council (2016): *South Taranaki District Council Eltham Central landfill Baseline Monitoring Programme Annual Report 2014-2015*. Technical Report 15-75.

Taranaki Regional Council (2014): *South Taranaki District Council Eltham Central landfill Baseline Monitoring Programme Annual Report 2013-2014*. Technical Report 14-114.

Taranaki Regional Council (2013): *South Taranaki District Council Eltham Central landfill Baseline Monitoring Programme Annual Report 2012-2013*. Technical Report 13-42.

Taranaki Regional Council (2012): *South Taranaki District Council Eltham Central landfill Baseline Monitoring Programme Annual Report 2011-2012*. Technical Report 12-32.

Taranaki Regional Council (2011): *South Taranaki District Council Eltham Central landfill Baseline Monitoring Programme Biennial Report 2009-2011*. Technical Report 11-45.

Taranaki Regional Council (2009): *South Taranaki District Council Eltham Central landfill Baseline Monitoring Programme Biennial Report 2007-2009*. Technical Report 09-111.

Taranaki Regional Council (2006): *South Taranaki District Council Eltham Central landfill Baseline Monitoring Programme Triennial Report 2004-2007*. Technical Report 06-117.

Appendix I

Resource consents held by NPDC for the Central Landfill

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

Water abstraction permits

Section 14 of the RMA stipulates that no person may take, use, dam or divert any water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or it falls within some particular categories set out in Section 14. Permits authorising the abstraction of water are issued by the Council under Section 87(d) of the RMA.

Water discharge permits

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

Air discharge permits

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

Discharges of wastes to land

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

Land use permits

Section 13(1)(a) of the RMA stipulates that no person may in relation to the bed of any lake or river use, erect, reconstruct, place, alter, extend, remove, or demolish any structure or part of any structure in, on, under, or over the bed, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations. Land use permits are issued by the Council under Section 87(a) of the RMA.

Coastal permits

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

Discharge Permit

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

Name of Consent Holder:	New Plymouth District Council Private Bag 2025 New Plymouth 4342
Decision Date (Change):	2 July 2019
Commencement Date (Change):	2 July 2019 (Granted Date: 15 March 2000)

Conditions of Consent

Consent Granted:	To discharge contaminants onto and into land at the South Taranaki District Council Central Landfill, Eltham
Expiry Date:	1 June 2034
Review Date(s):	June 2023, June 2029
Site Location:	Central Landfill, Rotokare Road, Eltham
Grid Reference (NZTM)	1712140E-5631866N
Catchment:	Waingongoro

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. That:

    a) the consent holder shall prepare a Landfill Management Plan addressing proposed operation, management and monitoring at the landfill for the purpose of demonstrating among other things the means by which compliance with the conditions set in this consent shall be achieved, such Plan (excluding that part of the Plan that deals with contingency events) to be prepared to the reasonable satisfaction of the General Manager, Taranaki Regional Council three months prior to the exercise of this consent. The initial Management Plan shall be reviewed by the General Manager in consultation with the Neighbourhood Liaison Group. The adverse environmental effects arising from implementation of the Management Plan, and any subsequent version required under Condition 1(b), shall be no greater than those arising from the implementation of the draft plan provided with the application dated May 1998 and in any case shall be within the limits set by the conditions on this consent;

    b) the Management Plan shall be reviewed and updated at not greater than two yearly intervals, in consultation with the General Manager, Taranaki Regional Council, and the Neighbourhood Liaison Group;

    c) the consent holder shall adhere to and comply with the procedures, requirements, obligations and all other matters specified in the management plan, unless it can be demonstrated to the reasonable satisfaction of the General Manager, Taranaki Regional Council, that any changes in those procedures, requirements, and obligations will result in the same or any lesser adverse environmental effect than already allowed; and

    d) in case of any contradiction between the management plan and the conditions of this resource consent, the conditions of this resource consent shall prevail.

2. That the consent holder shall ensure that:

    a) the operation of the landfill and the disposal of wastes shall be carried out at all times in accordance with the requirements of the Landfill Management Plan prepared as required in Condition (1) above or subsequent version of that document which does not lessen environmental protection standards;

    b) all site staff working at the landfill are regularly trained on the content and implementation of the Landfill Management Plan, the maximum period between training sessions being 12 months. New staff are to be trained on recruitment and the training record made available to the General Manager, Taranaki Regional Council upon request; and

    c) in order to avoid adverse effects arising from the exercise of this consent, all site staff are advised immediately of any revision or additions to the Landfill Management Plan.

3. That the consent holder shall meet the reasonable cost of the Taranaki Regional Council retaining a Technical Advisor, suitably qualified and knowledgeable in landfill development and operational procedures, to advise the General Manager, Taranaki Regional Council on aspects of the operation of the landfill related to disposal of solid waste and the installation and maintenance of the leachate collection system, and the ability to achieve compliance with the conditions of consent. Apart from other activities undertaken by the Technical Advisor, the Advisor shall undertake annual reviews, or other such reviews as reasonably determined by the General Manager, Taranaki Regional Council, of the landfill operations for the first 6 years and thereafter at a frequency determined by the General Manager, Taranaki Regional Council, in consultation with the Neighbourhood Liaison Group.

4. That the consent holder shall:

   a) construct a composite liner in all areas where refuse is to be placed. The liner shall be constructed with a layer of compacted clay with a permeability of less than $1x10^{-8}$ m/sec and a minimum thickness of 600 mm, overlain by a membrane of high density polyethylene HDPE at least 1.5 mm thick. The consent holder may use materials and a specification other than described above, provided that any such materials shall perform to the same or higher standard than those specified and provided further that the consent holder shall first obtain the written approval of the General Manager, Taranaki Regional Council; and

   b) provide for collecting leachate from the liner and transferring it to a pond within the landfill property boundary, such pond to be lined with a composite liner as specified in Condition 4(a) above;

   c) ensure there is no discharge of refuse or leachate to land or water in any area without the liner as required in Conditions 4a and 4b above; and

   d) remove sufficient daily cover and remove at least 20% of the intermediate cover to ensure downward migration of leachate, before placing refuse on an existing cell.

