REPORT

Tonkin+Taylor

Wainuiomata cleanfill expansion

Resource consent application and AEE

Prepared for
Hutt City Council
Prepared by
Tonkin & Taylor Ltd
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Schedule 4 Requirements

Schedule 4 of the RMA sets out the information required in an application for a resource consent. All relevant matters required to be included have been addressed in the assessments and descriptions in this AEE. The following table provides a summary of the information required in Schedule 4 and a quick reference to its location in this report.

Schedule 4 Item	Location within report
A description of the activity	Section 3
A description of the site at which the activity is to occur	Section 2
The full name and address of each owner or occupier of the site	Section 1.3
A description of any other activities that are part of the proposal to which the application relates	N/A
A description of any other resource consents required for the proposal to which the application relates	Section 4
An assessment of the activity against the matters set out in Part 2	Section 6.1.1
An assessment of the activity against any relevant provisions of a document referred to in section 104(1)(b). This must include: • Any relevant objectives, policies, or rules in a document • Any relevant requirements, conditions, or permissions in any rules in a document • Any other relevant requirements in a document (for example, in a national environmental standard or other regulations)	Sections 6.1.2 – 6.1.7
An assessment of the activity's effects on the environment that includes the following information: • If it is likely that the activity will result in any significant adverse effect on the environment, a description of any possible alternative locations or methods for undertaking the activity. • An assessment of the actual or potential effect on the environment of the activity. • If the activity includes the use of hazardous installations, an assessment of any risks to the environment that are likely to arise from such use. • If the activity includes the discharge of any contaminant, a description of— – The nature of the discharge and the sensitivity of the receiving environment to adverse effects; and – Any possible alternative methods of discharge, including discharge into any other receiving environment. • A description of the mitigation measures (including safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effect.	Section 5
Identification of the persons affected by the activity, any consultation undertaken, and any response to the views of any person consulted.	Section 7
If the scale and significance of the activity's effects are such that monitoring is required, a description of how and by whom the effects will be monitored if the activity is approved.	Section 5.10

Schedule 4 Item	Location within report
An assessment of the activity's effects on the environment that addresses the following matters: • Any effect on those in the neighbourhood and, where relevant, the wider community, including any social, economic, or cultural effects. • Any physical effect on the locality, including any landscape and visual effects. • Any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity. • Any effect on natural and physical resources having aesthetic, recreational, scientific, historical, spiritual, or cultural value, or other special value, for present or future generations. • Any discharge of contaminants into the environment, including any unreasonable emission of noise, and options for the treatment and disposal of contaminants. • Any risk to the neighbourhood, the wider community, or the environment through natural hazards or hazardous installations.	Section 5
If any permitted activity is part of the proposal to which the application relates, a description of the permitted activity that demonstrates that it complies with the requirements, conditions, and permissions for the permitted activity (so that a resource consent is not required for that activity under section 87A(1)).	Section 4.3

1 Introduction

1.1 Overview of proposed works

This Assessment of Effects on the Environment (AEE) report has been prepared on behalf of Hutt City Council (HCC) to support a resource consent application to authorise an expansion of the Wainuiomata cleanfill. The expansion of this cleanfill is proposed immediately south of the existing consented cleanfill area, adjacent to both Coast Road and the Wainuiomata River.

The existing cleanfill operation represents an important piece of infrastructure for HCC. It provides for an appropriately managed cleanfill facility which accommodates excess fill material associated with the continued growth and development of both Wainuiomata and the wider Hutt City. The area consented for cleanfill deposition has limited remaining capacity, and based on current usage, is anticipated to reach that capacity in the first half of 2019. Accordingly HCC proposes to expand the existing cleanfill into an area of suitable land located adjacent to the existing cleanfill.

The existing consented cleanfill area holds a resource consent from HCC (Ref RM170015) which expires on 9 August 2027. The site also holds regional resource consents from Greater Wellington Regional Council (GWRC) for the discharge of contaminants (dust) to air (Ref WGN100043 [30064]) and to discharge contaminants (sediment-laden stormwater) to land and to surface water (Ref WGN100043 [30065]), which expire in October 2019. These existing consents only cover Stages One and Two of the existing operation. To expand the cleanfill as proposed (Stage Three), new resource consents are required from both Hutt City Council and Greater Wellington Regional Council. These new consents seek to authorise the proposed new cleanfill area, and will replace the existing discharge consents granted by GWRC which expire in October 2019.

This report has been prepared in fulfilment of section 88 of the Resource Management Act 1991 (RMA), and in accordance with Tonkin & Taylor Ltd's (T+T) letter of engagement dated 25 July 2018 and with our current contract for services dated 30 August 2006.

1.2 Background

1.2.1 History of the site

The cleanfill is located on a site which was previously used as a wastewater treatment site. The parent site was identified as no longer being required for wastewater treatment by HCC, and subsequently decommissioned and subdivided into 8 lots in September 2008 (HCC ref – RM20-C30-126). This decommissioning involved the deposition of a 500 mm capping layer of cleanfill across the site, along with 25,000 m^3 worth of deposition to the north-eastern corner of the site. These works were in line with the designated purpose of the site (being wastewater treatment) and were therefore undertaken under the scope of that designation.

Despite the previous decommissioning work the site remains largely designated in the City of Lower Hutt District Plan for 'Bulk Waste Water Treatment Plant' (HCC 11). As the cleanfill activities are not consistent with this designated purpose, the designation cannot be relied upon to authorise the cleanfilling activity.

Resource consent for the initial cleanfill operation was lodged with both HCC and GWRC in August 2009 and proposed the deposition of approximately 165,000 m^3 worth of cleanfill over a 10 year period. A replacement land-use consent was subsequently sought from HCC (Ref RM170015) which was granted on 9 August 2017 and expires on 9 August 2027. These applications identified that the fill was would have a maximum height of 12 m above the existing ground level and result in a finished ground level broadly level with that of Coast Road. These works were proposed to commence in a staged approach:

- Stage one – Northern fill area (approximately 28,000 m^3); and
- Stage two – Southern fill area (approximately 137,000 m^3).

Stage one provided for the deposition of material along the northern boundary of the site to create a noise attenuation bund approximately 8 m high. This stage has been completed and has now been replanted.

Stage two provides for the further deposition of approximately 137,000m^3 of material across the remainder of the consented cleanfill footprint (as identified in **Appendix D**). This represents the stage of works currently being undertaken on the site. Volumes of clean fill delivered to the site were less than anticipated in early years however filling rates have increased over the last 2-3 years and the site is now expected to reach the currently consented capacity in the first half of 2019.

The current consented capacity of stage two was determined by onsite limitations, in particular the presence of the 1 in 100 year flood line identified by GWRC. A subsequent review of this identified flood extent (by GWRC) has shifted the modelled flood lines, and provides an opportunity to use an area previously constrained by the predicted extent of the inundation. This is area is located adjacent to the current fill footprint and is referred to in this application as stage three. In summary, the previously predicted inundation extent was the major determinant of limiting the currently consented extent of the clean fill operation, not the volume of material predicted to be placed on site or any resulting environmental effects.

1.2.2 Demand for cleanfill facilities

HCC are expecting the volume of cleanfill generated within the city which requires disposal to increase in the coming years. This is driven in part by council's development remissions policy coming to an end on 31 December 2018, which prompted a substantial degree of building and resource consent applications for new development. HCC are now aware of plans for approximately 500 new homes in Wainuiomata within the next two years, as well as the redevelopment of the Wainuiomata Mall into a supermarket and retail complex, as announced in early December 2018.

Lower Hutt currently has a limited capacity to place cleanfill material at suitable facilities. There is not sufficient cleanfill capacity for the material expected to be produced from those projects identified above, even without considering demand from the rest of the city. The existing cleanfill operation has limited remaining capacity, and it is understood that the main alternative site (in Dry Creek near the Haywards Hills) has also recently reached capacity. In the absence of private landowners establishing cleanfill operations elsewhere, HCC are seeking to make this facility available to accommodate additional material so that existing and proposed development is not constrained through the lack of suitable facilities.

Accordingly HCC is now seeking resource consent to authorise stage three. This will involve an expansion to the south of the existing cleanfill area and eventual total deposition of approximately a further 117,000m^3 worth of cleanfill material. HCC considers that this expansion represents the most appropriate use of the subject site. Much of the cleanfill being deposited onsite originates from within the local environment, and redistributing this cleanfill material to sites further away will result in an increase in cartage distances, an increase in material being deposited to landfill, or potentially with an increase in the deposition of material into smaller unregulated cleanfills with greater potential for associated adverse effects. It should be noted that efforts to reduce the volume of material being diverted to landfills is considered consistent with the Wellington Region Waste Management and Minimisation Plan 2017 – 2023.

1.3 Applicant and property details

Table 1.1: Applicant and property details

Applicant	Hutt City Council
Owner / Occupier of application site	Hutt City Council
Site address / map reference	130 Coast Road, Wainuiomata
Site area	6.4 hectares
Legal description	Lot 3 DP 393261
Certificate of Title reference	373441
District Council / Plans	Hutt City Council City of Lower Hutt District Plan
Regional Council / Plans	Greater Wellington Regional Council Proposed Natural Resources Plan Regional Freshwater Plan for the Wellington Region Regional Air Quality Management Plan
Address for service during consent processing	Tonkin + Taylor PO Box 2083 Wellington 6140 Attention: Alastair Meehan Phone: 04 806 4964 / 027 469 8034 Email: ameehan@tonkintaylor.co.nz
Address for service during consent implementation and invoicing	Hutt City Council Private Bag 31912 Lower Hutt 5040 Attention: Bruce Sherlock Phone: 027 4475056 Email: bruce.sherlock@huttcity.govt.nz

We attach copies of the application forms in **Appendix A**, a copy of the relevant Certificate of Title in **Appendix B,** the relevant planning maps in **Appendix C**, design drawings in **Appendix D,** a Site Management Plan in **Appendix E**, the relevant technical reports in **Appendix F**, a Draft Noise Management Plan in **Appendix G**, and a record of the communication between local residents and HCC regarding the Cleanfill in **Appendix H**.

1.4 Overview of resource consent requirements

The existing land use consent (Ref RM170015) was issued by the Hutt City Council in 2017 and is due to expire in August 2027. This previous application does not make reference to the proposed stage three extension, therefore the proposed future expansion will occur under the consents sought by this application. The residual filling of stage two will continue to occur under the existing consent identified above.

In addition, the consent holder previously obtained a suite of regional consents from Greater Wellington Regional Council in relation to the cleanfill activity, as listed below:

- WGN 100043 [30064]: Discharge Permit to discharge contaminants (dust) to air from the cleanfill (expires 2019);
- WGN 100043 [30065]: Discharge Permit to discharge contaminants (sediment-laden stormwater) to land and to the Wainuiomata River from the cleanfill (expires 2019).

The regional resource consents sought as part of this application are intended to replace these existing regional consents.

In light of the above, the following resource consents are being sought as part of this application:

Hutt City Council

City of Lower Hutt District Plan:

- An activity (cleanfill) which does not comply with the relevant requirements of Chapter 14 – General Rules, as a discretionary activity under General Rural Activity Area Rule 8B 2.3 (a);
- The generation of noise by machinery and/or vehicles exceeding 50dBA beyond the site between 7am and 10pm, as a discretionary activity under General Rules (Noise) Rule 14C 2.1.10;
- Earthworks exceeding permitted activity height and quantity thresholds of 1.2 m and 50 m^3 under Rule 14I 2.1.1, as a restricted discretionary activity under General Rules (Earthworks) Rule 14I 2.2.

Greater Wellington Regional Council

Proposed Natural Resources Plan for Wellington:

- The discharge of contaminants to air (dust) from cleanfilling activities, as a discretionary activity under Rule R41;
- The discharge of sediment laden water from cleanfilling activities, as a discretionary activity under Rule R53;
- The discharge of cleanfill material to land, as a discretionary activity under Rule R93;

Regional Freshwater Plan for Wellington

- The discharge of sediment laden water from cleanfill activities, as a discretionary activity under Rule 5; and

Regional Air Quality Management Plan for Wellington

- The discharge of contaminants to air (dust) from cleanfilling activities, as a discretionary activity under Rule 23.

Overall, resource consent is required from Hutt City Council as a discretionary activity under the City of Lower Hutt District Plan, and from Greater Wellington Regional Council as a discretionary activity under the Proposed Natural Resources Plan for Wellington, the Regional Freshwater Plan for the Wellington Region, and the Regional Air Quality Management Plan for Wellington.

1.5 Consent duration

Resource is being sought for a duration of 2.5 years from the approval date of the proposed consent from both GWRC and HCC. This short term consent duration is based on a commitment made by both the Mayor and Chief Executive in recent correspondence with Wainuiomata residents. The consent term is in no way linked to mitigating environmental effects.

2 Environmental setting

2.1 Site location

The cleanfill site is located on and accessed from Coast Road, to the south of the Wainuiomata Township. Ngaturi Park neighbours the site to the north, and residential properties are located to the north of this park, approximately 80 m from the northern boundary of the cleanfill site. The current fill area is approximately 150 m from the nearest residential boundary, and moving further away as filling progresses.

The site is bounded on the west by the Wainuiomata River. Rural residential activities occur on the properties to the south and southeast of the site. A number of the buildings on these properties are visible from within the site itself. The site neighbours a sewage pumping station at 126 Coast Road, and further east of Coast Road the land is zoned for both recreation and rural use. A number of dwellings are located on properties to the east of the subject site, well elevated above the cleanfill site. Based on available LiDAR data we note that Coast Road appears to be located at approximately 80mRL, while the dwellings to the east of the subject site are located as following:

- 115B Coast Road is at approximately 105mRL;
- 119 Coast Road is at approximately 130mRL; and
- 199 Coast Road is at approximately 95mRL.

This would place the proposed cleanfill crest between 15 and 50 vertical metres below the dwellings on the sites adjoining the cleanfill to the east.

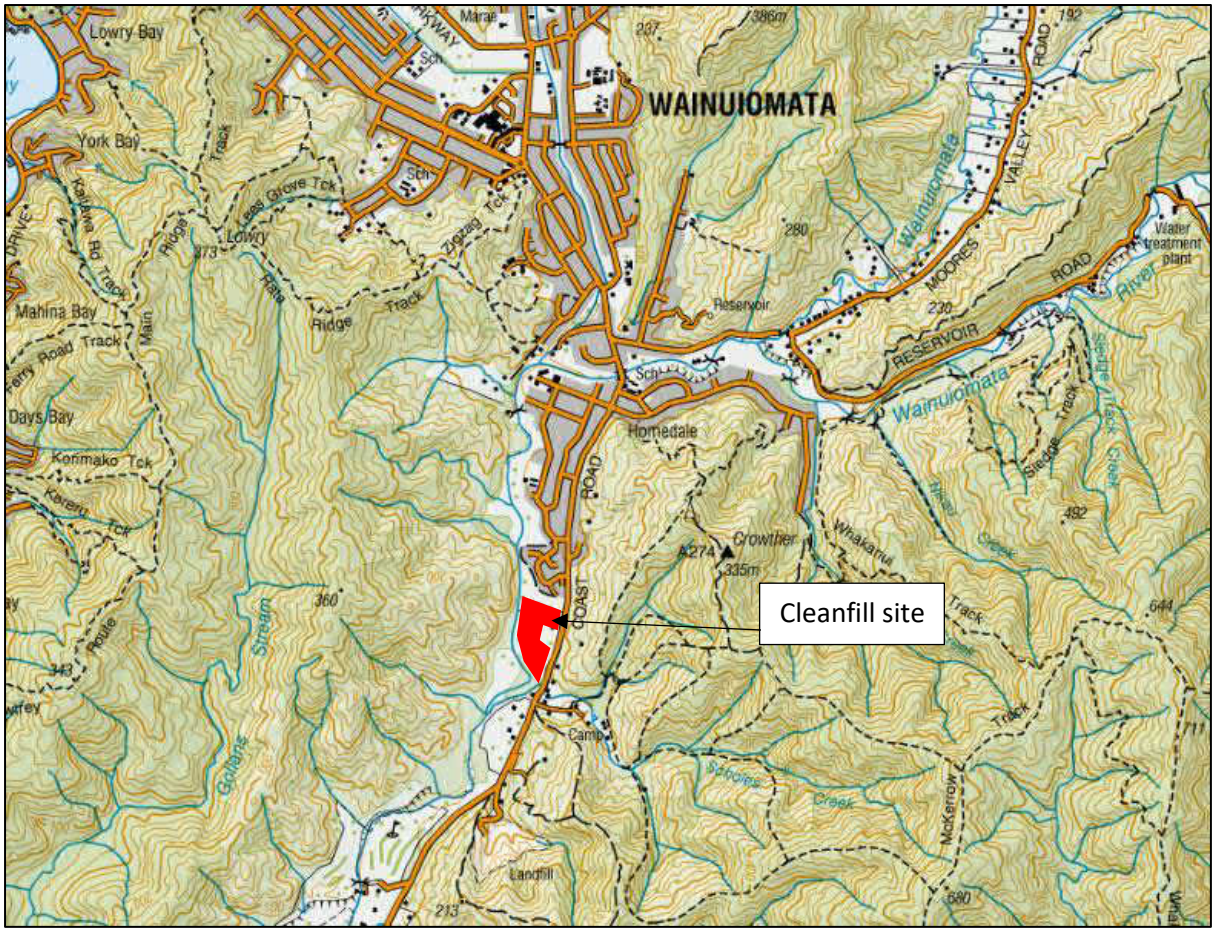

Figure 1: Location plan *Copyright TT MapViewer 2018*

2.2 Site description

The site is located at 130 Coast Road, Wainuiomata and is legally described as Lot 3 DP 393261 (CT number 373441). It is an irregular shaped site fronting Coast Road and directly adjoining a wastewater pumping station at 126 Coast Road. The site has an area of 6.4738 ha and is predominantly located within the general rural activity area of the District Plan, however a portion of the site to the north-west is within the general recreation activity area of the District Plan. The designation HCC 11 – Bulk Waste Water Treatment Plant encompasses a large portion of the site, however the application site is no longer used for waste water treatment and the proposed cleanfill activity is not provided for by this designation.

The site is accessed from Coast Road via a formed and sealed access, which is shared with the wastewater pumping station at 126 Coast Road. The site's eastern boundary is lined with densely planted mature trees.

A noise attenuation bund, created under the existing resource consent, is located to the north of the site where it boarders Ngaturi Park. The bund is approximately 8 m high and is bordered by a row of mature trees along the northern boundary. The bund has been grassed and otherwise revegetated and a fence also marks this boundary.

The Wainuiomata River and floodway area forms the western boundary of the site, which is covered with various types of scrub vegetation. The road and western boundaries merge to form the southern boundary point of the site.

The current active cleanfill area is in the central portion of the site and has resulted in a site topography which has been heavily modified via the deposition of fill material. The areas of the site to the south of the consented cleanfill operation is covered with vegetation comprising of low level scrub and dense blackberry bushes. This represents the area where stage three is proposed to occur.

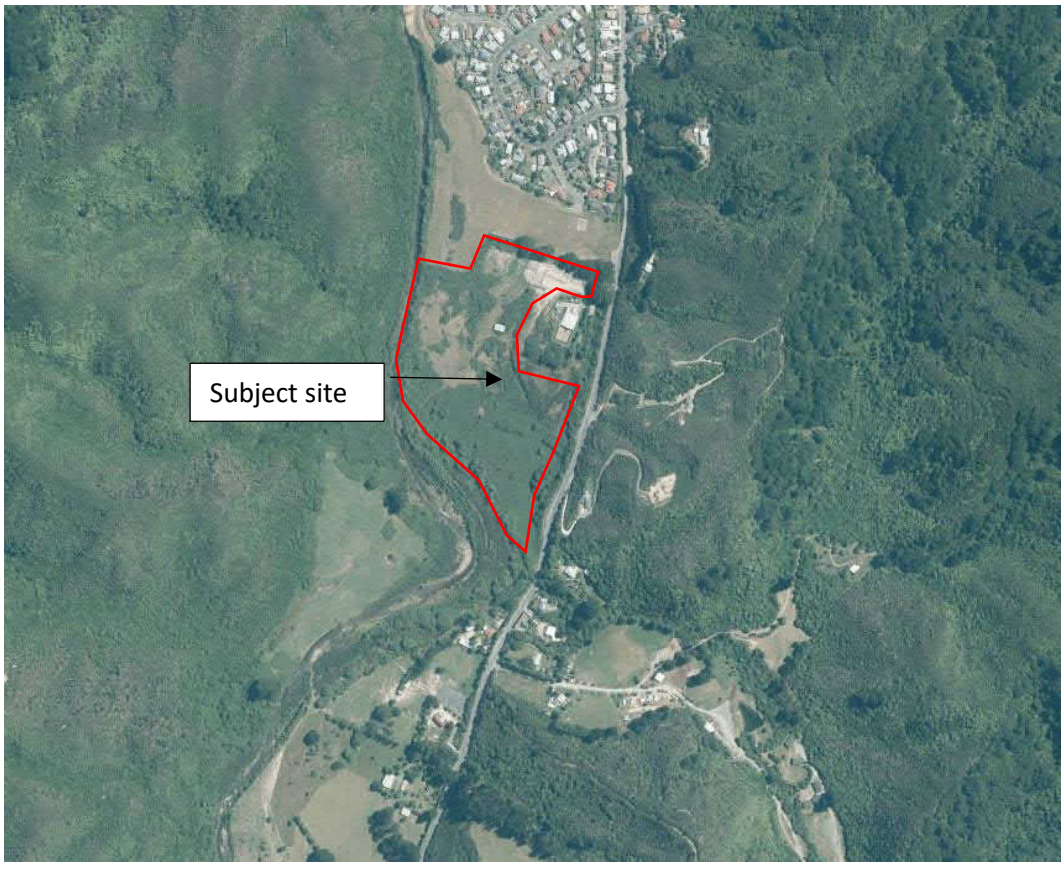

Figure 2: Site plan (approximate legal boundary shown in red) *Copyright TTMapViewer 2018*

Photographs 1-6 below show the site and surrounding area in more detail.

2.3 Ground contamination

Part of the site (the north portion and around the site of the sewage pumping station) is registered in the Greater Wellington Regional Council's (GWRC) 'Selected Land Use Register' (SLUR) as a Category I: Verified History of Hazardous Activity or Industry, specifically relating to waste recycling or waste or wastewater treatment activities undertaken at the site. There are no further cleanfill activities proposed to occur within this identified SLUR area, nor is any further ground disturbance proposed to occur. Previous consent applications and decisions have addressed the management of the HAIL site located within the extents of stage one of the completed cleanfill activity on site.

As part of the 2017 HCC consent (RM170015) T+T and HCC agreed that for those reasons identified above, the National Environmental Standard for Assessing and Managing Contaminants in Soil (NES Soils) did not apply to the proposed cleanfilling activities in stage two. Given that the area proposed as part of this application is located further to the south of the identified SLUR site, the NES Soils is not considered applicable.

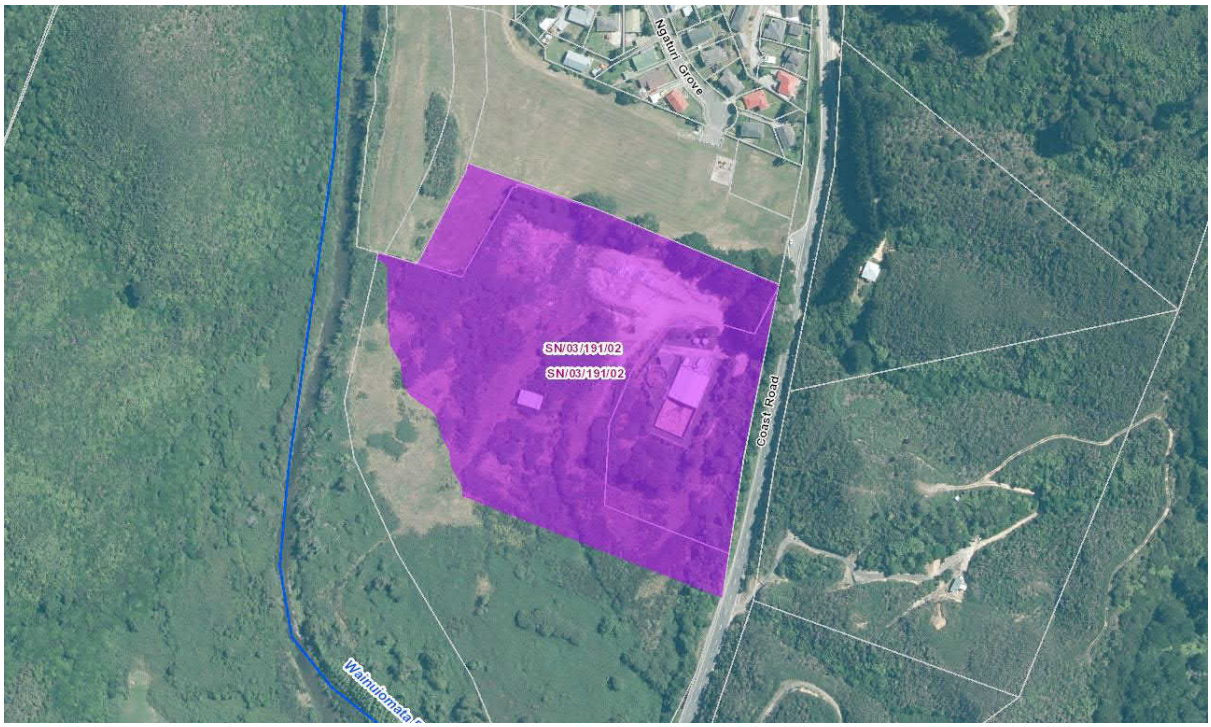

Figure 3: Screenshot of the extent of the subject site registered on the SLUR

2.4 Wainuiomata River Floodplain

GWRC have previously confirmed (in both 2009 and 2017) that their model shows the 1 in 100 year ARI flood event from the Wainuiomata River is likely to inundate some western areas of the subject site. The site plan attached in Appendix D shows the extent to which cleanfill from stage three is expected to extend into this Q_{100} flood extent. This area of fill has been designed to sit behind the concrete block armour wall, which is anticipated to provide further protection of the fill material against floodwaters in this location. An associated assessment of the likely flood effects has been included in section 5 of this AEE.

Figure 4: An oblique UAV image of the subject site (looking south), showing the existing fill area. Coast Road is located to the left of the image's frame. Stage one, which has now been replanting, sits in the foreground of this photo towards the bottom of frame.

Figure 5: An oblique UAV image of the subject site (looking north). The existing fill area is in the background, while proposed stage three is in the foreground. The replanted bund (stage one) can be observed in the background of the image.

Figure 6: An oblique UAV image looking towards the east (with Coast Road in the background). The low-lying, flat area to the right of frame represents the approximate location associated with proposed stage three

Figure 7: An image of the subject site proposed for stage three filling.

3 Description of proposed activity

3.1 Proposed activity

HCC proposes to expand the cleanfill area available for filling by incorporating an additional area in the southern portion of the site (proposed stage three). The existing consented area is nearing capacity, and stage three would consist of approximately an additional 117,000 m^3 worth of fill being deposited onsite to the south of the existing fill area. This fill would have a maximum height above existing ground level of approximately 12 m. A site plan detailing the extent of the additional fill is located in **Appendix D**.

As a result of updated flood modelling by GWRC a large portion of the southern area of the HCC land adjacent to Coast Road is no longer identified as being inundated by the 1 in 100 year flood event from the Wainuiomata River. The proposed area of additional fill has been designed to sit largely outside of the modelled Q_{100} flood risk, with the small area within the demarcated flood extent requiring only a 20 m extension to the existing concrete block armour wall for flood protection. This protective block wall will be designed and constructed prior to any filling within this area.

Drawings showing the proposed expansion to the cleanfill area, cadastral boundaries, stormwater controls, access locations, and the location and extent of the inundation area in relation to the proposed fill are provided in **Appendix D**.

3.2 Site Management

The activity currently operates in accordance with the existing Site Management Plan (SMP) dated September 2018. The SMP has recently been updated to reflect changes in the operations and management of the site and is awaiting approval from the relevant consent authorities. A copy of the Draft SMP is attached as **Appendix E**. The SMP covers matters such as:

- Operating hours;
- Traffic management;
- Noise;
- Erosion and sediment control;
- Dust management;
- Material acceptance criteria; and
- Documents and record keeping.

These matters are discussed and summarised in the following sections, and in Section 5 of this report. The applicant also proposes that the SMP be amended to include a fill sequencing plan, in line with condition (3) volunteered in section 8.1 of this AEE.

3.3 Operation

No changes to the current days and hours of operation are proposed (Monday to Friday 7.30am – 5.00pm and Saturday 7.30am – 12.00pm). A staff member is based on site during these hours to manage customer arrivals and material being deposited. The site may operate outside of these hours / days only where the operation is related to emergency works as defined by Section 330 of the RMA. No changes to the types of machinery and vehicles currently used at the site are proposed.

3.4 Traffic, access and parking

A transportation assessment has been prepared for the site and is attached in **Appendix F**.

Access to the site is obtained via Coast Road, which has a 50 km/h speed limit in the vicinity of the site access. The site access was reconfigured and sealed as part of the original consent application to establish the activity at the site. The access allows two trucks to pass each other if required (i.e. if one is entering the site while another is exiting). The existing vegetation around the access and along the site's road boundary is managed to maintain visibility for vehicles travelling along the carriageway in this section of Coast Road.

Access to the cleanfill will continue to be restricted to south-bound vehicles only, due to the alignment of the accessway with Coast Road.

The access is sealed adjacent to Coast Road, with internal roads constructed of compacted aggregate, to minimise dust and the tracking of material onto Coast Road. Following complaints received from residents, a wheel wash facility has been installed at the site to further reduce the amount of material tracked onto Coast Road from vehicles exiting the site.

The site is accessed by commercial operators only. Access to the site will continue to be monitored and managed by an onsite staff member during opening hours as identified in the Draft SMP attached as **Appendix E**. The site is locked outside of those hours to prevent illegal access or tipping. Vehicles accessing the site will be standard heavy rigid road trucks. The vehicle numbers accessing the site are responsive to demand, varying with the timing of projects around the Wellington region. The numbers of incoming vehicles are not anticipated to substantially alter from those currently accessing the site, being approximately 30-40 vehicles per day on average, and not expected to be more than 100 vehicles per day on peak days.

The site is of a sufficient size to allow vehicles to enter and exit the site in a forward direction. The active cleanfill area is managed to allow continual access and manoeuvring of multiple vehicles at any given time.

3.5 Noise

A Noise Assessment has been prepared for the proposal and is provided in Appendix F. This report identifies that the ambient noise levels are controlled by the traffic noise in the vicinity of the cleanfill, and are already moderately high.

The stage one works included the completion of an earth bund which provides noise attenuation to the residential area to the north of the main current filling site (stage two). The attached noise assessment identifies that this bund is anticipated to provide noise attenuation to the residential area to the north of the cleanfill operation to the extent of a 10dB reduction in noise levels. A Noise Management Plan (NMP) was prepared in November 2017 (attached as **Appendix G**) to satisfy the noise conditions of the existing consent and includes detail on the following:

- Phasing and hours of works;
- Noise conditions and criteria;
- Noise sources and noise receivers; and
- Mitigation and management.

3.6 Erosion and sediment and dust control

The erosion and sediment control measures currently implemented at the site follow the principles of the Greater Wellington Regional Council's Erosion and Sediment Control Guidelines 2002. The specific measures installed at this site are detailed in the sections below.

3.6.1 Staging of works

The stage three works will be undertaken in a staged manner, with vegetation clearance undertaken as required in preparation for each stage. Vegetation clearance outside of the cleanfill area will be restricted to that required for access, and to construct and access the erosion and sediment control measures for maintenance purposes. Areas where cleanfilling has been completed will be grassed as soon as practicable. Any temporary surfaces that are not expected to be disturbed for more than three months will be temporarily stabilised with grass or another suitable method.

HCC acknowledges that some residents have expressed concerns regarding the area of un-vegetated fill located onsite as part of stage two. As part of stage three the applicant is willing to volunteer a condition requiring that the works are undertaken with a staging plan (that will be certified by the HCC Compliance Manager prior to any filling occurring) and that each stage will be grassed upon completion. This is anticipated to provide visual, dust and erosion mitigation in the short-medium term. Further mitigation in the form of remedial planting will still occur upon the completion of the filling operation.

3.6.2 Erosion and sediment controls

The attached SMP (for current operations) identifies a number of operation controls relating to erosion and sediment control measures. The applicant proposes to roll the approaches identified in the existing SMP over to proposed stage three as a draft, and volunteer's condition (3) in Section 8 of the AEE below. This will enable HCC to review and certify the Draft SMP within three months of the approval of this consent.

3.7 Material acceptance criteria

The target material for the facility is cleanfill material which is only accepted from approved commercial operators. This ensures the material being brought to the facility meets the acceptance criteria for cleanfill materials prepared by MfE and appended as Appendix A of the SMP. Prior to a vehicle load being unloaded onto the cleanfill site a visual inspection shall be undertaken and any loads that are considered to contain non cleanfill materials are refused permission to dispose of that load at the cleanfill site.

3.8 Site stability

The proposed extension has been assessed for slope stability and seismic slope displacements to ensure that the cleanfill material is appropriately designed and constructed and mitigate the risk associated with slope failure. This assessment has been attached to this AEE as Appendix F.

Slope stability modelling was performed assuming that the site was underlain by stiff silt and dense river gravels, as observed during construction of the block armour wall, and assuming that unfavourable subsurface conditions do not exist in the stage three foundation materials. The seismic slope displacements under a 1 in 500 year earthquake is estimated to be between approximately 10 and 25 centimetres, which is believed to be easily repairable. These stability assessments are consistent with the observation that there has not been slope stability issues for the stage one and stage two slopes, which are built to a similar height and with a similar slope batter.

3.9 Site completion and remediation

When proposed stage three of the cleanfill reaches capacity, the site will be graded and remediated as set out in the drawings. Planting has already been established on the noise bund in the north of the site. Once cleanfill activities have ceased on the site the site will be gazetted as reserve under the Reserves Act 1977. HCC will volunteer a condition similar to Condition 10 of the existing land use

consent, requiring an environmental restoration plan be submitted to the Manager - HCC Parks and Reserves within 3 months of activity ceasing, and will include provision for the active revegetation of the site. This may include compaction, hydroseeding and / or planting trees and shrubs, and will be approved by HCC prior to restoration works starting.

The Environmental Restoration Plan will require certification by HCC prior to being given effect to. The plan will have regard to the guidance prepared by GWRC titled '*Restoration Planting – A guide to planning restoration planting projects in the Wellington Region*'. As part of this the applicant would be happy to consult with interested Wainuiomata residents to ensure that their goals and visions for the reserve are considered.

3.10 Consideration of alternatives

Schedule 4 of the RMA requires an assessment of effects on the environment to include a description of possible alternative locations or methods of undertaking an activity to be described where it is likely that an activity will result in any significant adverse effects on the environment. Section 105 also requires decision makers considering applications for discharge permits to have regard to "any possible alternative methods of discharge, including discharge into any other receiving environment". The anticipated environmental effects, which are identified in Section 5 of the AEE below, are considered to be less than minor. A detailed assessment of the possible alternatives under Schedule 4 is therefore not considered to be necessary.

It is however considered appropriate to have regard to alternative methods of discharge under section 105 of the RMA, as the applicant is seeking discharge permits to authorise the discharge of contaminants (dust and sediment-laden stormwater) to air and land & water respectively. This assessment is undertaken below:

Alternative methods of discharge:

The proposal identifies a number of operational requirements relating to the discharge of contaminants to air, land and water. These have been proposed via the SMP to mitigate the adverse effects associated with the operation of the proposed cleanfill, and include operational practices to manage the discharges emanating from the site.

The identified operational practices include the implementation of dust control measures, the establishment and maintenance of stormwater diversion channels and utilising revegetation and roughened slopes to reduce the sediment uptake and increase infiltration of stormwater. While operating without these controls certainly represents an alternative approach, it is considered that the approach volunteered through application is the result of the iterative development of operational controls and has delivered improved environmental outcomes during stages one and two of the existing cleanfill.

Alternative receiving environments:

Consent for proposed stage three is being sought in response to an increasing availability of land on the subject site (in light of the amended Q_{100} flood extent, and the continued demand for cleanfill deposition being generated by local development. The cleanfill material requires disposal somewhere, and in lieu of the Wainuiomata site, operators will be forced to seek alternative deposition sites. This could include four broad alternatives:

1.) Cartage of cleanfill material to another existing cleanfill facility further from the point of generation;

2.) The deposition of cleanfill material to landfill;

3.) The establishment of a new cleanfill site; and

4.) The deposition of cleanfill material to smaller, potentially unregulated sites.

All of these options represent alternative receiving environments for the deposition of cleanfill material. In all cases however they are considered to reflect a less-desirable option. The expansion of the existing operation is considered to provide for the most efficient use of the subject site, and is considered to be consistent with the *Wellington Region Waste Management and Minimisation Plan 2017 – 2023*, which aims to reduce the total quantity of waste to landfill across the region. A review of other HCC owned land has not identified any other sites considered to be as or more suitable for cleanfilling operations, particularly in the short-term.

4 Resource consent requirements

The requirements for resource consents are determined by the rules in the Hutt City Council's City of Lower Hutt District Plan, the Greater Wellington Regional Council's Proposed Natural Resources Plan for Wellington, Regional Freshwater Plan, and the Regional Air Quality Management Plan for Wellington. The rules which apply are determined by the zoning of the site, any identified notations in the plan and the nature of the activities proposed. The site is identified on Map E8 of the City of Lower Hutt District Plan, and on Regional Plan maps as noted in Table 4.1 below.

Table 4.1: Zoning and planning notations

Zoning / planning limitation	Comment
<u>City of Lower Hutt District Plan</u>	
General Rural Activity Area	This Activity Area aims to provide for a wide variety of rural based activities, while managing rural character and amenity.
Primary River Corridor	A small section of the eastern side of the site is located within the Primary River Corridor.
Designation HCC11	This designation relates to the sites previous use as a water treatment plant and, as such, the cleanfill activity cannot rely on this designation.
<u>Proposed Natural Resources Plan for Wellington</u>	
River Class 4 (Map 21d)	The Wainuiomata River, neighbouring the cleanfill site, is identified as river class 4 – which is described as 'Lowland, large, draining ranges'.
Schedule F1 Rivers and lakes with significant indigenous ecosystems (Maps 13a, 13b, 13c)	The Wainuiomata River, neighbouring the cleanfill site, is identified as – • high macroinvertebrate community health; • habitat for indigenous threatened/at risk fish species; • habitat for six or more migratory indigenous fish species.
Schedule H1 – Significant primary contact recreation rivers (Map 20)	The Wainuiomata River, neighbouring the cleanfill site, is identified as a significant primary contact recreation river.
Schedule I Trout fishery and spawning waters (Map 22)	The Wainuiomata River, neighbouring the cleanfill site, is identified as a trout fishery river and trout spawning waters. This overlay seeks to protect and improve trout habitat.
Surface water community drinking water supply protection areas (incorporates Schedule M1) (Map 26)	The Wainuiomata River, neighbouring the cleanfill site, is identified as a water supply protection area. This overlay seeks to protect these areas through managing the effects of discharges into these waters and in the surrounding areas.
<u>Regional Freshwater Plan</u>	
Rivers with Important Trout Habitats	The Wainuiomata River is subject to those classifications / overlays identified in the Regional Freshwater Plan.
Rivers with Quality Needed Enhancement	
Rivers with Recreational Values	

4.1 Regional Plans

This section identifies the regional resources consents required under the relevant regional planning documents.

