

7<sup>th</sup> October 2024

District Services – Resource Consents  
Far North District Council  
Private Bag 752  
Kaikohe 0440

Attention Team Leader Resource Consents

**RESOURCE CONSENT APPLICATION BY NJ & PJ SPOONER TRUST FOR A SUBDIVISION AND RELATED LANDUSE CONSENTS BEING LOCATED AT 17 MISSION ROAD, KERIKERI.**

Zenith Planning Consultants have been engaged by NJ & PJ Spooner Trust to prepare a combined subdivision and landuse resource consent application relating to a proposed subdivision of their property at 17 Mission Road, Kerikeri.

I have attached the following information in support of the application:

- Completed Application Form
- Planning Report and Assessment of Effects
- Scheme Plan
- Technical Reports includes Engineering and PSI/DSI reports
- Photos and plans of the site
- Current Certificate of Title

The applicant has paid the Council estimated fees using the reference Spooner Trust via internet banking.

Should you have any queries in respect to this application please contact me.

Yours faithfully



**Wayne Smith**

Zenith Planning Consultants Ltd

Principal | Director

BPlan | BSocSci | MNZPI

[wayne@zenithplanning.co.nz](mailto:wayne@zenithplanning.co.nz)

mob: +64 (0) 21 202 3898



<b>Office Use Only</b> Application Number:
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**APPLICATION FOR RESOURCE CONSENT OR FAST-TRACK RESOURCE CONSENT**

**(Or Associated Consent Pursuant to the Resource Management Act 1991 (RMA))**

**(If applying for a Resource Consent pursuant to Section 87AAC or 88 of the RMA, this form can be used to satisfy the requirements of Form 9)**

*Prior to, and during, completion of this application form, please refer to Resource Consent Guidance Notes and Schedule of Fees and Charges – both available on the Council’s web page.*

**1. Pre-Lodgement Meeting**

Have you met with a Council Resource Consent representative to discuss this application prior to lodgement? No

**2. Type of Consent being applied for (more than one circle can be ticked):**

- Land Use                       Fast Track Land Use\*                       Subdivision                       Discharge
- Extension of time (s.125)     Change of conditions (s.127)     Change of Consent Notice (s.221(3))
- Consent under National Environmental Standard (e.g. Assessing and Managing Contaminants in Soil)
- Other (please specify) \_\_\_\_\_

**\*The fast track for simple land use consents is restricted to consents with a controlled activity status and requires you provide an electronic address for service.**

**3. Would you like to opt out of the Fast Track Process? No**

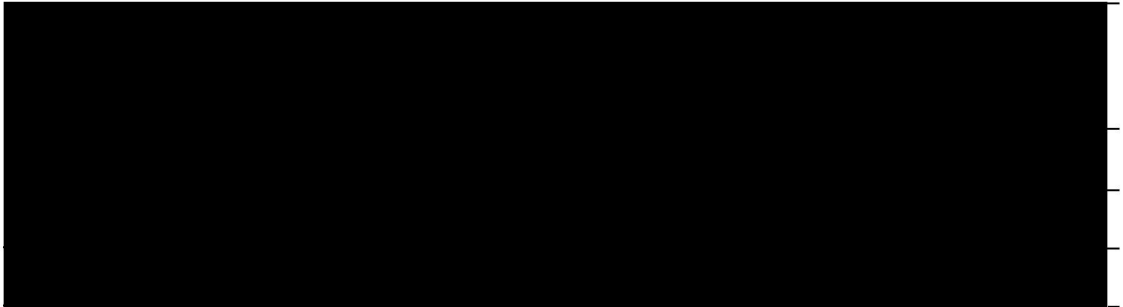
**4. Applicant Details:**

Name/s: NJ & PJ Spooner Trust \_\_\_\_\_

Electronic Address for Service (E-mail):

Phone Numbers:

Postal Address: (or alternative method of service under section 352 of the Act)



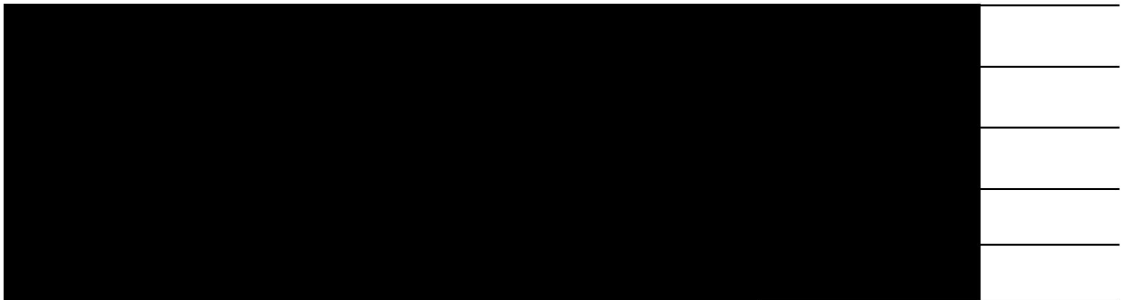
**5. Address for Correspondence: Name and address for service and correspondence (if using an Agent write their details here).**