5. That the construction, installation, placement, integrity and expected performance of landfill lining systems, groundwater drainage systems, and leachate interception, collection, holding and recirculation systems on any part of the site shall be certified by a registered engineer, a copy of such certification to be provided to General Manager, Taranaki Regional Council, prior to discharge of waste in those areas.

6. That the consent holder shall maintain a manifest/declaration system that shall record the following information on the waste received for disposal. This information is to be forwarded to the General Manager, Taranaki Regional Council on a 6-monthly basis no later than the 10th working day of the following month:

   a) general description in volume or quantity in cubic metres or kilograms per day of domestic, commercial and industrial waste received from other than transfer stations; and

   b) general description in volume or quantity (in cubic metres or kilograms) of all waste received at the landfill from transfer stations.

   Where the consent holder reasonably considers any information required under this condition is confidential, it may notify the General Manager, Taranaki Regional Council, accordingly so that reasonable measures can be taken to protect confidentiality.

7. That the consent holder shall ensure that:
   a) Medical waste is managed in accordance with NZS4304;
   b) Animal parts are buried immediately upon receipt
   c) Asbestos is managed in accordance with the Asbestos Regulations;
   d) Waste that is potentially a health hazard shall be placed in a hole specifically excavated and immediately covered with appropriate cover material. The location of special waste holes shall be recorded by survey.

8. That any contaminated soils that are accepted at the landfill and whose contaminant concentration exceeds those levels specified in any New Zealand Standard or guidelines as being appropriate for industrial unpaved sites shall be covered over as soon as practicable such that the risk to human and environmental health is avoided.

9. That the consent holder shall appoint a person to control entry of waste into the landfill.

10. That the consent holder shall not dispose of waste of an explosive, flammable, reactive, toxic, radioactive, corrosive or infectious nature other than minor quantities of such waste where they are ordinarily part of and found in general wastes. In addition, the consent holder shall not dispose of wastes deemed unacceptable under Conditions 11 and 12.

11. That further to Condition 10 of this consent, the wastes which are acceptable or unacceptable are as follows:
   a) General waste is solid waste generated from residential, commercial and industrial sources. General waste covers all waste not otherwise defined below. It is acceptable and may contain minor quantities of special or prohibited waste which are normally part of the waste stream;
   b) Difficult wastes are wastes which are acceptable but due to their physical nature require specific disposal management. These wastes include offal, dead animal bodies, wire rope, documents and bulky items;
   c) Special Wastes contain substances that may adversely affect the final landfill or leachate or landfill gas quality. Their acceptance in the landfill shall be based on an assessment of the nature of the waste and its effects on the landfill and its receiving environment in accordance with the requirements of Condition 12 of this consent;
   d) Liquid wastes shall not be accepted other than those liquids which are in small containers that are impractical to empty ;
   e) Sludges may be accepted, as long as they contain no separated liquids.

12. That no waste shall be accepted for disposal which may cause a significant potential or actual adverse environmental effect. In the absence of other criteria, no wastes shall be accepted:

    a) if a TCLP test extract exceeds 2,500 times the level specified in any New Zealand Standard or guideline as being appropriate for stock watering purposes; or

    b) if containing any contaminant exceeding 300 times the level specified in any New Zealand Standard or guideline as being appropriate for soil for agricultural use unless such wastes have been treated so as to comply with conditions as above and are not placed within the top 4 metres lift of refuse beneath any final landfill cap at any point.

13. That in order to maintain the integrity of the liner and to minimise the risk of discharge of contaminants, the consent holder shall ensure that special wastes as defined in Condition 11(c) shall not be deposited within 5 metres of the liner or the top 4 metres lift of refuse beneath the final landfill cap at any point or within 10 metres of the edge of the landfill.

14. That the consent holder shall take all practicable measures to avoid the discharge of contaminants from within the landfill site to surrounding land. To this end, the consent holder shall ensure:

    a) refuse is spread in thin layers and is compacted on the same day refuse is received;

    b) the amount of refuse exposed at any one time is confined to a practicable minimum; and

    c) exposed refuse is covered regularly with appropriate material and in any case no less frequently than daily.

15. That the consent holder shall:

    a) compact refuse to such an extent that post closure settlement is minimised, targeting a compacted refuse density averaging at least 700 kg/m^3 as far as practicable;

    b) progressively, as parts of the landfill are completed, cover exposed refuse with not less than 650 mm of earth material, of which 500 mm is compacted to a permeability of less than $1x10^{-7}$m/sec, and no less than 150 mm comprises topsoil, and establish and maintain pasture on those completed areas at the landfill; and

    c) within two months following the closure of any landfill stage, grade the tipping face to achieve a final slope less than or equal to 1V:3H (1 in 3) on any face.

16. That within one month following completion of each stage at the landfill, the consent holder shall report in writing to the General Manager, Taranaki Regional Council of the consent holder's compliance with Condition 15 of this consent.