Table 4.2: Resource consents required

Proposed activity	Rule reference / description	Activity status
Proposed Natural Resources Plan for Wellington		
Discharge of dust to air from cleanfill activities	**Rule R41**. The proposed activities are not provided for by Rules R1 – R40, and therefore require resource consent under Rule R41.	Discretionary
Discharge of contaminants (sediment laden water) from cleanfilling activities	**Rule R53**. The proposed discharge may not meet the provisions of Rule R48, and therefore requires resource consent under Rule R53.	Discretionary
Cleanfilling activities	**Rule R93**. The proposed cleanfilling activity cannot meet the permitted activity conditions under Rule R70 (volume of material exceeds 100m^3) and therefore requires resource consent under Rule R93.	Discretionary
Regional Freshwater Plan for Wellington		
Discharge of contaminants (sediment laden water) from cleanfilling activities	**Rule 5**. The discharge of sediment laden water from the cleanfill activities may not meet the permitted activity conditions of Rules 1 and 2 and therefore requires resource consent under Rule 5.	Discretionary
Regional Air Quality Management Plan for Wellington		
Discharge of dust to air from cleanfill activities	**Rule 23**. The proposed discharge is not provided for by a specific rule in the Plan and therefore requires resource consent under Rule 23.	Discretionary

Overall, the activity is a discretionary activity under the provisions of the relevant Regional Plans.

4.2 City of Lower Hutt District Plan

The District Plan does not manage cleanfilling as an activity in its own right, however the 'deposition of cleanfill' is included within the definition of 'earthworks'. The deposition of cleanfill is a permitted activity where the permitted activity conditions of the District Plan can be met.

Table 4.3: Resource consents required

Proposed activity	Rule reference / description	Activity status
Cleanfill activities in the General Rural Activity Area	**Rule 8B 2.3(a).** For a Permitted Activity that does not comply with relevant requirements of Chapter 14 – General Rules	Discretionary Activity
Noise generated by machinery and/or vehicles	**Rule 14C 2.1.10**. For noise levels in the General Rural Activity Area exceeding maximum of 50 dBA between 7am and 10pm	Discretionary Activity
Earthworks associated with cleanfill activities	**Rule 14I 2.2**. For alterations to natural ground level of more than 1.2 m measured vertically, and for earthworks volumes of more than 50 m^3 per site.	Restricted Discretionary Activity

Overall the activity is a discretionary activity under the provisions of the District Plan.

4.3 Permitted activities

The cleanfill activity complies with a number of permitted activity conditions in the District Plan, as listed in **Table 4.4** below.

Table 4.4: Permitted activities relevant to the proposed activity

Proposed activity	Rule	Comment on compliance
Dust	**8B 2.1.1 (f)**. Requires all outside areas shall be surfaced, or managed appropriately so that there shall be no dust nuisance at or beyond the boundary of the site.	The SMP includes practices to manage any dust to ensure no dust nuisance at or beyond the boundary of the site.
Vibration	**8B 2.1.1 (i)**. Requires all activities that cause vibration shall be carried out in such a manner that no vibration is discernible beyond the site boundary	Compaction activities and associated vibration effects will not be discernible beyond the site boundary.
Distance of cleanfill access to nearest intersection	**14A(ii) 2.1(b).** Lists minimum distances between accessways and intersections, based on maximum numbers of vehicle movements per hour.	The cleanfill access is 230 m from the nearest intersection, which complies with the most stringent requirement listed in this rule.
Circulation and manoeuvring space	**14A(ii) 2.1 (d).** Requires sufficient internal roading to allow for all necessary movements to be undertaken within the site.	The site has sufficient internal roading to allow for all necessary movement within the site. The site has sufficient manoeuvring space to allow vehicles to enter and exit the site in a forward direction.
Parking spaces	**14A(iii) 2.1 (a)**. Require car parking spaces to be provided in accordance with the activity undertaken at the site.	Car parking requirements for a cleanfill or landfill activity are not listed in Appendix 3. Therefore, the industrial activity requirements have been assessed which requires the greater of 1 car parking space per staff member or 1 space per 100 m^2 GFA. The site is able to accommodate a significant number of car parks and is compliant with the car parking standards.
Location of parking spaces	**14A(iii) 2.1(b)**. Requires parking spaces be provided on site.	A significant number of car parking spaces can be provided on site.
Design of parking spaces	**14A(iii) 2.1 (d)**. Requires the design of parking spaces to ensure convenient, safe and efficient use, with dimensions in accordance with the appropriate Standard.	All car parking areas will be designed in accordance with AS2890 Part 1 to ensure their convenient, safe and efficient use. The required car parking area shall be kept clear at all times and maintained appropriately.
Loading and unloading space	**14A(iv) 2.1(b)**. Requires adequate provision for loading and unloading from vehicles.	A generic unloading space will be provided at all times on the cleanfill site to enable the deposition of fill material. Vehicles will manoeuvre to the location where fill is to be deposited and unload.

4.4 Existing resource consents

The existing land use consent (Ref RM170015) was issued by the Hutt City Council and is due to expire in August 2027. This previous application does not make reference to the proposed Stage three extension, therefore the proposed future expansion will occur under the consents sought by this application. The residual filling of stage two will continue to occur under the existing consent identified above.

In addition, HCC obtained a suite of regional consents from Greater Wellington Regional Council in relation to the cleanfill activity, as listed below:

- WGN 100043 [30064]: Discharge Permit to discharge contaminants (dust) to air from the cleanfill (expires 2019);
- WGN 100043 [30065]: Discharge Permit to discharge contaminants (sediment-laden stormwater) to land and to the Wainuiomata River from the cleanfill (expires 2019).

The regional resource consents subject to this application are intended to replace these existing regional consents.

4.5 Other consents and approvals required

The Requiring Authority for the underlying designation is HCC. Written approval from HCC may be required to undertake the works under section 176(1)(b).

We are not aware of any other consents or approvals being required for the proposed activity.

5 Assessment of effects on the environment

5.1 Introduction

The following assessment identifies and assesses the types of effects that may arise from the proposed works. This assessment also outlines the measures that the applicant proposes to avoid, remedy or mitigate any potential adverse effects on the environment.

Actual and potential effects on the environment have been identified as including:

- Positive effects;
- Effects on water quality;
- Effects on air quality;
- Material tracking onto Coast Road
- Visual effects;
- Noise effects;
- Vibration effects;
- Transport effects; and
- Flooding and hazard effects.

5.2 Positive effects

5.2.1 Providing a local facility for locally generated cleanfill material

The cleanfill provides a controlled facility for the deposition of cleanfill material which has demonstrated an ability to operate to a high standard. There is strong demand for such facilities arising from the high level of development occurring within the district, coupled with a limited supply of such facilities in the Hutt area. The alternative cleanfill site is the Dry Creek Cleanfill near the Haywards Hill, and can require heavy vehicles originating in Lower Hutt to haul material a greater distance to dispose of their cleanfill. This is considered particularly important for material generated to the east of the Lower Hutt CBD, as future reliance on the Dry Creek site could result in an increasing number of heavy vehicles travelling on local roads around the sensitive CBD area, which has a higher proportion of pedestrian foot traffic than elsewhere in the city. It should also be noted that the Dry Creek site is understood to be nearing capacity. The site also provides an important local facility during and following council asset maintenance and upgrade works as well as responses to emergency events, such as landslips along Coast Road.

5.2.2 Reducing the volume of material going to landfill

The cleanfill provides a cost-effective and viable alternative to depositing clean materials into the Silverstream landfill. Given the inert nature of cleanfill material this is considered to be a better utilisation of the limited available space at the landfill, which can therefore be more effectively set aside for those materials which specifically require deposition at a landfill. Given the financial and environmental costs associated with creating new or extending existing landfills, the expansion of the cleanfill is considered to represent a development with strong positive benefits for the wider community.

5.2.3 Establishment of a reserve and associated improved amenity effects

Once cleanfill activities have ceased on the site the site will be gazetted as a council reserve under the Reserves Act 1977. The applicant has volunteered a condition akin to that imposed by the existing land-use consent, requiring that the consent holder submits an environmental restoration

plan to HCC within 3-months of either the cleanfill reaching capacity or the consent expiry date. This will identify measures to grass, revegetate or landscape any exposed areas, and ensure that the site is left in a suitable condition for future use as a reserve. We consider that this will protect and enhance the long-term amenity of the immediate environment, particularly when considering the nature of the existing vegetation onsite, which consists largely of exotic species, including invasive blackberry bushes (as per Figure 6 above), which are not considered to provide a high degree of visual amenity.

5.3 Stability effects

A stability assessment has been prepared for proposed stage three, and appended to this application in **Appendix F.** This assessment identifies that the minimum identified factors of safety will be achieved with regards to slope stability and anticipated seismic deformation. In light of the assessment undertaken above any effects adverse slope stability effects are considered to be less than minor.

5.4 Effects on water quality

The placement of fill on the site has the potential to generate sediment run-off effects on adjacent land and waterbodies. To minimise potential effects of the cleanfill activity, various operational practices and principles will be employed on the site, which are further outlined in the SMP.

We propose that the erosion and sediment control principles which are currently in place at the existing cleanfill facility are rolled over to stage three. They have been developed in accordance with the Regional Councils Erosion and Sediment Control Guidelines 2002. The principles include the use of minimising the area disturbed at any one time, prompt revegetation of batter slopes, isolating the site using perimeter earthen bunds and directing any overland flow to a grit trap. It should also be noted that the extent of the proposed cleanfill extension is well set back from the Wainuiomata River. When all of these measures are considered alongside one another the potential for sediment-laden stormwater to cause adverse effects upon water quality within the nearby Wainuiomata River are considered negligible. In the unlikely event that sediment-laden stormwater is discharged to surface water, the SMP contains a suite of contingencies to mitigate the associated effects.

The stormwater control measures identified in the SMP will ensure that the stormwater discharged will not give rise the following:

- Suspended materials entering a waterbody
- A conspicuous change in colour or visual clarity of natural water at the point of discharge
- Any objectionable odour
- Rendering of freshwater unsuitable for farm animal consumption
- Adverse effects on aquatic life
- Point source erosion
- Alteration of the natural watercourse.

We note that 6 monthly site audits have been undertaken and submitted to GWRC as a condition of the existing consent. These are proposed to continue under the proposed cleanfill extension. These site audits have demonstrated a “good overall management of the site and consents”.

In line with the effects assessment undertaken above, and subject to those identified mitigations contained within the SMP, the potential adverse effects on water quality from the cleanfill activities are considered to be less that minor.

5.5 Effects on air quality

Dust may be generated at the cleanfill site from:

- Earthworks on site (such as the deposition and manoeuvring of fill material);
- Disturbance by on-site traffic;
- Wind movements; and
- Uncovered loads carried by vehicles.

The SMP for the site includes the imposition of appropriate dust mitigation measures, including:

- Maintaining a stabilised entranceway to the facility;
- Establishing low speed restrictions within the facility;
- Establishing a wheel wash;
- Sweeping and watering of tracks; and
- Dampening areas of the deposited cleanfill with water sprays as required.

The mitigations identified above will ensure that dust emissions are minimised and contained onsite as much as is possible, so as to avoid any off-site nuisance effects. Accordingly the potential effects on air quality from the cleanfill activities are considered to be less than minor.

5.6 Material tracking onto Coast Road

The applicant acknowledges that complaints have been received in the past relating to the tracking of material from the cleanfill onto Coast Road. As a result of these complaints the cleanfill has installed a wheel wash, and it is understood that since the installation of this wheel wash no further complaints have been received. The applicant proposes to retain this wheel wash for stage three, and considers that in light of the demonstrated recent performance, any effects associated with material being tracked onto Coast Road will be less than minor.

5.7 Visual effects

The subject site is located within a wider environment that is largely rural in nature. The existing topography of the site is variable, sloping down from the road level towards the Wainuiomata River in the west. The finished crest height of the fill will remain level or below that of Coast Road, and will be graded and vegetated following completion of the activity in such a way that it resembles a natural rural landscape. Given the existing nature of the site we consider that the visual amenity will in fact be improved in the long-term following the future remediation in line with the environmental restoration plan. The plan will have regard to the guidance prepared by GWRC titled '*Restoration Planting – A guide to planning restoration planting projects in the Wellington Region*', and the applicant would be happy to consult with the local community liaison group on the development of this management plan. Further, the consent holder intends to vest the site as a council reserve which will protect this improved visual amenity in perpetuity.

Despite this, the consent holder recognises that the works have the potential to cause adverse visual effects during the operational life of the cleanfill. These potential adverse visual effects will be broadly mitigated by undertaking the cleanfilling activities in accordance with an approved fill sequencing plan, which will ensure that the works are staged appropriately. Following completion of each sub-stage the consent holder will grade and revegetate the area in line with conditions (3) and (4) volunteered in section 8.1 of the AEE below. The consent holder will then undertake a more substantive suite of remedial planting works following the cessation of cleanfilling operations at the site. Condition (11) in section 8.1 below has been volunteered to this effect.

The northern boundary of the subject site has a strand of mature vegetation lining the property boundary with Ngaturi Park to provide visual screening. The completed noise attenuation earth bund also provides a further degree of visual screening, the northern side of which has already undergone remedial planting of trees and shrubs to ensure it is visually consistent with the surrounding rural landscape. The presence of Ngaturi Park also provides an additional 80 m separation distance between the subject site and residential properties. Accordingly it is considered that any adverse visual effects upon properties to the north (including upon Ngaturi Park) will be less than minor.

To the east an existing strand of mature trees and established vegetation lines the subject site's boundary with Coast Road. This will continue to provide visual screening from ground level. Land further east of Coast Road is elevated above the subject site, with dwellings set back from the cleanfill's eastern boundary. The elevation, separation and existing screening, and the proposed staging of the operational filling will ensure that the visual amenity effects upon those properties to the east of the subject site will be less than minor.

To the south, in the area of the proposed extension, the dense and well established area of vegetation along the property boundary will be retained. This will mitigate any potential adverse visual effects of the operation of the additional cleanfill area upon those properties to the south. Following completion of cleanfill activities and subsequent re-vegetation of the site, any views from the south will be consistent with those expected in a rural area. Accordingly it is considered that any adverse visual effects upon properties to the south will be less than minor.

To the west of the subject site the land gradually falls towards the Wainuiomata River with no residential properties located in this direction.

In light of the above assessment it is considered that the potential visual effects from the proposed expansion of the existing cleanfill operation are considered to be less than minor.

5.8 Noise effects

It should be noted that since operations commenced at the cleanfill in 2011, there have been no recorded noise complaints in regard to activities at the site. Considering that the proposed extension is not anticipated to alter the existing intensity of the operation this is considered a good predictor of future performance.

Nonetheless, a detailed assessment of the noise effects associated with this proposal has been prepared by Tonkin + Taylor (T+T) and appended to this AEE Report as **Appendix F**. A summary of the conclusions drawn by the noise report has been included below.

The noise report prepared by T+T acknowledges that the proposal is anticipated to result in a maximum predicted noise which exceeds the District Plan's permitted noise standard at or near the boundary of four properties. These properties are identified below:

- 119 Coast Road
- 199 Coast Road
- 200 Coast Road
- 205 Coast Road

The report goes on however to identify that the predicted noise level at the notional boundary at all four of these properties represents a better predictor of the noise levels likely to be experienced by the occupants of these properties. When the predicted noise level is assessed at the notional as opposed to the physical boundary, the predicted noise levels reduce significantly, with three of these properties (being 205, 119 and 200 Coast Road) subsequently predicted to receive noise from

the proposal that complies with the District Plan's permitted noise standards. In light of this, it is considered that the adverse noise effects arising from the proposed works on those properties at 205, 119 and 200 Coast Road will be less than minor.

The noise level at the notional boundary of 199 Coast Road is predicted to be 52 dB L_{A10}. This remains 2 dB above the permitted activity threshold identified within the HCC District Plan. The T+T noise report identifies the following observations in relation to the 2 dB exceedance of the permitted limit:

- That the modelled noise predictions have been taken from the closest point of the proposed works to the receiver, and do not therefore represent the noise levels to be expected for the duration of the time the cleanfill is in operation. Rather they represent a conservative estimate, based on the works occurring at or near the relevant boundary of the cleanfill site; and
- It is anticipated that the ambient noise levels at the dwelling on 199 Coast Road will be predominantly controlled by traffic movements along Coast Road; and
- That a 2 dB difference in noise levels (between 50 dB and 52 dB) is unlikely to be perceptible.

In light of these findings (which are explained in greater detail within the T+T noise report) it is considered that any adverse noise effects upon 199 Coast Road arising from the proposed works will be less than minor.

For all the reasons set above, it is considered that the overall potential noise effects from the proposed cleanfill extension are likely to be less than minor.

5.9 Odour effects

Odour will be managed through the restrictions placed on material allowed to be deposited at the cleanfill. A staff member will be located on-site during opening hours, and any loads which do not meet the acceptance criteria will be rejected. The acceptance criteria allows for inert materials, with no scope for degradable or leachable materials with the potential to cause offensive odours. This is considered to be appropriate mitigation of potential odour effects, and any resulting adverse effects are considered to be less than minor.

5.10 Transportation effects

A detailed assessment of the transport effects associated with this proposal has been prepared and appended to this AEE Report as **Appendix F**. A summary of the conclusions drawn by this transportation assessment has been included below.

The transportation assessment prepared by T+T assesses the transportation effects of the proposed expansion to the Wainuiomata Cleanfill. The assessment concludes that, subject to a series of recommended conditions, the expansion of the existing cleanfill operation and construction of the associated maintenance access track can be supported from a road safety and transportation planning perspective, subject to the imposition of the following conditions:

- The proposed vehicle maintenance track is constructed to provide a minimum of seven metres of clearance between the road edge and the chain gate.
- Trucks are restricted to right turns into the site and left turns when exiting the site.
- The vegetation adjacent to the existing site access and proposed vehicle maintenance track shall be subject to regular maintenance to maintain sight lines onto Coast Road.

Based on the transport assessment it is considered that the proposal is likely to result in less than minor traffic effects.

5.11 Flooding and hazard effects

HCC is planning to extend the cleanfill area towards the south, as shown on the attached plan. GWRC has modelled the 100 year flood event, including for the effects of climate change. The results have been mapped to show the extent of the flood plain in the vicinity of the clean fill area (**Appendix D**).

While the proposed footprint is generally outside the 100 year flood plain, it will extend over a limited area of flood plain. The depth plot of the river cross sections indicates that the greatest conveyance contribution is in the main stream channel (as is typical). At the location of the cleanfill in the flood plain the flood depths are generally less than 250 mm (with isolated points up to 500 mm): these are in comparison to depths in the main channel up to 3 m and more. It is likely that any flow velocities at the limits of the flood plain in this location are very much less than the channel velocities at the peak of the flood event. At the edge of the flood plain inundation is more likely of the nature of overspill from the channel rather than fast flowing flood flows contributing to the overall conveyance of the river system. Because of the lower depth and velocity of flood flows in this location, the proposed flood protection in the form of the concrete block armour wall is expected to mitigate any potential erosion and sedimentation effects in events up to 100 year return period.

This part of the flood plain over which the cleanfill extension is proposed is mapped as a relatively small part of the overall flooded area, and outside the main conveyance width of the Wainuiomata river system. It almost certainly provides no significant contribution to the flood passage for the 100 year event. Thus the effect of the proposed extension on flood levels upstream and downstream will be less than minor given that:

- There will not be any significant impedance of the flood flows and thus no backwater effect on flood levels upstream
- The loss of flood plain storage volume is insignificant and will not contribute to an increase in flood flows that might cause higher flood levels downstream.

For those reasons identified above it is considered that the effects on flooding of this proposal to extend the cleanfill to the south will be less than minor.

5.12 Mitigation and monitoring

The operations at the site are currently undertaken in accordance with the SMP, as appended to this report in **Appendix E**. The approach is proposed to be carried over to the monitoring approach for proposed stage three. These operational parameters and site practices, including operation of erosion, sediment and dust control measures are considered to appropriately mitigate the potential adverse effects of the activity. The measures and operations are monitored in line with the SMP, and includes weekly and monthly inspections of the site by the operator, bi-annual environmental inspections by a suitably qualified engineer to ensure that the erosion and sediment control measures are operating in accordance with the SMP and consent conditions, and the keeping of a complaints and an incidents register.

The site has also experienced regular compliance monitoring by GWRC compliance officers, with no major issues identified during the life of the consent. The 2017-18 compliance monitoring assessment prepared by Simon Hunt from GWRC identified a “good overall management of the site and consents”.

5.13 Conclusion

In line with those conclusions drawn above, the effects associated with the proposed expansion of the cleanfill operation at 130 Coast Road, Wainuiomata are considered to be less than minor.

6 Statutory assessment

6.1 RMA assessment

Section 104 of the RMA sets out the matters to which a consent authority must have regard to, subject to Part 2 of the RMA, when considering an application for resource consent. These are:

- Any actual and potential effects on the environment of allowing the activity (refer Section 5 above);
- Any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity;
- Any relevant provisions of:
  - a national environmental standard;
  - other regulations;
  - a national policy statement;
  - a New Zealand coastal policy statement;
  - a regional policy statement or proposed regional policy statement;
  - a plan or proposed plan; and
- Any other matter the consent authority considers relevant and reasonably necessary to determine the application.

6.1.1 Part 2 of the RMA

Part 2 of the RMA sets out the purpose and principles of the Act. The purpose of the RMA is to promote the sustainable management of natural and physical resources. The on-going use and extension of this established cleanfill activity is considered to be sustainable management of a natural and physical resource as it will enable the site to be utilised to its full capacity. The use of a cleanfill site can divert waste which may otherwise go to landfill. It is also considered that having a local facility has the potential to reduce the haulage distances for cleanfill generated within the wider Hutt City District. The proposed cleanfill will be subject to a number of design and operational practices to mitigate the potential adverse environmental effects, which may not be the case with alternative deposition sites. The cleanfill thereby provides an important service to both the local and wider communities, and allows these communities to provide for their social, economic and cultural wellbeing whilst also mitigating the effects on the environment resulting from the activity.

6.1.2 National Environmental Standards

The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES Soil) has come into effect since the original consent was granted for the cleanfill site.

Part of the site (the north portion and around the site of the sewage pumping station) is registered in the Greater Wellington Regional Council's (GWRC) 'Selected Land Use Register' (SLUR) as a Category I: Verified History of Hazardous Activity or Industry. This specifically relates to waste recycling or waste or wastewater treatment activities undertaken at the site. There are no further cleanfill activities proposed to occur within this identified SLUR area, nor is any further ground disturbance proposed to occur.

As part of the 2017 HCC consent (RM170015) T+T and HCC agreed that for those reasons identified above, the National Environmental Standard for Assessing and Managing Contaminants in Soil (NES Soils) did not apply to the proposed cleanfilling activities in stage two. Given that the area proposed

as part of this application is located further to the south of the identified SLUR site, the NES Soils is not considered applicable.

6.1.3 National Policy Statements

There are no National Policy Statements relevant to this proposal.

6.1.4 Regulations

There are no Regulations relevant to this proposal.

6.1.5 Greater Wellington Regional Policy Statement

The RPS provides an overview of the resource management issues facing the region, and states the policies and methods needed to achieve integrated management of the region's natural and physical resources. The proposal is considered to be consistent with the objectives and policies of the RPS, particularly with regard to Objective 11 and Policy 65 which aim to reduce waste, as the ongoing use of the cleanfill will continue to divert material which would otherwise go to landfill.

6.1.6 Assessment of the relevant Regional Plans

An assessment against the relevant objectives and policies of the applicable regional plans is included in Table 6.1 below. Relevant plans include the Proposed Natural Resources Plan, Regional Freshwater Plan and the Regional Air Quality Plan.

Table 6.1: Objectives and policies assessment

Key Theme	References	Comment
Proposed Natural Resources Plan		
Ki uta ki tai: Mountains to the sea	Objective O1, O2, O10, Policies P1 and P4	The PNRP identifies that land and fresh water resources should be managed as integrated, connected resources, and recognise the important contribution that land and water have for social, cultural, economic and environmental wellbeing. This proposal is considered consistent with the overarching policy direction of Policies 1 and 4, for the following reasons: • The effects assessment above considers any alternatives for undertaking the activity that may have had less adverse effects. It also proposes the use of good management practices to reduce the likely adverse effects, as contained within the SMP. This is considered to align that policy direction set by Policy 4 in particular.
Māori relationships	Objectives O5, O14, O24 and O25 Policies P7, P10, P17, P18 and P19	The PNRP identifies that the cultural relationship of Māori with water should be recognised, with the adverse effects upon this relationship minimised. The river adjoining the subject site is identified as having high contact recreation values in the PNRP. The plan considers the protection of fresh water for the purposes of contact recreation and Māori customary use together in Policy P10. It also recognises the importance of the mauri of freshwater (Policy P17) and aims to minimise the adverse effects on the

Key Theme	References	Comment
		cultural relationship between Māori and air, land and water (Policy P19). This proposal is considered consistent with this overarching policy direction for the following reasons: • As addressed in the effects assessment above, the adverse effects upon water quality arising from this application are expected to be less than minor; • Neither the subject site nor the river are listed as a site with significant mana whenua values (in Schedule C); • The site is not subject to a statutory acknowledgement; and • The proposal is not anticipated to have any adverse effects on the provision of access to the river.
Natural Hazards	Objectives O19, O20, O21 Policies P4, P26, P29	The PNRP sets a policy direction that aims to minimise the effects of land use and development upon natural processes, manage the risk and adverse effects associated with natural hazards on people and the community, and avoid inappropriate development within high hazard areas. Policy P4 requires that any policy direction which requires the minimisation of effects shall consider alternative locations and methods for the activity, and use good management practices to reduce the adverse effects. Policy P26 requires that any effects upon the integrity and functioning of natural processes resulting from land-use and development will be minimised, and Policy P27 requires development within high hazard areas shall be avoided (with several identified exceptions). This proposal is considered consistent with this overarching policy direction for the following reasons: • The definition of high hazard area includes the coastal marine area and all areas in the beds of lakes and rivers. This proposal does not therefore constitute development within a high hazard area; • The application includes an associated assessment of alternatives; and • As illustrated in the effects assessment undertaken above the effects associated with flooding resulting from the proposal will less than minor.
Water quality	Objectives O23, O24, O25, O30 Policies P10, P31, P32, P67, P73 and P97	There is a strong direction within the Proposed Natural Resources Plan to protect and enhance water quality and to safeguard ecosystem and habitat health. As has been illustrated in the assessment *of Māori relationships* above, the river adjoining the subject site is identified as having high contact recreation values. The plan considers the protection of fresh water for the purposes of

Key Theme	References	Comment
		contact recreation in Policy P10. Policies 31 and 32 seek to maintain and manage the significant adverse effects upon aquatic ecosystem health. Policies 67 and 73 seeks to minimise the effects associated with the discharge of stormwater and other contaminants to water, while Policy 97 seeks to manage the sediment discharges associated with earthworks and vegetation clearance. The proposal is considered consistent with the overarching policy direction for the following reasons: • As addressed in the effects assessment above, the effects on water quality arising from this application are expected to be less than minor; • The cleanfill has historically, and will continue to employ operational practices on the site to manage erosion and sediment runoff. These practices are outlined in the Site Management Plan. Subject to the mitigations identified within the SMP, the effects associated with the discharge of stormwater and other contaminants to water are considered to be less than minor.
Air quality	Objectives O39, O40, O41 Policies P52 and P55	The PNRP sets a clear direction to maintain or improve ambient air quality and ensure that people's well-being, health and property are protected. Policy 52 seeks to manage the ambient air quality to protect human health, while Policy 55 seeks to minimise the adverse effects associated with offensive or objectionable particulate matter upon air quality in urban and rural areas. This proposal is considered consistent with this overarching policy direction for the following reason: • Subject to those mitigations identified within the SMP to protect air quality, including speed limits and the presence of dust mitigation measures onsite (i.e. water carts) the effects upon air quality arising from this application are anticipated to be less than minor.
Land use	Objective O44, O46 and O47 Policies P4, P26, P67, P73, P95 P96 and P97	The PNRP sets a direction to minimise the adverse effects upon soil and water from land-use activities. This policy direction is considered to closely aligned with the directions previously identified above relating to Natural Hazards and Water quality, and should be read in conjunction with those assessments. This proposal is considered consistent with this overarching policy direction for the following reasons: • The effects assessment above considers the alternatives for undertaking the activity that may have less adverse effects, and confirms that no such alternative is considered preferable; • Proposes the use of good management practices to reduce the likely adverse

Key Theme	References	Comment
		effects. This is considered to align that policy direction set by Policy 4 in particular. • As addressed in the effects assessment above, the effects on land arising from this application are expected to be less than minor.
Operative Regional Freshwater Plan		
Water quality	Objectives 5.1.1, 5.1.2 and 5.1.3 Policies 4.2.9, 4.2.12, 5.2.3, 5.2.4 and 5.2.6	There is a policy direction within the Regional Freshwater Plan to enable freshwater to provide for the range of uses for which it is required, including ecological, habitat, social and tangata whenua values. For the reason identified below the proposal is considered to be broadly consistent with this overarching policy direction: • As discussed in the effects assessment above, the discharge associated with this proposal is considered relatively innocuous, the concentrations of suspended sediments are expected to be low, and the associated effects will be less than minor; and • The volunteered mitigations are considered to mitigate the effects of the discharge to protect water quality.
Amenity values and access	Objective 4.1.7 Policies 4.2.15 and 5.2.4	The Regional Freshwater Plan sets an expectation that the amenity and recreational values of rivers are maintained and enhanced. It is noted that the freshwater plan identifies the river adjoining the subject site as having high contract recreation values. The proposal is considered to be broadly consistent with this policy direction for the following reason: • As addressed in the effects assessment above, the effects on water quality arising from this application are expected to be less than minor.
Tangata whenua	Objectives 4.1.2 and 4.1.3 Policies 4.2.2 and 4.2.3	The Regional Freshwater Plan identifies that the relationship of the tangata whenua and their culture and traditions with fresh water needs to be recognised and provided for. It is worth noting that the subject site is not located within an area identified as having a high degree of natural character or as having special value to tangata whenua within the Freshwater Plan. Furthermore, the anticipated effects upon water quality are anticipated to be less than minor. For these, and those reasons identified in the PNRP assessment above, it is considered that the proposal is broadly consistent with the identified policy direction.
Flood mitigation	Objectives 4.1.9, 4.1.10 and 7.1.2 Policy 4.2.18	The Regional Freshwater Plan identifies that: • the risk associated with flooding to human life and health and safety; and • the adverse effects of flooding upon natural values and physical resources (incl. private property) • Are at an "*acceptable level*".

Key Theme	References	Comment
		As identified in the effects assessment above the anticipated effects upon the modelled flood risk associated with the Q_{100} flood risk are expected to be less than minor. It is therefore considered that the proposed works are consistent with this policy direction.
Use and development	Objective 4.1.17 Policies 4.2.23, 4.2.25, 4.2.28 and 4.2.33	The Regional Freshwater Plan sets an expectation that conditions on resource consents are used as a means of avoiding, remedying or mitigating adverse effects. For those reasons identified in the effects and objectives and policies assessments above, it is anticipated that the proposed works will be broadly consistent with this policy direction.
Operative Regional Air Quality Management Plan		
Air quality	Objectives 4.1.1 and 4.1.2 Policies 4.2.1, 4.2.4, 4.2.5, 4.2.7 and 4.2.9.	The Regional Air Plan sets a policy direction to protect air quality and avoid, remedy or mitigate the adverse effects associated with the discharge of contaminants to air. The proposal is considered consistent with this policy direction for the following reasons: • The SMP identifies a number of mitigations to manage the effects of discharge to air; and • Subject to these identified mitigations, and as addressed in the effects assessment above, the effects on air quality arising from this application are expected to be less than minor.

6.1.7 District Plan assessment

Key Theme	References	Comment
Hutt City Council District Plan		
Rural amenity	8B 1.1.1 and 8B 1.1.3	The district plan sets a direction to: • Maintain and enhance the open character and amenity prevalent in rural areas • Ensure that adverse effects arising from activities are appropriately managed to ensure slope stability For the reasons identified within the visual effects assessment above we consider that, subject to those identified mitigations (i.e. the staging and subsequent remediation of worked areas) proposal will align with the direction to maintain and enhance the open character. A slope stability report has also been prepared for the proposed cleanfill extension (Appendix F). This aligns with the policy direction to manage those effects arising from activities to manage slope stability. Subsequently this proposal is considered consistent with the relevant objectives and policies relating to rural amenity.
Transport	14A2 (2.1-2.h), 14A3 (3.1-3.5) and 14A4 (4.1-4.7)	The district plan sets a policy direction to ensure a safe, efficient and resilient transport network which manages the adverse effects upon the adjoining environments. This policy

Key Theme	References	Comment
		direction has been identified in greater detail within the attached Transport Assessment. The proposal is considered consistent with the identified objectives and policies relating to transport.
Noise	Objective 14C 1.1 Policy 14C 1.1d	The district plan sets a direction to maintain or enhance the amenity value of all areas by ensuring that the adverse effects associated with excessive noise are avoided or mitigated. As illustrated in the relevant effects assessment above this is considered to be the case for this proposal. The proposal is therefore considered to be consistent with the objectives and policies relating to noise.
Natural Hazards	Objective 14H 1.1.1 Policy 14H 1.1d	The district plan sets a policy direction to avoid or reduce risk to people and their property from natural hazards, and to adopt suitable engineering, emergency management and land use controls to reduce the vulnerability of people and property to flood hazards. For those reasons identified within the flooding effects assessment this is considered to be the case for this proposal. The proposal is therefore considered consistent with this policy direction.
Earthworks	Objectives 14I 1.1 and 1.2 Policy 14I 1.2a and 1.2b	The district plan sets a policy direction to ensure that earthworks do not adversely affect visual, cultural or historic value by implementing rehabilitation measures to mitigate visual amenity values, and to maintain the natural features which contribute to the City's landscape by designing earthworks in a way that is sympathetic with the local topography. For those reasons identified in the visual effects section above this proposal is considered to be consistent with this policy direction.

Overall the proposal is considered consistent with the relevant objectives and policies (identified above) of the district and regional plans.

6.2 Sections 105 and 107

Sections 105 and 107 are relevant to applications for discharges under section 15. Section 105 requires the consent authority to have regard to the nature of the discharge and the sensitivity of the receiving environment, the applicant's reasons for the proposed choice and possible alternative methods of discharge. These matters have been addressed throughout this report, particularly in Section 2 which describes the receiving environments, Section 5 which assesses the effects on the environment, and Section 3.2 which addresses potential alternatives.

Section 107 restricts the granting of discharge permits in certain circumstances, namely if, after reasonable mixing, the contaminant or water discharged (either by itself or in combination with the same, similar, or other contaminants or water), is likely to give rise to all or any of the following effects in the receiving waters:

- The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
- Any conspicuous change in the colour or visual clarity;

- Any emission of objectionable odour;
- The rendering of fresh water unsuitable for consumption by farm animals;
- Any significant adverse effects on aquatic life.

The effects of the discharge are considered in Section 5 above. This assessment identifies that the resultant discharges resulting from the proposal will be largely controlled by the erosion and sediment controls identified in the SMP. It concludes that the potential effects from the discharge are less than minor, and it is therefore considered that the discharge would meet the tests set out in section 107(1)(c) to (g).

6.3 Other matters

There are no other matters relevant to this proposal.

6.4 Notification assessment

6.4.1 Public notification

Section 95A of the RMA is relevant when a consent authority is considering whether a consent application should be considered with or without public notification.

Section 95A identifies a four step process. In relation to these steps we note the following:

- The applicant does not request public notification of the application;
- There is no rule or national environmental standard that precludes or requires public notification of this application;
- An assessment of effects on the environment is provided in Section 5 of this AEE report. This assessment concludes that the adverse effects on the environment are likely to be less than minor;
- The application is not for any of the activities identified in section 95A(5)(b) (i.e. a controlled activity, subdivision of land or a residential activities, a boundary activity, or an activity prescribed in section 360H(1)(a)(i));
- No special circumstances are considered to exist in relation to the application.

Based on this assessment, we consider that this proposal meets the tests of the RMA to be processed without public notification.

6.4.2 Limited notification

For applications that are not publicly notified, under section 95B, the consent authority must determine whether to give limited notification of an application to any affected parties. Section 95B identifies a four step process. In relation to these steps we note the following:

- The application does not need to be notified to any parties under section 95B(4). The proposed change will not affect any customary rights;
- The proposed activity is not on or adjacent to, or does not affect, land that is the subject of a statutory acknowledgement;
- There are no applicable rules or national environmental standards precluding limited notification;
- No special circumstances are considered to exist in relation to the application that warrant notification of the application to any other persons not already determined to be eligible for limited notification.

In terms of section 95E(3), a consent authority must not consider a person affected if they have provided written approval to the activity. No written approvals have been received as part of this application.

Section 95E(1) states that a consent authority must consider a person to be an affected person if the activity's adverse effects on the person are minor or more than minor (but not less than minor). Taking into account the effects assessment in section 5 of this AEE, it is noted that any adverse effects upon the environment are expected to be less than minor. Accordingly there are not considered to be any affected parties for the purpose of notification under the RMA.

Based on this assessment, we consider that this proposal meets the tests of the RMA to be processed without limited notification.

6.4.3 Section 95 conclusions

Following the steps set out in sections 95A and 95B, we consider that the application should be processed without public or limited notification.

7 Consultation

Representatives from HCC have been in communications with Wainuiomata residents over the past several months, who have expressed concerns regarding both the existing operation of the cleanfill and any future expansion. The concerns raised by the residents include:

1. The duration of the resource consent, and the fact that the original application was granted a replacement consent in 2017;

2. The fact that this application was treated as a non-notified application;

3. A perceived suite of non-compliances with the relevant resource consent conditions and operational practices (including dust nuisance, material being tracked onto the road, and an assertion that non-cleanfill material has been deposited by non-approved persons); and

4. The nature of on-site restoration planting undertaken to date.

HCC believe that these concerns have been appropriately addressed in the correspondence to date. A detailed overview of the response prepared by HCC to these concerns has been appended to this application as **Appendix H**. Notwithstanding this however, HCC has also volunteered amendments to the application (i.e. the reduced term) and volunteered conditions (i.e. preparation of a fill sequencing plan, establishment of a community liaison group and development of an Environmental Restoration Plan) to further address those concerns.

It should be noted that, during this communication, HCC's Mayor and Chief Executive have provided their personal assurances of the following:

5. The current consented fill area will be topped off [sic] and planted in 2019, probably over the winter period.

6. The proposed extension would be limited to a maximum 2 ½ year fill period. If for some unforeseen reason the anticipated fill volumes did not eventuate over that period, HCC would nevertheless require the area to be contoured, topped off and planted at the end of 2021; no extension of time would be sought by Council or its operators.

7. HCC would ensure that invitations were sent to regular community meetings over the period. The latest monitoring and volume reports from the cleanfill would be available at those meetings. The Mayor and Chief Executive would request copies of the minutes of the meetings held and discuss any concerns raised.