Name/s: Zenith Planning Consultants Limited, Attention Wayne Smith

Electronic Address for Service (E-mail):

Phone Numbers:

Postal Address: ( or alternative method of service under section 352 of the Act)



**All correspondence will be sent by email in the first instance. Please advise us if you would prefer an alternative means of communication.**

**6. Details of Property Owner/s and Occupier/s: Name and Address of the Owner/Occupiers of the land to which this application relates (where there are multiple owners or occupiers please list on a separate sheet if required)**

Name/s: NJ & PJ Spooner Trust \_\_\_\_\_  
\_\_\_\_\_

Property Address/  
Location: 30A Blacks Road, Kerikeri \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**7. Application Site Details:**

Location and/or Property Street Address of the proposed activity:

Site Address/  
Location: 17 Mission Road, Kerikeri \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Legal Description: Lot 1 Deposited Plan 71920 Val Number:\_\_\_

Certificate of Title: NA 42A/103

Site Visit Requirements:

Is there a locked gate or security system restricting access by Council staff? No  
Is there a dog on the property? No

Please provide details of any other entry restrictions that Council staff should be aware of, e.g. health and safety, caretaker's details. **This is important to avoid a wasted trip and having to re-arrange a second visit.**

Access onto and around the property is unrestricted but please contact Paul on 027 289 1221

**8. Description of the Proposal:**

Please enter a brief description of the proposal here. Attach a detailed description of the proposed activity and drawings (to a recognized scale, e.g. 1:100) to illustrate your proposal. Please refer to Chapter 4 of the District Plan, and Guidance Notes, for further details of information requirements.

Subdivision of Lot 1 DP 71920 to create one additional lot.

Landuse consent for breach of the stormwater (impermeable surfaces) and building coverage rules as a direct result of the proposed subdivision for existing and future development.

If this is an application for an Extension of Time (s.125); Change of Consent Conditions (s.127) or Change or Cancellation of Consent Notice conditions (s.221(3)), please quote relevant existing Resource Consents and Consent Notice identifiers and provide details of the change(s) or extension being sought, with reasons for requesting them.

**9. Would you like to request Public Notification?** No

**10. Other Consent required/being applied for under different legislation (more than one circle can be ticked):**

- Building Consent (to be applied for)
- Regional Council Consent (see attached)
- National Environmental Standard consent
- Other (please specify)

**11. National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health:**

The site and proposal may be subject to the above NES. In order to determine whether regard needs to be had to the NES please answer the following (further information in regard to this NES is available on the Council's planning web pages):

Is the piece of land currently being used or has it historically ever been used for an activity or industry on the Hazardous Industries and Activities List (HAIL)  yes  no  don't know

Is the proposed activity an activity covered by the NES? (If the activity is any of the activities listed below, then you need to tick the 'yes' circle).  yes  no  don't know

- Subdividing land
- Changing the use of a piece of land
- Disturbing, removing or sampling soil
- Removing or replacing a fuel storage system

**12. Assessment of Environmental Effects:**

*Every application for resource consent must be accompanied by an Assessment of Environmental Effects (AEE). This is a requirement of Schedule 4 of the Resource Management Act 1991 and an application can be rejected if an adequate AEE is not provided. The information in an AEE must be specified in sufficient detail to satisfy the purpose for which it is required. Your AEE may include additional information such as Written Approvals from adjoining property owners, or affected parties.*

**Please attach your AEE to this application.**

**13. Billing Details:**

This identifies the person or entity that will be responsible for paying any invoices or receiving any refunds associated with processing this resource consent. Please also refer to Council's Fees and Charges Schedule.

Name/s: (please write all names in full) see separate sheet

Email: \_\_\_\_\_

Postal Address: \_\_\_\_\_

\_\_\_\_\_ Post Code: \_\_\_\_\_

Phone Numbers: Work: \_\_\_\_\_ Home: \_\_\_\_\_ Fax: \_\_\_\_\_

**Fees Information:** An instalment fee for processing this application is payable at the time of lodgement and must accompany your application in order for it to be lodged. Please note that if the instalment fee is insufficient to cover the actual and reasonable costs of work undertaken to process the application you will be required to pay any additional costs. Invoiced amounts are payable by the 20<sup>th</sup> of the month following invoice date. You may also be required to make additional payments if your application requires notification.