17. That the consent holder shall maintain and comply with an Annual Monitoring Plan prepared to the reasonable satisfaction of the General Manager, Taranaki Regional Council and prepared in consultation with the Neighbourhood Liaison Group. The Annual Monitoring Plan may be amended by the General Manager following consultation with the consent holder. The Plan shall describe in detail practices for water and soil chemistry monitoring, shall contain guidelines for the determination of whether contamination is occurring including "alert" and "response" levels for individual contaminants and shall make reference to the Management Plan, to be prepared as required in Condition 1 of this consent. The initial Monitoring Plan is to be received by the General Manager, Taranaki Regional Council, at least six months prior to any discharge of solid wastes authorised by this consent. The initial Monitoring Plan is to include:

    a) further baseline monitoring [biological, chemical and physical] of surface water quality and groundwater prior to commencement of landfilling;
    b) quarterly monitoring of groundwater levels and water quality of each of the existing monitoring bores shown in Figure 4 of the application documentation dated May 1998, plus the installation and monitoring of at least one further bore downslope of the leachate storage lagoon at a site approved by the General Manager, Taranaki Regional Council;
    c) biological, physical and chemical monitoring of surface water quality twice per year in the two unnamed tributaries of the Waingongoro River at site(s) approved by the General Manager, Taranaki Regional Council;
    d) measurement of volume of leachate removed from the site monthly;
    e) annual testing of leachate for the following components: pH, conductivity, alkalinity, chloride, sulphate, carbonate, bicarbonate, ammonia–N, nitrate-N, reactive dissolved phosphorus; COD, BOD_5; aluminium, arsenic, boron, cadmium, calcium, chromium, copper, iron, magnesium, manganese, mercury, sodium, nickel, potassium, lead, zinc; volatile organic compounds, semi-volatile organic compounds [volatile and semi-volatile organic compound scans to include but not be restricted to benzene, benzo-a-pyrene, phenol, perchlorethylene, and napthalene], organochlorine pesticides screen, organophosphate pesticide screen, and polyaromatic hydrocarbon screen;
    f) quarterly testing of leachate for the following components: pH, conductivity, alkalinity, chloride, sulphate, carbonate, bicarbonate, ammonia–N, nitrate-N, reactive dissolved phosphorus; COD, BOD_5; aluminium, arsenic, boron, cadmium, calcium, chromium, copper, iron, magnesium, manganese, mercury, sodium, nickel, potassium, lead, zinc;
    g) quarterly sampling and testing of groundwater from on-site bores as noted in Condition 17(b) above as follows: Comprehensive testing (April) - pH, conductivity, alkalinity, chloride, sulphate, carbonate, bicarbonate, ammonia–N, nitrate-N, reactive dissolved phosphorus; COD, BOD_5; aluminium, arsenic, boron, cadmium, calcium, chromium, copper, iron, magnesium, manganese, mercury, sodium, nickel, potassium, lead, zinc, benzo-a-pyrene, benzene, phenol, perchlorethylene, and napthalene; Indicator testing (July, October, January) - pH, conductivity, COD, boron, iron, manganese, chloride, ammonia-N, nitrate-N;
    h) annual sampling and testing of surface water supplies and bores on neighbouring properties, located as noted in Appendix 10 of the application documentation dated May 1998, subject to the agreement of the respective owners, as follows: pH, benzene, zinc, alkalinity, conductivity, chloride, ammonia–N, nitrate-N, nitrite-N, boron, COD, iron, manganese; and
    i) analysis shall be conducted by a laboratory with appropriate accreditation for those parameters measured.

18. That the results of the Annual Monitoring Programme for the year ending 30 June be provided to the General Manager Taranaki Regional Council by 31 August of each year following the monitoring, and be made available to the Neighbourhood Liaison Group, and to any other interested party.

19. That the consent holder shall prevent surface runoff of water or contaminants to the unnamed tributaries of the Waingongoro River from any surface area being used or previously used for the deposition of refuse, or for extraction of soil, clay, or other cover material, or prepared for the deposition of refuse, unless such surface area has been covered and rehabilitated.

20. That where any leachate or other contaminants associated with the consent holder's activities or processes associated with the landfill significantly affect surface and ground water, the consent holder shall:

    a) undertake appropriate remedial action as soon as practicable as described in the consent holder's Management Plan required by Condition 1, or other such action reasonably required by the General Manager, Taranaki Regional Council;

    b) as soon as reasonably practicable, notify the General Manager, Taranaki Regional Council, of the escape of wastes;

    c) shall review the Monitoring Programme and Management Plan and incorporate such reasonable modifications as are considered necessary by the General Manager, Taranaki Regional Council; and

    d) where water supplies are significantly affected, immediately provide alternative supplies as reasonably required by the General Manager, Taranaki Regional Council.

    "Significantly affected" for the purposes of this condition shall be determined by the General Manager Taranaki Regional Council, by reference to the monitoring data and taking into account the purpose for which the water is to be used.

21. That the consent holder shall inspect the landfill for leachate break out, settlement and other adverse environmental effects at least once per month until such time as discharge of refuse to the landfill ceases. Thereafter, the frequency of inspection shall be determined in consultation with the General Manager, Taranaki Regional Council.

22. That the consent holder shall record the date, time, observations and any remedial action as a result of Condition 21. The record shall be made available to the Neighbourhood Liaison Group and the General Manager, Taranaki Regional Council on an annual basis.

23. That the consent holder shall ensure that records are kept of any site investigations for any engineering works associated with this consent, and that these records are forwarded to the General Manager, Taranaki Regional Council.

24. That the consent holder and staff of the Taranaki Regional Council shall meet, with representatives of the Neighbourhood Liaison Group to discuss any matter relating to the exercise of this resource consent, in order to facilitate ongoing consultation, such meetings to be according to the following schedule:

    (a) one month prior to the exercise of this consent;

    (b) thereafter at intervals of three months for the first eighteen months after the date of exercise;

    (c) thereafter at one interval of no more than six months; and

    (d) thereafter at intervals of no more than twelve months;

    unless all parties agree that changes to the intervals are acceptable.