8. HCC will commence investigations into the long term planning for the City's future cleanfill requirements in other locations.

Under the RMA planning framework (s 95), it is considered that the application should proceed as a non-notified application, for those reasons identified in section 6.4 of the AEE above. Despite this however, council remains willing to commit to ongoing engagement with the community outside of the resource consent application process. This commitment is reflected through the volunteered conditions, in particular the willingness to establish a community liaison group, to discuss operational matters with the community (as required) for the duration of the consent.

8 Proposed conditions of consent

The applicant proposes to roll-over those conditions imposed upon the existing consents. In some cases we have proposed updates to these conditions, and these have been track-changed. Accordingly the following conditions are volunteered:

8.1 Hutt City Council – Volunteered Conditions

1. That the proposal is carried out substantially in accordance with the information and approved plans submitted with the application and held on file at the council.
2. That the consent holder keeps a copy of this decision on site when work starts and makes it available on request to council staff.
3. The Site Management Plan (SMP) prepared by Tonkin and Taylor Ltd (currently dated September 2018) shall be updated within three months of approval of this resource consent and then shall be reviewed annually and updated as required. Any amendments to the SMP shall be sent to the Team Leader Resource Consents for approval. The Site Management Plan shall, among other relevant information, include the following:
   - Material acceptance criteria in accordance with the Ministry for the Environment's 'A guide to Management of Cleanfills' dated January 2002 or subsequent revisions
   - Fill sequencing
   - Re-vegetation following phase completion
   - Measures to manage sediment and erosion on site in accordance with Greater Wellington Regional Council's Erosion and Sediment Control Guidelines (issued September 2002).
   - Measures taken to avoid vehicles and machinery dropping dirt on the road as they leave the site.

   The ongoing operation of the cleanfill shall be in accordance with the approved SMP.
4. Within one month of the completion of each sub-stage of the stage three filling (as identified in the fill sequencing plan identified in the SMP) the consent holder shall ensure that the particular sub-stage is top-soiled and grassed. The stage should then be monitored and maintained until 80% grass cover has established.
5. The Noise Management Plan (NMP) prepared by Tonkin and Taylor Ltd (currently dated November 2017) shall be updated within three months of approval of this resource consent. Any subsequent changes to the operation of the cleanfill relevant to noise generation will require a review of the NMP and any amendments shall be sent to the Team Leader Resource Consents for approval. The ongoing operation of the cleanfill shall be in accordance with the approved NMP.
6. The cleanfill shall only operate within the hours of Monday to Friday 7.30am – 5.00pm and Saturday 7.30am – 12.00pm (except where deposition of fill is required outside these hours/days for emergency civil works).
7. The consent holder shall ensure that the operation is managed in a manner to ensure that no unreasonable dust nuisance occurs beyond the boundary of the site. Measures for control may include the use of a water cart, limiting vehicle speeds, and application of water to surfaces that are exposed or excessively dry.
8. That if the consent holder finds taonga (a thing of tangible or intangible value treasured in Maori culture) on the site, the consent holder must contact iwi representatives, the Heritage

New Zealand and the council within 24 hours. All work in the area must stop immediately and may not resume until iwi representatives and council staff have carried out a site inspection and the council gives its approval.

9. The final batter slopes shall be designed and certified by a suitably qualified geotechnical engineer and certification shall be provided to the Team Leader Resource Consent within 3 months of the cleanfill reaching capacity.
10. The consent holder shall manage cleanfill activities to generally avoid the placement of concrete and building rubble and other material not easily compacted in the part of the site affected by the 1:100 year floodway (as show in in **Appendix D** of the AEE), unless appropriate rock armouring is installed on the southern edge of the fill area.
11. That the consent holder shall submit an Environmental Restoration Plan for stage three of the cleanfill to the Team Leader Resource Consents for approval within 3 months of the cleanfill reaching capacity or by the lapse date, whichever is sooner. The environmental restoration plan shall include measures to grass or landscape any exposed areas and ensure the site is left in a suitable condition to enable use of the site as a reserve in future. The plan will have regard to the guidance prepared by GWRC titled '*Restoration Planting – A guide to planning restoration planting projects in the Wellington Region*'.
12. Within 3 months of the granting of the consent, the consent holder shall invite local residents to participate in a community liaison group. This group will meet on a three-monthly basis (or at a timeframe otherwise agreed by the parties involved) and shall give the opportunity for residents and council representatives to discuss operations at the Cleanfill. The minutes from these meetings shall be provided to the Team Leader, Resource Consents within three (3) working days of the meeting occurring.

8.2 Greater Wellington Regional Council – Volunteered Conditions

1. The location, design, implementation and operation of the cleanfill shall be in general accordance with the application and associated documents lodged with GWRC on [date]
2. The permit holder shall provide a copy of this permit and any documents referred to in this permit to each operator or contractor undertaking works authorised by this permit before the operator or contractor starts any works.
3. The permit holder shall ensure that a copy of this permit is kept on site at all time and presented to any GWRC officer upon request.
4. There shall be no discharges to air that are, in the opinion of a GWRC enforcement officer, noxious, dangerous, offensive or objectionable at or beyond the legal boundary of the property from which the permit holder operates.
5. The permit holder shall keep a permanent record of any complaints received alleging adverse effects from the permit holder's operations. The complaints shall record the following (where practicable):
    a. The name and address of the complainant, if supplied;
    b. Identification of the nature of the complaint;
    c. Date and time of the complaint and alleged event;
    d. Result of the permit holders investigations; and
    e. Any mitigation measures adopted.

The permit holder shall notify the Manger, Environmental Regulation from GWRC within 24 hours, or the next working day, of the complaint being received. Notification can be provided by emailing notifications@gw.govt.nz

6. The permit holder shall, at all times, operate, maintain, supervise and control all processes and equipment on site to ensure compliance with all conditions of this permit.
7. GWRC may review any or all conditions of this permit by giving notice of its intention to do so, pursuant to section 128 of the RMA at any time within six months of the first, second, fifth and seventh anniversary of the date of this permit for either of the following purposes:
    a. To deal with any adverse effects on the environment which may arise from the exercise of this permit, and which it is appropriate to deal with at a later stage; or
    b. To enable consistency with any relevant Regional Plans or ant National Environmental Standards.
8. GWRC shall be entitled to recover from the permit holder the costs of the conduct of any review, calculated in accordance with and limited to the council's scale of changes in force and application at the time, pursuant to section 36 of the RMA.

9 Conclusion

This AEE report has been prepared on behalf of Hutt City Council to accompany a resource consent application to expand the Wainuiomata cleanfill. The proposal requires resource consent from Hutt City Council and Greater Wellington Regional Council as a discretionary activity under:

- Rules 8B 2.3(a), 14C 2.1.10 and 14I 2.2 of the Hutt City District Plan;
- Rules R41, R53 and R93 of the Proposed Natural Resources Plan;
- Rule 5 of the Regional Freshwater Plan for Wellington; and
- Rule 23 of the Regional Air Quality Management Plan for Wellington.

This AEE report draws the following conclusions:

- The expansion of the existing cleanfill operation is considered to be consistent with Part 2 of the Resource Management Act 1991 in promoting the sustainable use of natural and physical resources;
- The proposal will provide a mechanism to reduce the volume of material being diverted to landfill, which is consistent with the Wellington Region Waste Management and Minimisation Plan 2017 – 2023;
- The site currently operates in accordance with a robust set operational practices, which are largely proposed to be rolled over into stage three. The most recent compliance monitoring assessment prepared by Simon Hunt from GWRC identified a "good overall management of the site and consents"*;*
- The works are consistent with the relevant objectives and policies of the Regional Policy Statement for Wellington, Proposed Natural Resources Plan for Wellington, Regional Freshwater Plan; Regional Air Quality Plan and the Hutt City District Plan; and
- The cleanfill expansion will have less than minor effects upon both people and the environment, as illustrated in Section 5 of the AEE above.

Accordingly, we respectfully request that this resource consent application be granted on a non-notified basis, subject to fair and reasonable conditions. We have attached a suite of recommended conditions to the application and would appreciate the opportunity to comment on draft conditions prior to any consent being granted.

10 Applicability

This report has been prepared for the exclusive use of our client Hutt City Council , with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

Tonkin & Taylor Ltd

Environmental and Engineering Consultants

Report prepared by:	Authorised for Tonkin & Taylor Ltd by:
	
.....	.....
Alastair Meehan	Ed Breese
Planner	Project Director

Technical review undertaken by

Reuben Hansen

1-Mar-19

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Appendix A: Consent application forms

greater WELLINGTON
REGIONAL COUNCIL
Te Pane Matua Taiao

Form 1: Application for resource consent

All sections must be completed in full and accompanied by the initial fixed application fee (see section 12) and the relevant activity form (see section 7). Failure to do so may result in your application not being accepted and/or returned.

The information you provide with your application is official information and available to the public. It will be used to process your application and, together with other official information, assist in the management of the region's natural and physical resources. Access to information held by Greater Wellington Regional Council is administered in accordance with the Local Government Official Information and Meetings Act 1987, and Privacy Act 1993. Your information may be disclosed in accordance with the terms of these Acts. It is therefore important you advise Greater Wellington Regional Council if your application includes trade secrets and/or commercially sensitive material.

You can lodge your application in any of the following ways:

- **By post to PO Box 11646, Wellington or PO Box 41, Masterton**
- **In person at our Wellington office (Shed 39, 2 Fryatt Quay, Pipitea) or Masterton office (34 Chapel Street)**
- **By email to notifications@gw.govt.nz (a signed PDF copy is required)**

1. Applicant's details

Applicant(s) name(s) and address ie, whose name will be on the consent. Note if a private or family trust is the applicant, all the trustees are required to provide contact details and sign the application form (see 4. below)

Name:	Hutt City Council	T: Business:	(04) 570 6666	T: Private:	
Address:	30 Laings Road, Lower Hutt	Fax:		T: Mobile:	
Address:		Email address:			

Please note that all correspondence and documents will be sent by email only unless instructed otherwise.

The applicant is the:

Owner ☑ Occupier ☑ Lessee ☐ Prospective Purchaser ☑ The Crown ☑

Network Utility Operator ☑ Other ☐ Please specify:

2. Agent's details

Agent's name and address Please note that all correspondence will be sent to the Agent (via email) as the first point of contact during the application process, unless instructed otherwise

Name:	Tonkin + Taylor (C/- Alastair Meehan)	T: Business:	(04) 806 4964	T: Private:	
Address:	PO Box 2083, Wellington 6140	Fax:		T: Mobile:	027 469 8034
Address:		Email address:	AMeehan@tonkintaylor.co.nz		

3. Property owner's details (if different from above)

Name:		T: Business:		T: Private:	
Address:		Fax:		T: Mobile:	
Address:		Email address:			

If your proposed activity will take place on land not owned by the applicant, the written approval of the property owner must be provided on a **completed and signed form 1B**.

4. Partnership/unincorporated entity details

For partnerships or unincorporated entities (such as private trusts or unincorporated bodies or societies) you **must** provide details of all authorised partners, trustees or members. Any consent granted will then include these names, and all individuals will be legally responsible for the consent and any associated costs. Should these persons change, then you must notify us.

Full name of person:			
Status (e.g. partner, trustee):			
Address:			
Email address:		Phone:	
Full name of person:			
Status (e.g. partner, trustee):			
Address:			
Email address:		Phone:	
Full name of person:			
Status (e.g. partner, trustee):			
Address:			
Email address:		Phone:	

Include details of any further partners/trustees/members on a separate page if necessary

5. Location of proposed activity

Describe the location of activity and/or property address

Please refer to section 2 of the attached AEE	Map reference: NZTM:	
	Valuation reference [from rates]:	

Include the name of any relevant stream, river or other waterbody to which the application may relate, proximity to any well known landmark, etc. (Note: a location map is required in your activity form.)

Legal description [from rates notice] [e.g. Lot 9 DP58809 Block XI]

6. Description of proposed activity

Please refer to section 2 of the attached AEE

7. Consents from the Greater Wellington Regional Council – activity forms you need to fill in

Consent(s) being applied for. You will need to fill in an activity form for each of the following activities: Make sure you attach the forms for your activity.

Water:

- [x] Dam/Divert (Form 2a)
- [ ] Take and use surface water (Form 2b)
- [ ] Take and use groundwater (Form 2c)

Discharge to Land:

- [x] General discharges (Form 3a)
- [ ] Agricultural discharge (Form 3b)
- [ ] On-site wastewater (Form 3c)

Discharge to Water:

- [x] General discharges (Form 4a)

Discharge to Air:

- [x] Air discharge (Form 5a)

Land Use:

- [x] General river/stream works (Form 6a)
- [ ] Bore/well construction (Form 6b)
- [ ] Bridge/culvert/pipe (Form 6c)
- [ ] Erosion protection structures (Form 6d)
- [ ] Land clearing/tracking/logging soil disturbance (Form 6e)
- [ ] Forestry (Form 6f)

Coastal:

- [ ] General coastal (Form 7a)
- [ ] Boatshed (Form 7b)
- [ ] Swing mooring (Form 7c)

8. Consents from local authorities

Territorial authority in which land is situated:

- [ ] Wellington City Council
- [x] Hutt City Council
- [ ] Upper Hutt City Council
- [ ] Porirua City Council
- [ ] Kapiti Coast District Council
- [ ] Masterton District Council
- [ ] South Wairarapa District Council
- [ ] Carterton District Council

Do you require any other resource consents from your local council? Yes [x] No [x]

If yes, please list:

Cleanfill activities in the General Rural Area (8B 2.3(a))
Noise generated by machinery (14C 2.1.10)
Earthworks (14I 2.2)

Have these consents been applied for? Yes [x] No [ ]

9. Other documentation

Please list any documents in addition to your application forms that form part of your application. Note: if multiple other documents exist, please attach a separate sheet of paper.

- [ ] No other documents
- [x] Reports — Please see attached AEE and appended reports identified in that document
- [x] Plans
- [ ] Other documents

10. Pre-application advice

Please list any pre-application meetings or advice (verbal and/or written) you have had with GWRC below:

☐ Meeting(s) – with who and when?

☐ Verbal advice – from who and when?

☐ Written advice – from who and when?

☐ Other (e.g. submitted draft application/AEE)

11. Consultation and written approval of affected persons

Consultation with all persons potentially affected by your activity prior to lodging your application may result in considerable time and cost savings.

Non-notified applications

Non-notified consents are for activities which have minor effects on the environment. For your activity to be considered on a non-notified basis you must consult and obtain written approval from all persons potentially affected by your activity (e.g. neighbours, iwi, Fish and Game Council, Department of Conservation). If you are unsure who may be an affected party, please call us. ***Non-notified consents are significantly cheaper and quicker to process***.

Limited notified and fully notified applications

Notified consents (either limited notified or fully notified consents) are for activities which do not meet requirements in the RMA for processing on a non-notified basis.

Please provide any consultation details and written approvals obtained in the space provided below.

Consultation details

Have you consulted with iwi? Yes ☐ No ☑

If so, who did you consult?

Who else have you consulted?

What was their response?

How have you addressed any concerns they may have had?

Written approval of affected parties

If you have obtained the signature of affected persons please give their details below. Please note that for us to accept the approvals **they must each complete and sign form 1B**.

Name	**Address**	**Contact details (phone, email etc)**

12. Fees and charges

Non-notified initial fixed application fees <u>including GST</u> (please tick one or more)

Discharge permit	☐ Land	☐ Water (other)	☑ Land/Water (earthworks)	☑ Air
	$2,328.75	$3,432.75	$3,432.75	$1,500.75
Water permit	☐ Take (new)	☐ Take (renewal)	☐ Dam/Divert	
	$2,052.75	$1,224.75	$1,086.75	
Land use consent	☐ Bore	☐ River works	☐ Land clearing/disturbance/logging	
	$ 465.75	$1,155.75	$1,776.75	
Coastal permit	☐ Mooring	☐ Boatshed	☐ Other	
	$ 672.75	$ 672.75	$1,155.75	

Notes:
1. Where there is more than one application required for the same proposal, an initial fixed application fee is required for <u>each</u> application
2. The initial fixed application fee is the average cost of processing an application type. Final processing costs are based on actual and reasonable time and disbursements spent processing your application.
3. Contact the Greater Wellington Regional Council for information about notified initial fixed application fees

Payment method (please tick one)

HCC's preference is to pay the deposit fee via a Purchase Order

☐ Cheque (to be lodged with application documents)

☐ Internet banking to:

Greater Wellington Regional Council – ANZ account 06-0582-0104781-00

Date of payment: _____ Reference details used: _____

Note: for reference details please quote "Consents" and the applicant name

☐ Cash/Eftpos (to be made at Wellington or Masterton office)

Future payments

Any additional consent processing charges and consent monitoring charges will be invoiced directly to the applicant, unless instructed otherwise below:

13. Applicant's declaration

I/we hereby certify that, to the best of my/our knowledge and belief, the information given in this application is true and correct.

I/we understand that the Council may charge me/us for all costs actually and reasonably incurred in processing this application and, if granted, for any subsequent monitoring charges. Subject to my/our rights under sections 357B and 358 of the RMA to object to any costs, I/we undertake to pay all and future processing costs and monitoring costs incurred by the Council. Without limiting the Council's legal rights, if any steps, including the use of debt collectors, are necessary to recover unpaid costs, I/we agree to pay all costs associated with recovering those costs. If this application is made on behalf of a trust (private or family), a society (incorporated or unincorporated) or a company in signing this application I/we are binding the trust, society or company to pay all the above costs and guaranteeing to pay all the above costs in my/our personal capacity.

Full name: Alastair Meehan Date: 1/3/2019

Applicant's signature: _____

(or person authorised to sign on behalf of the applicant)

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Te Pane Matua Taiao

3a Discharge permit application – general discharges to land

Please answer all questions fully. The questions provide a guide in order to satisfy the minimum information requirements that must be included with your application as prescribed in Schedule 4 of the Resource Management Act 1991 (RMA). Depending on the scale of your proposed activity, more detailed information and an Assessment of Environmental Effects (AEE) will be required to support the resource consent application.

Officers from the Greater Wellington Regional Council's (GWRC) Environmental Regulation department are available to assist with filling out this form or to clarify information to include with your application. Up to 1 hour of free pre application advice is available to you.

This form is required to be filled out in conjunction with Form 1 Resource Consent Application

Part A: General information on nature and scale of your activity

1. Is this application a renewal of an existing discharge permit ?

Yes ☑ No ☑ If Yes, what is the discharge permit number? WAR/WGN .....

2. What is the source of the contaminant(s)? e.g. industry, solid agrichemical (1080), cleanfill, landfill, winery wastewater, composting animal wastes, breweries, oil etc:

Cleanfill material - please refer to the attached AEE

3. Provide a detailed description of contaminant characteristics, physical and chemical composition, and whether it is a classified hazardous substance:

Please refer to the attached AEE

4. Is the waste treated before discharge?

Yes ☐ No ☑ If Yes, describe treatment:

5. Describe discharge method, period, volume and rate of discharge – include calculations:

Please refer to the attached AEE

6. Locality map and system design

Show the location of your proposed discharge and a detailed sketch/plan of the treatment/discharge system and discharge area. Please show the discharge area and any treatment system in relation to roads, property boundaries, waterways, bores, and the nearest town. Include an estimate of the size of the area to be irrigated (if applicable), the location of any buildings, septic tanks, location of any neighbouring bores/wells, other known abstraction points, freshwater springs, streams, rivers, wetlands that you know of and any other relevant features of the surrounding environment. Alternatively you may wish to attach a plan/aerial photograph showing the above information.

Note: Remember to show where north is.

Part B: Assessment of effects on the environment (AEE)

1. Describe soil type(s) in the discharge area(s) and the source of this information (e.g. soil maps, soil tests, local knowledge):

Please refer to the attached AEE

2. What is the depth to groundwater at the discharge site(s) (and the direction of groundwater flow if known)?

Unknown

3. What is the land drainage like in the discharge area(s)? Is the soil artificially drained?

Please refer to the attached AEE

4. How far is the nearest surface water to the discharge area(s) and in what direction (e.g. 50m NE)?

Please refer to the attached AEE

5. Are there any bores in vicinity (including neighbouring properties) and what are they used for?

Yes ☑ No ☑ If Yes, show them on the locality map and describe their use below:

6. Are there any sensitive environments close to the discharge area? e.g. wetlands, recreational areas

Yes ☑ No ☑ If Yes, show them on the locality map and describe them below:

Including the Wainuiomata River and the nearby park - please refer to the attached AEE

7. What effects will your discharge have on the sensitive environments identified above?

Please refer to section 5 of the attached AEE

8. Why did you choose the proposed method of treatment and disposal, including the proposed discharge location?

Refer to section 3 of the attached AEE

9. What alternative methods and locations have you considered?

Refer to section 3.10 of the AEE

Part C: Assessment against statutory documents

1. Part 2 of Resource Management Act 1991 (RMA)

Have you provided an assessment against Part 2 (Purpose and Principles) of the RMA? http://www.legislation.govt.nz/act/public/1991/0069/latest/DLM231904.html

Yes - refer to the AEE

2. Regional Policy Statement (RPS) & Regional Discharges to Land Plan (RDLP)

Have you provided an assessment of the proposal against the relevant objectives, policies and rules of the Regional Policy Statement (http://www.gw.govt.nz/rps/) and Regional Discharges to Land Plan (http://www.gw.govt.nz/regional-plan-for-discharges-to-land/)?

Yes - refer to the AEE

3. Proposed Natural Resources Plan (PNRP)

Have you provided an assessment of the proposal against the relevant objectives, policies and rules of the Proposed Natural Resources Plan? http://www.gw.govt.nz/proposed-natural-resources-plan/

Yes - refer to the AEE

4. Other relevant statutory documents

Have you provided an assessment against all other relevant statutory documents? e.g National Environmental Standard for Sources of Drinking Water http://www.mfe.govt.nz/fresh-water/reform-programme/sources-drinking-water-nes/about-standard)

Refer to the attached AEE

5. Permitted activities

Will you be undertaking any permitted activities as part of the proposed activity? http://www.gw.govt.nz/regional-plans-policies-and-strategies/

Yes - refer to the attached AEE

6. Other activities that are part of the proposal

Are there any other activities that are part of the discharge which may require consent? (e.g. effluent pipes crossing streams/watercourses)

No

7. Value of investment

If you are applying to replace an existing consent, please provide an assessment of the value of the investment to which the activity relates.

N/A

Part D: Monitoring and management of your activity

1. What monitoring and management do you propose to ensure any potential adverse effects on the environment are avoided, remedied or mitigated?

(In particular, please provide a description and analysis of contaminant effects on soil and water and any proposed monitoring to ensure that the discharge does not adversely affect soil or water resources. Include details on what is to be monitored, when, how and why.)

Refer to the attached AEE - particularly section 3

2. Operation and management plans

Please include an Operation and Management Plan for the activity. This should include (but not be limited to) how the equipment controlling the treatment and discharge will be operated and maintained to prevent equipment failure (e.g. maintenance/servicing schedules), and what measures will be implemented to ensure that the effects of any malfunction are remedied. It should also include contingency plans (e.g. effluent storage) in the event of a system malfunction or adverse weather/soil conditions preventing effluent disposal to land (e.g. saturated soils).

Find attached to the AEE

Continuation page

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4a Discharge permit application – general discharge to water

Please answer all questions fully. The questions provide a guide in order to satisfy the minimum information requirements that must be included with your application as prescribed in Schedule 4 of the Resource Management Act 1991 (RMA). Depending on the scale of your proposed activity, more detailed information and an Assessment of Environmental Effects (AEE) will be required to support the resource consent application.

Officers from the Greater Wellington Regional Council's (GWRC) Environmental Regulation department are available to assist with filling out this form or to clarify information to include with your application. Up to 1 hour of free pre application advice is available to you.

This form is required to be filled out in conjunction with Form 1 Resource Consent Application

Part A: General information on nature and scale of your activity

1. Is this application a renewal of an existing discharge permit?

Yes ☑ No ☑ If Yes, what is the discharge permit number? WAR/WGN .....

2. What is/are the contaminant(s) of concern in the discharge?

(A contaminant is any substance which is likely to change the water into which it is discharged in any way. Water can also be a contaminant)

Sediment laden water - Refer to the attached AEE

3. What is the source of the contaminant and/or process that results in the discharge? (e.g. municipal wastewater, industry, water treatment, rural activity/agricultural production - cows, pigs, poultry, contaminated stormwater, other)

Stormwater runoff - refer to the AEE

4. If from municipal wastewater what is the current and future size of the population the treatment plant will serve, and what is the proposed operational life of the treatment plant and associated pipework?

N/A

5. **Is the contaminant treated in any way before being discharged?** **Yes** ☐ **No** ☑

6. **Name the treatment system and describe the treatment process (include the design specifications such as the capacity of the system):**

7. **If sludge/solid waste is generated as part of the treatment process, please state what happens to this sludge.** (Note: an additional consent will be required for the discharge of sludge to land).

8. **Describe the contaminant and expected quality of the discharge after treatment but before it enters its receiving environment:**

Please provide the results from any water quality testing of the discharge. If you do not have this information, you will need to test your discharge. Indicate which contaminants have been identified in the discharge by ticking the box(es). Explain how the samples were taken (e.g. spot sample or composite sample) and attach the sampling results (laboratory analytical certificates) to this application.

☑ Temperature °C	☐ pH
☑ Suspended solids g/m³	☐ BOD_5 g/m³
☐ Faecal coliforms cfu/100 mL	☐ Heavy metals g/m³
☑ Toxic substances (e.g. PAHs, phenols) g/m³	☐ Dissolved and total nutrients g/m³
☑ Ammonia g/m³:	☐ Oil/grease g/m³

Date(s) sample taken: Name of sampler:

Location(s) sample taken:

Date(s) of analysis: Analysis conducted by:

Indicate the sampling area(s) on the locality map (question 20).

Where appropriate describe the following:

Physical characteristics of the discharge (such as temperature, suspended solids, turbidity)

Inorganic chemical characteristics of the discharge (such as pH, free ammonia, organic nitrogen, total kjeldahl nitrogen, nitrites, nitrates, inorganic phosphorus, sulphate, metals)

Organic chemical characteristics of the discharge (such as BOD_5, VOC's)

Biological characteristics of the discharge (such as faecal coliforms, specific micro-organisms, toxicity)

9. What is the name of the waterbody into which the discharge will be made (e.g. name of stream, river, lake, bay, harbour, catchment, etc)?

Wainuiomata River

10. Describe the present state of the waterbody at the proposed location of the discharge. Parameters to include in your description are flow information, water colour/clarity, width of channel, average depth, land use surrounding the waterbody, bed material (e.g. rocky, silty, etc), bank material, streamside vegetation, erosion, fish life, invertebrate life, aquatic plants.

Refer to the AEE

Greater Wellington Regional Council's Environmental Science department may be able to assist you with flow or water quality data if you have no information. Please note some applications may require a professional ecological assessment.

11. What is the quality of the receiving waterbody before the discharge? Provide sample results and interpretation of these results (e.g. against guideline values).

Refer to the attached AEE

12. Provide details of the expected quality of the receiving waters (AFTER the point of discharge, at a point after reasonable mixing). Provide sample results for existing discharges or provide anticipated results.

Refer to the attached AEE

Indicate which contaminants have been identified in the receiving waters by ticking the box(es). Attach the sampling results (laboratory analytical certificates) to this application

☐ Temperature °C	☐ pH
☐ Suspended solids g/m³	☐ BOD_5 g/m³
☐ Faecal coliforms cfu/100 mL	☐ Heavy metals
☐ Toxic substances	☐ Nitrates
☐ Ammonia and dissolved reactive phosphorus	☐ Dissolved Oxygen g/m³

Date(s) sample taken: Name of sampler:

Location(s) sample taken:

Date(s) of analysis: Analysis conducted by:

Please indicate the sampling locations (i.e. upstream, downstream, point of discharge) on the locality map (question 20)

13. **Describe the method of discharge.** Describe what measures will be put in place to prevent erosion or scour at the point of discharge.

Refer to the attached AEE

14. **Describe the discharge outlet structure (e.g. 300mm pipe, multi-port diffuser, gravel trench etc.)**

15. **Is the discharge continuous** ☐ **or intermittent** ☑ **?**

16. **What will be the maximum discharging period?**

..... hours per day
..... days per week
..... weeks per year

17. **Describe the expected volume and frequency of the discharge?**

Maximum flow rate ..... litres per second
Maximum daily discharge ..... cubic metres per day
Average Dry Weather Flow .....
Peak Wet Weather Flow .....
Max. Volume per annum .....

18. **Does the discharge also involve:**

Outlet structure?	Yes ☐	No ☐
Diversion?	Yes ☐	No ☐
Discharge to air (odour)?	Yes ☐	No ☐
Discharge to land?	Yes ☑	No ☐

If you answered yes to any of 17 above, a separate consent application may be required. Give details of these other discharges below unless separate consent applications forms have been completed (in order to assess if further consents are required):

19. **Is there any odour associated with the discharge?**

No

20. **Give details of other discharge(s) occuring to the waterbody (e.g. wet weather overflows).** Describe the location, activity and source of these discharge(s) and any other details you are able to provide:

Intermittent discharges of sediment-laden water from the cleanfill - details and the identified mitigations are described in the AEE

21. Locality map and system design

Show the location of your proposed discharge. The sketch or plan should include, but not be limited to discharge point(s), sampling locations, location of neighbouring properties, roads, waterbodies (including streams, wetlands and drains), and other significant landmarks. Alternatively you may wish to attach a plan/aerial photograph showing the above information.

Note: Remember to indicate where north is and relevant location information e.g. distance and direction to nearest town/city. Name the waterbody(ies) shown on the map.

Part B: Assessment of effects on the environment (AEE)

1. Within a reasonable distance downstream or in the vicinity of the discharge are there any:

(1) Obvious indications of the presence of biota (e.g. birds/nests, fish, eels, insect life, aquatic plants)? Yes ☐ No ☐

(2) Areas where food is gathered (e.g. watercress, fish, kaimoana, blackberries)? Yes ☐ No ☐

(3) Water abstractions? Yes ☐ No ☐

(4) Wetlands (e.g. swamp areas)? Yes ☐ No ☐

(5) Recreational activities carried out (e.g. swimming, fishing, canoeing)? Yes ☐ No ☐

(6) Areas of particular aesthetic or scientific value (e.g. archaeological sites)? Yes ☐ No ☐

(7) Areas or aspects of significance to iwi that you are aware of? Yes ☐ No ☐

2. If you have answered yes to any of the above, please provide further information, including the distance of these activities from your proposed discharge point(s) and a description of what effects the discharge may have on them.

For an assessment of the environmental effects refer to the attached AEE

3. What steps do you propose to take to mitigate these effects?

Refer to the AEE

[Continue on a separate page if necessary]

4. If there any other discharges within the same catchment, what is the combined effect of these discharges (including the proposed discharge) on the receiving environment?

5. What is the length and width of the proposed zone of non-compliance (if any) to allow for reasonable mixing of the discharge in the receiving waters? How were the dimensions of this zone determined and what degree of dilution (e.g. 100:1) is provided by the end of the zone?
Note: In some waterbodies it may not be reasonable to have a non-compliance zone.

6. **Describe any noticeable change in the colour/clarity of the receiving waters that may result from the discharge:**

7. **What environmental effects were considered when choosing the proposed method of disposal and location (e.g. water table, dilution rates/mixing potential, proximity to waterbody)?**

8. **What alternative methods of treatment and disposal/discharge locations were considered?**

Part C: Assessment against statutory documents

1. **Part 2 of Resource Management Act 1991 (RMA)**

   Have you provided an assessment against Part 2 (Purpose and Principles) of the RMA? http://www.legislation.govt.nz/act/public/1991/0069/latest/DLM231904.html

   ~~Refer to the attached AEE~~

2. **Regional Policy Statement (RPS) & Regional Freshwater Plan (RFP) & Regional Coastal Plan if applicable (RCP)**

   Have you provided an assessment of the proposal against the relevant objectives, policies and rules of the Regional Policy Statement (http://www.gw.govt.nz/rps/), Regional Freshwater Plan (http://www.gw.govt.nz/Regional-Freshwater-Plan/) and Regional Coastal Plan (http://www.gw.govt.nz/guide-to-the-regional-rules-and-regulations/)?

3. Proposed Natural Resources Plan (PNRP)

Have you provided an assessment of the proposal against the relevant objectives, policies and rules of the Proposed Natural Resources Plan? http://www.gw.govt.nz/proposed-natural-resources-plan/

4. Other relevant statutory documents

Have you provided an assessment against all other relevant statutory documents? e.g National Policy Statement for Freshwater Management (http://www.mfe.govt.nz/fresh-water/freshwater-management-nps), National Environmental Standard for Sources of Drinking Water http://www.mfe.govt.nz/fresh-water/reform-programme/sources-drinking-water-nes/about-standard)

5. Permitted activities

Will you be undertaking any permitted activities as part of the proposed activity? http://www.gw.govt.nz/regional-plans-policies-and-strategies/

6. Other activities that are part of the proposal

Are there any other activities that are part of the discharge which may require consent?

Yes, as address in the attached AEE

7. Value of investment

If you are applying to replace an existing consent, please provide an assessment of the value of the investment to which the activity relates.

Part D: Monitoring and management of your activity

1. **What monitoring and management do you propose to ensure any potential adverse effects on the environment are avoided, remedied or mitigated?** (e.g. discharge monitoring, receiving water monitoring, ecological surveys, toxicity tests). Include details on what is to be monitored, when, how, and why.

Comprehensive monitoring and management approach described in the AEE

2. **What contingency measures are proposed to deal with any system malfunction or failures so as to prevent unauthorised, uncontrolled, or only partially treated discharge to the environment?**

Refer to the AEE

3. **Describe how the equipment controlling the discharge to prevent equipment failure will be maintained and operated** (e.g. measures to exclude stormwater from the system, desludging, equipment maintenance).

Refer to the AEE

4. **What will be done to minimise and remediate any effects in the event of equipment failure?**

Refer to the AEE

Continuation page

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5a Discharge permit application to discharge contaminants to air

Please answer all questions fully. The questions provide a guide in order to satisfy the minimum information requirements that must be included with your application as prescribed in Schedule 4 of the Resource Management Act 1991 (RMA). Depending on the scale of your proposed activity, more detailed information and an Assessment of Environmental Effects (AEE) will be required to support the resource consent application. Additional guidance on the level of information required for various activities is provided in pages 9 to 11.

Officers from the Greater Wellington Regional Council's (GWRC) Environmental Regulation department are available to assist with filling out this form or to clarify information to include with your application. Up to 1 hour of free pre application advice is available to you.

This form is required to be filled out in conjunction with Form 1 Resource Consent Application

Part A: General information on nature and scale of your activity

1. Is this application a renewal of an existing discharge permit ?

Yes ☑ No ☑ If Yes, what is the discharge permit number? WAR/WGN .....

2. Process details

(1) Please supply a detailed flow chart and description of the processes and operations that either result in a discharge to the atmosphere or could potentially result in a discharge to air. (See pages 9-11 for further information on the industry-specific details required.)

(2) Please provide details on the methods of discharge from point discharges (e.g. stacks, vents, chimneys), fugitive emissions (e.g. leaks in equipment or gaps in buildings), and diffuse discharges (e.g. stockpiles, oxidation ponds). These details should include the number, height (above ground level), diameter, location, etc, of any discharge points.

Refer to the attached AEE

(3) Please state the usual frequency and duration of the discharge (or discharges) and any variation, where appropriate:

Refer to the attached AEE

(4) If applicable, please state the quantity of materials processed and the amount of fuel consumed that leads to the discharge (or discharges) including typical and maximum amounts:

Part A: General (continued)

(5) If applicable, please state the maximum continuous design rating for each process or piece of equipment associated with the discharge:

.....

.....

(6) Has any equipment been placed on the discharge points to remove/alter the contaminants (including gas, dust, and odour) from the waste flows? Yes ☐ No ☐

If yes, please give details: (Any details should include any manufacturer's specifications of pollution control or abatement equipment and the expected or measured efficiencies of contaminant removal.)

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3. Discharge details

Note: To supply an adequate level of information for this section you may need to seek professional assistance from an appropriately qualified person (e.g. air quality scientist). Emission/stack testing may be required with air dispersion modelling which models predicted ground level concentrations of contaminants for normal and worst case situations.

(1) Please supply (as far as possible) air discharge details for all contaminants, including (but not limited to) NO2, CO, SO2, particulates (PM10 & PM2.5), etc (refer to Clean Air Act 1972 – First Schedule for Air Pollutants and Regional Air Quality Management Plan – Appendix 1) under the following headings:

Name of contaminant/gas				
Concentration (ppm, mg/Nm^3)				
Mass emission rate (kg/hr)				
Frequency of discharge				
Flow rate (m^3/hr)				
Efflux velocity (m/s)				
Particle size distribution				

Name of contaminant/gas				
Concentration (ppm, mg/Nm^3)				
Mass emission rate (kg/hr)				
Frequency of discharge				
Flow rate (m^3/hr)				
Efflux velocity (m/s)				
Particle size distribution				

[Concentrations and volumetric flow rates should be calculated at 0°C, 1 atm pressure and a dry gas basis.]

Part A: General (continued)

(2) Has there been carried out, or do you have access to, any background monitoring, monitoring of the discharges, impacts of the discharges? Yes ☑ No ☑

[If yes, please supply a copy/summary of the information obtained.]

(3) Has any meteorological data relevant to the site been obtained? Yes ☐ No ☑

[If yes, please give details and, if possible, a copy/summary of the information obtained.]

(4) Describe the topography of the area and dimensions or building and structures in the area of the discharge that may influence wind flow and the dispersion of contaminants.

Refer to the attached AEE

(5) Describe the type of land use and activities surrounding the site. Particular attention should be paid to activities that may be sensitive to the discharge (e.g. residential areas, hospitals, schools, office buildings etc.)

Refer to the attached AEE

4. Locality map and plans

Please show the location of your proposed discharge(s) on a scaled map. Please also provide detailed site plans and elevation drawings that clearly show all aspects of the proposed discharge(s) and any processes and operations leading to the discharge(s). Any submitted maps or plans will need to show the discharge(s) in relation to roads, property boundaries and buildings, waterways, the nearest town, and any other relevant features of the surrounding environment.

Part B: Assessment of Effects on the Environment (AEE)

1. Comment on the possible effect the discharge may have on the quality of the receiving air, persons living or working in the area and local biota (plant and animal life):

Note: Relevant guidelines to consider in responding to this question include (but are not limited to):

- National Environmental Standards for Air Quality
- Ministry for the Environment's `Ambient Air Quality Guidelines' (May 2002)
- Ministry for the Environment's 'Good Practice Guide for Assessing and Managing Odour in New Zealand' (June 2003)
- Other relevant information sources from overseas

Refer to the attached AEE for a detailed assessment of the environmental effects

[Continue on a separate page if necessary]

Part B: Assessment of effects on the environment (continued)

2. Within a radius reasonable to the nature and scale of your activity, are there any:

(1)	Residential developments?	Yes ☑	No ☐
(2)	Production land (e.g. crops, dairy farming)?	Yes ☐	No ☐
(3)	Recreational activities carried out (e.g. sports grounds, parks, etc)?	Yes ☐	No ☐
(4)	Sources of similar or other discharges to air?	Yes ☐	No ☐
(5)	Areas of particular aesthetic or scientific value (e.g. scenic views, etc)?	Yes ☐	No ☐
(6)	Areas or aspects of significance to iwi that you are aware of?	Yes ☐	No ☐
(7)	Commercial activities (e.g. office blocks)?	Yes ☐	No ☐

What radius have you used in answering the above questions? .....

If you have answered yes to any of the above, describe what effects your discharge may have and the steps you propose to take to mitigate these:

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[Continue on a separate page if necessary]

3. What alternative methods of disposal or discharge locations have you considered?

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4. Why did you choose the proposed method and location?

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Part C: Assessment against statutory documents

1. Part 2 of Resource Management Act 1991 (RMA)

Have you provided an assessment against Part 2 (Purpose and Principles) of the RMA? http://www.legislation.govt.nz/act/public/1991/0069/latest/DLM231904.html

Refer to the attached AEE

2. Regional Policy Statement (RPS) & Regional Air Quality Management Plan (RAQMP)

Have you provided an assessment of the proposal against the relevant objectives, policies and rules of the Regional Policy Statement (http://www.gw.govt.nz/rps/) and Regional Discharges to Land Plan (http://www.gw.govt.nz/regional-air-quality-management-plan/)?

3. Proposed Natural Resources Plan (PNRP)

Have you provided an assessment of the proposal against the relevant objectives, policies and rules of the Proposed Natural Resources Plan? http://www.gw.govt.nz/proposed-natural-resources-plan/

4. Other relevant statutory documents

Have you provided an assessment against all other relevant statutory documents? e.g National Environmental Standard for Air Quality (http://www.mfe.govt.nz/air/national-environmental-standards-air-quality/about-nes)

Part C: Assessment against statutory documents (continued)

5. Permitted activities

Will you be undertaking any permitted activities as part of the proposed activity?
http://www.gw.govt.nz/regional-plans-policies-and-strategies/

6. Other activities that are part of the proposal

Are there any other activities that are part of the discharge which may require consent?

7. Value of investment

If you are applying to replace an existing consent, please provide an assessment of the value of the investment to which the activity relates.

Part D: Monitoring and management of your activity

1. What monitoring and management do you propose to ensure any potential adverse effects on the environment are avoided, remedied or mitigated?

In particular please include an Operation and Management Plan (OMP) for the activity that covers the following minimum requirements:

- All procedures to ensure the operation will comply with any proposed consent conditions or standards
- How the equipment controlling the discharge be operated and maintained to prevent equipment failure, and what measures will be implemented to ensure that the effects of any malfunction are remedied.
- The methods and monitoring programmes will be adopted for emissions testing, dust deposition testing, and/or site boundary odour assessments
- Procedures for responding to any complaints relating to the discharges to air from surrounding landowners/occupiers
- Details of maintenance and servicing schedules
- All key contact information

Note: At a minimum a draft OMP is required for all applications, unless special circumstances apply. Where any existing OMP is in place, this will need to be supplied with any application.

Refer to the attached AEE

[Continue on a separate page if necessary]

Air discharge permit information (required for Industry Groups)

Combustion processes

- Describe combustion processes and details of boiler or heat unit.
- Heat release rate (kilowatts, megawatts)
- Contaminants discharged to the atmosphere.
- Concentration of contaminants in discharge (ppm).
- Height of discharge point (chimney).
- Describe fitting on top of chimney (cone, rain excluded, China man's hat).
- Frequency of discharge.
- Describe air pollution control equipment.
- Velocity of flue gas.
- Monitoring system (for checking and recording discharge).
- Location of discharge points in relation to factory and boundaries.
- Condition of boiler or heat unit, chimney and details of last service.

Quarries

- Describe quarrying process.
- Type of rock being mined.
- Open cast extraction capacity (tonnes/hour).
- Size reduction and screening capacity (tonnes/hour).
- Storage capacity (tonnes/hour).
- Dust control measures.
- Monitoring systems (for checking and recording dust emissions).
- Frequency of discharge (i.e. hours of operation).
- Quarry management plan.

Wood processing industries

- Describe the process and contaminants discharged to atmosphere.
- Describe air pollution control equipment (including height of discharge point, exit velocity).
- Monitoring system (for checking and recording discharge).
- Particulate emission test (to determine dust concentration and mass emission levels discharged from the stack, measure over three runs, with all wood sanding equipment working at the same time).
- Frequency of discharge (i.e. hours of operation).
- Location of discharge points in relation to the premises and neighbouring premises.

Chemical manufacturing blending processes/electroplating

- Describe the process.
- Describe contaminants/gases discharged to atmosphere and their concentrations.
- Describe air pollution control equipment.
- Monitoring system (for checking and recording discharge).
- Frequency of discharge (i.e. hours of operation).
- Location of discharge points in relation to the premises and neighbouring premises.

Air discharge permit information (continued)

Abrasive blasting

- Describe the process and details of blasting chamber, blasting media used.
- Describe air pollution control equipment and height of discharge point, velocity of gases, fitting on top of chimney.
- Describe contaminants discharged to the atmosphere.
- Particulate emission tests (to determine dust concentration and mass emission levels discharged from the stock, measured over three runs).
- Monitoring system (for checking and recording discharge).
- Frequency of discharge (i.e. hours of operation).
- Location of discharge points in relation to the premises and neighbouring premises.

Wool scourers and tanneries

- Describe the process.
- Describe contaminants/gases discharged to atmosphere and their concentrations.
- Describe air pollution control equipment and height of discharge point, fitting on top of chimney.
- Monitoring system (for checking and recording discharge).
- Describe raw material capacity of operation.
- Frequency of discharge (i.e. hours of operation).
- Location of discharge points in relation to the premises and neighbouring premises.

Spray painting process

- Describe the process and details of spray painting booth.
- Describe air pollution control equipment and height of discharge point, velocity of gases, fitting on top of chimney.
- Describe contaminants discharged to atmosphere.
- Frequency of discharge (i.e. hours of operation).
- Monitoring system (for checking and recording discharge).
- Location of discharge points in relation to the premises and neighbouring premises.

Concrete manufacturing plants

- Describe the process.
- Describe contaminants/gases discharged to atmosphere.
- Give details of raw material capacity (tonnes/hour).
- Dust control measures.
- Frequency of discharge (i.e. hours of operation).
- Monitoring system (for checking and recording dust).

Rendering process

- Describe the rendering process (high/low temperature, drying, etc.).
- Describe combustion process (if applicable, i.e. type of combustion process, fuel uses, fuel combustion rate, contaminants released to air, exit velocity, concentration).
- Describe air pollution control equipment.
- Height and number of discharge points, and any fitting on top of chimney.
- Frequency of discharge (i.e. hours of operation).
- Monitoring system (for checking and recording discharge).
- Location of discharge points in relation to the premises and neighbouring premises.

Air discharge permit information (continued)

Asphalt production

- Describe the process.
- Describe contaminants/gases discharged to atmosphere.
- Give details of raw material capacity (tonnes/hour).
- Describe air pollution control equipment (dust controls, etc.).
- Frequency of discharge (i.e. hours of operation).
- Monitoring systems.

Coffee roasting processes/vegetable frying processes

- Describe roasting process (roast or frying cycle, maximum raw material capacity (kg/hr)).
- Describe combustion process (if applicable, i.e. type of combustion process, fuel uses, fuel combustion rate, contaminants released to the atmosphere, concentration of contaminants in ppm, exit velocity).
- Describe air pollution control equipment.
- Height and number of discharge points, and any fitting on top of chimney.
- Frequency of discharge (i.e. hours of operation).
- Monitoring system (for checking and recording discharge).
- Location of discharge points in relation to the premises and neighbouring premises.

Other processes

- Describe the process.
- Describe contaminants/gases discharged to atmosphere.
- Describe air pollution control equipment.
- Frequency of discharge (i.e. hours of operation).
- Monitoring systems.

Continuation page

RMA FORM 9

APPLICATION FOR RESOURCE CONSENT UNDER SECTION 88 OF THE RESOURCE MANAGEMENT ACT 1991

Basic instructions on how to apply are at the end of this form.
For additional help go to: huttcity.govt.nz/apply-online

An up-to-date version of Adobe Reader is required to fill this form out online.
Download for free get.adobe.com/reader/

To: Chief Executive, Hutt City Council

1. This is an application from:

Full name	*Last*	*First*
Company/organisation	Hutt City Council	
Contact *if different*	Tonkin + Taylor (C/- Alastair Meehan)	
Address	*Street number & name* 30 Laings Road	
	Suburb Lower Hutt	
	City	*Postcode* 5010
Address for Service *If different*	*Postal address* PO Box 2083 Wellington 6140	*Courier address*
Phone	*Day* (04) 806 4964	*Evening*
Fax		*Mobile* 027 469 8034
Email	AMeehan@tonkintaylor.co.nz	

2. *Name of applicant* Hutt City Council

apply for a
- [x] Land use resource consent
- [ ] Subdivision resource consent
- [ ] Change or cancellation of a condition of a resource consent

3. The proposed activity of the application is:

Cleanfill operation

4. The location of the proposed activity is:

Please refer to the attached AEE for property details (including owners and occupiers)

5. The names and addresses of the owners and occupiers (other than the applicant) of the proposed activity are:

6. ☐ No additional resource consents are needed for this proposed activity *(e.g. from Greater Wellington)* OR

☑ The following resource consents are needed for the proposed activity and

☑ have been applied for:

☐ have not been applied for:

List consents

Refer to the attached AEE

7. ☑ I attach, in accordance with the fourth schedule of the Resource Management Act 1991, an assessment of environmental effects in such detail that corresponds with the scale and significance of the effects that the proposed activity may have on the environment.

8. ☑ I attach any information required to be included in this application by the district plan, regional plan, the Resource Management Act 1991, or any regulations made under that Act. *(List all documents that you are attaching)*

Signature of applicant: *(or person authorised to sign on behalf of the applicant)*		1/03/2019 *Date*

The following information MUST be included with your application for Resource Consent:

- The name and address of applicant and owner/occupier of land to which the application relates.
- Type of consent sought and other resource consents required.
- A description of the activity and its location.
- An assessment of effects (See Infosheet: Preparing and Assessment of Environmental Effects, for further guidance)
- Signature of applicant or person authorised to sign on behalf of the applicant and date.
- Certificate of Title (pictorial and written pages) and a copy of any encumbrances listed on it.
- All other information required by the District Plan (see attached copy of Section 17 of the District Plan including two copies of the Site Plan and Elevations to scale.)
- Signed plans and 'Approval of Person Affected by an Application for Resource Consent' forms, where written approval from affected persons has been obtained.
- Application Fee: The application fees payable are set out in Council's Resource Consent and Subdivision fees list.

Application fees cover the cost of processing your application only. Additional charges may apply. Consultants' fees and costs of disbursements will also be additionally charged and invoiced when consent is completed.

You must pay the charge, payable to Hutt City Council, for the resource consent application under Section 36 of the Resource Management Act 1991.

To avoid unnecessary delays in the processing of your resource consent your application WILL NOT be accepted by Hutt City Council unless ALL of the information requested above has been provided. If you have any questions about how to fill in this form or the processing of your application, please contact Hutt City Council on 570 6666.

HOW TO COMPLETE AND SUBMIT THIS FORM

Additional information
If there isn't enough room on the form for all the information you wish to give us, please include the additional information as a separate PDF with your application (please state your name, the application address, and the question to which the information refers).

Electronic signatures
Hutt City Council Environmental Consents Division will accept this application form with a digital signature created through Adobe or your existing digital signature. If you click on the pink arrow in the signature box, or choose 'Place signatures' from the tools menu on the right hand side, Adobe will prompt you to add your digital signature, or take you through the easy steps to create one.

How to submit
Once you have completed and added the required signatures, please save it to your computer.
You can then submit it with your supporting documentation by selecting 'Apply for it' under the 'Do it here' menu at huttcity.govt.nz.

If you would prefer to post or deliver your application, please print it, and send or deliver it to:
Environmental Consents Division, Hutt City Council, Private Bag 31912, Lower Hutt 5040.

For enquiries, please phone 04 570 6666

Appendix B: Certificate of Title

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COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**373441**
Land Registration District	**Wellington**
Date Issued	02 June 2009

Prior References

Proc 5591 WN20A/1163 WN26B/503

Estate	Fee Simple
Area	6.4738 hectares more or less
Legal Description	Lot 3 Deposited Plan 393261
Purpose	Disposal of sewage

Proprietors

Hutt City Council

Interests

8106405.2 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 2.6.2009 at 3:51 pm

Subject to a right right of way over part marked G, H and Z on DP 393261 created by Easement Instrument 8106405.4 - 2.6.2009 at 3:51 pm

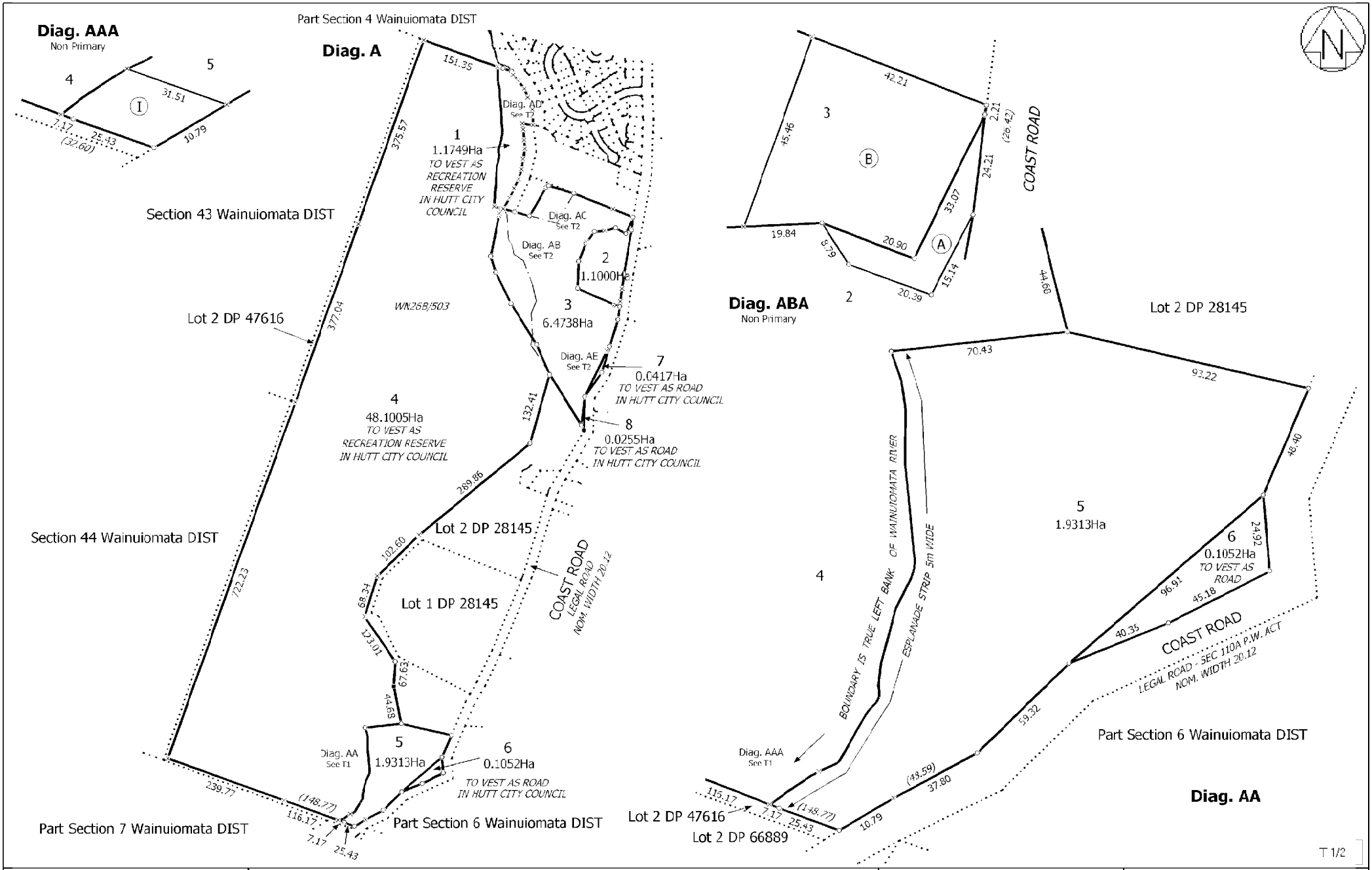
The easements created by Easement Instrument 8106405.4 are subject to Section 243 (a) Resource Management Act 1991

Subject to a right (in gross) to convey water, gas, electricity, telecommunications over part marked B, drain sewage over part marked B and C and to convey water over part marked F and G all on DP 393261 in favour of Hutt City Council created by Easement Instrument 8106405.6 - 2.6.2009 at 3:51 pm

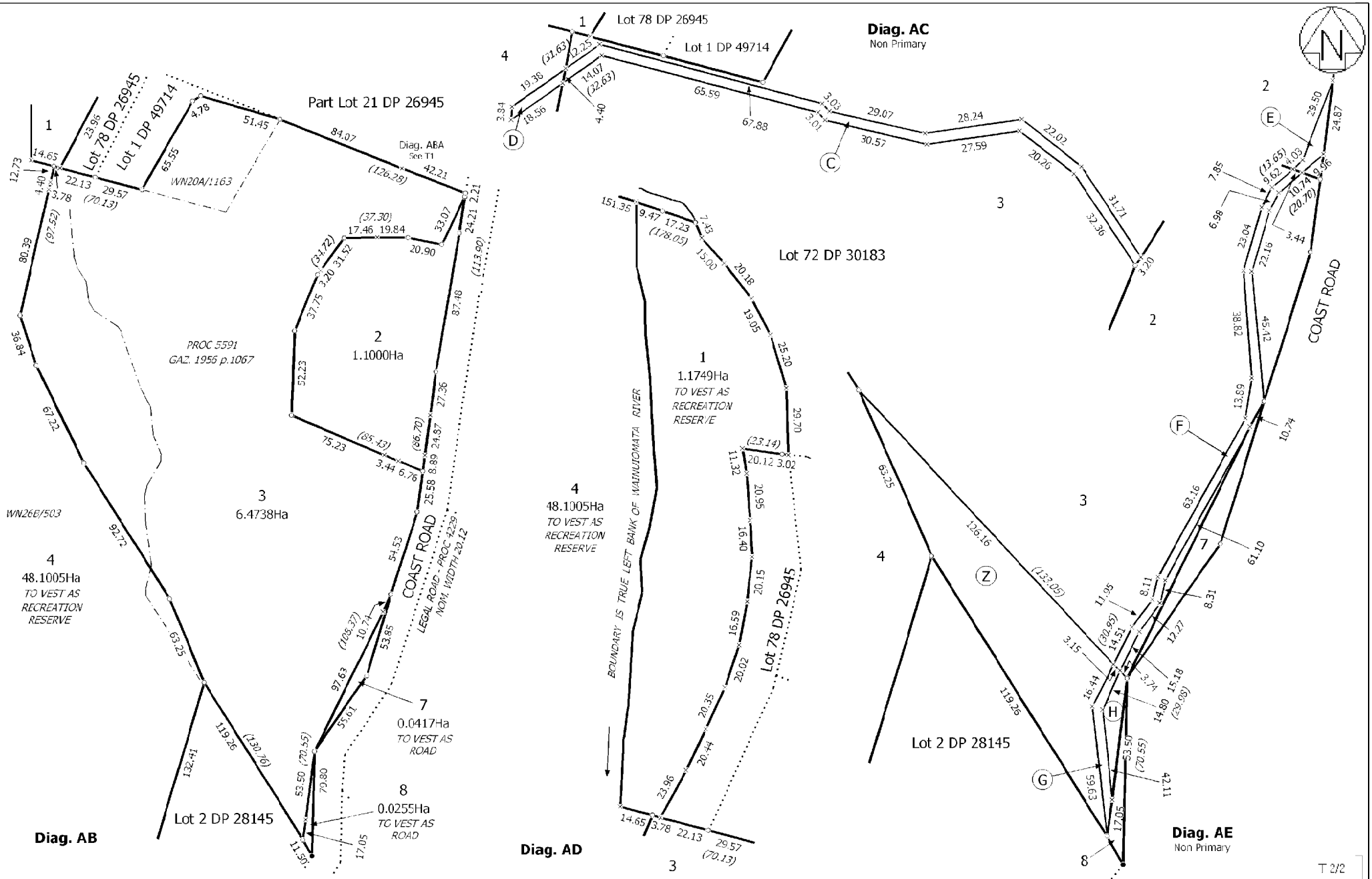
The easements created by Easement Instrument 8106405.6 are subject to Section 243 (a) Resource Management Act 1991

Appurtenant hereto is a right of way and to convey water, electricity, gas and telecommunications created by Easement Instrument 8106405.7 - 2.6.2009 at 3:51 pm

The easements created by Easement Instrument 8106405.7 are subject to Section 243 (a) Resource Management Act 1991



Land District: Wellington Digitally Generated Plan Generated on: 05/06/2009 11:03am Page 4 of 5	Lots 1-8 being subdivision of Part Lots 1 & 2 DP 13941 (SO 23428), Part Lot 20 DP 26945 and Lot 1 DP 47616	Surveyor: Karl Anthony Wilton Firm: Cuttriss Consultants Ltd (Lower Hutt)	Digital Title Plan DP 393261 Deposited on: 2/06/2009



Land District: Wellington Digitally Generated Plan Generated on: 05/06/2009 11:03am Page 5 of 5	Lots 1-8 being subdivision of Part Lots 1 & 2 DP 13941 (SO 23428), Part Lot 20 DP 26945 and Lot 1 DP 47616	Surveyor: Karl Anthony Wilton Firm: Cuttriss Consultants Ltd (Lower Hutt)	Digital Title Plan DP 393261 Deposited on: 2/06/2009

View Instrument Details

Instrument No.	8106405.2
Status	Registered
Date & Time Lodged	02 Jun 2009 15:51
Lodged By	Stanley, Clare
Instrument Type	Consent Notice under s221(4)(a) Resource Management Act 1991

Affected Computer Registers	Land District
WN20A/1163	Wellington
WN26B/503	Wellington

Annexure Schedule: Contains 2 Pages.

Signature

Signed by Clare Stanley as Territorial Authority Representative on 09/03/2009 12:02 PM

***** End of Report *****

THE HUTT CITY COUNCIL
CONSENT NOTICE PURSUANT TO SECTION 221 RESOURCE MANAGEMENT ACT 1991

IN THE MATTER of Lots 1 to 8 DP 393621.

AND

IN THE MATTER of Subdivision Consent pursuant to sections 104, 108, 220 and 221 of the Resource Management Act 1991

Pursuant to sections 104, 108 and 220 of the Resource Management Act 1991 the Hutt City Council, by resolution passed under delegated authority on 2 September 2008, imposed the following conditions on the subdivision consent for Lots 1 to 8 DP 393621 being a subdivision of Part Lots 1 & 2 DP 13941 (SO 23428), Part Lot 20 DP 26945 and Lot 1 DP 47616:

The owners of Lot 3 to note and comply with the following:

1. This site was formerly used as a wastewater treatment plant and associated contamination may be present on the property.
2. Remedial works have been undertaken on this allotment but these works have resulted in buried demolition rubble and areas of uncertified fill being located within the confines of the allotment, as shown in the MWH NZ Ltd reports titled
   - "Wainuiomata Wastewater Treatment Plant – Stage 2 Decommissioning", dated July 2003 (which includes as Appendix A the Seaview Projects Ltd report titled "Wainuiomata Wastewater Treatment Plant Decommissioning – Stage 1") and
   - "Wainuiomata Wastewater Treatment Plant: Environmental Monitoring 2002 – 2008" dated18 August 2008

   and Greater Wellington Regional Council resource consent restrictions (Ref: GWRC – WGN020159 [21937] & [21908] held on Hutt City Council File RM20-C30-126 for further information.
3. The written approval of the Team Leader, Resource Consents is required prior to any soil disturbance works being undertaken. Any application for such approval must include an appropriate management plan that addresses how the discovery, handling and disposal of any contaminants would be undertaken as well as any further soil testing which would be required.
4. This property may be subject to objectionable discharges to air (odour and dust) from the Wastewater Pump Station located on Lot 2 which has been established by the Greater Wellington Regional Council consent WGN990084(02).

5. All new buildings on this allotment are to have a foundation designed by a Chartered Professional Structural or Geotechnical Engineer. The design and details of these foundations shall be submitted as part of any building consent applied for on this allotment.
6. There are no services (sewer, power, telephone or stormwater) provided to the boundary of this allotment.
7. Hutt City Council will not be liable for the construction, maintenance or costs involved in any shared fencing along areas bordering Council reserve land.

The owners of Lots 3, 4 and 5 to note and comply with the following:

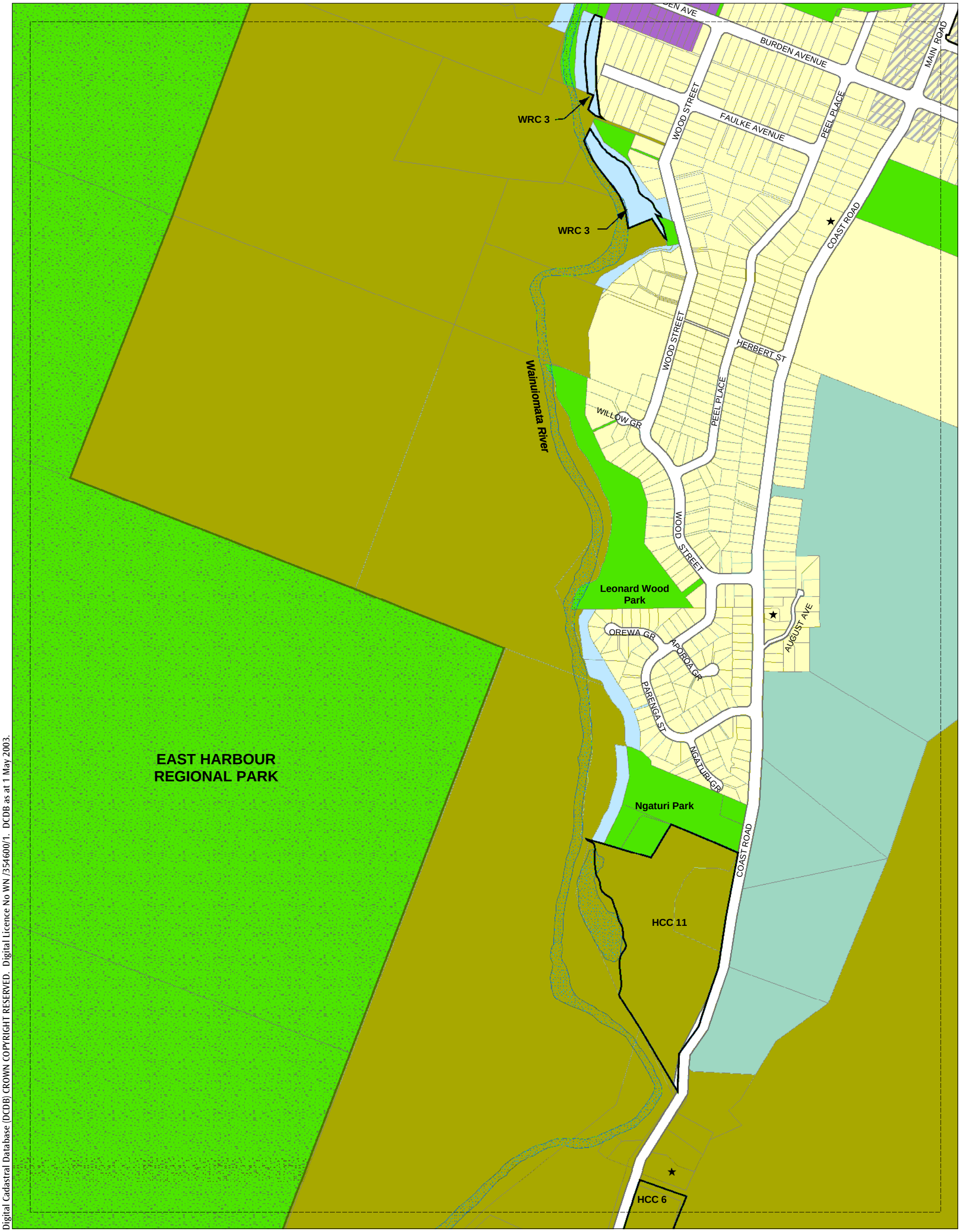
8. Portions of these allotments fall within the Greater Wellington Regional Council 1 in 100 year flood extent as shown on the Scheme Plan - Cuttriss Consultants Limited plan number 25305SCH held on Council file RM20-C30-126. Any future buildings will need to be appropriately located so that they are not situated within this identified 1:100 year flood level for the Wainuiomata River.

DATED at Lower Hutt this 22nd day of January 2009

For and on behalf of the Hutt City Council

Authorised Officer

Appendix C: Planning maps



Updated 1 December 2011

ACTIVITY AREAS

- General Residential
- Special Residential
- Historic Residential
- Hill Residential
- Landscape Protection
- Rural Residential
- General Rural
- Central Commercial
- Petone Commercial
- Suburban Commercial
- Special Commercial
- General Business
- Special Business
- Avalon Business
- Extraction
- General Recreation
- Special Recreation
- River Recreation
- Passive Recreation
- Community Health
- Community Iwi

ANNOTATIONS

- City Boundary
- Designation
- Medium Density Residential
- Wellington Faultline Special Study Area
- Hydraulic Line
- Flood Protection Bank
- Railway Line
- Regional/Forest Park
- Heritage Area
- Primary River Corridor
- Secondary River Corridor
- 1 in 100 Year Flood Extent
- Building Setback Line
- Notable Tree
- Historic Place

N

D7 E7 F7 F8

HUTT CITY

District Plan - City of Lower Hutt

Scale 1:6000

E8

Appendix E: Draft Site Management Plan

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REPORT

Tonkin+Taylor

Cleanfill facility, 130 Coast Road, Wainuiomata

DRAFT

Prepared for
Hutt City Council
Prepared by
Tonkin & Taylor Ltd
Date
September 2018
Job Number
84466.002

Exceptional thinking together
www.tonkintaylor.co.nz

Document Control

Title: Cleanfill facility, 130 Coast Road, Wainuiomata					
Date	**Version**	**Description**	**Prepared by:**	**Reviewed by:**	**Authorised by:**
Jun-11	1	Final issue for consent application	E Breese	G Wallace	G Wallace
Mar-12	2	Update following consent approval	E Breese	G Wallace	G Wallace
Oct-14	3	Updated for District Consent	S Grundy	E Breese	E Breese
Sep-18	4	Updated for District Consent	B Rodenburg		

Distribution:

Hutt City Council	1 copy
Wainui Landfill Limited	1 copy
Tonkin & Taylor Ltd (FILE)	1 copy

Table of contents

1 Introduction

This Site Management Plan (SMP) has been prepared on behalf of Hutt City Council for the operation of a Cleanfill Facility (the 'Facility') at Coast Road, Wainuiomata. It has been prepared to cover the day to day operations and emergency procedures for the Facility.

1.1 Objective

The objective of this SMP is to ensure that during the operation of the Facility, any adverse environmental effects are effectively managed, that the operation is a good neighbour, and the Facility is a pleasant and safe environment for staff.

1.2 Operation

The Facility receives cleanfill material only, which includes virgin natural materials such as clay, soil, rock and other inert materials such as concrete or brick all of which are free of:

- Combustible, putrescible, degradable or leachable components;
- Hazardous substances;
- Products or materials derived from hazardous waste treatment, hazardous waste stabilisation or hazardous waste disposal practices;
- Materials that may present a risk to human or animal health such as medical and veterinary waste, asbestos or radioactive substances; and
- Liquid waste[1].

1.3 Stakeholders

The stakeholders in the Facility operation and their responsibilities or expectations are listed in Table 1 below. Contact details of key personnel are also listed.

Table 1: Stakeholders

Organisation	Person/Role	Responsibilities/Expectations	Contact Details (if required)
Cleanfill Site Manager	Bob McWhirter	To ensure the Facility is operated in accordance with the SMP. To respond to complaints and incidents. To provide training to staff. To maintain a complaints and incidents register and write reports. To keep operational records.	Phone 027 445 3378
Staff	Scott McWhirter	To create a safe working environment. To operate the site according to the SMP.	04 568 8624
Commercial Customers	Various	To have access to a safe and properly managed facility.	N/A

[1] Water excavated cleanfill material may be accepted to site but shall be dried within a bunded area to a suitable water content prior to disposal within the cleanfill to ensure that these materials do not seep directly into the environment.

Organisation	Person/Role	Responsibilities/Expectations	Contact Details (if required)
Neighbours	Various	For Wainui Landfill Ltd to be a good neighbour.	N/A
Hutt City Council	Planning Section	To monitor operations to ensure compliance with consent conditions	Private Bag 31-912, Lower Hutt 5040 Phone 04 570 6666
Greater Wellington Regional Council	Planning Section	To monitor operations to ensure compliance with consent conditions	PO Box 11646 Wellington 6142 Phone 0800 496 734 or 04 384 5708

2 Processes

2.1 Control of document

This SMP is a controlled document. If changes are made to the SMP, the updated SMP is to be supplied to Hutt City Council and Greater Wellington Regional Council.

2.2 Review and updating of SMP

The SMP shall be reviewed annually and updated as required. The review shall address as a minimum;

- Operation and maintenance of new equipment
- Changes in operational procedures.

The SMP may also be reviewed in response to a specific incident.

Any amendments to the SMP shall be submitted to Hutt City Council, and Greater Wellington Regional Council, for approval.

2.3 Staff training

All staff shall be required to undertake an induction course at the time of starting employment at the Facility. The induction course shall cover all matters contained in the SMP. At no less than two yearly intervals, a refresher session shall be undertaken for all staff on the SMP requirements and procedures.

In addition, specific training shall be provided for all staff on acceptable cleanfill materials, conditionally acceptable cleanfill material and unacceptable cleanfill material.

A schedule of training shall be kept and records made of all training. The Cleanfill Site Manager shall be responsible for keeping staff training records.

2.4 Notices

Operational procedures and contingency requirements shall be identified in a series of notices that shall be placed around and on the kiosk building at the entrance to the Facility.

A list of acceptable materials shall also be posted at the entrance of the Facility.

2.5 Complaints and incidents

A complaints register and an incidents register shall be kept by the Site Manager. The Hutt City Council and Greater Wellington Regional Council shall also be notified of complaints. The procedures for this reporting shall be as set out in Section 5 of this SMP.

2.6 Taonga

If taonga (a thing of tangible or intangible value treasured in Maori culture) is found on the site, the consent holder must contact iwi representatives, the Heritage New Zealand and Greater Wellington Regional Council within 24 hours. All work in the area must stop immediately and may not resume until iwi representatives and council staff have carried out a site inspection and the council gives its approval.

3 Operations

3.1 Operating hours

The Facility shall primarily operate during normal working hours of Monday - Friday 7.30am – 5.00pm. However the Facility may operate between 7.30am – 12.00pm on a Saturday. A staff member is based on site during working hours. The cleanfill may open outside of these hours for emergency works as defined by Section 330 of the Resource Management Act.

3.2 Material acceptance

The target material for the facility is cleanfill materials - material that when buried will have no adverse effect on people or the environment. Cleanfill material includes virgin natural materials such as clay, soil and rock, and other inert materials such as concrete or brick that are free of:

- Combustible, putrescible, degradable or leachable components;
- Hazardous substances;
- Products or materials derived from hazardous waste treatment, hazardous waste stabilisation or hazardous waste disposal practices;
- Materials that may present a risk to human or animal health such as medical and veterinary waste, asbestos or radioactive substances; and
- Liquid waste[2].

Commercial material shall be received only from accredited commercial operators. Accreditation shall only be given to operators who can ensure the material brought to the Facility meets the acceptance criteria.

Prior to a vehicle load being unloaded onto the Facility site, a visual inspection of the fill shall be undertaken by the staff member, during peak periods. Any loads that are considered to contain non cleanfill materials shall be refused entry to the Facility.

A list of acceptable cleanfill materials can be found in **Appendix A.**

3.3 Material unloading

The incoming truck driver will be verbally informed by staff as to where incoming loads should be deposited.

The incoming truck load of accepted cleanfill material shall be emptied directly onto the Facility site within the designated area shown in Drawing 84466.002-01.

Any unacceptable material discovered by either the commercial truck driver or staff member shall be handled as follows -

- The Cleanfill Site Manager shall be informed of the incident
- Non cleanfill material shall be placed in a container for removal to landfill as soon as practical
- The material shall be disposed of at a suitable landfill or transfer station, such as Silverstream Landfill in Lower Hutt.

3.4 Fill Area

Fill will only be allowed to be placed within the designated area shown in Drawing 84466.002-01.

[2] Water excavated cleanfill material may be accepted to site but shall be dried within a bunded area to a suitable water content prior to disposal within the cleanfill to ensure that these materials do not seep directly into the environment.

3.5 Fill sequence

Stage 1 of the clean fill operation was the construction of the noise bund along the northern boundary of the site. The noise bund has now been completed.

Stage 2 and the main filling operation of the cleanfill is now underway. Drawing 84466.002-30 in Appendix C shows the proposed Operational Filling Plan for Stage 2.

The site will be filled on a staged basis to limit the size of the working face. Erosion and sediment controls will be installed prior to opening a new tip face in accordance with section 4.

4 Erosion and sediment control

The erosion and sediment control measures on site will be undertaken in accordance with the Greater Wellington Regional Council's Erosion and Sediment Control Guidelines 2002.

The guidelines identify a number of principles in respect of erosion and sediment control. Table 2 shows how these principles have been addressed.

Table 2 - Erosion and Sediment Control Principles

Erosion and sediment control principle	Proposed measure
Minimise disturbance	Vegetation clearance will be undertaken as required for the staged cleanfill placement within the consented extent. Disturbance of vegetation cover outside the cleanfill extent will be limited to the minimum required for access and to construct and maintain erosion and sediment controls.
Stage works	The works will be undertaken in staged fashion so the area disturbed at any one time is minimised
Protect steep slopes	There are no natural steep slopes in the clean fill area. Temporary slopes formed during cleanfill placement will be controlled with stormwater diversions in place at the top of the slope. All runoff from temporary slopes will be treated by and erosion and sediment control measure.
Protect water bodies	The clean fill has been set well back from the Wainuiomata River and there are no surface water features in the clean fill area. All runoff from the Cleanfill is directed to erosion and sedimentl controls for treatment prior to discharge to the vegetated surfaces between the Cleanfill and Wainuiomata river.
Stabilise exposed areas rapidly	The areas where clean filling has been completed will be scarified and grassed as soon as practical. Temporary surfaces not expected to be disturbed within three months will be temporarily stabilised with grass or other suitable methods based on site requirements.
Install perimeter controls	Soil and vegetation bunds are used to control any runoff from clean fill areas. The earth bunds are also used to direct water to a decanting earth bund.
Employ detention devices	To treat the runoff from areas where clean filling is being undertaken decanting earth bunds will be installed
Make sure plan evolves	The plan will be reviewed annually as identified in Section 4 and expanded as the filling progresses
Inspect	As identified in Section 5 regular inspections of the clean fill erosion and sediment control measures will be inspected by a suitably qualified Engineer as part of existing Resource Consent conditions. A report is generated for each environmental audit and sent to the Compliance Officer at Regional Council.