    The Technical Adviser may attend one meeting per year for the first six years and thereafter at a frequency determined by the General Manager, Taranaki Regional Council

25. This consent shall lapse on 21 December 2025, 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.

26. That the consent holder shall not apply for any further variation of its resource consent seeking to permit the discharge of waste into the Eltham landfill from beyond Taranaki Region (i.e. beyond the waste-stream presently accepted by New Plymouth, South Taranaki and Stratford District Councils) and for avoidance of doubt includes the peripheral townships of Awakino and Mokau. Any further variations will be restricted to health and safety and/or applications to enhance the environmental performance of the Eltham landfill due to improvements in engineering methods and available technology relevant to landfill construction and operation or as a result of monitoring.

27. That the Taranaki Regional Council may, under section 128(1)(a) of the Resource Management Act 1991, serve notice of review of conditions of this consent in June 2005, June 2011, June 2017, December 2017, June 2018, June 2019, June 2023, and June 2029 and within 18 months of the date this consent is first exercised, for the purpose of:

    i) ensuring the ongoing adequacy of the Monitoring Programme and methods of implementation outlined in Condition 17 of this consent; and

    ii) ensuring the effectiveness of conditions in avoiding, remedying or mitigating adverse effects on the environment from the discharge of contaminants to land.

    The review of conditions may allow for:

    a) modification of the Monitoring Programme and methods of implementation outlined in Condition 17 of this consent;

    b) deletion, additions or changes to Conditions 3, 4, 7, 8, 11, 13, 14, 15 and 20.

Signed and transferred at Stratford on 2 July 2019

For and on behalf of
Taranaki Regional Council

_____

A D McLay
Director - Resource Management

Discharge Permit

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

Name of Consent Holder:	New Plymouth District Council Private Bag 2025 New Plymouth 4342
Decision Date (Change):	2 July 2019
Commencement Date (Change):	2 July 2019 (Granted Date: 15 March 2000)

Conditions of Consent

Consent Granted:	To discharge emissions into the air from landfilling activities at the South Taranaki District Council Central Landfill, Eltham
Expiry Date:	1 June 2034
Review Date(s):	June 2023, June 2029
Site Location:	Central Landfill, Rotokare Road, Eltham
Grid Reference (NZTM)	1712140E-5631866N

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. That:

   a) the consent holder shall prepare a Landfill Management Plan addressing proposed operation, management and monitoring at the landfill for the purpose of demonstrating among other things the means by which compliance with the conditions set in this consent shall be achieved, such Plan (excluding that part of the Plan that deals with contingency events) to be prepared to the reasonable satisfaction of the General Manager, Taranaki Regional Council three months prior to the exercise of this consent. The initial Management Plan shall be reviewed by the General Manager in consultation with the Neighbourhood Liaison Group. The adverse environmental effects arising from implementation of the Management Plan, and any subsequent version required under Condition 1(b), shall be no greater than those arising from the implementation of the draft plan provided with the application dated May 1998 and in any case shall be within the limits set by the conditions on this consent;

   b) the Management Plan shall be reviewed and updated at not greater than two yearly intervals, in consultation with the General Manager, Taranaki Regional Council, and the Neighbourhood Liaison Group;

   c) The consent holder shall adhere to and comply with the procedures, requirements, obligations and all other matters specified in the management plan, unless it can be demonstrated to the reasonable satisfaction of the General Manager, Taranaki Regional Council, that any changes in those procedures, requirements, and obligations will result in the same or any lesser adverse environmental effect that already allowed; and

   d) in case of any contradiction between the management plan and the conditions of this resource consent, the conditions of this resource consent shall prevail.

2. That the consent holder shall at all times adopt the best practicable option [as defined in section 2 of the Act] to prevent or minimise any actual or likely adverse effect on the environment arising from emissions from the landfill operation.

3. That the discharge of contaminants into the air from the landfill shall not result in offensive or objectionable odours or dangerous or noxious ambient concentrations of any airborne contaminant, in the opinion of an appropriately qualified enforcement officer of the Taranaki Regional Council, at or beyond the boundary of the site.

4. That the discharge of contaminants into the air from the landfill shall not result in either dust or other particulate matter that is offensive or objectionable, in the opinion of an appropriately qualified enforcement officer of the Taranaki Regional Council, at or beyond the boundary of the site.

5. That the consent holder shall ensure that dust is controlled on access roads and on the landfill as necessary.

6. That there shall be no burning of waste at the site.

7. That there shall be no composting of waste at the site.

8. That there shall be no extraction venting of untreated landfill gases within 200 metres of the boundary of the site.

9. That the consent holder shall take all practicable measures to avoid the discharge of waste or contaminants from within the landfill site to the surrounding environment. To this end, the consent holder shall ensure:

   a) refuse is spread in thin layers and is compacted on the same day refuse is received;

   b) the amount of refuse exposed at any one time is confined to a practicable minimum; and

   c) exposed refuse is covered regularly with appropriate material and in any case no less frequently than daily.

10. That the consent holder shall maintain and comply with an Annual Monitoring Plan, prepared to the reasonable satisfaction of the General Manager, Taranaki Regional Council, and prepared in consultation with the Neighbourhood Liaison Group, setting out details of monitoring to be carried out and containing guidelines for the determination of whether contamination is occurring. The Annual Monitoring Plan may be amended by the General Manager following consultation with the consent holder. The initial Monitoring Plan is to be received by the General Manager, Taranaki Regional Council, at least six months prior to any discharge under this consent. The initial Monitoring Plan is to include:

    a) annual sampling of landfill gas constituents for a period of five years and thereafter at five yearly intervals from a suitable landfill gas well using a tech tube or equivalent method to the satisfaction of the General Manager Taranaki Regional Council. The head space in the water monitoring bores B1 and B3, as shown in Figures 5 and 8 of Appendix 4 of the application documentation dated May 1998, and in the leachate pump chamber shall also be sampled;

    b) samples shall be monitored and analysed for: hydrogen sulphide, methane and carbon dioxide, vinyl chloride, benzene, perchlorethlyene and xylene;

    c) every five years another landfill gas well shall be installed in waste placed in the preceding five years and monitored as in (a) and (b) above;

    d) monitoring of each well shall cease when there is a significant reduction in the level of landfill gas [to the reasonable satisfaction of the General Manager, Taranaki Regional Council];

    e) analysis shall be conducted by a laboratory with appropriate accreditation for those parameters measured; and

    f) monthly odour surveys around the perimeter of the site or a lesser frequency as agreed to by the Neighbourhood Liaison Group.

11. That a meteorological station be established, at a site to the reasonable satisfaction of the General Manager, Taranaki Regional Council, to measure and record, for a period of no less than 12 months commencing within one year of the development of the site, wind speed, wind direction, temperature and net radiation . The results are to be used to undertake dispersion modelling to predict ground level concentrations of hydrogen sulphide or other gaseous or airborne contaminants around the site.

12. That in fulfilment of Condition 11 above the meteorological parameters are to be measured as specified in Appendix 10 to the application documentation dated May 1998.

13. That the consent holder shall keep a record of any complaints received relating to discharges to air with respect to the landfill activity. The complaints record shall include the following where possible:

    a) name and address of complainant;

    b) nature of complaint;

    c) date and time of the complaint and alleged event;

    d) weather conditions at the time of the event; and

    e) any action taken in response to the complaint.

14. That the results of the Annual Monitoring Plan, the complaints record, and the meteorological data, for the year ending 30 June be provided to the General Manager Taranaki Regional Council by 31 August of each year following the monitoring, and be made available to the Neighbourhood Liaison Group, and to the public.

15. That the consent holder shall ensure that records are kept of any site investigations for any engineering works associated with this consent, and that these records are forwarded to the General Manager, Taranaki Regional Council.

16. That the consent holder and staff of the Taranaki Regional Council shall meet with representatives of the Neighbourhood Liaison Group to discuss any matter relating to the exercise of this resource consent, in order to facilitate ongoing consultation, such meetings to be according to the following schedule:

    (a) one month prior to the exercise of this consent;

    (b) thereafter at intervals of three months for the first eighteen months after the date of exercise;

    (c) thereafter at one interval of no more than six months; and

    (d) thereafter at intervals of no more than twelve months;

    unless all parties agree that changes to the intervals are acceptable.

    The Technical Adviser may attend one meeting per year for the first six years and thereafter a frequency determined by the General Manager, Taranaki Regional Council.

17. This consent shall lapse on 21 December 2025, 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.

18. That the consent holder shall not apply for any further variation of its resource consent seeking to permit the discharge of waste into the Eltham landfill from beyond Taranaki Region (i.e. beyond the waste-stream presently accepted by New Plymouth, South Taranaki and Stratford District Councils) and for avoidance of doubt includes the peripheral townships of Awakino and Mokau. Any further variations will be restricted to health and safety and/or applications to enhance the environmental performance of the Eltham landfill due to improvements in engineering methods and available technology relevant to landfill construction and operation or as a result of monitoring.

19. That the Taranaki Regional Council may, under section 128(1)(a) of the Resource Management Act 1991, serve notice of review of conditions of this consent in June 2005, June 2011, June 2017, December 2017, June 2018, June 2019, June 2023, and June 2029 and within 18 months of the exercise of this consent, for the purpose of:

    i) ensuring the ongoing adequacy of the Monitoring Programme and methods of implementation outlined in Condition 10 of this consent; and
    ii) ensuring the effectiveness of conditions in avoiding, remedying or mitigating adverse effects on the environment from the discharge of contaminants to air.

    The review of conditions may allow for:

    a) modification of the Monitoring Programme and methods of implementation outlined in Condition 10 of this consent; and
    b) deletion, additions or changes to conditions 2, 3, 4 and 9.

Signed and transferred at Stratford on 2 July 2019

For and on behalf of
Taranaki Regional Council

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A D McLay
Director - Resource Management

Discharge Permit

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

Name of Consent Holder:	New Plymouth District Council Private Bag 2025 New Plymouth 4342	
Decision Date (Change):	2 July 2019	
Commencement Date (Change):	2 July 2019	(Granted Date: 15 March 2000)

Conditions of Consent

Consent Granted:	To discharge up to 15,000 cubic metres/day of uncontaminated stormwater and 4,000 cubic metres/day of treated stormwater from the South Taranaki District Council Central Landfill, Eltham, onto and into land and into an unnamed tributary of the Waingongoro River
Expiry Date:	1 June 2034
Review Date(s):	June 2023, June 2029
Site Location:	Central Landfill, Rotokare Road, Eltham
Grid Reference (NZTM)	1712140E-5631866N
Catchment:	Waingongoro

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. That:

   a) the consent holder shall prepare a Landfill Management Plan addressing proposed operation, management and monitoring at the landfill for the purpose of demonstrating among other things the means by which compliance with the conditions set in this consent shall be achieved, such Plan (excluding that part of the Plan that deals with contingency events) to be prepared to the reasonable satisfaction of the General Manager, Taranaki Regional Council prior to the exercise of this consent. The initial Management Plan shall be reviewed by the General Manager in consultation with the Neighbourhood Liaison Group. The adverse environmental effects arising from implementation of the Management Plan, and any subsequent version required under Condition 1(b), shall be no greater than those arising from the implementation of the draft plan provided with the application dated May 1998 and in any case shall be within the limits set by the conditions on this consent;

   b) The Management Plan shall be updated at not greater than two yearly intervals, to the satisfaction of the General Manager, Taranaki Regional Council, and following consultation with the Neighbourhood Liaison Group;

   c) The consent holder shall adhere to and comply with the procedures, requirements, obligations and all other matters specified in the management plan, unless it can be demonstrated to the reasonable satisfaction of the General Manager, Taranaki Regional Council, that any changes in those procedures, requirements, and obligations will result in the same or any lesser adverse environmental effect than already allowed; and

   d) in case of any contradiction between the management plan and the conditions of this resource consent, the conditions of this resource consent shall prevail.