4.1 Stabilised construction entrance

The entrance to the clean fill area off Coast Road is stabilised with a combination of seal and compacted aggregate to minimise the removal of sediment from site and the generation of dust. This

access track will be maintained in good condition to minimise any sediment generation. The entrance is shown in Drawing 84466.002-01.

4.2 Dust management

Dust emissions shall be mitigated by:

- Maintaining the stabilised entranceway to the Facility
- Establishing low speed vehicle restrictions within the Facility
- Establishing a wheel wash
- Sweeping / watering of tracks
- Dampening down the deposited cleanfill with water sprays when required

4.3 Stage 1 - Diversion channels

On the western side of stage 1 a diversion channel has been installed to direct any surface water flow to the decanting earth bund servicing that area. The channel is constructed across the slope with a grade of no greater than 2%. The shape of the channel is trapezoidal with side slopes no greater than 3:1. The base of the channel is 0.3m wide and the depth of the channel 0.6m.

If the channel gradient is greater than 2% or there are signs of channel erosion then check dams and/or armouring will be placed in the channel. Materials for the rock check dams and armouring may be obtained from material brought to the clean fill such as concrete or rock.

4.4 Stage 1 - Decanting earth bund

The runoff from stage 1 is collected via a diversion channel (refer 4.3), with flow directed to a decanting earth bund (DEB).

The DEB size is based upon 2% of the catchment area of each phase (2,500m2) and this equates to a capacity of 50m3. The DEB will be an oblong in shape; 5m wide, 10m long and 1 m deep. The main discharge from the DEB shall be via an upright 150mm perforated pipe. The top of the pipe is to be a minimum of 150mm below the top of the emergency spillway. The discharge pipe through the bund wall will be a non perforated pipe. At the outlet to the pipe the ground will be stabilised to prevent any scour and disperse the flow.

An emergency spillway will be provided and stabilised with a geotextile or concrete. The spillway will be at least 2m wide with a freeboard of at least 200mm. The toe of the spillway will be stabilised to prevent any scour and disperse the flow.

4.5 Stage 2 Controls

Stage 2 is surrounded by the stage 1 diversion drain (ref 4.3) to the north and a perimeter bund to the south and west. This bund has proven effective at containing all surface runoff from stage 2.

Stormwater runoff from stage 2 batter slopes is directed to a large grit trap south of stage 2 (within the consented boundary) via diversion channels and a temporary culvert that runs under the stage 2. This culvert outfalls to a large grit trap where stormwater infiltrates to ground.

4.6 Roughened surfaces

Where considered appropriate by the Site Manager, the surface of the clean fill will have roughed slopes to reduce runoff velocities, increase infiltration, and increase sediment trapping. The roughing will be achieved by tracking a bull dozer or other tracked vehicle up and down the slopes of the clean fill.

4.7 Re-vegetation

Following the completion of placement of clean fill in each phase the areas will be vegetated. This will be achieved by scarifying the surface and seeding with a pasture mix.

4.8 Maintenance

The inspection of erosion and sediment control structures is required on a regular basis as outlined in Section 5. The purpose of the inspection is to ensure that the measures are in good operating condition. In response to these inspections maintenance activities may be required. Table 3 below identifies the type of maintenance activities that may be required.

Table 3 - Maintenance actions for Erosion and Sediment Control Structures

Sediment Control Structure	Trigger	Potential Maintenance action
Diversion drains	Debris in channel resulting in blockage or forcing water out of the channel	Remove material/ debris
	Scouring in channel	Armour channel or install check dams
	Scouring at outlet	Use sand bags or rock to dissipate energy
DEBs	More than 20% full with sediment	Empty DEB
	Scour at exit point	Install concreted pipe exit or sand bag over flow point to provide erosion resistant surface
	Insufficient capacity filling quickly	Enlarge DEB or provide additional DEBs
Stabilised construction entrance	Mud and or sediment being tracked on to Coast Road	Sweep road and track surfaces to remove mud and sediment. Extend and/ or repair area of stabilised track

5 Monitoring and Reporting

5.1 Weekly inspections

Each week the Clean Fill Operator will undertake inspections of the site. This inspection process will ensure that:

- There is no tracking of mud on to Coast Road
- The diversion drains are clear of debris and there is no scouring
- The DEB is operating effectively

5.2 Monthly Inspection

The Cleanfill Site Manager shall undertake a monthly inspection of the site to ensure that the SMP is being implemented. The inspection shall follow the procedure set out in the checklist in **Appendix B.**

5.3 Bi Annual Environmental Inspection

A suitably qualified Engineer shall undertake an environmental audit on a bi-annual basis (January and July) to ensure that the erosion and sediment control methods are operating in accordance with the principles outlined in this plan and conditions of consent. The inspection shall follow the procedure set out in the checklist in **Appendix B.**

5.4 Records and Reports

5.4.1 Complaints Register

The Cleanfill Site Manager shall be responsible for maintaining a Complaints Register. The following information shall be recorded, where possible:

- The name and address of the complainant, if supplied;
- Identification of the nature of the complaint;
- Date and time of the complaint and alleged event;
- Weather conditions at the time of the alleged event;
- Results of the Site Manager's investigations; and,
- Any mitigation measures adopted.

The complaints register shall be made available to Hutt City Council and Greater Wellington Regional Council upon request.

The Site Manager shall provide acknowledgement to the complainant of the complaint within 3 working days. A full response to the complaint shall be made within 10 days. The response should, where appropriate, identify the action taken.

The Site Manager shall forward a copy of any complaints to Hutt City Council and Greater Wellington Regional Council, within 7 days of receiving the complaint.

The Site Manager shall notify Hutt City Council and Greater Wellington Regional Council of any action taken in response to the complaint, within 21 working days of receipt of the complaint.

5.4.2 Incidents Register

The Site Manager shall be responsible for maintaining an Incident Register. Any incidents that result, or could result, in an adverse effect on the environment beyond the boundary of the site shall be recorded in the register.

The Site Manager shall notify Hutt City Council and Greater Wellington Regional Council of any incident within 48 hours of the incident being brought to the attention of the Site Manager.

The Site Manager shall prepare an incident report for each incident. This report shall include the following information:

- Description of incident;
- Reasons for the incident occurring;
- Measures taken to mitigate the incident; and,
- Measure to prevent recurrence.

A copy of each incident report shall be forwarded to Hutt City Council and Greater Wellington Regional Council within 14 working days of the incident occurring.

5.4.3 Non-compliance with the SMP

The Site Manager shall be responsible for keeping a register of any non-compliance with this SMP.

A report shall be prepared by the Site Manager, when any inspection has identified the SMP has not been followed.

The register, and any reports, shall be made available to Hutt City Council and Greater Wellington Regional Council, upon request.

5.4.4 Training Records

The Site Manager shall be responsible for maintaining staff training records. This shall include records of induction courses and refresher courses.

6 Contingencies

In the event of natural hazards, extreme climatic events or human error the contingency actions identified in Table 4 may need to be enacted.

Table 4 - Summary of Contingency measures

Cause	Effect	Contingency Action
Earthquake	Failure of erosion and sediment controls	Determine extent of loss of sediment, contain lost sediment with silt fences, direct water away from damaged / disturbed control devices, repair or replace erosion and sediment controls.
	Slope failure	Check failure; determine if slip poses threat to water quality. Remove material out of stream course if necessary and install silt fence at the slip toe.
Extreme rainfall event	Failure of sediment retention pond or DEB	Determine extent of loss of sediment, contain lost sediment with silt fences, direct water away from damaged / disturbed control devices, repair or replace sediment pond.
	Scour of water table	Repair and re-armour water table.
	Scour on fill and cut faces	Re-direct water and repair slopes.
	Failure of silt fences	Repair or replace.
	Slope failure	Check out failure; determine if slip poses threat to water quality. Remove material out of stream course if necessary and install silt fence at the slip toe.
	Tracking of mud onto Coast Road	
Prolonged drought	Failure of stabilisation methods	Use straw mulch, geo-binder and or geo fabric to stabilise surfaces.
Chemical Spill	Discharge to aquatic environment	Call GWRC emergency hot line 0800 4 WN REG. Stop the spill, block path to avoid entry to any surface water, remove contaminants to landfill.

6.1 Discharge of Sediment

The most likely reason for the discharge of sediment into surface water is the failure of DEB, diversion drains or perimeter containment bund. Should this occur all practical steps will be taken to improve the quality of the discharge or to stop the discharge. This may include any or all of the following activities:

- Unblocking decants which may be clogged;
- Use of flocculants (in accordance with an approved Flocculation Management Plan);
- Increasing detention times (this action is dependent on the rainfall event being finished);
- Halting the discharge by blocking off the out let pipe from the DEB;
- Identifying possible mitigation measures such as removal of deposited debris;
- Reviewing the failed structure to determine if it requires to be repaired or redesigned this may include;
  - Repair existing structure where appropiate
  - Installation of additional DEBs or sediment traps;

- Improving diversion of clean water away from disturbed land; and
- Placing mulch on disturbed areas.

6.2 Tracking of mud onto Coast Road

Should mud be tracked on to Coast Road the possible contingency actions are as follows;

- Increase stabilised area;
- Install tipping platform to reduce for contact with mud;
- Install shaker or wheel wash to remove mud; and
- Installation of a wheel wash at entrance of facility.

6.3 Dust

Dust emissions shall be mitigated by -

- Establishing low speed vehicle restrictions within the Facility;
- Establishing a wheel wash at the entrance to the Facility;
- Sweeping / watering of tracks; and
- Dampening down the deposited cleanfill with water sprays when required.

6.4 Non cleanfill materials

In the event that non cleanfill materials are brought on-site, the following actions shall be taken;

- The Cleanfill Site Manager shall be informed of the incident
- Non cleanfill material shall be placed in a container for removal to landfill as soon as practical
- The material shall be disposed of at a suitable landfill or transfer station, such as Silverstream Landfill in Lower Hutt.

6.5 Noise

In the event of any noise complaints being received about activities on-site, the Cleanfill Site Manager will investigate the complaint.

The Site Manager will take appropriate action to minimise any noise problems.

If a noise problem persists a suitably qualified noise consultant shall be engaged to investigate the problem and provide advice on mitigation measures.

6.6 Traffic accident

In the event of a traffic accident on-site, the following actions would be taken:

- The scale and magnitude of the accident would be determined
- Emergency services would be contacted if required
- Traffic stopped.

7 Applicability

This report has been prepared for the exclusive use of our client Hutt City Council, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

Tonkin & Taylor Ltd

Report prepared by:	Reviewed by:
.....	.....
Billy Rodenburg	Simon Grundy
Civil Engineer	Senior Civil Engineer/Project Manager

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Authorised for Tonkin & Taylor Ltd by:

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Ed Breese

Project Director

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Appendix A: Acceptable Cleanfill Material

Table 5 - Acceptable Cleanfill Material

Acceptable Material	Comment
Asphalt (cured)	Weathered (cured) asphalt is acceptable. After asphalt has been exposed to the elements for some time, the initial oily surface will have gone and the asphalt is considered inert
Bricks	Inert - will undergo no degradation
Ceramics	Inert
Concrete (un-reinforced)	Inert material. Ensure that other attached material is removed
Concrete (reinforced)	Steel reinforcing bars will degrade. However, bars fully encased in intact concrete will be protected from corrosion by the concrete. Reinforced concrete is thus acceptable provided protruding reinforcing steel is cut off at the concrete face
Fibre cement building products	Inert material comprising cellulose fibre, Portland cement and sand. Care needs to be taken that the product does not contain asbestos, which is unacceptable
Glass	Inert, and poses little threat to the environment. May pose a safety risk if placed near the surface in public areas, or if later excavated. The safety risk on excavation should become immediately apparent, so glass is considered acceptable provided it is not placed immediately adjacent to the finished surface
Roading aggregate (sub-base and basecourse)	Inert
Soils, rock, gravel, sand, clay, etc	Acceptable if free of contamination
Tiles (clay, concrete or ceramic)	Inert

Appendix B: Report Templates

Wainuiomata Cleanfill – Monthly Inspection Sheet

Date;	
Name of auditor;	
Weather and site conditions;	
Progress of works since the previous inspection;	
Coast Road entrance (check of condition and dust/mud tracking);	
Facility unloading area (including identification of problem areas that are not being treated by sediment control measures, and any measures put in place to treat these areas);	
Condition of sediment control measures, including channels, DEBs and the perimeter bund;	
Maintenance required, contractor responsible for the maintenance, and the date this will be completed by;	
General comments	

Wainuiomata Cleanfill – Monthly Inspection Sheet for GWRC Consent No. WGN100043

Date;	*Date of inspection*
Name;	*Name/initial of inspector*
Weather and site conditions;	*What is it like on site?*
Progress of works since the previous inspection;	
What works are currently underway? *Are there any new areas of work, and what sediment control measures are in place for each new area?* *Are there any areas which have been stabilised?*	
Coast Road entrance (check of condition and dust/mud tracking);	
Have there been any incidents, accidents or near misses, and what occurred? *Is the access in good condition, and have any potholes been repaired?* *Have roads and tracks been swept/scraped of loose material that could result in dust or sediment?*	
Facility unloading area (including identification of problem areas that are not being treated by sediment control measures, and any measures put in place to treat these areas);	
Are there any areas where scouring is occurring? *Have exposed surfaces been track rolled prior to rainfall to minimise sediment generation?* *Is all runoff treated by sediment control measures?*	
Condition of sediment control measures, including channels, DEBs and the perimeter bund;	
Have any new diversion channels been constructed? *What is the condition of existing diversion channels? Check they are they adequately collecting and directing runoff, and are not scouring or filled with silt?* *What is the current water level in DEBs and grit traps? Are they discharging?*	
Maintenance required, contractor responsible for the maintenance, and the date this will be completed by;	
What maintenance is required to address any actions required above? *Who will complete each maintenance item, and when will it be completed (today, this week, or by a specific project related date)?*	
General comments	
Are there any shutdown periods coming up (Christmas, Easter, etc.), and who is the emergency contact during this period? *Any other comments?*	

Environmental Compliance Audit – Wainui Cleanfill Facility

Audit Item	Site Notes
Date	
Name of Auditor	
Site Condition	
Weather Conditions	
Sediment Management (identification of areas of potential sediment generation and review of sediment control measures	
Runoff Control (check of diversion channels and check sediment retention structures)	
Condition of sediment control measures	
Maintenance required and the date this will be completed by	
All runoff treated by E&SC measure?	
General Comments	

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Appendix F: Technical reports

REPORT

Tonkin+Taylor

Transportation Assessment- Wainuiomata Cleanfill Stage 3

130 Coast Road, Wainuiomata

Prepared for
Hutt City Council City Infrastructure
Prepared by
Tonkin & Taylor Ltd
Date
September 2018
Job Number
84466.005.v1

Exceptional thinking together
www.tonkintaylor.co.nz

Document Control

Title: Transportation Assessment- Wainuiomata Cleanfill Stage 3					
Date	**Version**	**Description**	**Prepared by:**	**Reviewed by:**	**Authorised by:**
Sep 2018	1	Draft for comment	B Rodenburg	R Dunn	

Distribution:

Hutt City Council City Infrastructure	PDF copy
Tonkin & Taylor Ltd (FILE)	PDF copy

Table of contents

1 Background and scope

Tonkin & Taylor Ltd (T+T) was engaged by Hutt City Council (City Infrastructure) to prepare a Transportation Assessment (TA) report, assessing the transportation effects of a proposed expansion of the existing cleanfill operation at their site on Coast Road. The scope of work is briefly described below, and more fully described in T+T's proposal dated 25 July 2018 (T+T Ref: 84466.005).

The Wainuiomata Cleanfill (cleanfill) has operated at this site since 2011 with a consented volume of approximately 200,000m^3 of material, to be placed within two stages. Based on current use, there is approximately four months of capacity remaining in the consented fill area. This assessment is of an expansion of the fill area to the south east of the site (Stage 3), for a further 140,000m^3 of material to be placed over a period up to ten years.

This assessment has been prepared with the guidance specified in the following:

- Integrated Transport Assessment (ITA) Guidelines - Research Report 422, published by the NZ Transport Agency November 2010; and
- City of Lower Hutt Operative District Plan (District Plan).

The spatial effects of the development are expected to have an effect within the site and at the interface with the transport network, and is expected to be compliant with statutory rules. Thus the scope of this document, in accordance with the ITA guidelines, is deemed to be simple.

1.1 Report structure

This transportation assessment of the proposed cleanfill expansion focuses on the following:

- Existing site data – a description of the site, the surrounding transport network, traffic volume records and road safety information;
- Proposal details – describing the proposed expansion with specific focus on the transportation aspects;
- Assessment of transportation effects – the trip generating potential of the site, and the effects of the anticipated vehicle trips on the surrounding road network; and
- Compliance with policy – an assessment of the proposal with the relevant transport issues, objectives, policies and rules of the District Plan.

2 Existing site data

2.1 Site location

The cleanfill site is located at 130 Coast Road, to the south of the suburb of Wainuiomata in Lower Hutt. The site is accessed from Coast Road via an existing formed and sealed access, which is shared with the sewage pumping station. Figure 1 shows the location of the site.

Figure 1 – Site Location (Source – Google Maps)

2.2 Road environment

Coast Road is a two lane rural road with a 50km/h posted speed limit in the vicinity of the site access which increases to 80km/h some 180m to the south of the cleanfill site. A single traffic lane of approximately 3m width is provided in each direction, with narrow sealed shoulders either side. The road corridor is constrained with a steep bank along the east side, and a dense stand of mature trees lining the west (cleanfill site) side of Coast Road. A number of power poles are also located within the road shoulder south of the site access.

South of the site, Coast Road is no-exit road predominantly providing access to rural and lifestyle dwellings along the Wainuiomata River valley. There are no walking, cycling or public transport provisions adjacent to the site, and no pedestrians or cyclists were observed during site visits. The existing road environment is shown in Figure 2 and Figure 3 below.

Traffic counts obtained from Hutt City Council records[1] show an average two-way daily volume of approximately 1,100 vehicles per day (vpd). An assumed 2% annual growth in traffic has been applied in the absence of any up to date traffic count information to take into account an increase in residential development further south along Coast Road. This corresponds to an assumed existing daily traffic volume of around 1,600 vpd past the site.

Figure 2 – Coast Road, looking south from the cleanfill access

Figure 3 – Coast Road, looking north from the cleanfill access towards Parenga Street

[1] Sites WAI08105 (Coast Road, south of Golf Course, 2013) and SPL00803 (Coast Road, between Burden Ave & Herbert St, 2014)

2.3 Crash records

A detailed search of the NZ Transport Agency Crash Analysis System (CAS) for the 10 year period 2009 to 2018 (inclusive) revealed a total of five crashes on the section of Coast Road between Parenga Street and the entrance to Camp Wainui (some 600m south of the cleanfill site access). Four of these crashes occurred south of the site access, involving single vehicle loss of control factors, with two crashes resulting in serious and minor injuries. A single non-injury, loss of control motorbike crash also occurred at the intersection between Parenga Street and Coast Road.

No crashes involved private accesses or heavy vehicles, or appear related to the current cleanfill operation.

Overall the crash record indicates no on-going road safety issues associated with Coast Road along the site boundary since improvements were undertaken in 2011 as part of the original cleanfill consent (refer Section 2.4 below), and the crash record is not expected to be exacerbated by the continued use of the existing site access for the cleanfill activity. A collision diagram is attached in Appendix A.

It is recommended that maintenance of the vegetation adjacent to Coast Road at the site access continues to ensure site access visibility along Coast Road is maintained.

2.4 Summary of previous assessments

Land use consent (Ref RM090340) was issued for the existing cleanfill operation by the Hutt City Council (HCC) in 2011, for a period of six years to import a total of up to 200,000m^3 of material. The consent included an Assessment of Transportation Effects undertaken by Traffic Design Group (TDG) to support the application. A number of improvements to the site access were undertaken as a result of recommendations in the TDG assessment. These are considered to have addressed what was previously considered a poor safety record on Coast Road along the site boundary, as the improvement in the crash record since 2008 would indicate.

A further consent (Ref. RM170015) was issued by Hutt City Council in 2017 allowing the continuation of the cleanfill operation at the site for up to 10 years to allow the cleanfill to reach the volume consented in 2011, following a lower than expected rate of import of cleanfill to the site. An Assessment of Transportation Effects was completed by T+T as part of the application, which did not find any concerns with the transport movements over the previous six years of cleanfill operation, and concluded the potential adverse traffic effects from the on-going cleanfill operation on the transport network were considered to be less than minor. This assessment included a single recommendation that regular maintenance of the vegetation adjacent to the site access on Coast Road continued as part of the cleanfill operation.

3 Proposed activity

The cleanfill, which has operated at this site since 2011 with a consented volume of approximately 200,000m^3 of material, is currently approaching capacity. HCC (City Infrastructure) proposes to prolong the use of the site as a cleanfill by expanding to the south east of the existing filling area. Stage 3 (the proposed expansion) will increase the capacity of the cleanfill by approximately 140,000m^3, or a further two to three years of operation based on current import rates. A 10 year consent period is sought in this consent application as the future filling rates are unknown and dependent on demand.

The site layout, including access roads and fill stages is shown in Appendix B.

No changes to the days and hours of the cleanfill operation are proposed, which are currently normal business hours, (Monday - Saturday 7.00am – 6.00pm). The site may also operate on Sunday in circumstances related to emergency civil works.

Access to the site is obtained via Coast Road, which has a 50 km/h speed limit in the vicinity of the site access driveway. The site access was reconfigured and sealed as part of the previous consent application, to allow two trucks to pass each other if required. Access to the cleanfill will continue to be restricted to south-bound vehicles only, due to the alignment of the access with Coast Road.

A new site access on Coast Road, approximately 400m south of the existing access, and an internal perimeter road are proposed at the southern end of the site to provide long term maintenance access for HCC and for Greater Wellington Regional Council (GWRC) to the adjacent Wainuiomata River. This new access will not be used for cleanfill operation, and is expected to be used by HCC and/or GWRC around 10 times a year. This access road will be locked with a chain at all times with access managed by HCC.

The existing vegetation around the access and along the site's road boundary will continue to be managed by the contractor to maintain visibility in this section of Coast Road.

The existing access is sealed adjacent to Coast Road, and the internal roads are constructed of compacted aggregate to minimise dust and the tracking of material on to Coast Road. A wheel wash facility has recently been installed at the site to further reduce the amount of material tracked on to Coast Road from vehicles exiting the site. Road sweeping will also continue to be undertaken when mud has accumulated on the road and in response to notifications from the public.

The site is of a sufficient size to allow vehicles to enter, manoeuvre and exit the site in a forward direction. The active cleanfill area will continue to be managed to allow continual access and manoeuvring of vehicles.

The site is accessed by commercial operators only. Access to the site will continue to be monitored and managed during peak periods as proposed in the Site Management Plan attached separately in the Assessment of Effects on the Environment (AEE). Vehicles accessing the site are expected to be standard heavy rigid road trucks.

4 Appraisal of transportation effects

4.1 Traffic generation

The number of vehicles entering the site are responsive to demand, varying with the timing of projects around the Wellington region.

The majority of deliveries are by heavy rigid road trucks, not truck and trailers. Truck entry data obtained from the cleanfill operator, given in Table 4-1 below, shows between 16 and 60 truck entries (32 to 120 truck movements) occur during the average day.

Increased traffic volumes (up to a maximum of 104 truck entries, or 208 truck movements) were recorded between May and July 2018 when significant excavations were underway for local developments in Wainuiomata and Lower Hutt. These are considered to represent peak months, and truck entries are expected to return to the average daily rate during August and September.

Table 4-1 - Traffic generation (source Wainui Landfill Ltd)

MONTH	TOTAL VOLUME CU.METERS	DAILY AVERAGE TRUCK ENTRIES
Jan-17	2080	16
Feb-17	2965	25
Mar-17	6796	41
Apr-17	3138	23
May-17	5318	38
Jun-17	7129	44
Jul-17	7213	52
Aug-17	6552	49
Sep-17	5390	40
Oct-17	6743	47
Nov-17	8327	60
Dec-17	3558	28
Jan-18	5018	28
Feb-18	3069	26
Mar-18	5551	41
Apr-18	3784	30
May-18	10762	69
Jun-18	10387	80
Jul-18	14227	104

The number of vehicles entering and exiting the site is not proposed to appreciably change as part of the ongoing use of the site. It is also expected that arrivals and departures will continue to be evenly spread across the day with no significant peak period of arrivals. Accordingly, the expected hourly traffic volume is expected to be within the range of 2 and 10 truck entries per hour (between 4 and 20 truck movements). Assuming a 10 hour working day this rate equates to between 20 and 100 truck entries per day, from the supplied data.

These volumes are slightly higher than assessed in the previous consent application for the cleanfill operation. However, the expected volumes remain significantly less than that of a high trip generator (as defined in the District Plan) and are expected to be accommodated on Coast Road with no appreciable delays to other road users[2].

[2] The number of vehicle movements at the site access do not meet the Austroads threshold for intersection capacity analysis described in Austroads *Guide to Traffic Management, Part 3 Traffic Studies and Analysis, 2009, Section 6.1.1*

Truck entries to the site will stop once the cleanfill site has been filled. As noted above in Section 3, maintenance activities (mowing, weeding, general inspections) on the site following closure of the cleanfill will generate a small volume of traffic but not expected to be more than 10 visits per year.

4.2 Safety

Following commencement of the cleanfill operation at the site in 2011, the contractor has not recorded any instances of traffic accidents, near misses or effects on traffic flows in the area resulting from the cleanfill operation. The CAS crash records also show no crashes related to the current cleanfill operation within the last 10 years. Furthermore, as described above in Section 2.4 the improvements to the site access undertaken in 2011 are considered to have addressed what was previously described as a poor safety record on Coast Road.

Vehicles will continue to only make right turns to enter the site and only left turns to exit. The configuration of the access to Coast Road, and the sealing of this access, has been shown to enable convenient and safe access and egress to and from the site. This access will be maintained throughout the remaining life of the cleanfill site.

Internal access roads are formed around the site providing width sufficient for on-site vehicle manoeuvres without impacting on the ability for other vehicles to unload and ensuring all vehicles can enter site unhindered in a forward direction.

4.3 Maintenance access

As described above in Section 3, a new site access is proposed at the southern end of the site to provide long term maintenance access for HCC and GWRC to the adjacent Wainuiomata River. This new access will not be used for cleanfill operation, and is expected to be used by HCC and/or GWRC around 10 times a year. This access road will be locked with a chain at all times with access managed by HCC.

The access has been aligned at a 90^{o} angle to Coast Road to maximise visibility and sight distance. This will allow access in all directions, although access is expected to be predominantly to/from the north (Wainuiomata).

The access point has been positioned to achieve the maximum sight distance to the south on Coast Road. The design plans indicate minimum sight distances of 214m and 111m to the north and south respectively within the road reserve can be achieved along Coast Road. The sight distance in both directions meets the District Plan[3] sight distance requirements of 111m for an 80 km/hr frontage road speed. A sight distance diagram is attached in Appendix C.

It is expected that Council continue to maintain vegetation within the road reserve, which could otherwise impact the available sight distance from this access.

The 0.5m high earth safety bund along the outside of the access track meets the recommended design provided in Section 5.3.9 in the Worksafe publication Health and Safety at Opencast Mines, Alluvial Mines and Quarries (November 2015).

The maximum longitudinal grade of 6% within the site is considered suitable for maintenance vehicle traffic, and the 20m of less than 3% gradient provided adjacent to the intersection with Coast Road provides adequate length for vehicles to start and stop, observing on-coming traffic prior to entering Coast Road.

[3] Refer ASNZS 2890.1:2004 Parking Facilities Part 1: Off-street car parking Figure 3.2

The chain should be positioned to allow a maintenance vehicle to stop clear of Coast Road and driver to exit the vehicle to open/ close the chain clear of traffic. We recommend seven metres of clearance from the edge line as suitable for light vehicles undertaking maintenance inspections.

5 Compliance with District Plan

This section provides an assessment of the cleanfill operation against the relevant traffic and transportation issues, objectives, policies and standards from the District Plan (Chapter 14A). As described in Tables 5.1 and 5.2 below, the proposal is considered to adequately meet the transport requirements described in Chapter 14A of the District Plan.

Table 5-1 - Transport Issues, Objectives and Policies

Issues	**Comment**
Issue 14A 2.1 A safe, efficient, resilient, multi-modal transport network that is well integrated with land use and development is essential for both sustainable development and social and economic wellbeing.	N/A – No changes to the transport network are proposed as part of the consent application.
Issue 14A 2.2 The construction, operation and maintenance of the transport network can have adverse effects on the surrounding environment, including noise, vibration and visual effects.	N/A – The existing access will continue to be used for the cleanfill with no changes proposed. A separate noise assessment will be undertaken as part of the consent application.
Issue 14A 2.3 Noise sensitive activities can have reverse sensitivity effects on the transport network, potentially affecting the construction, operation and maintenance of the network.	N/A - A separate noise assessment will be undertaken as part of the consent application.
Issue 14A 2.4 Land use and development can adversely affect the safety and efficiency of the transport network through the generation of additional traffic.	The cleanfill traffic movements are expected to be accommodated on Coast Road with no appreciable delays to other road users.
Issue 14A 2.5 Land use and development can adversely affect the safety and efficiency of the transport network through inappropriate design of on-site transport facilities (vehicle access, parking, manoeuvring and loading facilities).	The cleanfill site provides ample manoeuvring and parking space for the number of vehicles expected within the site boundaries at any one time. The access is sealed and maintained and provides good access for the vehicles entering and exiting the site.
Objectives	**Comment**
Objective 14A 3.1 A safe, efficient, resilient and well-connected transport network that is integrated with land use patterns, meets local, regional and national transport needs, facilitates and enables urban growth and economic development, and provides for all modes of transport.	N/A – No changes to the transport network are proposed as part of the consent application.
Objective 14A 3.2 Adverse effects from the construction, maintenance and development of the transport network on the adjacent environment are managed.	N/A – The existing access will continue to be used for the cleanfill with no changes proposed.
Objective 14A 3.3 Reverse sensitivity effects on the transport network from sensitive activities are managed.	N/A – The cleanfill is not expected to be sensitive to expected changes to the surrounding transport network.

Objective 14A 3.4 Adverse effects on the safety and efficiency of the transport network from land use and development that generate high volumes of traffic are managed.	N/A – the expected volumes are significantly less than that of a high trip generator as defined in the District Plan.
Objective 14A 3.5 Adverse effects on the safety and efficiency of the transport network from on-site transport facilities (vehicle access, parking, manoeuvring and loading facilities) are managed.	The cleanfill site provides ample manoeuvring and parking space for the number of vehicles expected within the site boundaries at any one time. The access is sealed and maintained and provides good access for the vehicles entering and exiting the site.
Policies	**Comment**
Policy 14A 4.1 Additions and upgrades to the transport network should seek to improve connectivity across all modes and be designed to meet industry standards that ensure that the safety, efficiency and resilience of the transport network are maintained.	No changes are proposed to the existing access for normal cleanfill operation, and the crash record indicates that this access has been current layout has been operating satisfactorily. The proposed maintenance access meets the sight distance, separation and geometric design requirements of ASNZS 2890.1:2004 in accordance with the District Plan.
Policy 14A 4.2 Land use, subdivision and development should not cause significant adverse effects on the connectivity, accessibility and safety of the transport network, and, where appropriate, should: • Seek to improve connectivity within and between communities; and • Enable walking, cycling and access to public transport.	N/A – No changes to the transport network are proposed as part of the consent application.
Policy 14A 4.3 The transport network should be located and designed to avoid, remedy or mitigate adverse effects on the adjacent environment.	N/A – No changes to the transport network are proposed as part of the consent application.
Policy 14A 4.4 Land use, subdivision or development containing noise sensitive activities should be designed and located to avoid, remedy or mitigate adverse effects which may arise from the transport network.	N/A - A separate noise assessment will be undertaken as part of the consent application.
Policy 14A 4.5 Any activity that is a High Trip Generator must be assessed on a case by case basis. Adverse effects of High Trip Generators on the safety and efficiency of the transport network should be managed through the design and location of the land use, subdivision or development.	N/A – the expected volumes are significantly less than that of a high trip generator as defined in the District Plan.

Policy 14A 4.6 Vehicle access, parking, manoeuvring and loading facilities should be designed to standards that ensure they do not compromise the safety and efficiency of the transport network.	The cleanfill site provides ample manoeuvring and parking space for the number of vehicles expected within the site boundaries at any one time. The access is sealed and maintained and provides good access for the vehicles entering and exiting the site.
Policy 14A 4.7 The transport network, land use, subdivision and development should provide for all transport modes.	No changes to the transport network are proposed as part of the consent application. The site does not preclude access by all modes; however the cleanfill activity by nature will be accessed by vehicle.

Table 5-2 - Transport Standards (Appendix 1)

Proposed activity	Standard	Comment
Separation between adjacent accesses	2 (a) describes vehicle access requirements, specifically; • No more than two separate vehicle accesses for a single site • A minimum 1.0m separation between the accesses. • Site access must be designed and constructed in accordance with Section 3 of AS/NZS 2890.1:2004	Two vehicle accesses will be provided to the cleanfill site. The new access is 400m south of the existing site access, and 70m from the nearest residential driveway (east side of Coast Road). The access location meets the sight distance requirements in Figure 3.2 of AS/NZS 2890.1:2004.
Distance of cleanfill access to nearest intersection	2 (b) Lists minimum distances between access ways and intersections, based on maximum numbers of vehicle movements.	The cleanfill access is 230 m from the nearest intersection, which complies with the most stringent requirement listed in this rule.
Circulation and manoeuvring space	2 (c) requires sufficient internal roading to allow for all necessary movements to be undertaken within the site.	The site has sufficient internal roading to allow for all necessary movement within the site. The site has sufficient manoeuvring space to allow vehicles to enter and exit the site in a forward direction.
Parking spaces	4(a) require car parking spaces to be provided in accordance with the activity undertaken at the site.	Car parking requirements for a cleanfill or landfill activity are not listed in Appendix 3. Therefore, the industrial activity requirements have been assessed which requires the greater of 1 car parking space per staff member or 1 space per 100 m^2 GFA. The site is able to accommodate a significant number parked vehicles, more than adequate for the single staff member usually present on site.
Location of parking spaces	4(c) requires parking spaces be provided on site.	A significant number of parked vehicles can be accommodated on site.
Design of parking spaces	4 (d) requires the design of parking spaces to ensure convenient, safe and efficient use, with dimensions in accordance with the appropriate Standard.	Car parking spaces are not marked on site. Areas for car parking on site will be assigned by the cleanfill manager based on site operations, and maintained appropriately.
Loading and unloading space	5(b) requires adequate provision for loading and unloading from vehicles.	A generic unloading space will be provided at all times on the cleanfill site to enable the deposition of clean fill material. Vehicles will manoeuvre to the location where fill is to be deposited and unload.

6 Conclusions

This Transportation Assessment has been prepared to assess the proposed Stage 3 expansion of the existing cleanfill operation at 130 Coast Road, Wainuiomata.

Based on the assessment of anticipated transportation effects undertaken within this report, the following is concluded:

1 No crashes involving private accesses or heavy vehicles, or appearing related to the current cleanfill operation, have occurred since the cleanfill operation commenced in 2011;

2 Daily traffic volumes generated by the activity are not expected to appreciably change as a result of this cleanfill expansion, and the contractor has not recorded any instances of traffic accidents, near misses or effects on traffic flows in the area resulting from the existing cleanfill operation;

3 The on-going operation of the cleanfill, with the expected traffic generation is not expected to adversely impact the safety or efficiency of the access and operation of Coast Road;

4 The proposed maintenance access road is to be located in a position that achieves the minimum access sight distance requirements set out in the District Plan;

5 It is expected that Council continue to maintain vegetation within the road reserve, which could otherwise impact the available sight distance from this access; and

6 The chain across the new proposed maintenance access track should be positioned to allow a maintenance vehicle to stop clear of Coast Road, and driver to exit the vehicle clear of traffic to open/ close the chain. We recommend seven metres of clearance from the edge line as suitable for light vehicles undertaking maintenance inspections.

Accordingly, on the basis of the preceding assessment of the transportation effects of the proposed development and with the mitigation measure recommended, it is considered that the proposed expansion to cleanfill activities and construction of new maintenance access on to Coast Road can be supported from a road safety and transportation planning perspective.

7 Applicability

This report has been prepared for the benefit of Hutt City Council City Infrastructure with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose without our prior review and agreement.

Tonkin & Taylor Ltd

Report prepared by:

.....

Billy Rodenburg

Transportation Engineer

Authorised for Tonkin & Taylor Ltd by:

.....

Ed Breese

Project Director

Report reviewed by:

.....

Ryan Dunn

Senior Transportation Engineer

\\weldc1.ttgroup.local\data\rep\live\tt\projects\84466\84466.0050\workingmaterial\transport assessment\84466.005 ta wainui cleanfill stage 3.docx

Appendix A Crash history diagram

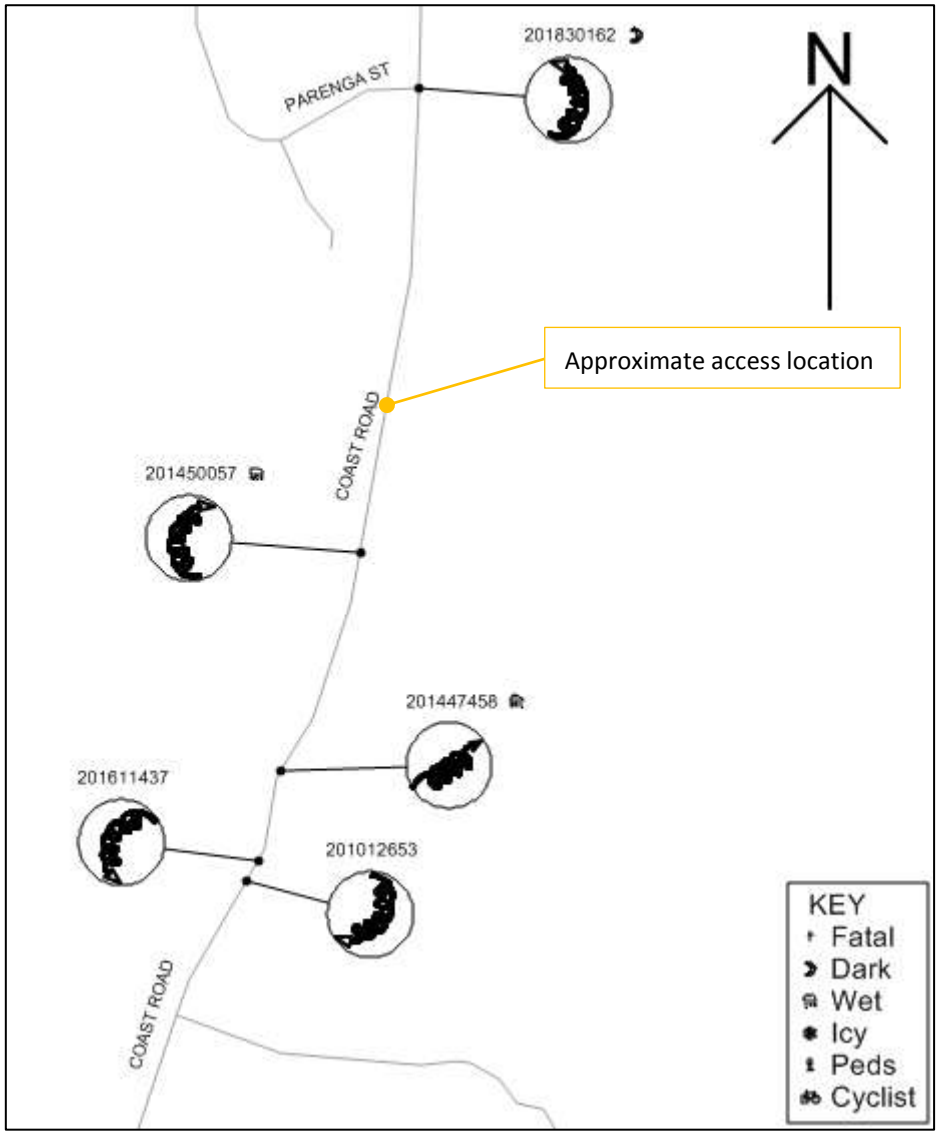

Figure 4 Crash history diagram

Appendix B: Site plan

Maintenance access track

800 x 800 concrete block armour wall extension

Stormwater crossing (ford)

1 in 100 year flood line (Refer DWG 84466.02 and Note 4 for details)

20m

800 x 800 concrete block armour wall.

Proposed maintenance access track 3m min wide

Cleanfill surface to be contoured to a natural, rounded landscape profile. Final landscape profile to be confirmed

Chain gate or similar to control access

Stage 2
Total Volume (approx) – 165,356m^3
less 117,179m^3 already placed as at October 2017

Stage 3
Total Volume (approx)
117,000m^3

Stage 1
Total Volume (approx) – 30,012m^3

Cleanfill surface to be contoured to a natural, rounded landscape profile. Final landscape profile to be confirmed

New maintenance access

Site entrance kiosk

Pump Station

Proposed stormwater channel, refer detail

Approximate location of existing HCC GIS sewer pipe

Approximate location of existing HCC GIS stormwater pipe

COAST ROAD

Approximate location of existing stormwater pipe

LEGEND

- Proposed Stage 3
- Proposed concrete block wall
- Proposed access track
- Sealed road (existing)
- Temporary metalled roads
- Existing Property boundary
- 72 — Stage 3 Proposed fill Contours (1m interval)
- 72 — Stage 2 Proposed fill Contours (1m interval)
- 72 — Stage 1 & 2 Existing fill Contours (1m interval)
- GWRC 1 in 100 Year Flood Extent
- GWRC Erosion Risk Area Extent

ORIGINAL IN COLOUR

A3 SCALE 1: 1250

0 25 50 75 (m)

DRAWING STATUS: FOR INFORMATION ONLY

REVISION	DESCRIPTION	BY	DATE
1	FOR INFORMATION ONLY	BLR	Aug. 18

DESIGNED :	BLR	Sep. 18
DRAWN :	BLR	Sep. 18
DESIGN CHECKED :		
DRAFTING CHECKED :		

CADFILE : \\84466.0050-20.dwg

APPROVED :

NOT FOR CONSTRUCTION

This drawing is not to be used for construction purposes unless signed as approved

NOTES :

1. Aerial photo supplied by Cuttriss Consultants (Date of Photography : Oct 2017)
2. Topographic survey supplied by Cuttriss Consultants, dated October 2017. Reference data: "29513 Wainui Cleanfill Contours.dwg".
3. Coordinate Datum: NZGD2000, Wellington Circuit Coordinates. Origin: 41 18 04S 174 46 35E 800,000mN 400,000mE Level Datum: LINZ (MSL) Wellington Vertical Datum 1953
4. Flood modelling provided by GWRC December 2017
5. Refer to DWG 84466.002-02 for details of flood modelling, DWGs 84466.002-03 to 07 for details of proposed flood inundation armour wall; DWG 84466.002-08 for culvert details and 84466.005-21 for sections.

REFERENCE :

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CLIENT, PROJECT
HUTT CITY COUNCIL
WAINUIOMATA CLEAN FILL SITE

TITLE
SITE PLAN – STAGE 3 CLEANFILL EXTENSION

SCALES (AT A3 SIZE)	DWG. No.	REV.
1: 1250	84466.005-20	1

Appendix C: Site distance diagram

Hutt City Council

Date Printed:

10 September 2018

Projection: NZGD_2000_New_Zealand_Transverse_Mercator

SCALE 1: 4,000

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DESIGN CALCULATIONS

Job Name:	Wainuiomata Clean Fill Stage 3	Revision No:	1
Job Location:	Wainuiomata	Job No:	84466.005
Design Case:	Slope stability and seismic deformation assessment	Designer:	DAUM

Revision History

Ref	Scope	Reviewed by	Date checked	PD Review	Comments
1	Slope stability and seismic deformation assessment	SMP	28/08/2018		See File

Table of Contents

1 Summary

1.1 Key Design Conclusions

Item	Description	Comments from Reviewer
1	Static factor of safety for proposed Stage 3 clean fill meets design criteria	
2	Static factor of safety is expected to meet design criteria for a range of clean fill material properties and groundwater conditions	
3	Median estimate of seismic slope deformations is 10 cm for an earthquake with an annual probability of exceedance of 1/500	

1.2 Key Design Verification Requirements / Further Work

Item	Description	Comments from Reviewer
4	Subsurface (foundation) conditions for proposed Stage 3 is unknown below of depth of 4 metres	
5	Based on a review of regional geologic and seismic hazard maps, foundation is assumed not to contain significant soft or liquefiable deposits	
6	No geotechnical testing on site soils or clean fill materials – material properties are inferred from visual observations	

2 Design Purpose

The Wainuiomata Clean Fill (site) is an existing clean fill facility in Wainuiomata, Lower Hutt. The site is owned by the Hutt City Council (HCC). The Site currently has two stages of clean fill, Stages 1 and 2. A proposed extension, Stage 3, will be located to the south of Stage 2 and consist of approximately 140,000 m^3 of additional fill capacity.

The purpose of these design calculations are to assess the stability and anticipated seismic deformations of the proposed Stage 3 clean fill slopes.

The proposed layout of Stage 3 and the cross section used to model site conditions is included as **Attachment 1**.

3 Design Objective

The minimum static factor of safety under design final conditions has been taken as 1.5. This factor of safety is typical for modelling long-term steady state conditions of embankments. See, for example, Section 6.4.1 of the New Zealand Transportation Agency's *Bridge Manual* (2016)[1], which requires that embankment have a minimum design long term factor of safety of 1.5 "based on moderately conservative effective stress soil strengths under moderately conservative design operating piezometric conditions."

The proposed clean fill slopes have also been assessed for a scenario in which groundwater conditions in the fill is elevated 4 metres above the base of the fill. This groundwater condition is considered unlikely, as the foundation soils are generally free draining, however, this groundwater condition is modelled to represent the range of potential slope behaviour. The minimum factor of safety under this short-term condition is taken as 1.3.

[1] New Zealand Transport Agency (NZTA), 2016, "Bridge Manual SP/M/022," Third edition, Amendment 2. Effective from May 2016.

Seismic deformations are assumed to be acceptable provided the resulting damage is easily repairable.

4 Input Parameters and Assumptions

4.1 Ground model

The published geology of the site[2] indicates that the site is underlain by well sorted Holocene alluvial gravels. Recent site investigations consisted of a series of test pits in the Stage 3 area, which were excavated to a depth of up to approximately 3 metres. These test pits suggest that the site is generally underlain by a thin layer (<50 mm) of topsoil, 0.5 to 1.5 metres of stiff silt, and dense gravels with silt and sand. Representative site photos are included as **Attachment 2**.

In addition, Tonkin + Taylor (T+T) reviewed field logs from monitoring wells BH A, BH B, and BH 3, which were installed in 2002. These monitoring wells were drilled to a depth of 4 metres below ground surface and indicate that subsurface conditions consist of "light brown sandy silt and gravels."

T+T understands that no other geotechnical or geologic site investigation (besides the test pits and monitoring well field logs described above) have been performed at the site. As such, subsurface conditions deeper than 4 metres below existing ground levels are unknown and are inferred from the regional geology.

As the site consists of Holocene river deposits, there is the potential for soft or loose soils to exist at depth. The combined earthquake hazard map for the Hutt Valley, published by the Greater Wellington Regional Council[3] and included for reference as **Attachment 3**, indicates that the site has variable to no liquefaction potential, and that the overall seismic hazard is "medium". In consideration of the above and based on the dense gravels observed in the test pits, the potential for soft or loose soil deposits in the foundation is considered low to moderate. However, the stability of the Stage 3 fill slopes should be re-evaluated if the subsurface conditions are found to vary from assumed in this calculations package.

Ground conditions on site were modelled as 1.5 metres of alluvial silts overlying Holocene river gravel. Note that the slope stability results were not observed to be sensitive to depth to bedrock.

For long-term static slope stability and seismic deformations evaluations, the groundwater level was assumed to be located at the current ground level (i.e., the base of the clean fill).

4.2 Material Properties

Material properties adopted in the analyses are presented in Table 1 below. Geotechnical laboratory or field testing isn't available on site soils or clean fill material, therefore the material properties presented in Table 1 are inferred from site observations including soil composition and consistency. These material values represent moderately conservative interpretations of strengths for each material type.

Site clean fill generally consists of a mixture of soil and construction debris which is lightly to moderately compacted on site. The clean fill occasionally consists of softer clays or silts which are blended with previously deposited soil on site, therefore, assumed properties for clean fill represent assumed values for moderately soft cohesive soil.

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[2] Begg, J.G., Johnston, M.R. (compilers) 2000: *Geology of the Wellington area*. Institute of Geological & Nuclear Sciences 1:250,000 geological map 10. 1 sheet + 64 p. Lower Hutt, New Zealand. Institute of Geological & Nuclear Sciences Limited.

[3] Breater Wellington Regional Council, 1996. *Sheet 3 Hutt Valley (1st ed.)*. Combined Earthquake Hazard map 1:30000, Pub. No. WRC/RP-T-96/14 Greater Wellington Regional Council, Wellington, New Zealand.

Table 1 Material properties adopted for stability analyses

Material	Strength Model	Unit Weight (γ), kN/m^3	Effective Friction Angle (Φ'), degrees	Effective cohesion (c'), kPa
Clean fill	Mohr-Coulomb	18	25	10
Alluvial silt	Undrained	18	0	60
Holocene river gravel	Mohr-Coulomb	20	32	0

4.3 Section location

Section 1 was used to model the stability of the Stage 3 fill slopes. However, Section 1 is not perpendicular to the maximum slope gradient, so this section was modified slightly so that the batter of the front face slope is 3:1 (horizontal : vertical) to represent design conditions. The base of the Stage 3 fill is represented by the site topographic survey supplied by Cuttriss Consultants, dated October 2017.

4.4 Seismic hazard

The design earthquake loading for the site was derived based on the *Bridge Manual* and NZS 1170.5: *Structural design actions*[4]. The design site loads were evaluated in **Attachment 4**.

Design loading was evaluated assuming the site is an Importance Level 2 (normal structure) with a design working life of 50 years, for which the ultimate limit state (ULS) earthquake is taken as the ground motions with a 1/500 annual probability of exceedance. The site is assumed to be a Class D (deep soil) site based on regional geology, the site location relative to valley side slopes, and the angle of these side slopes.

The site peak ground acceleration (PGA) is taken as 0.34 g and the effective earthquake magnitude (M_w) is taken as 7.1. Note that slip surfaces through the fill may experience amplification of the ground motions, depending on the period of the slip surface relative to the frequency of the input ground motions. For the anticipated slip surfaces of the Stage 3 fill, the period of the slip surface is estimated to be approximately 0.1s. The spectral acceleration of the slip surface under seismic loading conditions was evaluated based on the elastic site spectra for horizontal loading described in Section 3.1 of NZS 1170.5.

5 Design Method

5.1 Slope stability modelling

The static and seismic stability of the landfill were evaluated using limit equilibrium slope stability analyses employed in the software programme Slope/W (Geo-Studio, 2018). Analyses were performed using Spencer's (1967) method of slices, which satisfies both force and moment equilibrium conditions. For each stability assessment, the programme performed a grid and radius search to find the minimum factor of safety. The grid

[4] Standards New Zealand, 2004, "New Zealand Standard, Structural design actions – Part 5: Earthquake actions – New Zealand," NZS 1170.5:2004, incorporating Amendment No. 1.

and radius search uses a series of grid points representing the centres of a rotational slip surfaces, and a series of lines to which the circular slip surfaces are tangent.

Output files from the slope stability evaluation are included as **Attachment 5**.

5.2 Seismic deformation assessment

The amount of permanent seismic deformation was estimated for final grades of the Stage 3 fill under the design earthquake scenario (i.e., ground motions with a 1 in 500 year annual probability of exceedance). These estimates were performed to assess the seismic performance of the Stage 3 slopes, particularly in relation to the magnitude of seismically-induced displacements that might be accommodated by the final fill slopes.

Seismic displacements were estimated using the methodology described by Bray and Travasarou (2007), which is a semi-empirical method to estimate seismically-induced deviatoric slope displacements based on the results of nonlinear fully coupled Newmark-type sliding block analyses. An outline of the method of analysis is as follows:

1 Use Slope/W to find the yield acceleration (k_y) of a slope, defined as the horizontal seismic coefficient which produces a factor of safety of 1.0 in a pseudo-static slope stability analysis.

2 Estimate the height (H) of the centre of mass of the critical slip surface under pseudo-static conditions.

3 Use the assumed shear wave velocity of the sliding mass materials (taken as 400 m/s) along with the height of the slip surface to evaluate the fundamental period of the slip surface (T_s): $T_s=4H/V_s$.

4 Estimate the spectral acceleration (S_a) at the degraded period of the sliding mass (1.5 T_s). The spectral acceleration was estimated using the elastic site spectra for horizontal loading developed through NZS 1170.5 and described in Section 4.4.

5 Use Bray and Travasarou (2007) to estimate the seismic displacement. The Bray and Travasarou (2007) model uses the following input parameters: k_y from Step 1, $S_a(1.5T_s)$ from Step 4, and earthquake magnitude (M_w=7.1 as discussed in Section 4.4).

Calculations for seismic slope displacement are included as **Attachment 6**.

6 Results

The results of the static slope stability and seismic deformation analyses are presented below in Tables 2 and 3.

As shown in Table 2, the minimum static factors of safety are achieved.

As shown in Table 3, the median seismic slope displacement is estimated to be 10 cm, while the median +1 standard deviation seismic slope displacement is estimated to be 20 cm. These seismic slope displacements represent values with a 50% or 16% probability of exceedance under the design ground motions, respectively. These seismic slope displacements are expected to be readily repairable and are therefore assumed to meet design objectives.

Table 2 Summary of static slope stability results

Description	Factor of Safety	Minimum Factor of Safety	Meets Criteria?
Static slope stability – long term	2.4	1.5	Yes
Static slope stability – elevated groundwater	2.0	1.3	Yes

Table 3 Summary of seismic slope deformation results

Description	***Seismic slope displacement (cm)***	**Meets Criteria?**
Seismic slope displacement – median estimate	12	Yes
Seismic slope displacement – median +1 standard deviation estimate	24	Yes

As there is significant variability in the type of clean fill at the site, there is also significant uncertainty in the material properties used to represent the clean fill. A sensitivity analyses on the long-term static factor of safety was therefore performed to represent the expected range of material properties that might be expected for the clean fill. Figure 1 presents a sensitivity analysis for the effective friction angle of the clean fill. Figure 2 presents a sensitivity analysis for the total unit weight of the clean fill. All other material parameters were set constant during these sensitivity evaluations.

As shown in Figures 1 and 2, the factor of safety decreases for material with a lower friction angle and a higher total unit weight, however, the minimum factors of safety are achieved across the range of clean fill material properties that may be reasonably expected at the site.

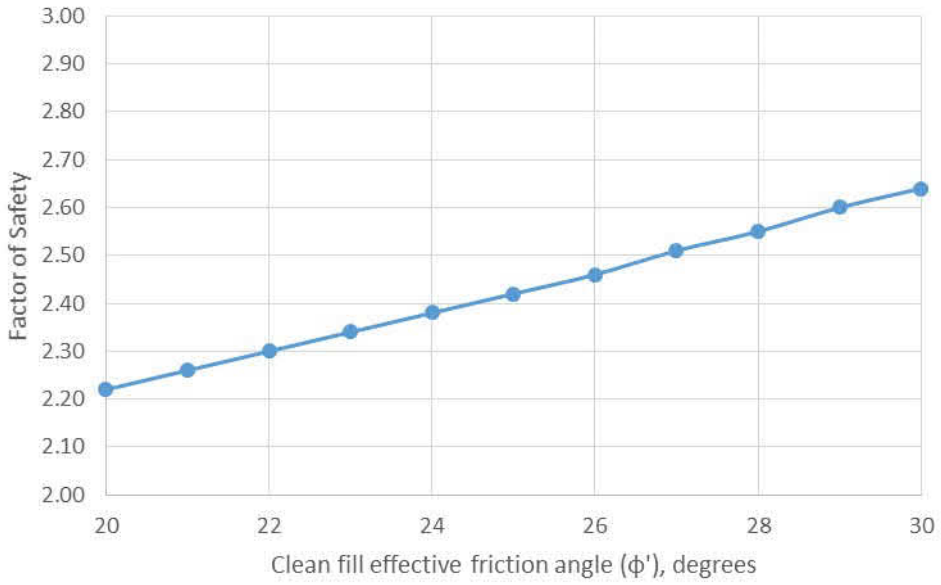

Figure 1 Static factor of safety sensitivity analyses for clean fill effective friction angle

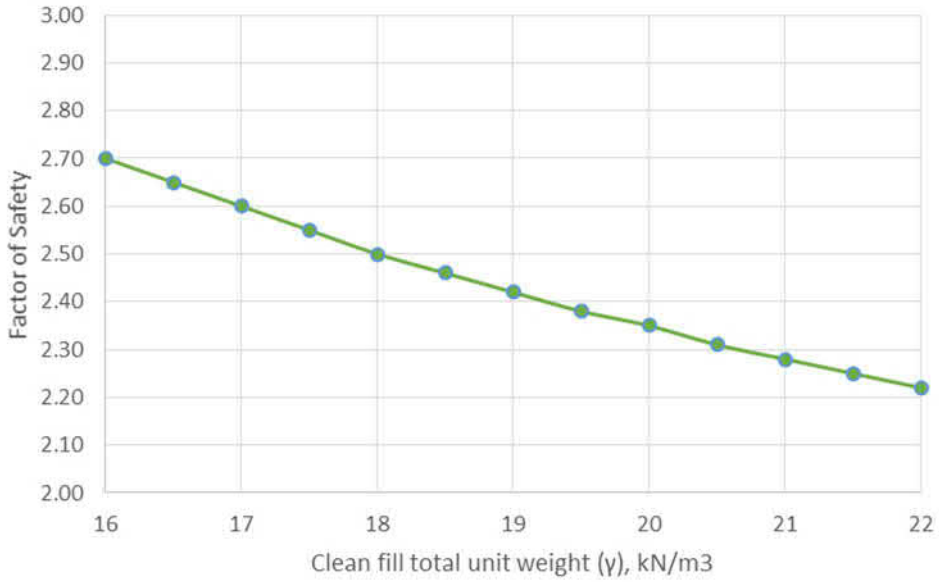

Figure 2 Static factor of safety sensitivity analyses for clean fill total unit weight

There is also uncertainty related to the strength of the alluvial silt layer. The properties of this layer are observed to influence the estimated seismic slope displacement. Therefore, a sensitivity analysis was performed to evaluate the relationship between the median seismic displacement estimate and the undrained shear strength of the silt layer. As shown in Figure 3, median estimates of seismic slope displacements are expected to be easily repairable across the anticipated range of shear strengths for the alluvial silt layer.

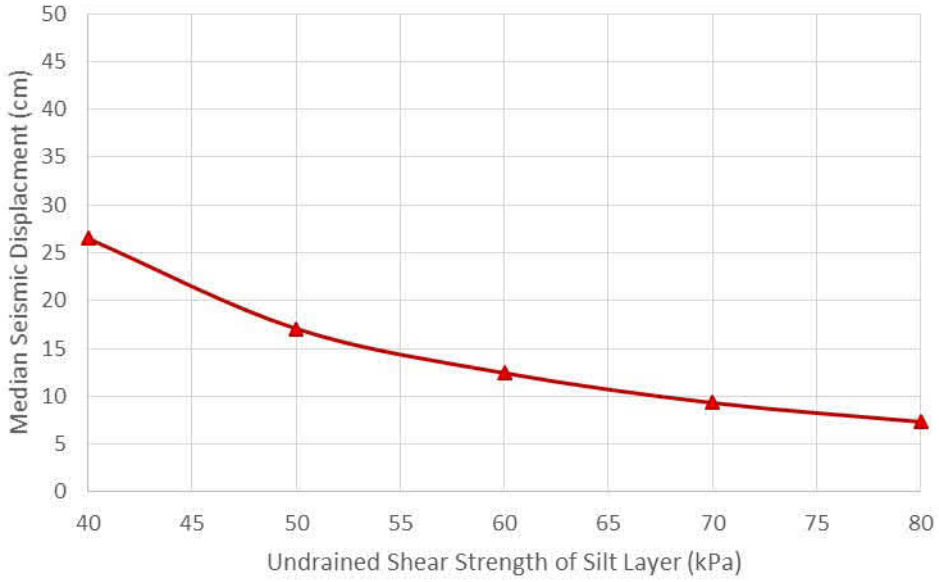

Figure 3 Seismic displacement sensitivity analyses for undrained shear strength of silt layer

7 Risks / Uncertainties

There is considerable uncertainty in the Stage 3 subsurface conditions and material properties. Observed site conditions directly beneath Stage 3 consists of dense alluvial gravels to a depth of approximately 4 metres, but conditions below this depth are unknown and are inferred based on regional geology and hazard maps. A key analysis assumption is that a continuous layer of soft or liquefiable soils are not present in the subsurface beneath the proposed Stage 3 fill. Based on the depositional environment and regional geology, there is the potential for historic stream channel deposits of soft or liquefiable soil. These deposits are most likely to be discontinuous lenses. Based on the available information, T+T can't rule out the potential risk of instability due to less favourable foundation conditions, however, we consider that damaged is most likely to be localised depending on the orientation of the soft or liquefiable stream channel deposits. However, the magnitude and extent of potential damage is difficult to quantify without more detailed information about the site subsurface conditions.

There is also uncertainty in the properties of the clean fill, however, sensitivity analyses presented in Figures 1 and 2 suggest that the Stage 3 fill slopes are likely to achieve acceptable static factors of safety across the range of expected clean fill material conditions. Note that existing slopes in Stages 1 and 2 are built at the same slope batter as designed for Stage 3 (3 horizontal : 1 vertical), and are constructed to a similar height of approximately 10 metres. T+T understands that these existing clean fill slopes have not exhibited any evidence of instability.

Stability and seismic deformations of the Stage 3 fill slopes should be re-evaluated if foundation or clean fill properties are found to vary from assumed in these analyses.

Attachment 1 - Stage 3 layout and cross section

800 x 800 concrete block armour wall extension (alignment to be confirmed).

800 x 800 concrete block armour wall.

Proposed maintenance access track 3m min wide

1 in 100 year flood line (Refer DWG 84466.02 and Note 4 for details)

20m

10m Min. toe of fill clearance to boundary

1

Stage 3
Total Volume (approx) – 140,000m³

Stage 2
Total Volume (approx) – 165,356m³
less 117,179m³ already placed as at October 2017

Stage 1
Total Volume (approx) – 30,012m³

Erosion Extent

Proposed stormwater channel, refer detail

COAST ROAD

approximate location of existing stormwater pipe

LEGEND

- Proposed Cleanfill Area
- Proposed concrete block wall
- Proposed access track
- Sealed road (existing)
- Temporary metalled roads
- Existing Property boundary
- Proposed fill contour
- 78 Existing Major Contours (2m) (From Drone Survey 2017)
- 72 Existing Major Contours (0.5m) (From Drone Survey 2017)
- GWRC 1 in 100 Year Flood Extent
- GWRC Erosion Risk Area Extent

ORIGINAL IN COLOUR

A3 SCALE 1: 1250

0 25 50 75 (m)

DRAWING STATUS: FOR INFORMATION ONLY

REVISION	DESCRIPTION	BY	DATE
1	FOR INFORMATION ONLY	BLR	Aug. 18

DESIGNED :	BLR	Aug. 18
DRAWN :	BLR	Aug. 18
DESIGN CHECKED :		
DRAFTING CHECKED :		

CADFILE : \\84466.0050-01.dwg

APPROVED :

NOT FOR CONSTRUCTION

This drawing is not to be used for construction purposes unless signed as approved

NOTES :

1. Aerial photo supplied by Cuttriss Consultants (Date of Photography : Oct 2017)
2. Topographic survey supplied by Cuttriss Consultants, dated October 2017. Reference data: "29513 Wainui Cleanfill Contours.dwg".
3. Coordinate Datum: NZGD2000, Wellington Circuit Coordinates. Origin: 41 18 04S 174 46 35E 800,000mN 400,000mE Level Datum: LINZ (MSL) Wellington Vertical Datum 1953
4. Flood modelling provided by GWRC December 2017
5. Refer to DWG 84466.002-02 for details of flood modelling, DWGs 84466.002-03 to 07 for details of proposed flood inundation armour wall and DWG 84466.002-08 for culvert details

REFERENCE :

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www.tonkintaylor.co.nz

CLIENT, PROJECT
HUTT CITY COUNCIL
WAINUIOMATA CLEAN FILL SITE

TITLE
SITE PLAN – STAGE 3 CLEANFILL EXTENSION

SCALES (AT A3 SIZE)	DWG. No.	REV.
1: 1250	84466.005-20	1

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Datum RL60

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STAGE 2 DESIGN FL (m)												72.9	76.22	79.53	82	82	82	82	82	82	82	82
STAGE 3 DESIGN FL (m)			71.73	72.72	75.84	78.98	80.65	81.3	81.78	82	82	81.56	81.07	80.14								
CHAINAGE (m)	0.00	10.00	20.00	30.00	40.00	50.00	60.00	70.00	80.00	90.00	100.00	110.00	120.00	130.00	140.00	150.00	160.00	170.00	180.00	190.00	200.00	201.05

SECTION 1–>

Horizontal Scale 1: 1000

Vertical Scale 1: 1000

PRELIMINARY DRAFT

12D WORKING FOLDER: T:\Wellington\TT Projects\84466\WorkingMaterial\12D\DESIGN\STAGE 3 12D PROJECT: STAGE 3

PLOT FILE: o-LPLOT, PLOTTED: Wed Aug 22 15:47:58 2018

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105 Carlton Gore Road, Newmarket, Auckland
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DRAWN	BRMA
DRAFTING CHECKED	
APPROVED	
CADFILE :	*12D DRAFT*
SCALES (AT A3 SIZE)	1:1000(H) - 1:1000(V)
PROJECT No.	84466.003

HUTT CITY COUNCIL

WAINUIOMATA LANDFILL STAGE 3 CLEAN FILL

SKETCH. No. Sheet 1 - CH 0.00 to 201.05 REV. 1

Attachment 2 - Representative site photos

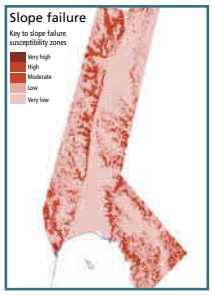
Photo 1: Typical shallow subsurface conditions at site, from test pit investigation. Photo shows approximately 500 mm of topsoil and stiff silt overlying a well graded alluvial gravel layer

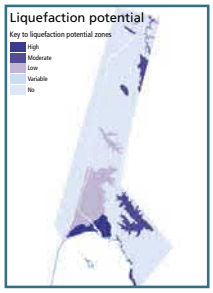
Photo 2: Existing site conditions and typical conditions for site cleanfill

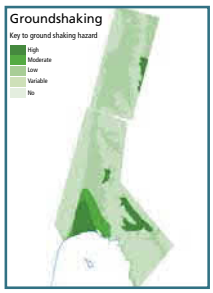
Attachment 3 - Regional earthquake hazard map

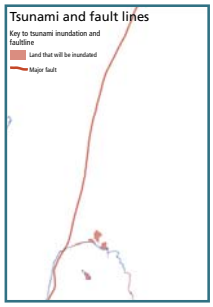
Combined earthquake hazard map

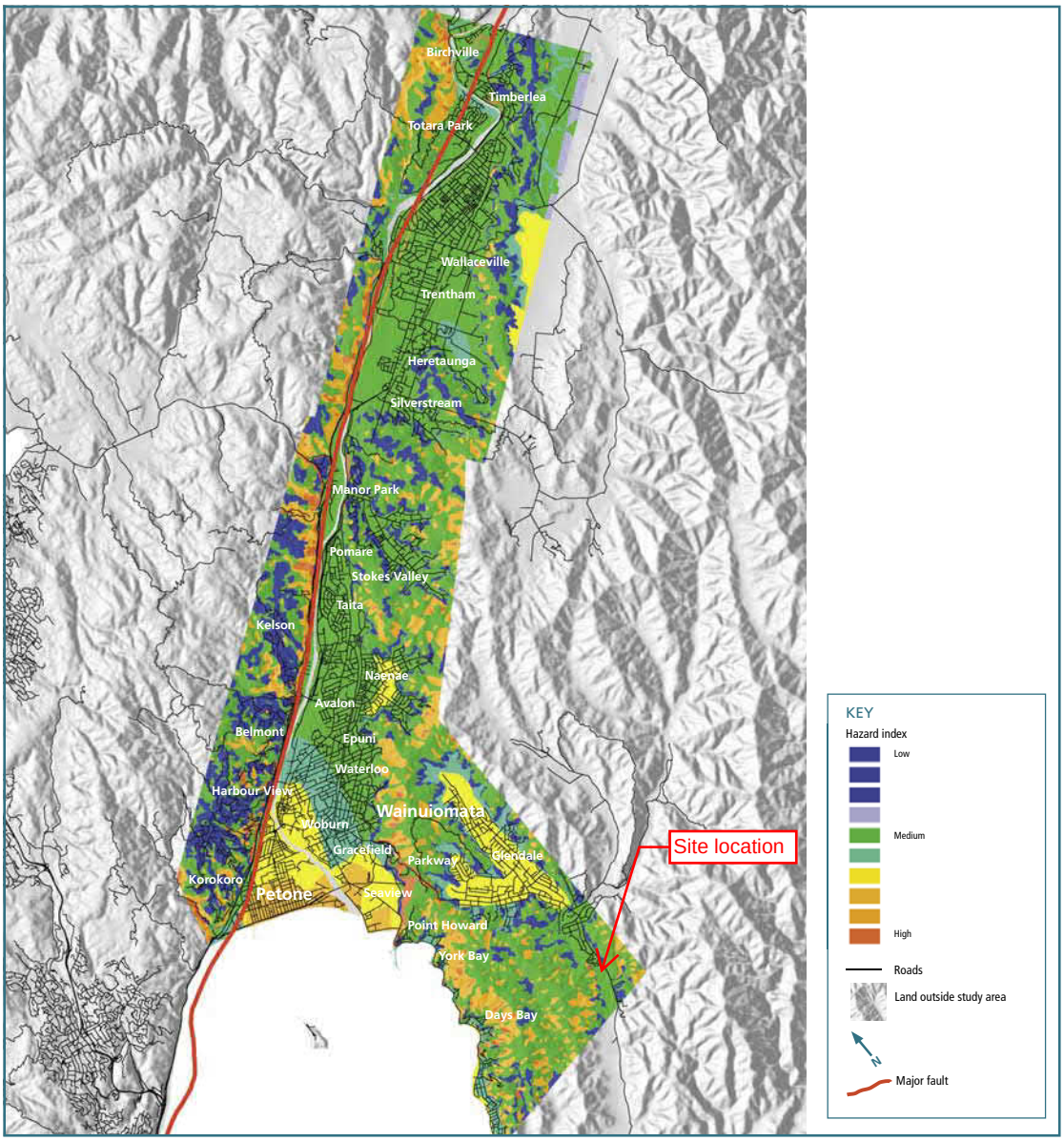
Hutt Valley











Earthquake hazard mitigation measures

Hazard	Effect on ground	Effect on facilities	Mitigation options: existing facilities	Mitigation options: planned facilities
Fault movement	Ground disturbances vertically and horizontally over a zone depends on depth to rock below surface. Cracks in land surface.	Upheaval, tearing apart, movement of foundations, severe damage to structures which cross the fault.	1. Verify. 2. Assess impact. 3. Options: a) strengthen to survive b) move facilities from fault zone c) limit damage by providing weak links or isolation	1. Verify. 2. Assess impact. 3. Options: a) construct facilities elsewhere b) incorporate special strengthening c) provide weak links or special isolation to limit damage
Ground shaking	Violent horizontal and vertical motions for up to one minute duration.	Cracking, fracture, collapse of buildings. Breaks in underground services. Deformation of surface infrastructure.	1. Verify. 2. Assess impact. 3. Options: a) strengthen or base isolate b) secure/improve vulnerable parts c) limit damage by providing weak links or isolation.	1. Verify. 2. Assess impact. 3. Options: a) comply with current codes for design and construction b) incorporate strength and resilience c) secure vulnerable parts and contents
Liquefaction	Shaking causes some soils to behave like liquid, causing loss of support to structures above. Such soils may be up to 10m below ground surface. Lateral movement of large soil masses, especially adjacent to rivers. Variable subsidence of ground surface.	Sinking and tilting of structures supported on liquefied material. Severe damage to underground services. Flotation of empty underground tanks and chambers.	1. Verify. 2. Assess impact. 3. Options: a) install piles b) install gravel drains c) drain liquefiable layers d) prepare for quick reinstatement	1. Verify. 2. Assess impact. 3. Options: a) compact ground at site b) install piles and gravel drains c) drain liquefiable layers
Slope failure	A significant soil masses moves bodily down the slope, from few hundred millimetres to many metres. Landslides occur at many different locations.	Ranges from deformation of foundations and structural failures to total destruction of site and all buildings and infrastructure above and below ground.	1. Verify. 2. Assess impact. 3 Options: a) stabilise slope – retaining walls b) stabilise slope – ground anchors c) improve drainage, reduce erosion	1. Verify. 2. Assess impact. 3. Options: a) find a better site b) stabilise slope retaining walls c) stabilise slope – ground anchors d) improve drainage, reduce erosion
Tsunami	Land flooded. Scouring action erodes soil dramatically	Flooding of basements. Undermining/destruction of surface infrastructure. Exposure/ damage to underground services. Undermining of foundations. Bodily movement of some structures, equipment, vehicles etc.	1. Verify. 2. Assess impact. 3. Options: a) construct protective sea walls b) shift critical facilities to higher level	1. Verify. 2. Assess impact. 3. Options: a) find a better site b) construct protective sea walls c) design special foundations / dikes d) put critical facilities at high level

Background statement

In recognition of the earthquake hazard in the Region, the Greater Wellington Regional Council has carried out studies on ground surface rupture from active faulting, ground shaking, liquefaction potential and associated ground damage, slope failure and tsunami inundation (Wellington Harbour). Single factor hazard maps have been produced by Greater Wellington for each of these earthquake hazards.

This map sheet is part of a series of four map sheets showing the combined earthquake hazard for the main urban areas in the western part of the Wellington Region. The map series is one of Greater Wellington's natural hazard education and awareness initiatives.

The combined earthquake hazard map is a generalised map of earthquake hazard reflecting possible effects on a typical range of facilities (buildings, roads, services, etc). The methodology has involved broad assessments of many factors which determine the effects of earthquakes.

This map series was prepared for Greater Wellington by Ian R Brown Associates Ltd in association with Kingston Morrison Ltd and Victoria University of Wellington.

Warning

The hazard assessment methodologies developed for each of the earthquake hazard components and the methodology used to combine and present the hazard information impose certain qualifications and limitations on the use of the information. Details on the qualifications and limitations, and assessment methodologies of the component earthquake hazard studies are available from Greater Wellington. The methodology used to combine the various earthquake hazards are described in the Greater Wellington Report on Mapping Methodology and Risk Mitigation Measures WRC/RP-T-96/22.

The information provided on these maps cannot be substituted for a site specific investigation. The site specific potential for and consequent damage from active faulting, amplified ground shaking, liquefaction, slope failure, and tsunami inundation should be assessed by qualified and experienced practitioners.

Bibliographic reference

Greater Wellington Regional Council (1996). Sheet 3 Hutt Valley (1st ed.) Combined Earthquake Hazard Map 1:30000, Pub. No. WRC/RP-T-96/14 Greater Wellington Regional Council, Wellington, New Zealand.

Notes on earthquake hazard mitigation measures

1. Check that the broad indication of hazard from the maps is correct for a particular site. (In many case, this could prove cost-effective towards mitigation.)
2. Obtain professional advice on implications and available countermeasures.
3. Mitigation options shown are in brief general terms. Professional advice will be needed to account for particular circumstances at the site.

Single component hazard maps

These combine to produce the Combined Earthquake Hazard Maps. Maps of the single components (ground shaking, liquefaction and earthquake induced slope failure) are available from the Hazard Analyst at Greater Wellington.

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THE REGIONAL COUNCIL
Emergency Management

Attachment 4 - Design seismic loading

6.2 Design loadings and analysis

6.2.1 General

Design loads to be considered shall be as specified in section 3 of this manual. In particular, earth loads are specified in 3.4.12 and load combinations in 3.5.

6.2.2 Earthquake loads and analysis for the assessment of liquefaction and of the stability and displacement of soil structures

The design earthquake loading to be applied to soils, rock and independent soil structures shall be derived as set out herein.

Methods for the assessment of liquefaction, slope stability, and soil structure displacements referred to within this section require the application of peak ground accelerations in combination with a corresponding earthquake magnitude. The peak ground accelerations (PGA) to be applied shall be 'unweighted' and derived for the relevant return period as follows:

$$PGA = C_{0,1000} \times \frac{R_u}{1.3} \times f \times g$$

Where:

$C_{0,1000}$ = 1000 year return period PGA coefficient for a subsoil Class A or B rock site or Class C shallow soil site derived from figure 6.1(a), or for subsoil Class D deep or soft soil site or Class E very soft soil site from figure 6.1(b). Alternatively, for the locations listed, PGA coefficients may be taken from table 6A.1 contained in addendum 6A

R_u = return period factor derived from table 3.5 of NZS 1170.5 *Structural design actions* part 5 Earthquake actions – New Zealand[1] corresponding to the design return period determined from tables 2.2 or 2.3, as appropriate

$R_u = 1.0$ for Importance level 2 & 50-yr design life AEP for ULS is 1/500

f = Site subsoil class factor, where

$f = 1.0$ for a Class A, B, D and E soil sites

$f = 1.33$ for a Class C shallow soil site

The earthquake magnitude shall be derived for the relevant return period from table 6A.1 contained in addendum 6A or figures 6.2(a) to (f).

As a lower bound, the ultimate limit state effects to be designed for shall not be taken to be less than those due to a 6.5 magnitude earthquake at 20km distance, for which the peak ground acceleration coefficients shall be derived from table 6.3.