2. That no leachate discharge shall be permitted by the exercise of this consent.

3. That in order to give effect to Condition 2, the consent holder shall ensure that the leachate storage lagoon is bunded to ensure no entry of stormwater to that lagoon.

4. That the consent holder shall at all times adopt the best practicable option [as defined in section 2 of the Act] to keep uncontaminated stormwater separate from contaminated stormwater.

5. That no contaminated stormwater be discharged directly to the unnamed tributaries of the Waingongoro River.

6. That stormwater holding ponds be installed.

7. That after allowing for reasonable mixing in a zone that extends downstream no further than the western boundary of the site ["the mixing zone"], the discharge shall not give rise to all or any of the following effects in the receiving water:

   (a) the production of 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 freshwater unsuitable for consumption by farm animals; and

   (e) any significant adverse effects on aquatic life.

8. That the exercise of this consent shall not cause the water quality of the tributary streams, beyond the mixing zone, to exceed the following criteria:

Parameter	**Limit**
pH	6.0-9.0
Copper (dissolved)	0.01 g/m^3
Iron (dissolved)	1.0 g/m^3
Manganese (dissolved)	0.01 g/m^3
Zinc (dissolved)	0.1 g/m^3
Dissolved reactive phosphorus	0.5 g/m^3
Nitrate nitrogen	10 g/m^3
Ammonia nitrogen	1.8 g/m^3
Suspended solids	100 g/m^3
Faecal coliforms	1000 n/100 ml

9. That all stormwater diversion and containment channels shall be designed, constructed and maintained so as to prevent or minimise erosion of the channel.

10. That the earthworks and construction associated with the landfill and the stormwater diversion and containment channels shall be designed, constructed and maintained so as to minimise instability of the surrounding land.

11. That the consent holder shall repair and rehabilitate any land made unstable and any erosion occurring due to the construction or maintenance of the diversion channels or landfilling operations associated with the exercise of this consent.

12. That the consent holder shall minimise disturbance to riparian vegetation during the exercise of this consent, and shall undertake, at a minimum, planting within the site in accordance with those areas shown in Figures 5a, 5b, 5c, and 5d of the Assessment of Environmental Effects accompanying the application dated May 1998.

13. That the consent holder shall maintain and comply with an Annual Monitoring Plan prepared to the reasonable satisfaction of the General Manager, Taranaki Regional Council and prepared in consultation with the Neighbourhood Liaison Group. The Plan shall describe in detail practices for water monitoring. The Annual Monitoring Plan may be amended by the General Manager following consultation with the consent holder. The initial Monitoring Plan is to be received by the General Manager, Taranaki Regional Council, at least six months prior to any discharge under this consent. The initial Monitoring Plan is to include:

    a) biological and water quality monitoring twice per year in the two unnamed tributaries of the Waingongoro River at site(s) to the reasonable satisfaction of the General Manager, Taranaki Regional Council;

    b) monitoring of the parameters as set out in Condition 8 above, and also alkalinity, BOD_5, and conductivity; and

    c) analysis shall be conducted by a laboratory with appropriate accreditation for those parameters measured.

14. That the results of the Annual Monitoring Programme for the year ending 30 June be provided to the General Manager Taranaki Regional Council by 31 August of each year following the monitoring, and be made available to the Neighbourhood Liaison Group, and to any other interested party, and to the public.

15. That the construction, installation, placement, integrity and expected performance of stormwater collection, drainage and holding systems on any part of the site shall be certified by a registered engineer, a copy of such certification to be provided to the General Manager, Taranaki Regional Council, prior to and on completion of construction of any such systems, and prior to the disposal of any waste in those areas.

16. That the consent holder and staff of the Taranaki Regional Council shall meet as appropriate, and at least once per year, with representatives of the Neighbourhood Liaison Group to discuss any matter relating to the exercise of this resource consent, in order to facilitate ongoing consultation, such meetings to be according to the following schedule:

    (a) one month prior to the exercise of this consent;

    (b) thereafter at intervals of three months for the first eighteen months after the date of exercise;

    (c) thereafter at one interval of no more than six months; and

    (d) thereafter at intervals of no more than twelve months;

    unless all parties agree that changes to the intervals are acceptable.

    The Technical Adviser may attend one meeting per year for the first six years and thereafter at a frequency determined by the General Manager, Taranaki Regional Council.

17. This consent shall lapse on 21 December 2025, 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.

18. That the consent holder shall not apply for any further variation of its resource consent seeking to permit the discharge of waste into the Eltham landfill from beyond Taranaki Region (i.e. beyond the waste-stream presently accepted by New Plymouth, South Taranaki and Stratford District Councils) and for avoidance of doubt includes the peripheral townships of Awakino and Mokau. Any further variations will be restricted to health and safety and/or applications to enhance the environmental performance of the Eltham landfill due to improvements in engineering methods and available technology relevant to landfill construction and operation or as a result of monitoring.

19. That the Taranaki Regional Council may, under section 128(1)(a) of the Resource Management Act 1991, serve notice of review of conditions of this consent June 2005, June 2011, June 2017, December 2017, June 2018, June 2019, June 2023, and June 2029 and within 18 months of the exercise of this consent, for the purpose of:

    i) ensuring the ongoing adequacy of the Monitoring Programme and methods of implementation outlined in Condition 13 of this consent; and
    ii) ensuring the effectiveness of conditions in avoiding, remedying or mitigating adverse effects on the environment from the discharge of contaminants to land and water.