Table 6.3: Peak ground acceleration coefficients corresponding to a magnitude 6.5 earthquake at 20 km distance

Site subsoil class	Class A/B rock	Class C shallow soil	Class D deep or soft soil	Class E very soft soil
PGA coefficient (g)	0.14	0.19	0.16	0.16

Note that PGAs derived using NZS 1170.5[1] are magnitude weighted to correspond to an earthquake magnitude of 7.5. Given that the performance of soils, earth structures, slopes and retaining walls exhibit a step-wise behaviour (where a critical acceleration results in a sudden loss of stability, ie dramatic change in behaviour), use of these values may be unconservative. Therefore unweighted PGAs are to be used in the assessment and design of these soil structures for earthquakes.

$PGA = C_{0,1000} \times \frac{R_u}{1.3} \times f \times g$ where: $f = 1.0$ for Class D, $R_u = 1.0$ for 1/500 AEP

$C_{0,1000}$ given below

$PGA = 0.34\ g$

Table 6A.1: continued

Town/City	$C_{0,1000}$		Effective magnitudes (M_{eff}) for design return period (years)		Town/City	$C_{0,1000}$		Effective magnitudes (M_{eff}) for design return period (years)	
	Class A/B rock	Class D&E deep/ soft soil	500 – 2500	50 – 100		Class A/B rock	Class D&E deep/ soft soil	500 – 2500	50 – 100
Foxton	0.40	0.42	6.7	6.1	Christchurch[3]	-	-	-	-
Levin	0.43	0.44	6.8	6.1	Akaroa[3,4]	-	-	5.8	6.25
Otaki	0.42	0.44	6.8	6.2	Ashburton	0.25	0.29	6.1	
Paraparaumu	0.42	0.44	6.9	6.2	Geraldine	0.25	0.28	6.0	
Wellington	0.44	0.45	7.1	6.2	Temuka	0.22	0.24	6.0	
Porirua	0.43	0.44	7.0	6.2	Fairlie	0.32	0.32	6.1	
Lower Hutt	0.45	0.45	7.1	6.2	Mt Cook	0.45	0.48	6.9	6.2
Upper Hutt	0.47	0.45[2]	7.1	6.25	Timaru	0.20	0.23	6.0	
Eastbourne - Point Howard	0.44	0.45	7.1	6.2	Waimate	0.20	0.24	6.0	
					Twizel	0.39	0.37[2]	6.1	
Wainuiomata	0.47	0.44[2]	7.1	6.2	Wanaka	0.39	0.42	6.1	
Takaka	0.42	0.46	5.8		Cromwell	0.33	0.37	6.25	
Motueka	0.42	0.46	5.9		Alexandra	0.29	0.32	6.3	
Nelson	0.40	0.43	6.1		Arrowtown	0.39	0.42	6.4	
Picton	0.35	0.38	6.6	6.1	Queenstown	0.40	0.42	6.5	
Blenheim	0.40	0.42	6.75	6.1	Milford Sound	0.62	0.62	7.1	6.1
St Arnaud	0.46	0.48	6.9	6.1	Oamaru	0.22	0.24	6.0	
Westport	0.54	0.52[2]	5.7		Palmerston	0.22	0.25	6.0	
Reefton	0.53	0.56	6.0		Mosgiel	0.23	0.26	6.0	
Murchison	0.51	0.54	6.2		Dunedin	0.22	0.25	6.0	
Hanmer Springs	0.55	0.53[2]	7.0	6.5	Te Anau	0.43	0.42[2]	6.4	
Kaikoura	0.55	0.53[2]	6.7	6.1	Riverton	0.26	0.30	6.2	
Cheviot	0.43	0.42[2]	6.6		Winton	0.26	0.28	6.2	
Greymouth	0.50	0.50	6.5		Gore	0.26	0.27	6.2	
Hokitika	0.52	0.54	6.75	6.3	Mataura	0.24	0.26	6.1	
Arthurs Pass	0.65	0.62[2]	7.0	6.3	Balclutha	0.22	0.24	6.0	
Otira	0.65	0.60[2]	7.1	6.4	Invercargill	0.21	0.26	6.1	
Darfield[3]	0.40	0.37[2]	6.25		Bluff	0.20	0.24	6.1	
Rangiora[3]	0.37	0.38	6.4		Oban	0.19	0.23	6.1	

Notes:

1. Shallow soil PGAs are determined from the rock values by multiplying by 1.33.
2. The deep soil PGAs are less than the rock values at some high-hazard locations because of nonlinear site-response effects built into the modelling.
3. The Canterbury earthquake region values are to be determined from a new seismic hazard model for the region in 2014.
4. The M_{eff} decreases with return period for Akaroa because its estimated hazard has a larger contribution from the Alpine Fault at low acceleration values which is replaced by contributions from local earthquakes as the PGAs increase.
5. M_{eff} values given in this table may vary slightly from those derived from the maps as they have been assessed conservatively to apply across a range of return periods.

SECTION 3 SITE HAZARD SPECTRA

3.1 ELASTIC SITE SPECTRA FOR HORIZONTAL LOADING

3.1.1 Elastic site spectra

The elastic site hazard spectrum for horizontal loading, $C(T)$, for a given return period shall be as given by Equation 3.1(1):

$$C(T) = C_h(T)\, Z\, R\, N(T,D) \quad \ldots 3.1(1)$$

where

$C_h(T)$ = the spectral shape factor determined from Clause 3.1.2 = 3.0 for $0 < T_s \leq 0.5$

Z = the hazard factor determined from Clause 3.1.4 = 0.40 for Wainuiomata

R = the return period factor R_s or R_u for the appropriate limit state determined from Clause 3.1.5 but limited such that ZR_u does not exceed 0.7 $R = 1.0$ for 1/500 AEP

$N(T,D)$ = the near-fault factor determined from Clause 3.1.6 = 1.0 for AEP ≥ 1/250

3.1.2 Spectral shape factor, $C_h(T)$

The spectral shape factor, $C_h(T)$, shall be selected from Table 3.1, for the site subsoil class defined in Clause 3.1.3. The spectral shape factor functions are graphed in Figure 3.1 for general cases and in Figure 3.2 for values for the modal response spectrum and the numerical integration time history methods, to determine the $C(T)$ values required for vertical loading, and to determine the $C_h(0)$ values required to evaluate $C(0)$ for parts in Clause 8.2.

Alternatively, the spectral shape factor for periods $T \geq 0.1$ s for Class D sites with site periods T_{site} from 0.6 s up to 1.5 s may be interpolated between Class C and D sites according to the formula: Amd 1 Sep '16

$$C_h(T, T_{site}) = \text{Min}\left[3, C_h(T)_{shallow\_soil} * (1 + 0.5(T_{site} - 0.25))\right] \quad \textit{for } 0.6 \text{ s} \leq T_{site} \leq 1.5 \text{ s } \textit{and } T \geq 0.1 \text{ s} \quad \ldots 3.1(2)$$

where

T_{site} is the low amplitude natural period of the site estimated in accordance with Clause 3.1.3.4, and

$C_h(T)_{shallow\_soil}$ is the Class C spectral shape factor for numerical integration time history methods.

For periods $T \leq 0.1$ s, $C_h(T)$ for this alternative shall be taken as for Class D.

The spectral shape factor for the equivalent static method need not exceed the value given by equation 3.1(2) for a period T of 0.4 s.

The determination of the site period shall be documented, and will normally be determined by a method allowed by Clause 3.1.3.1.

$C(T = 0.1\text{ s}) = (3.0)(0.4)(1.0)(1.0) = 1.2$ g

Note: Bray & Travasarou (2007) uses the spectral acceleration at the degraded period of the sliding mass, taken as $1.5T_s$ ($= 1.5 \times (0.1\text{ s}) = 0.15\text{ s}$)

In this case $C_h(T = 0.15\text{ s}) = 3.0$, so $C(T = 0.15\text{ s}) = S_a(1.5T_s)$

$S_a(1.5T_s) = 1.2$ g

T = period of sliding mass = $\frac{4H}{V_s} = \frac{4(10)}{400} = 0.1$ s

where H = characteristic height of slip surface under seismic loading = 10 m

V_s = shear wave velocity = 400 m/s (assumed)

TABLE 3.1

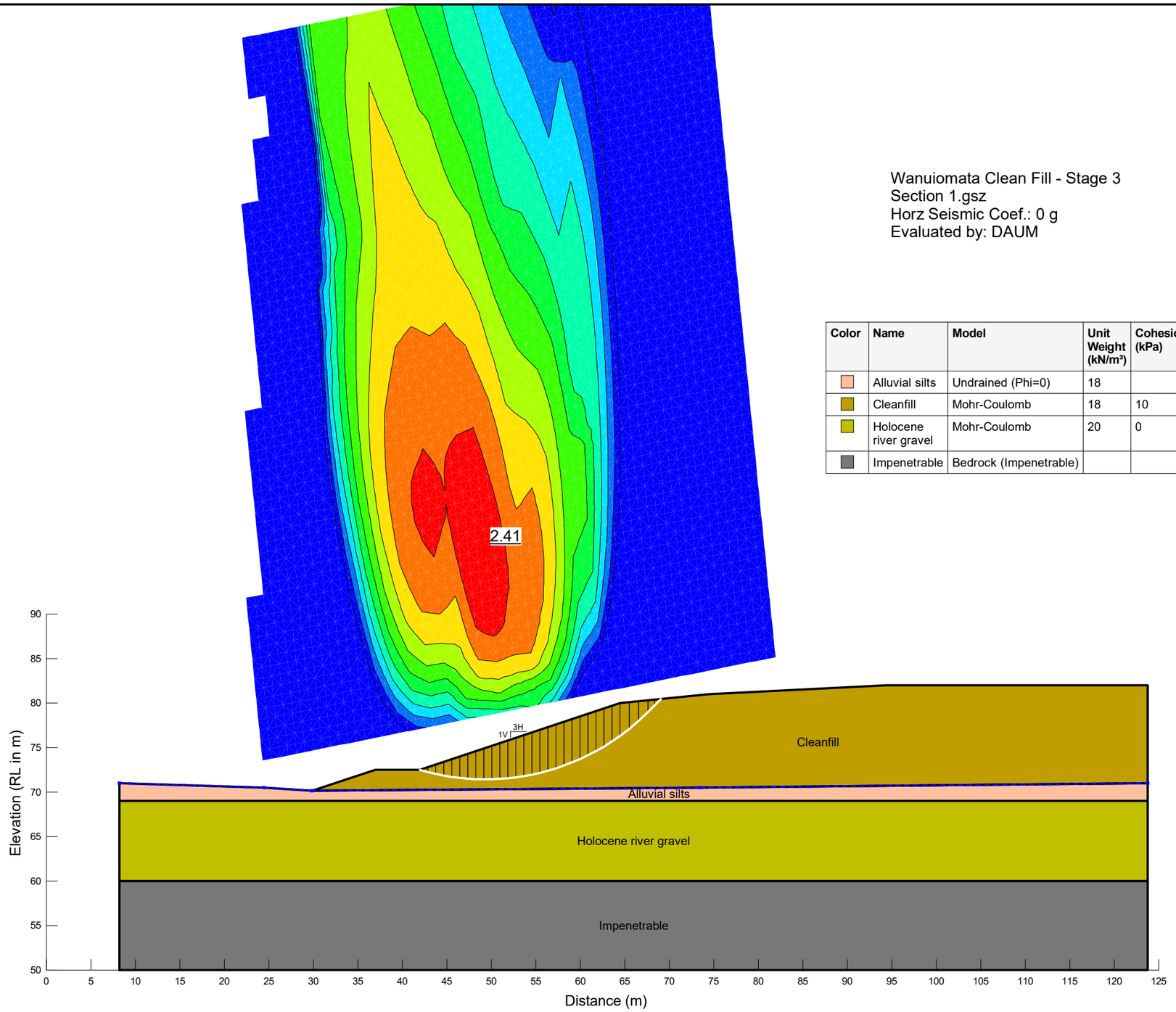
SPECTRAL SHAPE FACTOR, $C_h(T)$

Period, T (seconds)	Spectral shape factor, $C_h(T)$ (g)			
	Site subsoil class			
	A Strong rock and B rock	C Shallow soil	D Deep or soft soil	E Very soft soil
0.0	1.89 (1.00)[1]	2.36 (1.33)[1]	3.00 (1.12)[1]	
0.1	1.89 (2.35)[1]	2.36 (2.93)[1]	3.00	
0.2	1.89 (2.35)[1]	2.36 (2.93)[1]	3.00	
0.3	1.89 (2.35)[1]	2.36 (2.93)[1]	3.00	
0.4	1.89	2.36	3.00	
0.5	1.60	2.00	3.00	
0.6	1.40	1.74	2.84	3.00
0.7	1.24	1.55	2.53	3.00
0.8	1.12	1.41	2.29	3.00
0.9	1.03	1.29	2.09	3.00
1.0	0.95	1.19	1.93	3.00
1.5	0.70	0.88	1.43	2.21
2.0	0.53	0.66	1.07	1.66
2.5	0.42	0.53	0.86	1.33
3.0	0.35	0.44	0.71	1.11
3.5	0.26	0.32	0.52	0.81
4.0	0.20	0.25	0.40	0.62
4.5	0.16	0.20	0.32	0.49

NOTE:

1 Values in brackets correspond to spectral values for the modal response spectrum and the numerical integration time history methods, to the $C(T)$ values required for vertical loading, and to the $C_h(0)$ values required to evaluate $C(0)$ for parts in Clause 8.2.

Attachment 5 - Slope/W output files



Wanuiomata Clean Fill - Stage 3
Section 1.gsz
Horz Seismic Coef.: 0 g
Evaluated by: DAUM

Color	Name	Model	Unit Weight (kN/m³)	Cohesion' (kPa)	Phi' (°)	Phi-B (°)	Cohesion (kPa)	Piezometric Line
	Alluvial silts	Undrained (Phi=0)	18				60	1
	Cleanfill	Mohr-Coulomb	18	10	25	0		1
	Holocene river gravel	Mohr-Coulomb	20	0	32	0		1
	Impenetrable	Bedrock (Impenetrable)						1

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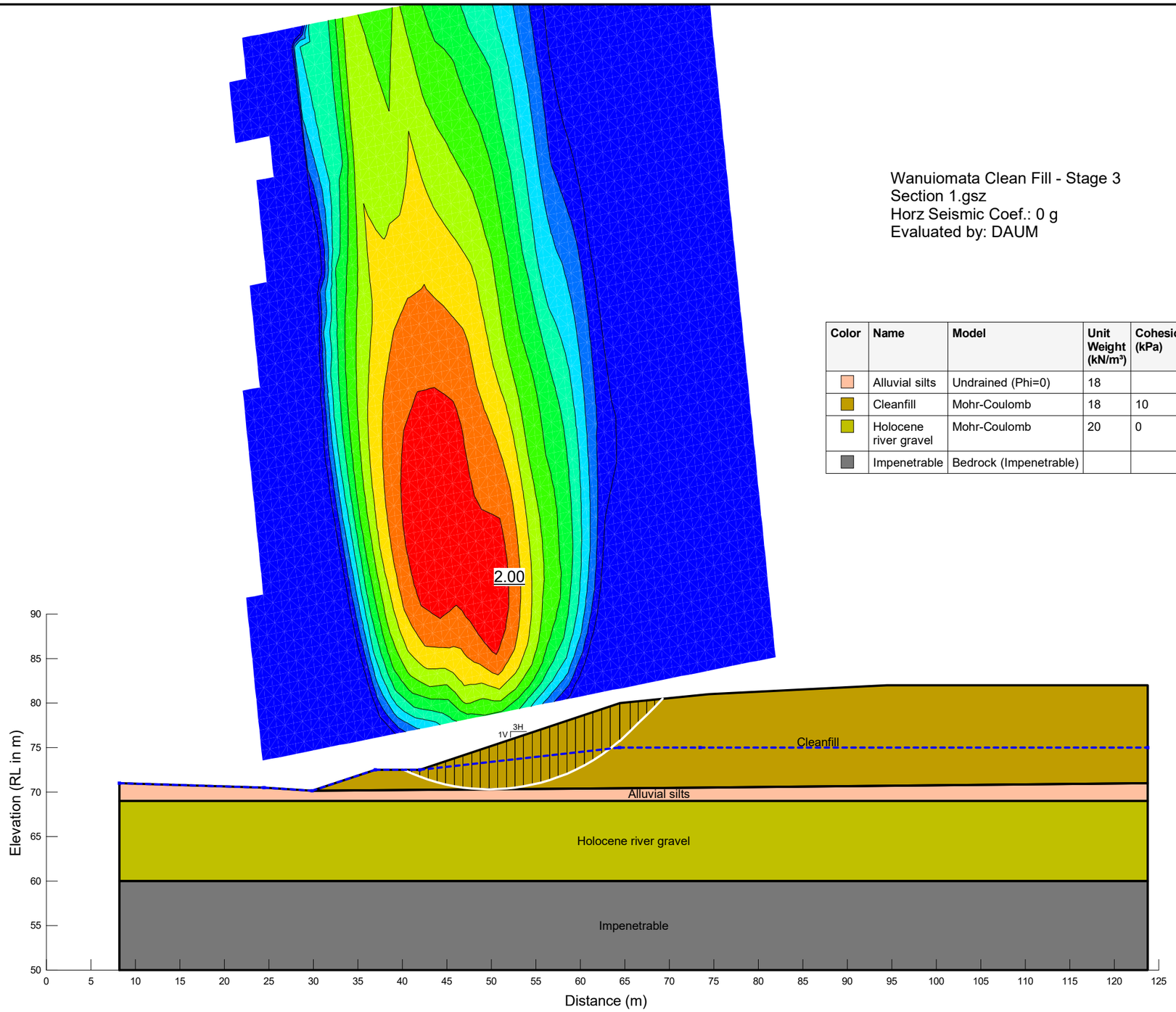
Stage 3 Stability Assessment

Hutt City Council
Wainuiomata Clean Fill Site, Wainuiomata
T+T Proj. 84466.005

Tonkin+Taylor

Section 1.gsz | Static

27/08/2018 | Scale: 1:500



Wanuiomata Clean Fill - Stage 3
Section 1.gsz
Horz Seismic Coef.: 0 g
Evaluated by: DAUM

Color	Name	Model	Unit Weight (kN/m³)	Cohesion' (kPa)	Phi' (°)	Phi-B (°)	Cohesion (kPa)	Piezometric Line
	Alluvial silts	Undrained (Phi=0)	18				60	1
	Cleanfill	Mohr-Coulomb	18	10	25	0		1
	Holocene river gravel	Mohr-Coulomb	20	0	32	0		1
	Impenetrable	Bedrock (Impenetrable)						1

Stage 3 Stability Assessment

Hutt City Council
Wainuiomata Clean Fill Site, Wainuiomata
T+T Proj. 84466.005

Tonkin+Taylor

Section 1.gsz — High GW - static

27/08/2018 — Scale: 1:500

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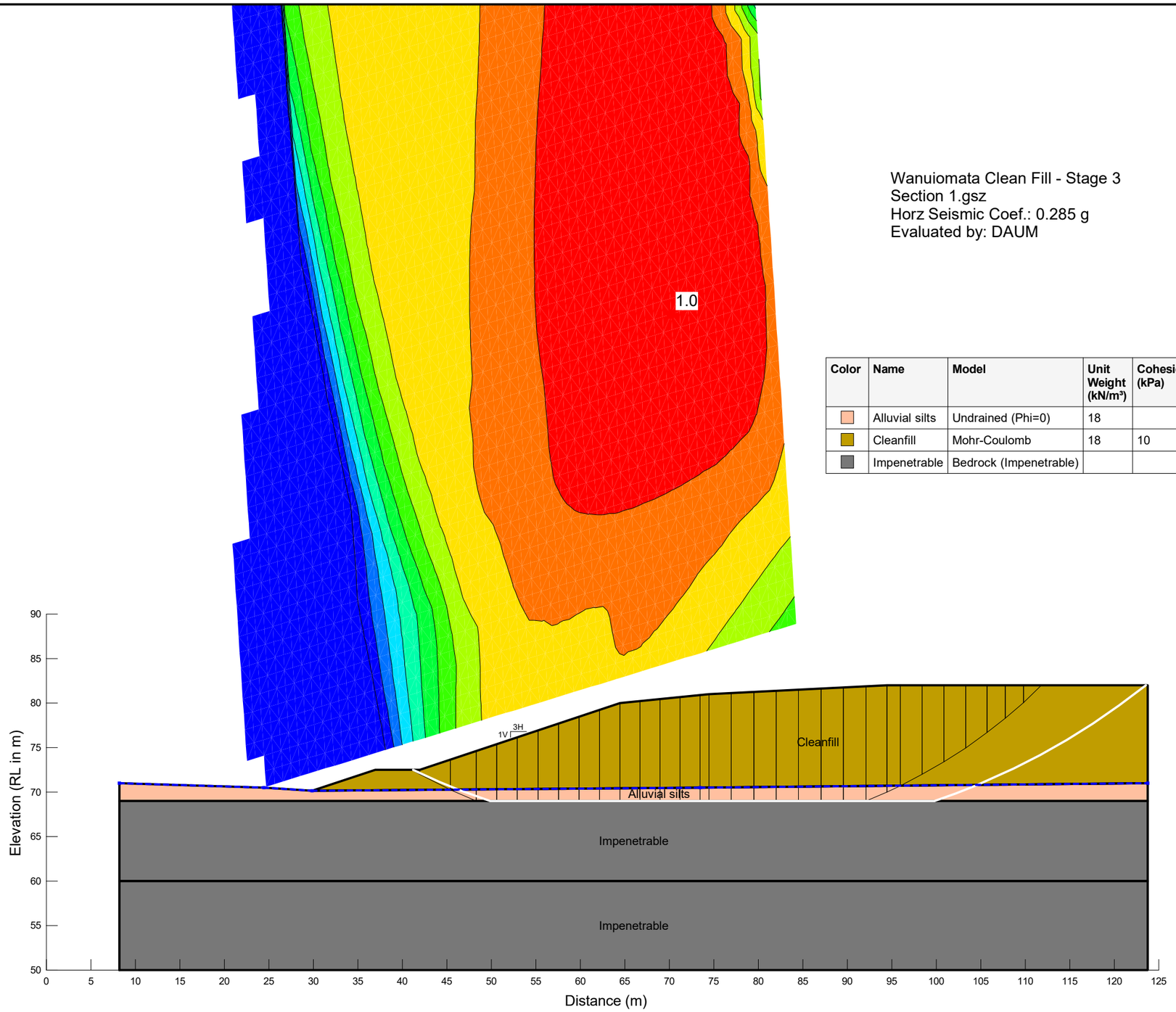


Wanuiomata Clean Fill - Stage 3
Section 1.gsz
Horz Seismic Coef.: 0.285 g
Evaluated by: DAUM

Color	Name	Model	Unit Weight (kN/m³)	Cohesion' (kPa)	Phi' (°)	Phi-B (°)	Cohesion (kPa)	Piezometric Line
	Alluvial silts	Undrained (Phi=0)	18				60	1
	Cleanfill	Mohr-Coulomb	18	10	25	0		1
	Impenetrable	Bedrock (Impenetrable)						1

Stage 3 Stability Assessment

Hutt City Council
Wainuiomata Clean Fill Site, Wainuiomata
T+T Proj. 84466.005

Tonkin+Taylor

Section 1.gsz ky (2)

27/08/2018 Scale: 1:500

Simplified Procedure for Estimating Earthquake Induced Deviatoric Slope Displacements
by Jonathan D. Bray and Thaleia Travasarou
Journal of Geotechnical and Geonvironmental Engineering, ASCE, V. 133(4), pp. 381-392, April 2007

SEE NOTES BELOW FOR GUIDANCE IN THE USE OF SPREADSHEET

Input Parameters			
Yield Coefficient (ky)	0.285		Based on pseudostatic analysis
Initial Fundamental Period (Ts)	0.10	seconds	1D: Ts=4H/Vs 2D: Ts=2.6H/Vs
Degraded Period (1.5Ts)	0.15	seconds	
Moment Magnitude (M_w)	7.1		
Spectral Acceleration (Sa(1.5Ts))	1.2	g	

Additional Input Parameters		
Probability of Exceedance #1 (P1)	84	%
Probability of Exceedance #2 (P2)	50	%
Probability of Exceedance #3 (P3)	16	%
Displacement Threshold (d_threshold)	30	cm

Intermediate Calculated Parameters			
Non-Zero Seismic Displacement Est (D)	12.45	cm	eq. (5) or (6)
Standard Deviation of Non-Zero Seismic D	0.66		

Results			
Probability of Negligible Displ. (P(D=0))	0.001		eq. (3)
D1	6.44	cm	calc. using eq. (7)
D2	12.44	cm	calc. using eq. (7)
D3	23.99	cm	calc. using eq. (7)
P(D>d_threshold)	0.091		eq. (7)

Notes

1. Values highlighted in blue are input parameters
2. Probability of Exceedance is the desired probability of exceeding a particular displacement value.
3. Displacements D1, D2, and D3 correspond to P1, P2, and P3, respectively.
   (e.g., the probability of exceeding displacement D1 is P1)
4. Calculated seismic displacements are due to deviatoric deformation only (add in volumetrically induced movement).
5. ky may range between 0.01 and 0.5, Ts between 0 and 2 s, Sa between 0.002 and 2.7 g, M between 4.5 and 9
6. Rigid slope is assumed for Ts < 0.05 s
7. When a value for D is not calculated, D is < 1cm
8. ky may be estimated using the simplified equations shown below.
9. Examples of how Ts is estimated are shown below.
10. Vs = weighted avg. shear wave velocity for the sliding mass, e.g., for 2 layers, Vs = [(h1)(Vs1) + (h2)(Vs2)]/(h1 + h2)

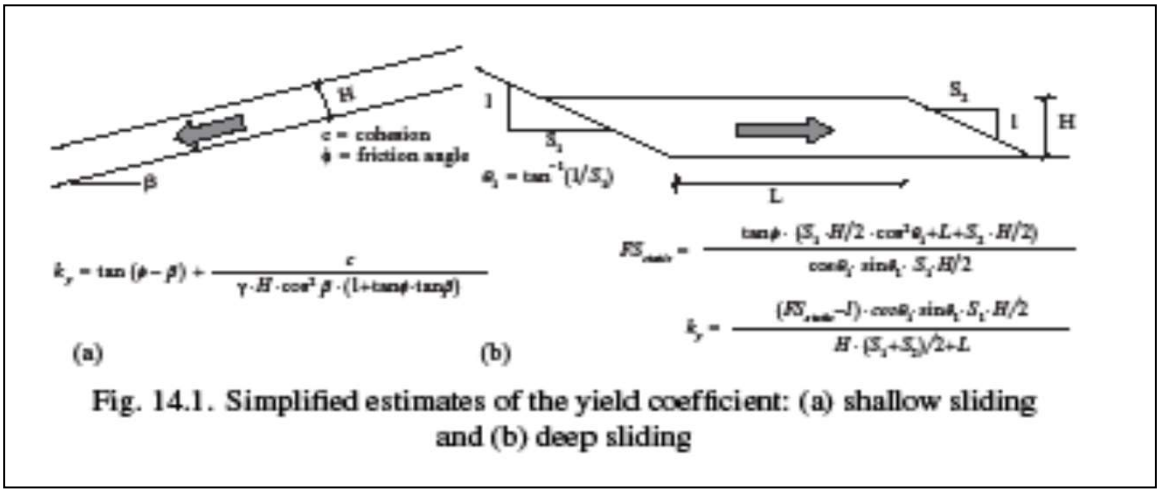


Fig. 14.1. Simplified estimates of the yield coefficient: (a) shallow sliding and (b) deep sliding

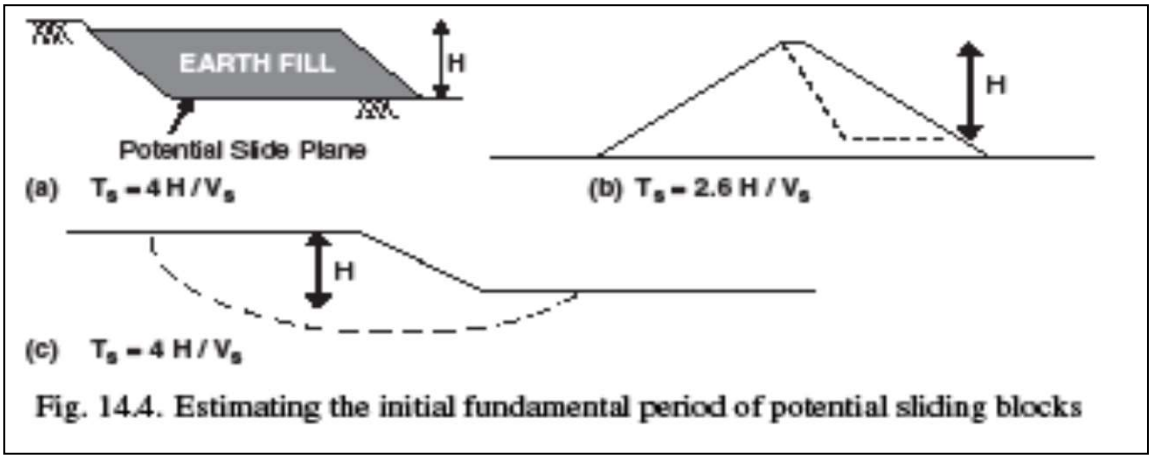
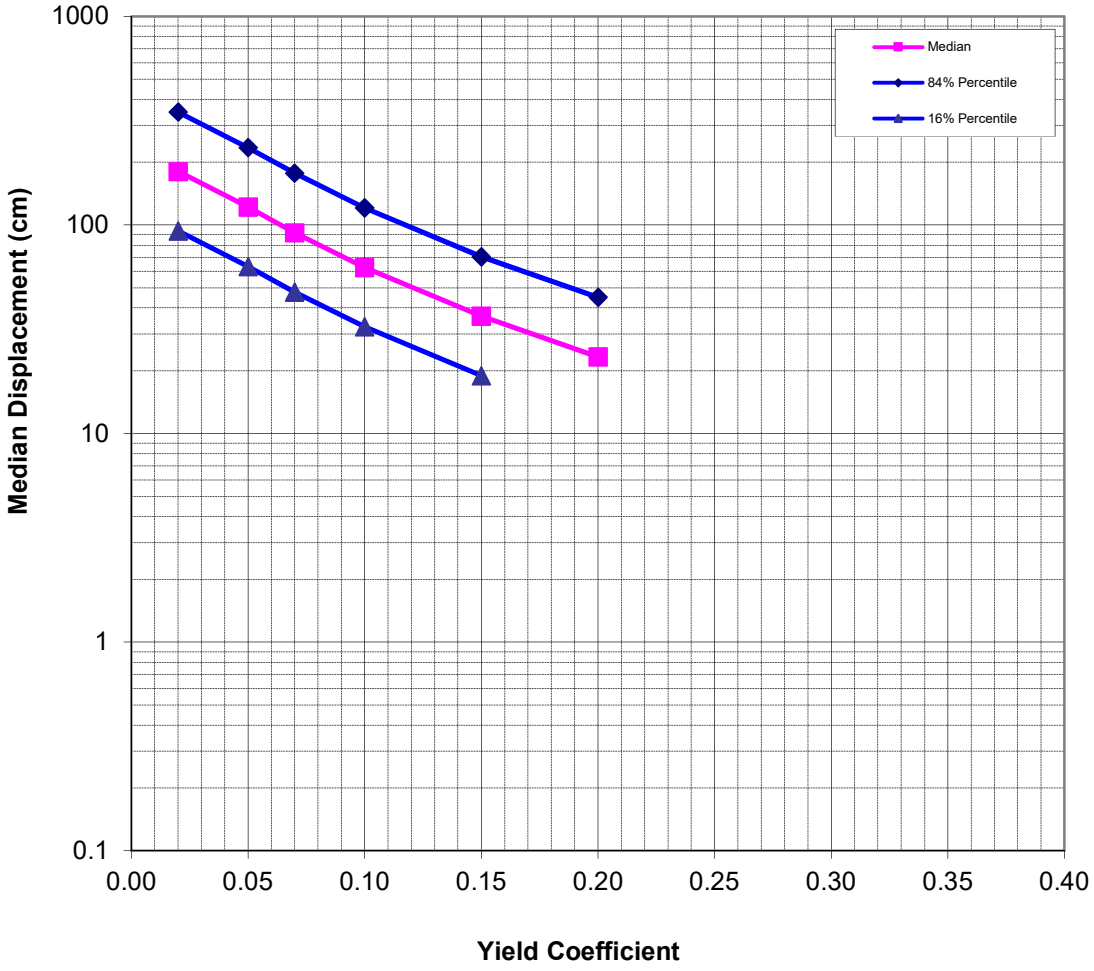


Fig. 14.4. Estimating the initial fundamental period of potential sliding blocks

Figures from Bray, J.D. (2007) “Chapter 14: Simplified Seismic Slope Displacement Procedures,” Earthquake Geotechnical Engineering, 4th Inter. Conf. on Earthquake Geotechnical Engineering - Invited Lectures, in Geotechnical, Geological, and Earthquake Engineering Series, Vol. 6, Pitilakis, Kyriazis D., Ed., Springer, Vol. 6, pp. 327-353.

Dependence on ky

ky	P(D="0")	D (cm)	Dmedian (cm)	D1 (cm)	D3 (cm)
0.020	0.00	180.4	180.4	347.7	93.6
0.05	0.00	122.0	122.0	235.2	63.3
0.07	0.00	91.9	91.9	177.1	47.7
0.1	0.00	62.6	62.6	120.7	32.5
0.15	0.00	36.5	36.5	70.4	19.0
0.2	0.00	23.3	23.3	45.0	12.1
0.3	0.00	11.3	11.3	21.7	5.8
0.4	0.03	6.3	6.2	12.0	3.0



REPORT

Tonkin+Taylor

Wainuiomata Cleanfill Expansion

Noise Assessment

Prepared for
Hutt City Council City Infrastructure
Prepared by
Tonkin & Taylor Ltd
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Document Control

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20.08.18	Draft	Noise assessment	K. Leemeyer	J Styles	
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Distribution:

Hutt City Council City Infrastructure	copies
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1 Introduction

Tonkin + Taylor (T+T) has been engaged by Hutt City Council City Infrastructure (HCCCI) to prepare an assessment of noise effects for the proposed expansion of the existing Wainuiomata Cleanfill at 130 Coast Road, Wainuiomata (the Site).

This report has been prepared in accordance with our letter of engagement, dated 26 July 2018[1]. The assessment sets out the relevant standards and predicted noise levels for the operation of the cleanfill, together with identifying the nearest receivers and mitigation measures, based on information provided by HCCCI.

A glossary of terms is included at Appendix A.

[1] T+T letter of engagement (26 July 2018) *Offer of service: Planning services, resource consent for expansion of Wainuiomata Cleanfill*. T+T ref 84466.005

2 Site and project description

The site currently operates as the Wainuiomata cleanfill, an existing operational cleanfill site. To the north it borders Ngaturi Park, to the west the Wainuiomata River and Coast Road to the east. Adjacent to the site in the north-eastern area of site is a decommissioned waste water treatment plant that is owned by HCCCI. Access to the site is off Coast Road via a sealed access way.

Due to increased volumes of cleanfill material being deposited, the area currently being filled is anticipated to be at capacity in less 12 months. HCCCI are seeking consent to expand the filling area to the south (see Figure 2.1).

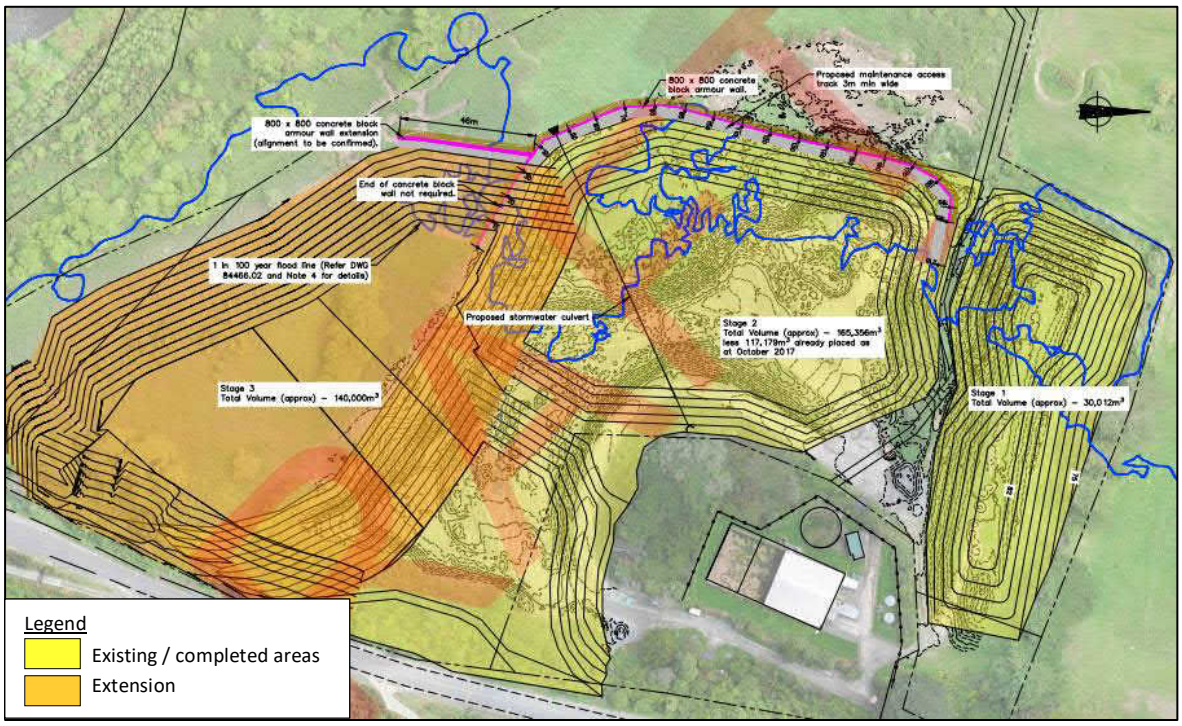

Figure 2.1: Site map showing fill areas

3 Cleanfill operation

The intensity of the operation of the cleanfill will not change with the proposed extension. The only changes will be to the area of works which will move further south to the Stage 3 area. The hours of operation will remain as 8:00 am – 5:00 pm, Monday to Friday and 8:00 – 12 noon on Saturdays.

Plant operating on site will include:

- Dynapac pad foot roller;
- Hyundai 210LC-7 21 tonne excavator;
- Hyundai 118-7 18 tonne excavator;
- Hyundai 60-9 6 tonne excavator; and
- Trucks.

The pad foot roller is not used for day-to-day operation of the cleanfill; it is only brought to site for site specific tasks such as forming the flood protection walls and access roads. These works are classified as maintenance works and they fall within the definition of construction rather than operational activities.

The majority of deliveries to site are made by road trucks, not truck and trailer units. The number of trucks bringing cleanfill material to site varies depending on timing of projects and local demand. Between April 2016 and December 2016 the average number of trucks per day ranged between 13 and 30, with arrivals and departures spread evenly across the day. This is not anticipated to change with the extension to the cleanfill area – the maximum number of trucks expected during peak demand is up to 40 trucks per day (an average of 4-5 per hour over the operational time period).

4 Hutt City Council

4.1 Noise standards

4.1.1 Hutt City District Plan

In accordance with the Hutt City District Plan (HCDP) the site is zoned *Rural – General.* The surrounding sites to the west and south are also zoned *Rural – General,* to the north is land zoned *General Recreation* with sites zoned *General Recreation* beyond that and across Coast Road to the east are sites zoned *Rural Residential.*

The noise criteria are set out in Rule 14 as follows:

> *14C 2.1 Permitted Activity – Conditions*
>
> *In all Activity Areas*
>
> *(c) The noise levels shall be measured in accordance with NZS 6801:1991 "Measurement of Sound", and assessed in accordance with NZS 6802: 1991 "Assessment of Environmental Sound". The noise level is the L_{10} descriptor, as defined in NZS 6801:1991.*
>
> *(d) The lower levels shall apply between the commencement of the lower level on a Saturday evening and Monday morning, and Public Holidays, unless otherwise specified.*
>
> *(f) All construction, demolition, and maintenance work shall comply with NZS 6803P 'Measurement and Assessment of Noise from Construction, Maintenance and demolition work".*
>
> *14C 2.1.10* ***General Rural*** *Activity Area*
>
> *All non-residential activities must not exceed the conditions as specified, measured anywhere beyond the site on which the activity takes place:*
>
> | | |
> |---|---|
> | *Maximum 50 dBA* | *7:00 am – 10:00 pm* |
> | *Maximum 40 dBA* | *10:00 pm – 7:00 am* |

4.1.2 Construction noise

The HCDP requires that construction noise from the site is subject to compliance with NZS 6803P:1984. This standard has been superseded by an updated version NZS 6803:1999 *Acoustic – Construction Noise.*

It is standard practice to use the most recent version of the construction noise standard when assessing and managing construction, maintenance and demolition works. The 1999 standard is widely adopted on construction sites in New Zealand and contains a number of updates from the 1984 version which reflect best practice and technical developments in acoustics. Most notably, the change from the L_{A10} to the L_{Aeq} descriptor which is widely regarded as being more appropriate for the measurement and assessment of construction noise.

The noise limits from NZS 6803:1999 are set out below in Table 4.1. Noise is assessed at 1 m from the façade of occupied buildings.

The applicable limits for the works on site are the short-term duration limits (for works at any one location for up to 14 calendar days) as use of the pad foot roller is not a regular occurrence.

Table 4.1: NZS 6803:1999 Table 2 – Recommended upper limits for construction noise received in residential zones and dwellings in rural areas

Time of week	Time Period	Duration of work					
		Typical duration (dBA)		Short-term duration (dBA)		Long-term duration (dBA)	
		L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
Weekdays	0630 – 0730	60	75	65	75	55	75
	0730 – 1800	75	90	**80**	**95**	70	85
	1800 – 2000	70	85	75	90	65	80
	2000 - 0630	45	75	45	75	45	75
Saturdays	0630 – 0730	45	75	45	75	45	75
	0730 – 1800	75	90	**80**	**95**	70	85
	1800 – 2000	45	75	45	75	45	75
	2000 - 0630	45	75	45	75	45	75
Sundays and public holidays	0630 – 0730	45	75	45	75	45	75
	0730 – 1800	55	85	55	85	55	85
	1800 – 2000	45	75	45	75	45	75
	2000 - 0630	45	75	45	75	45	75

The highlighted cells indicate the limits applicable during operating hours of the site

4.1.3 Operational Noise

The HCDP requires operational noise from the site to comply with the following limits:

L_{10} 50 dBA *7:00 am – 10:00 pm*

L_{10} 40 dBA *10:00 pm – 7:00 am*

The district plan requires noise to be assessed in accordance with NZS 6802:1991"Assessment of Environmental Sound". The Standard sets out the provisions for averaging in Section 4.5. It notes that "*a noise nuisance does not generally arise from a single isolated infringement" and sets out constraints to be observed.* As such, the standard allows for averaging to derive a single figure for comparison with any limit, provided the noise limit is not exceeded by more than 5 dB for any single time interval and provided the averaged L_{10} over the daytime period does not exceed the noise limit.

Most recent district plans have replaced the L_{A10} with $L_{Aeq,t}$, as NZS 6802:1991 has been superseded by the 2008 version of the standard. Typically a noise source of constant character (such as clean fill activities) assessed using L_{A10} will be around 2-3 dB higher than the L_{Aeq}. For compliance with the district plan, the L_{A10} noise metric is reported.

NZS 6802 requires noise to be assessed over a 5 minute period, and where applicable, a correction is applied to account for any special audible characteristics, such as tonality or impulsivity.

5 Noise

5.1 Existing environment

The site is located where rural and residential zones meet, with most land to the south / east being zoned for rural use. To the north is a park and a residential area which continues on to the north. The closest sites to the east are zoned for rural – residential use.

T+T undertook attended noise measurements in March 2017 from three locations around the site (see Table 5.1). The purpose of the measurements was to quantify the main sources of local noise and to compare against the HCDP daytime noise limit, i.e. to determine whether existing levels of noise were already high.

Table 5.1: Ambient noise measurements, March 2017

Time	Location	Measured noise level (L_{A10})	Measured noise level (L_{A90})	HCDP Noise limit (L_{A10}) – day time
13:03	115 Coast Road (road boundary)	58 dB	41 dB	50 dB
12:44	13 Ngaturi Grove	47 dB	37 dB	
12:28	4 Ngaturi Grove	42 dB	35 dB	

The measured L_{A10} noise level is the ambient noise level and the measured L_{A90} noise level is the background noise level.

The noise measurements show that ambient levels are controlled by traffic noise and are already moderately high in the area. Close to the road existing noise levels are greater than the relevant district plan noise limit.

As there have been no significant developments in the local area which would materially affect the ambient noise environment, the March 2017 results are representative of current day time noise levels.

5.1.1 Noise receivers

The proposed extension to the Wainuiomata cleanfill is further south than the current area of filling, i.e. away from the main residential areas. The nearest receivers to the proposed cleanfill area are presented below in Table 5.2. See Figure 5.1 for a location map showing the receiving sites.

Table 5.2: Nearest noise receivers to site (to site boundary)

Location in relation to proposed cleanfill area	Receiver address	Nearest distance to works area
North	4 Ngaturi Grove	298 m
	8 Ngaturi Grove	292 m
	10 Ngaturi Grove	290 m
	11 Ngaturi Grove	295 m
	13 Ngaturi Grove	290 m
	Ngaturi Park	152 m
East	126 Coast Road (pump station)	42 m
	115B Coast Road	150 m
	119 Coast Road	40 m
	199 Coast Road	20 m

Location in relation to proposed cleanfill area	Receiver address	Nearest distance to works area
	200 Coast Road	55 m
South	201 Coast Road	105 m
	201A Coast Road	130 m
	202 Coast Road	165 m
	204 Coast Road	155 m
	205 Coast Road	10 m

Other receivers are further away and will receive lower noise levels, given the attenuation due to the additional distance and the existing screening of the activities at the site by the surrounding buildings and topographical features.

Figure 5.1: Site location map and receivers

5.2 Noise assessment

5.2.1 Noise predictions

The nearest receivers to the proposed area of filling are to the east and south of the site. There is an earth bund that provides screening to receivers to the north of the works area.

5.2.1.1 Cleanfill operation

Noise levels for the extension of the cleanfill have been calculated using reference source levels[2] for a 21 T excavator[3] and a dump truck. Noise predictions take into account screening provided by the earth bund for receivers to the north, that the sources are moving on site, effects of ground conditions (undulating ground and long grass), the potential for cumulative noise effects from excavators and trucks operating simultaneously and a reduction for averaging in accordance with NZS 6802:1991 (the noise source is present for 9 hours of the 15 hour assessment period).

There are no special audible characteristics associated with the cleanfill operations, which would warrant the addition of a penalty weighting.

Noise predictions are presented in Table 5.3 below.

Table 5.3: Noise predictions and applicable HCDP criteria

Address	Distance to receiver (m)	Maximum predicted noise level (L_{A10})	Permitted noise limit (L_{A10})
4 Ngaturi Grove	298	28 dB*	50 dB
8 Ngaturi Grove	292	28 dB*	
10 Ngaturi Grove	290	28 dB*	
11 Ngaturi Grove	295	28 dB*	
13 Ngaturi Grove	290	28 dB*	
Ngaturi Park	152	43 dB	
115B Coast Road	150	44 dB	
119 Coast Road	40	**53 dB**	
199 Coast Road	20	**56 dB**	
200 Coast Road	55	**51 dB**	
201 Coast Road	115	46 dB	
201A Coast Road	130	45 dB	
202 Coast Road	165	43 dB	
204 Coast Road	155	43 dB	
205 Coast Road	10	**60 dB**	

* Noise prediction includes a 10 dB reduction for screening by earth bund

5.2.1.2 Pad foot roller use

A pad foot roller is occasionally used on site for maintenance and this work is covered under the definition of "construction works" and is subject to compliance with NZS 6803:1999.

A source level of 82 dB L_{Aeq} at 10 m for the pad foot roller has been assumed. The pad foot roller will be compliant with the permitted noise limits at 8 m from receiving buildings; the closest occupied building from the site is 199 Coast Road which is 40 m from the closest area of works.

Use of the pad foot roller on site will be compliant with the permitted activity criteria at all times when it is used on site.

[2] BS 5228-1:2009 *Code of practice for noise and vibration control on construction and open sites* – Part 1: Noise

[3] 21 T excavator used as the source level is approximately 2-3 dB greater than the smaller excavators listed in Section 3.

5.2.1.3 Trucks entering and exiting the site

Truck movements are anticipated to be up to 40 per day during operating hours, spread out evenly over the day (around 4 – 5 trucks per hour).

The entrance to the site is a sealed road which turns into a compacted track further onto the site.

Noise from trucks entering the site will not be present for long enough to control the L_{A10} noise levels[4]. Existing levels of road traffic noise from Coast Road will control the L_{A10}.

For reference, to quantify noise levels for trucks entering and exiting the cleanfill, we have assumed there will be sufficient numbers of trucks to control the L_{A10} noise level and provided noise predictions in Table 5.4. In accordance with NZS 6802:1991 averaging has been applied to noise from trucks entering and exiting the site as this noise source would only be present between 8:00 am – 5:00 pm during the assessment period (being 7:00 am – 10:00 pm). The noise predictions from trucks entering and exiting the site are compliant with the HCDP at all surrounding boundaries during operating hours.

Noise predictions have only been provided to quantify the noise levels that would be expected if trucks were controlling the noise levels for the purpose of demonstrating compliance with the permitted noise limits.

Table 5.4: Entrance road – noise predictions and applicable HCDP criteria

Address	Distance	Predicted noise level (L_{A10})	Permitted noise limit (L_{A10})
Ngaturi Park	20	49 dB	50 dB
11 Ngaturi Grove	70	40 dB	
115B Coast Road	20	49 dB	
119 Coast Road	83	39 dB	

Truck movements entering the site are over 250 m north of the proposed cleanfill area and will not generate cumulative noise levels with the operation of excavators in the cleanfill.

5.2.2 Assessment of noise effects

The permitted limit for noise emissions between sites in the *Rural – General Zone* is 50 dB L_{A10} between 07:00 and 22:00 on all days. There are four properties where the permitted noise limit would be exceeded by the operation of the cleanfill. These are: 119, 199, 200 and 205 Coast Road.

The noise limits are applicable and must be assessed at "anywhere beyond the site on which the activity takes place".

At 119 Coast Road the predicted noise level is 53 dB L_{A10}. The boundary of the site at 119 Coast Road in the western area, where the noise levels have been assessed and the non-compliance has been identified, is around 140 m closer than the dwelling on site and the land is almost entirely planted in dense, mature trees. It is therefore unlikely that anyone will be occupying the area of site near the road and if they did they would be exposed to noise from traffic of up to 58 dB L_{A10} which is higher than the predicted noise levels from the cleanfill. The predicted noise level at the notional boundary (20 m from the dwelling) of 119 Coast Road is 36 dB L_{A10}; this a better representation of the noise level that will actually be experienced by the occupants.

The dwellings at 199 and 200 Coast Road are closer to Coast Road and the site. At 200 Coast Road the predicted noise level is 51 dB L_{A10}. The boundary of the site is around 40 m closer than the

[4] truck noise source would need to be controlling the noise levels for 90 seconds or more in a 15 minute sample

dwelling on site. The predicted noise level at the notional boundary is 44 dB L_{A10}. Furthermore, the dwelling at 200 Coast Road is around 25 m from Coast Road and noise levels here would be controlled by traffic on Coast Road.

At 199 Coast Road the predicted noise level is 56 dB L_{A10}. The boundary of the site is around 30 m closer than the dwelling on site. The predicted noise level at the notional boundary is 52 dB L_{A10}. The dwelling here is 30 m from Coast Road and the ambient noise levels would be controlled by traffic on Coast Road.

The noise prediction for 205 Coast Road is 60 dB L_{A10}. The boundary of the site in the northern area is over 250 m closer than the dwelling on site, and the northern area of the site is densely planted in shrubs and trees on the river banks and is therefore unlikely to be occupied by anyone. The predicted noise level at the notional boundary is 39 dB L_{A10}. The dwelling is less than 30 m from the road and based on ambient noise measurements, noise levels here are likely to be controlled by traffic noise over 39 dB L_{A10}.

Noise predictions are at the closest point of the works to the receiver and do not represent the noise levels that will be experienced at these receivers for the duration of time that the cleanfill is operational. Noise levels for the operation of the cleanfill are predicted to comply for receivers at > 60 m from the cleanfill area, so all works that are more than 60 m from the southern and eastern boundaries will comply with the permitted noise limit at the assessment position of all receivers.

The exceedances of the 50 dB L_{A10} noise limit will be intermittent over the lifetime of the cleanfill, once works progress to the southern corner of the site and will be intermittent over each day / week depending on the intensity of filling activities. Noise predictions are based on the cleanfill operating at the maximum possible capacity; the number of truck deliveries per day has previously been as low as 13, depending on local demand and timing of projects. If there are 13 trucks per day then there will be 1-2 deliveries per hour throughout the day and excavators on site would not be operating all day. When local demand for the cleanfill is lower it is anticipated that the exceedances of the permitted noise limit would be minimal and only for works in the area of site within 60 m of the southern or eastern boundary.

Notwithstanding that resource consent is required for an exceedance of the permitted noise limit at four properties, it is our opinion that the notional boundary is a better representation of the actual effects that will be experienced by these occupants. When assessed at the notional boundary the noise levels from the extension of the Wainuiomata Cleanfill are compliant at all receiving sites with the exception of 199 Coast Road where noise levels are predicted to be up to 52 dB L_{A10}. A difference in noise level of 2 decibels, between 50 dB L_{A10} and 52 dB L_{A10}, will not be perceptible. This exceedance will be intermittent over the lifetime of the cleanfill and only when works are within 60 m of the eastern boundary of site.

Due to the local topography it is not practicable to create an earth bund or screening for 199 Coast Road and receivers to the east of the cleanfill. These receivers are elevated above the height of Coast Road and the cleanfill site (west of the road) is much lower than the road height.

Based on the predicted noise levels, the duration of exposure to these noise levels and the noise that will actually be received by occupants of the land, it is our opinion that the noise levels from the extension to the Wainuiomata cleanfill will be reasonable.

6 Summary and conclusions

Tonkin + Taylor has been engaged by Hutt City Council City Infrastructure to prepare an assessment of noise effects for the proposed expansion of the existing Wainuiomata Cleanfill at 130 Coast Road, Wainuiomata.

Noise levels have been predicted for the operation of the cleanfill, including trucks entering and exiting the site. Noise predictions show that the noise emissions can comply with the permitted noise limit of 50 dB L_{A10} at all receivers with the exception of 119, 199, 200 and 205 Coast Road. When noise levels are assessed at the notional boundary, where they will actually be experienced by the land occupants, the noise levels are below 50 dB L_{A10} at all receivers except 199 Coast Road. The maximum predicted noise level at 199 Coast Road is 52 dB L_{A10}; this noise level will be intermittent over the lifetime of the cleanfill when it is operating at maximum capacity and works are within 60 m of the eastern site boundary. The difference of 2 decibels will not be perceptible.

It is our opinion that the noise levels received at the surrounding rural properties from the extension of the Wainuiomata cleanfill will be reasonable.

7 Applicability

This report has been prepared for the exclusive use of our client Hutt City Council City Infrastructure, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

Tonkin & Taylor Ltd

Report reviewed by:	Authorised for Tonkin & Taylor Ltd by:
	
.....	.....
Darran Humpheson	Ed Breese
Senior Acoustics Specialist	Project Director

Appendix A: Glossary

dB (decibel)	10 times the logarithm to base 10 of the ratio of two quantities proportional to intensity, power or energy
dBA – sound pressure level	The logarithmic ratio of the A-weighted sound pressure (p) relative to a reference pressure (p_o of 20μ Pa). $L_p = 10.\ lg(p^2/p_o^2)$ dB. The A-weighting modifies the frequency characteristics of the sound pressure to mimic the frequency response of the average human ear.
$L_{Aeq\ (t)}$	The equivalent continuous (time-averaged) A-weighted sound level commonly referred to as the average level. The suffix (t) represents the period, e.g. 15 minutes.
L_{AFmax}	The A-weighted maximum sound level. The highest sound level which occurs during the measurement period.
L_{A10}	The A-weighted sound level which is equalled or exceeded for 10% of the measurement time.
Noise	A sound that is unwanted.

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Appendix G: Draft Noise Management Plan

REPORT

Tonkin+Taylor

Wainuiomata Cleanfill

Noise Management Plan

Prepared for
Hutt City Council
Prepared by
Tonkin & Taylor Ltd
Date
November 2017
Job Number
84466.002.v2

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Table of contents

1 Introduction

This Noise Management Plan (NMP) has been prepared by Tonkin & Taylor Limited (T+T), to meet Condition 4 of land use resource consent RM170015 granted by the Hutt City Council. This consent authorises the operation of an existing cleanfill facility at 130 Coast Road, Wainuiomata.

The NMP will be used to manage noise from operational activities in relation to the cleanfill facility.

The NMP details the limits and predicted levels of noise, together with identification of the nearest noise receivers, mitigation measures, monitoring requirements, key contacts and communication and complaints procedures, for cleanfill activities at 130 Coast Road, Wainuiomata.

2 Contact details

Cleanfill Site Manager	Bob McWhirter Wainui Landfill Ltd 119A Port Road Seaview Lower Hutt Mobile: 027 445 3378
Hutt City Council Project Manager	Toni Stevens Project Manager Hutt City Council Private Bag 31 912 Lower Hutt Phone: 04 570 6873 Mobile: 027 430 1593
Public Contact Number	04 570 6666 (Hutt City Council helpdesk)

3 Site description

The site is legally described as Lots 2 and 3 DP 393261 and has an approximate area of 7.6 ha. The site is developed on rurally zoned land formerly housing the Wainuiomata wastewater treatment plant. The wastewater treatment plant has been decommissioned and the site remains vacant apart from the Wainuiomata sewage pumping station.

The environment surrounding the site is predominantly zoned General Rural to the west and south of the site, Rural Residential to the east of the site, and General Residential bordered by Ngaturi Park to the North.

4 Cleanfill sequence

4.1 Phasing of works

The works will be carried out in two distinct stages:

- **Stage 1** includes works proposed to deposit approximately 28,000 m^3 of cleanfill along the northern boundary, to create a noise bund of approximately 8 m height, to minimise effects on Ngaturi Park and the residential area to the north. This stage's filling has been completed and rehabilitation (including topsoil and revegetation) is progressing.
- **Stage 2** includes works proposed to deposit approximately 137,000 m^3 of cleanfill over the majority of the balance of the site until capacity is reached. The remainder of filling operations is expected to take up to 10 years.

The phasing of the cleanfill deposition is shown on the site plan (Appendix A).

4.2 Hours of work

Condition 5 of resource consent RM170015 sets out the hours of operation at the site:

The cleanfill shall only operate within the hours of Monday to Friday 7.30am – 5.00pm and Saturday 7.30am – 12.00pm (except where deposition of fill is required outside these hours/days for emergency civil works).

During operational hours the noise criteria, as outlined in Section 5.2 will apply.

5 Noise conditions and criteria

5.1 Noise conditions

Condition 1 of resource consent RM170015 requires the proposed works to be carried out substantially in accordance with the information and approved plans submitted with the resource consent application, and held on file at Hutt City Council. This includes the AEE report[1] for the project and Section 92 response[2].

Condition 4 of resource consent RM170015 requires the update of the Noise Management Plan (NMP)[3] within 3 months of approval of the consent. Any subsequent changes to the operation of the cleanfill relevant to noise generation will require a review of the NMP and any amendments shall be sent to the Team Leader Resource Consents for approval. The operation of the cleanfill shall be in accordance with the approved NMP.

5.2 Noise criteria

Resource consent RM170015 does not contain specific noise criteria relevant to the project. The applicable noise limits are those set out in the City of Lower Hutt District Plan.

Noise limits during normal compaction, spreading and truck moving operations are shown in Table 5.1.

Table 5.1: Upper limits for operational cleanfill site activities

Time period	L_{A10} (dBA)
07:00 am – 10:00 pm	50
10:00 pm– 07:00 am	40

6 Noise predictions and mitigation measures

6.1 Noise receivers

The site is located within a rural area with a few residential properties to the east and more densely populated residential areas to the north. The closest noise receivers are located 70-150 m from the nearest point to the cleanfill works. Stage 1 works are largely complete with only rehabilitation works in progress. The nearest receptors are as follows:

[1] Tonkin & Taylor Ltd, Resource Consent Application and Assessment of Effects on the Environment Wainuiomata Cleanfill, January 2017, Job Number 84466.004.v1.
[2] Tonkin & Taylor Ltd, Wainuiomata Clean fill - response to request for further information, 14 July 2017, 84466.004.
[3] Tonkin & Taylor Ltd, Wainuiomata Cleanfill Noise Management Plan, March 2015, Job Number 84466.002.

- To the south the nearest property is located approximately 70 m to the nearest point of works at the rural property located at 199 Coast Road. Further south at 200 Coast Road is a rural property located around 150 m from the nearest point of works;
- To the east the rural property at 119 Coast Road is 150 m from the nearest point of works;
- To the north residential properties at 4, 10, and 13 Ngaturi Grove are approximately 150 m from works.

6.2 List of cleanfill operational plant

During works the plant operating on site will include the following:

- Komatsu D53a 18 ton Bulldozer;
- Trucks.

6.3 Noise sources and predictions

Table 6.1 provides indicative noise predictions of activities. The noise predictions are based on Marshall Day Associates modelling for the original consent application, updated in the light of the operational change of the bulldozer to 1 hour a day[4].

At the nearest residential receivers, the modelled noise predictions indicate that cleanfill operations are generally expected comply with permitted activity limits for the zone within the District Plan. Levels marginally above the permitted activity limits within the District Plan (maximum of 50 dBA from 07:00 am to 10:00 pm) are predicted at 199 Coast Road, however the model predictions are conservative. This has been confirmed through monitoring on 30 March 2017, which showed measured levels of activities are similar to background noise levels[4].

Table 6.1: Marshall Day Acoustics noise predictions for operations involving both bulldozer and truck movements

Receiver	West	South
	Predicted (dBA L_{10})	Predicted (dBA L_{10})
Dwelling 1 – 4 Ngaturi Grove	42	41
Dwelling 2 – 13 Ngaturi Grove	44	44
Dwelling 3 – 115B Coast Road	46	47
Dwelling 4 – 199 Coast Road	45	51
Dwelling 5 – 200 Coast Road	42	40
Dwelling 6 – 201 Coast Road	42	44
Dwelling 7 – 202 Coast Road	40	43
Dwelling 8 – 203 Coast Road	39	40
Dwelling 9 – 204 Coast Road (north)	40	42
Dwelling 10 – 204 Coast Road (south)	40	39

The proposed mitigation measures and noise management measures are outlined in Section 6.4 below.

[4] Tonkin & Taylor Ltd, Wainuiomata Clean Fill Section 92 Request – Assessment of Noise Effects, 26 April 2017, 84466.0040.

6.4 Good noise management and mitigation

6.4.1 Noise mitigation

An earth bund is constructed on the northern edge of the fill area which will provide noise attenuation to the residential area to the north for the main filling stage in the southern area of the site.

Where noise levels during cleanfill operations are identified as being at risk of exceeding the consented noise limits (E.g. when operations are closest to 199 Coast Road) and/or complaints are received, the following measures are proposed:

- Monitor activities at the nearest receivers to assess compliance with noise levels during cleanfill operation, in particular during spreading and compaction;
- Consider whether alternative lower noise methodology could be employed to complete works in that area or whether additional noise screening is required;
- Liaise with affected receivers to determine their movements during noisy works and whether cleanfill compaction operations can be programmed on days when they are out or time of day when less disturbance would be caused.

6.4.2 Good noise management

In addition to the above mitigation, the Cleanfill Site Manager will talk to site staff about potential issues in relation to noise and how they can help reduce it. This could be carried out at the same time as the site inductions or through specific staff training. To ensure noise limits are achieved, all site staff will be made aware of and follow the below good practice.

1 Trucks should enter site without engine brakes and leave site with smooth acceleration and low engine revs.

2 When arriving at work, drive slowly on site and keep revs to a minimum. Keep stereos off and do not slam doors.

3 Equipment and vehicles should not be left running when not in use.

4 Limit vehicle horns to emergency purposes only.

5 Where possible, avoid reversing beepers on trucks, opting for flashing lights.

6 All equipment is to be well maintained - simple maintenance can reduce noise levels by as much as 50 per cent.

7 No shouting or swearing on site. Either walk over and talk to somebody or use a radio/phone.

8 Be careful with tools and equipment. Place them down and do not drop them. Do not slam tailgates of vehicles.

9 Do not drag materials on the ground. Place them down when you arrive at the work area.

10 When loading and unloading trucks try not to drop material from a height. Load softer material at the bottom.

11 No noisy works shall be conducted outside the consent operational hours of 0730 to 1700 Monday to Friday and 0730 to 1200 Saturday.

12 If you see anything/anyone making unnecessary noise then stop it/them. If the source cannot be stopped then report it to the Site Manager.

13 It is essential that good relationships are maintained with local residents. Any queries from members of the public should be responded to politely and referred to the Site Manager. Staff shall assist the public to make contact with this person. Staff shall not enter into a debate or argue with members of the public.

14 No potentially noisy work is to be conducted until all staff involved in the task understands the required noise controls for that task.

7 Noise monitoring

Noise monitoring will be undertaken where required to confirm that cleanfill operations at the site are being undertaken in compliance with the consented noise limits.

Noise monitoring will be carried out where noise levels are at risk of exceeding noise criteria (E.g. when operations are closest to 199 Coast Road), in the event that complaints are received, or in the event of significant change of operation (e.g. changes in plant).

Noise monitoring will be undertaken by an experienced and qualified person in accordance with NZS 6801:2008. The noise monitoring will be undertaken when plant used to spread and compact the cleanfill is in operation. Any special audible characteristics in relation to the noise from operations will be identified and recorded during monitoring so this can be further investigated with the Site Manager and remedied where required.

The resultant report of the noise monitoring will be submitted to Hutt City Council within 10 days of the monitoring taking place.

In the event that measured noise levels exceed the consented noise limits, the Resource Consent Monitoring Leader will be notified as soon as practicable and further mitigation options shall be investigated and implemented.

8 Management of complaints

The general number for complaints is (04) 570 6666, (Hutt City Council helpdesk) which will go through to the Site Project Manager.

Noise complaints will be handled as follows:

- The Site Project Manager (Refer Section 2) will be the nominated contact person for complaints received. This person shall be responsible for investigation of complaints and subsequent contact with the complainant and Council;
- For each complaint, prompt action will be taken to investigate whether any unusual activity may have given rise to the complaint, and if so, action to prevent recurrence shall be undertaken;
- Complaints and investigations shall be recorded in the complaints register. The register shall include: the name and address of the complainant, the nature of the complaint, the date and time of the complaint, results of any investigations and any mitigation measures adopted;
- The complaints register shall be made available to Hutt City Council and Greater Wellington Regional Council upon request;
- The Site Manager shall provide acknowledgement of the complaint to the complainant within 3 working days. A full response to the complaint shall be made within 10 days. The response should, where appropriate, identify the action taken;
- The Site Manager shall forward a copy of any complaints to Hutt City Council and Greater Wellington Regional Council, within 7 days of receiving the complaint; and
- The Site Manager shall notify Hutt City Council and Greater Wellington Regional Council of any action taken in response to the complaint, within 21 working days of receiving the complaint.

9 Applicability

This report has been prepared for the benefit of Hutt City Council with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose without our prior review and agreement.

Tonkin & Taylor Ltd

Environmental and Engineering Consultants

Report prepared by:	Authorised for Tonkin & Taylor Ltd by:
.....	.....
Dylan Vernall	Ed Breese
Environmental Scientist	Project Director

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Appendix A: Site Plan

www.tonkintaylor.co.nz

Appendix H: Record of communication between HCC representatives and community members

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29 November 2018

By email: [redacted]

Dear Ms Moffat

I am writing on behalf of the Mayor in response to a document you have supplied commenting about the Coast Road cleanfill, and questions raised at our subsequent meeting.

Our officers have read the document, investigated the issues raised and address them in turn below.

Resource Consent duration

The first resource consent, issued in 2011 allowed the cleanfill to operate for six years (until 27 April 2017). Not all of the cleanfill deposit was completed within that time.

A second resource consent was issued in 2017 and allowed the cleanfill to operate for ten years. This was to allow the remainder of the cleanfill (uncompleted under the first consent) to be deposited on site. Despite the ten year term of the second consent, it was anticipated that the consented space would be filled within a much shorter period of time than that, and as we have advised, we expect this to be the case by the middle of next year.

There was a period between the lapse of the first resource consent and the issue of the second resource consent, which is allowed for under the Resource Management Act.

It is alleged that because the cleanfill has operated for longer than six years it is "operating in breach of its own agreed RC conditions". This is not the case because when we have a case like this where there are two resource consents issued, the second resource consent supersedes the first one.

Therefore the cleanfill is operating legally in line with the second resource consent.

Resource Consent conditions

There were conditions attached to the first resource consent which were applicable whilst the cleanfill was in operation for the first six years. These have now been superseded by the second resource consent. Therefore the conditions of the first resource consent are now irrelevant to a degree.

There are also conditions attached to the second resource consent which are applicable now.

The conditions mentioned are below:

3. The consent holder shall not undertake cleanfill activities (including vegetation removal) over any more than 1.5 ha (approximately 20%) of the site (Lots 2 and 3 DP 393261) at any one time. The consent holder shall maintain up to date records of the area subject to cleanfill activities and provide these within 24 hours of any request from the consent authority.

The applicant maintained records of the area of the cleanfill and the active face of the cleanfill area did not extend over 1.5 hectares at any time. A survey undertaken in September 2017 showed an area of 1.2 hectares was the maximum exposed at that time.

There may have been some periods of time when the total area disturbed was greater than the 1.5ha specified. Disturbed areas were expected to be revegetated faster than in fact occurred – refer to comments on Condition 28 below.

4. This consent authorises the undertaking of cleanfill activities and related activities as set out in the application and varied by conditions, for a period of six (6) years from the date of the application being granted.

The first resource consent, to which this condition is attached, has been superseded by a second resource consent, which has given permission to the landfill for a further ten years.

9. The consent holder shall ensure that the operation is managed in a manner to ensure that no unreasonable dust nuisance occurs beyond the boundary of the site. Measures for control may include the use of a water cart, limiting vehicle speeds, and application of water to surfaces that are exposed or excessively dry.

My staff have looked through our records and cannot find any complaints about dust nuisance for the duration of the first resource consent. Essentially, our RMA Monitoring and Enforcement Officers act in reaction to complaints.

10. Notwithstanding condition 9 above, large areas of soil shall not be left exposed for periods longer than one month. Such areas shall be hydroseeded or otherwise vegetated until such time as they are required to be released for cleanfill activities.

Staff have confirmed to me that the cleanfill did not comply with this condition, but as we didn't receive any complaints, it was not picked up at the time. This is something that should have been done better.

13. The site management plan required under Condition 5 shall also specify the measures taken to avoid the tracking of sediment and dust onto the public road network. The plan should also specify contingency measures such as wheel shakers.

For the duration of the first resource consent, my staff have checked the Council records and found two complaints of sediment being tracked onto the road. These were dealt with on the day the complaint was made.

For the duration of the second resource consent, our records show there were complaints and that these were dealt with by having the road cleaned. This was, at times, being done on a daily basis. More recently, a wheel wash has been installed on site, and no complaints have been received since that time.

19. Materials deposited as part of cleanfill activities shall be non-polluting materials such as clay, soil, rock, concrete or brick and in accordance with the January 2002 publication "A Guide to the Management of Cleanfills" by the Ministry for the Environment (and any subsequent updates).

A photo attached to the document shows tyres, bottles, plastic etc in the cleanfill. You further showed me a photo with a pile of plastic bottles.

We have also spoken to the cleanfill operator about this issue. He advises that relatively small quantities of plastic bottles are occasionally received, and this is allowable under the definition of acceptable cleanfill material. But the cleanfill operator does not encourage this, and anyone looking to deposit significant quantities of such material would be turned away.

28. Within 3 months of cleanfill activities ceasing (either because the cleanfill volume is reached or the six year consent duration is reached) the consent holder shall:

    - Submit an environmental restoration plan to the Team Leader Resource Consents for his / her approval
    - Seek approval from the Minister of Conservation to gazette the site as reserve under the Reserves Act 1977.

    (Note: It is expected that the environmental restoration plan referred to in this condition will involve active revegetation of the site, including compaction, hydroseeding or by planting trees and shrubs. Where trees and shrubs are to be planted these shall be chosen through liaison with Council's Leisure Services Division).

In terms of site remediation, I have talked to officers and it is clear to me that it was Councils intention to revegetate the area in more of a staged approach.

One of the main issues raised regarding rehabilitation of the site, could not be complied with because the cleanfill had received insufficient material to progress to completion of each stage when planting could be undertaken.

The rates of filling, and operational practicalities, made this more difficult than expected.

Planting has now been completed on the area adjoining Ngaturi Park, and the balance of the cleanfill area will also be planted on completion.

The intention to gazette the area remains, and as discussed at the time of the original consent, it is expected that this will add significantly to the amenity and recreational value of the land.

Non-notification of resource consent

You have raised questions as to why the second resource consent was not notified to the neighbours.

There were a number of issues assessed by the planner (and experts) to determine what the level of effects were – these included noise, the separation distance between the clean fill operations and surrounding/adjoining properties, the management of the site via existing and future iterations of management plans (such as site management plan, noise management plan), visual amenity, odour, traffic, vibration, flooding and dust. These were all found to be "less than minor" – which is the test in the RMA to decide whether or not we have to consult with the neighbours.

This is explained in detail in the attached Resource Management Officers Report.

Information requested

I understand you have verbally requested some information from Stephen Dennis regarding the cleanfill. I attach:

- Resource Consent monitoring reports from the first resource consent
- Planners report detailing the decision around notification/non-notification of the second resource consent

In terms of vehicle movements, whilst we do not have records of actual vehicle numbers, an analysis of volume and estimated average truck size, suggests that over the last 2.5 years there would have been an average number of vehicle movements in the order of 31 per working day.

I will shortly send through additional information in relation to environmental monitoring reports and cleanfill volume records.

Issues raised around Bruce Sherlock

I have talked to Bruce and have responses around the issues raised.

- No. 2 - some water logged material was been received, mostly from foundation excavations for the hotel being developed in Lower Hutt.
  The material was carefully stockpiled and managed to ensure that any run off was contained, and then spread onto the cleanfill proper once it had dried out. The cleanfill

operation has been regularly audited by Greater Wellington Regional Council staff in respect to potential effects on the Wainuiomata River. Greater Wellington Regional Council Officers did not raise any concerns about the way this was managed.

- No. 12 – I understand the suggestion of forming a Liaison Group was not adopted as a condition by the Commissioner.
  Minutes of a meeting held with the residents on 16th September note that "Residents Group meetings will be held initially after three months, and then as required".

  A further meeting was held on the 18th November, and letters recording the outcomes of those meetings, and the proposed way forward, were sent on 8th Dec 2010. No further issues were raised by residents, until some recent (2018) complaints about mud and stones on the road, and therefore no further meetings were held.

While there are some impacts from extending timeframes to complete the cleanfill operations on the site, the end result remains that we will have a significantly enhanced area when compared to the state of the land prior to the works commencing. I look forward to seeing plans from our Parks & Gardens division for the restoration; and the first major part of which could commence as soon as winter next year. Your input on those plans at the appropriate time would be most welcome.

Nevertheless, I do understand your frustrations at the extended timeframe and concerns about future location of cleanfill operations in Wainuiomata. And so I apologise for the inconvenience caused.

As the Mayor suggested, we are happy to meet with you to discuss any remaining questions and suggest that be fairly soon given the coming holiday season. This would be together with the senior officers involved so responses can be more immediate. Please be in touch so we can coordinate a time.

At that meeting we could summarise the current status of cleanfill requirements for Wainuiomata and the rest of the city together with options under consideration.

Yours sincerely

Tony Stallinger
Chief Executive

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29 November 2018

By email: [redacted]

Dear Ms Moffat and Ms O'Regan

Further to my letter of late November, I attach several additional records in relation to the existing cleanfill. These are the volume records and recent audit records for the operation.

You have requested some further explanation about how planning officers determine who the affected parties are in a resource consent process. That is best handled by discussion and I can get a suitable senior staff member to join our next meeting for that purpose, or contact you by phone if preferable.

As regards the individual car observed at the cleanfill, Bruce Sherlock's understanding and requirement is that this should not be happening. This is especially since the current operator was appointed and maintains a staff member on site. If you have any further information about this, such as the date and time of the event, we will raise it with due concern with the cleanfill operator and get his response. At present we are only able to speculate how a breach could have occurred.

We remain keen to meet up again to discuss any remaining concerns or questions, and to also discuss future cleanfill requirements. In the meantime, I can provide an update on recent developments.

Over the last few weeks there has been a rapid escalation in announced plans for Wainuiomata. In part this is driven by Council's development remissions policy coming to an end on 31 December 2018 and this deadline prompting action. We are now aware of plans for about 500 new Wainuiomata homes within the next two years, as well as the Mall/supermarket project announced this week. This level of development is unprecedented in the recent history of Wainuiomata. It represents an increase of about 1000% over previous growth levels.

There simply is not sufficient cleanfill capacity for the material expected to be produced from these projects, even without demand from the rest of the city. In the absence of private landowners establishing cleanfill operations, Council has a responsibility to support this growth particularly given the current housing shortage. This is especially so when a large proportion of these homes are planned to be constructed with social objectives rather than a pure profit motive.

Our best current option remains an extension of the current operation. If this was to proceed, I have confirmed with the Mayor that we would both be prepared to give personal undertakings in addition to any regulatory requirements in consents:

1. The current consented fill area will be topped off and planted in 2019, probably over the winter period.
2. The proposed extension would be limited to a maximum 2 ½ year fill period. If for some unforeseen reason the anticipated fill volumes did not eventuate over that period, we would nevertheless require the area to be contoured, topped off and planted at the end of 2021; no extension of time would be sought by Council or our operators.
3. We would ensure that invitations were sent to regular community meetings over the period. The latest monitoring and volume reports from the cleanfill would be available at those meetings. The Mayor and I would request copies of the minutes of the meetings held and discuss any concerns raised.
4. We will commence long term planning for the City's future cleanfill requirements in other locations.

We look forward to further discussion.

Yours sincerely

Tony Stallinger
Chief Executive

www.tonkintaylor.co.nz