    The review of conditions may allow for:

    a) modification of the Monitoring Programme and methods of implementation outlined in Condition 13 of this consent; and
    b) deletion, additions or changes to Conditions 7 and 8.

Signed and transferred at Stratford on 2 July 2019

For and on behalf of
Taranaki Regional Council

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A D McLay
Director - Resource Management

Land Use Consent

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

Name of Consent Holder:	New Plymouth District Council Private Bag 2025 New Plymouth 4342
Decision Date (Change):	2 July 2019
Commencement Date (Change):	2 July 2019 (Granted Date: 15 March 2000)

Conditions of Consent

Consent Granted:	To dam and divert water around the South Taranaki District Council Central Landfill, Eltham, in the headwaters of an unnamed tributary of the Waingongoro River
Expiry Date:	1 June 2034
Review Date(s):	June 2023, June 2029
Site Location:	Central Landfill, Rotokare Road, Eltham
Grid Reference (NZTM)	1712140E-5631866N
Catchment:	Waingongoro

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. That:

   a) the consent holder shall prepare a Landfill Management Plan addressing proposed operation, management and monitoring at the landfill for the purpose of demonstrating among other things the means by which compliance with the conditions set in this consent shall be achieved, such Plan (excluding that part of the Plan that deals with contingency events) to be prepared to the reasonable satisfaction of the General Manager, Taranaki Regional Council three months prior to the exercise of this consent. The initial Management Plan shall be reviewed by the General Manager in consultation with the Neighbourhood Liaison Group. The adverse environmental effects arising from implementation of the Management Plan, and any subsequent version required under Condition 1(b), shall be no greater than those arising from the implementation of the draft plan provided with the application dated May 1998 and in any case shall be within the limits set by the conditions on this consent;

   b) the Management Plan shall be reviewed and updated at not greater than two yearly intervals, in consultation with the General Manager, Taranaki Regional Council, and the Neighbourhood Liaison Group;

   c) the consent holder shall adhere to and comply with the procedures, requirements, obligations and all other matters specified in the management plan, unless it can be demonstrated to the reasonable satisfaction of the General Manager, Taranaki Regional Council, that any changes in those procedures, requirements, and obligations will result in the same or any lesser adverse environmental effect than already allowed; and

   d) in case of any contradiction between the management plan and the conditions of this resource consent, the conditions of this resource consent shall prevail.

2. That all stormwater diversion and containment channels shall be designed, constructed and maintained so as to prevent or minimise erosion of the channel in all circumstances.

3. That the earthworks and construction associated with the landfill and the stormwater diversion and containment channels shall be designed, constructed and maintained so as to minimise instability of the surrounding land.

4. That the consent holder shall repair and rehabilitate any land made unstable and any erosion occurring due to the construction or maintenance of the diversion channels or landfilling operations associated with the exercise of this consent.

5. That the consent holder shall maintain and comply with an Annual Monitoring Plan prepared to the reasonable satisfaction of the General Manager, Taranaki Regional Council and prepared in consultation with the Neighbourhood Liaison Group. The Annual Monitoring Plan may be amended by the General Manager following consultation with the consent holder. The initial Monitoring Plan is to be received by the General Manager, Taranaki Regional Council, at least six months prior to any dam construction under this consent. The initial Monitoring Plan shall describe in detail practices and sites for water monitoring.

6. That the construction, installation, placement, integrity and expected performance of the damming and diversion systems on any part of the site shall be certified by a registered engineer, a copy of such certification to be provided to the General Manager, Taranaki Regional Council, prior to and on completion of the construction of any such systems in those areas.

7. That the consent holder and staff of the Taranaki Regional Council shall meet with representatives of the Neighbourhood Liaison Group to discuss any matter relating to the exercise of this resource consent, in order to facilitate ongoing consultation, such meetings to be according to the following schedule:

   (a) one month prior to the exercise of this consent;

   (b) thereafter at intervals of three months for the first eighteen months after the date of exercise;

   (c) thereafter at one interval of no more than six months; and

   (d) thereafter at intervals of no more than twelve months;

   unless all parties agree that changes to the intervals are acceptable.

   The Technical Adviser may attend one meeting per year for the first six years and thereafter a frequency determined by the General Manager, Taranaki Regional Council.

8. This consent shall lapse on 21 December 2025, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

9. That the consent holder shall not apply for any further variation of its resource consent seeking to permit the discharge of waste into the Eltham landfill from beyond Taranaki Region (i.e. beyond the waste-stream presently accepted by New Plymouth, South Taranaki and Stratford District Councils) and for avoidance of doubt includes the peripheral townships of Awakino and Mokau. Any further variations will be restricted to health and safety and/or applications to enhance the environmental performance of the Eltham landfill due to improvements in engineering methods and available technology relevant to landfill construction and operation or as a result of monitoring.

10. That the Taranaki Regional Council may, under section 128(1)(a) of the Resource Management Act 1991, serve notice of review of conditions of this consent in June 2005, June 2011, June 2017, December 2017, June 2018, June 2019, June 2023, and June 2029 and within 18 months of the exercise of this consent, for the purpose of:

    i) ensuring the ongoing adequacy of the Monitoring Programme and methods of implementation outlined in Condition 5 of this consent; and
    ii) ensuring the effectiveness of conditions in avoiding, remedying or mitigating adverse effects on the environment from the damming and diversion of water.

    The review of conditions may allow for:

    a) modification of the Monitoring Programme and methods of implementation outlined in Condition 5 of this consent.

Signed and transferred at Stratford on 2 July 2019

For and on behalf of
Taranaki Regional Council

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A D McLay
Director - Resource Management

Land Use Consent

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

Name of Consent Holder:	New Plymouth District Council Private Bag 2025 New Plymouth 4342
Decision Date (Change):	2 July 2019
Commencement Date (Change):	2 July 2019 (Granted Date: 15 March 2000)

Conditions of Consent

Consent Granted:	To erect, place and maintain structures in the beds of unnamed tributaries of the Waingongoro River for the construction and maintenance of the South Taranaki District Council Central Landfill, Eltham
Expiry Date:	1 June 2034
Review Date(s):	June 2023, June 2029
Site Location:	Central Landfill, Rotokare Road, Eltham
Grid Reference (NZTM)	1712140E-5631866N
Catchment:	Waingongoro

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. That:

   a) the consent holder shall prepare a Landfill Management Plan addressing proposed operation, management and monitoring at the landfill for the purpose of demonstrating among other things the means by which compliance with the conditions set in this consent shall be achieved, such Plan (excluding that part of the Plan that deals with contingency events) to be prepared to the reasonable satisfaction of the General Manager, Taranaki Regional Council three months prior to the exercise of this consent. The initial Management Plan shall be reviewed by the General Manager in consultation with the Neighbourhood Liaison Group. The adverse environmental effects arising from implementation of the Management Plan, and any subsequent version required under Condition 1(b), shall be no greater than those arising from the implementation of the draft plan provided with the application dated May 1998 and in any case shall be within the limits set by the conditions on this consent;

   b) the Management Plan shall be updated at not greater than two yearly intervals, in consultation with the General Manager, Taranaki Regional Council, and the Neighbourhood Liaison Group;

   c) the consent holder shall adhere to and comply with the procedures, requirements, obligations and all other matters specified in the management plan, unless it can be demonstrated to the reasonable satisfaction of the General Manager, Taranaki Regional Council, that any changes in those procedures, requirements, and obligations will result in the same or any lesser adverse environmental effect than already allowed; and

   d) in case of any contradiction between the management plan and the conditions of this resource consent, the conditions of this resource consent shall prevail.

2. That the construction and maintenance authorised by this consent, in conjunction with the exercise of any other consent associated with the landfill, shall not give rise to all or any of the following effects in the unnamed tributaries of the Waingongoro River at the western boundary of the site:

   a) the production of 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 freshwater unsuitable for consumption by farm animals; and

   e) any significant adverse effects on aquatic life.

3. That the earthworks and construction associated with the erection, placement and maintenance of structures shall be designed, constructed and maintained so as to minimise instability of the stream banks and the surrounding land.

4. That the consent holder shall repair and rehabilitate any land made unstable and any erosion occurring due to the construction or maintenance of the structures.

5. That the consent holder shall minimise disturbance to riparian vegetation during the exercise of this consent, and that any areas of such vegetation disturbed shall be reinstated and additional areas planted within the site in accordance with those areas shown in Figures 5a, 5b, 5c, and 5d of the Assessment of Environmental Effects accompanying the application dated May 1998.

6. That the consent holder shall maintain and comply with an Annual Monitoring Plan prepared to the reasonable satisfaction of the General Manager, Taranaki Regional Council and prepared in consultation with the Neighbourhood Liaison Group. The Annual Monitoring Plan may be amended by the General Manager following consultation with the consent holder. The initial Monitoring Plan is to be received by the General Manager, Taranaki Regional Council, at least six months prior to any streambed structure construction under this consent. The initial Monitoring Plan shall describe in detail practices and sites for water monitoring.

7. That the construction, installation, placement, integrity and expected performance of the structures in the streambeds on any part of the site shall be certified by a registered engineer, a copy of such certification to be provided to the General Manager, Taranaki Regional Council, prior to and on completion of the construction of any structures in those areas.

8. That the consent holder shall remove any structure(s) in waterways and reinstate the area if and when any structure(s) is no longer required.

9. That the consent holder and staff of the Taranaki Regional Council shall meet as appropriate, and at least once per year, with representatives of the Neighbourhood Liaison Group to discuss any matter relating to the exercise of this resource consent, in order to facilitate ongoing consultation, such meetings to be according to the following schedule:

   a) one month prior to the exercise of this consent;

   b) thereafter at intervals of three months for the first eighteen months after the date of exercise;

   c) thereafter at one interval of no more than six months; and

   d) thereafter at intervals of no more than twelve months;

   unless all parties agree that changes to the intervals are acceptable.

   The Technical Adviser may attend one meeting per year for the first six years and thereafter at a frequency determined by the General Manager, Taranaki Regional Council.

10. This consent shall lapse on 21 December 2025, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

11. That the consent holder shall not apply for any further variation of its resource consent seeking to permit the discharge of waste into the Eltham landfill from beyond Taranaki Region (i.e. beyond the waste-stream presently accepted by New Plymouth, South Taranaki and Stratford District Councils) and for avoidance of doubt includes the peripheral townships of Awakino and Mokau. Any further variations will be restricted to health and safety and/or applications to enhance the environmental performance of the Eltham landfill due to improvements in engineering methods and available technology relevant to landfill construction and operation or as a result of monitoring.

12. That the Taranaki Regional Council may, under section 128(1)(a) of the Resource Management Act 1991, serve notice of review of conditions of this consent June 2005, June 2011, June 2017, December 2017, June 2018, June 2019, June 2023, and June 2029 and within 18 months of the exercise of this consent, for the purpose of:

    i) ensuring the ongoing adequacy of the Monitoring Programme and methods of implementation outlined in Condition 6 of this consent; and
    ii) ensuring the effectiveness of conditions in avoiding, remedying or mitigating adverse effects on the environment from the construction and maintenance of structures.

    The review of conditions may allow for:

    a) modification of the Monitoring Programme and methods of implementation outlined in Condition 6 of this consent; and
    b) deletion, additions or changes to Condition 2.

Signed and transferred at Stratford on 2 July 2019

For and on behalf of
Taranaki Regional Council

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A D McLay
Director - Resource Management