**Declaration concerning Payment of Fees:** I/we understand that the Council may charge me/us for all costs actually and reasonably incurred in processing this application. 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 incurred by the Council. Without limiting the Far North District Council's legal rights if any steps (including the use of debt collection agencies) are necessary to recover unpaid processing costs I/we agree to pay all costs of recovering those processing 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.

Name: \_\_\_\_\_ (please print)

Signature: \_\_\_\_\_ (signature of bill payer – **mandatory**) Date: \_\_\_\_\_

## 14. Important Information:

### Note to applicant

You must include all information required by this form. The information must be specified in sufficient detail to satisfy the purpose for which it is required.

You may apply for 2 or more resource consents that are needed for the same activity on the same form.

You must pay the charge payable to the consent authority for the resource consent application under the Resource Management Act 1991.

### Fast-track application

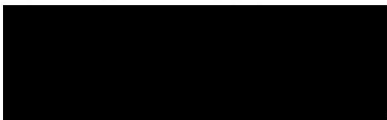
Under the fast-track resource consent process, notice of the decision must be given within 10 working days after the date the application was first lodged with the authority, unless the applicant opts out of that process at the time of lodgement. A fast-track application may cease to be a fast-track application under section 87AAC(2) of the RMA.

### Privacy Information:

Once this application is lodged with the Council it becomes public information. Please advise Council if there is sensitive information in the proposal. The information you have provided on this form is required so that your application for consent pursuant to the Resource Management Act 1991 can be processed under that Act. The information will be stored on a public register and held by the Far North District Council. The details of your application may also be made available to the public on the Council's website, [www.fndc.govt.nz](http://www.fndc.govt.nz). These details are collected to inform the general public and community groups about all consents which have been issued through the Far North District Council.

**Declaration:** The information I have supplied with this application is true and complete to the best of my knowledge.

Name: Wayne Smith \_\_\_\_\_ (please print)

Signature:  \_\_\_\_\_ (signature)

Date: 7<sup>th</sup> October 2024

(A signature is not required if the application is made by electronic means)

### Checklist (please tick if information is provided)

- ✓ Payment (cheques payable to Far North District Council) – Estimated charge paid via online banking
- ✓ A current Certificate of Title (Search Copy not more than 6 months old)
  - Copies of any listed encumbrances, easements and/or consent notices relevant to the application
- ✓ Applicant / Agent / Property Owner / Bill Payer details provided
- ✓ Location of property and description of proposal
- ✓ Assessment of Environmental Effects
  - Written Approvals / correspondence from consulted parties
- ✓ Reports from technical experts (if required)
  - Copies of other relevant consents associated with this application
- ✓ Location and Site plans (land use)
- ✓ Location and Scheme Plan (subdivision)
  - Elevations / Floor plans
  - Topographical / contour plans

*Please refer to Chapter 4 of the District Plan for details of the information that must be provided with an application. Please also refer to the RC Checklist available on the Council's website. This contains more helpful hints as to what information needs to be shown on plans.*

**Digital Applications may be submitted via E- mail to: [Planning.Support@fndc.govt.nz](mailto:Planning.Support@fndc.govt.nz)**

**Only one copy of an application is required, but please note for copying and scanning purposes, documentation should be:**

**UNBOUND**

**SINGLE SIDED**

**NO LARGER THAN A3 in SIZE**

**10. Other Consent required/being applied for under different legislation (more than one circle can be ticked):**

- Building Consent (BC ref # if known)
- Regional Council Consent (ref # if known)
- National Environmental Standard consent
- Other (please specify)

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Is the proposed activity an activity covered by the NES? (If the activity is any of the activities listed below, then you need to tick the 'yes' circle).  yes  no  don't know

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**Please attach your AEE to this application.**

**13. Billing Details:**

This identifies the person or entity that will be responsible for paying any invoices or receiving any refunds associated with processing this resource consent. Please also refer to Council's Fees and Charges Schedule.

Name/s: (please write all names in full) NJ + PJ SPOONER TRUST

Email: \_\_\_\_\_  
Postal Address: \_\_\_\_\_  
Phone Numbers: \_\_\_\_\_

**Fees Information:** An instalment fee for processing this application is payable at the time of lodgement and must accompany your application in order for it to be lodged. Please note that if the instalment fee is insufficient to cover the actual and reasonable costs of work undertaken to process the application you will be required to pay any additional costs. Invoiced amounts are payable by the 20<sup>th</sup> of the month following invoice date. You may also be required to make additional payments if your application requires notification.

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Name: PAUL SPOONER (please print)

Signature: \_\_\_\_\_ (signature of bill payer – mandatory) Date: 12-6-24

# **Planning Report and Assessment of Effects**

## **Proposed Subdivision and Landuse Consent**

### **NJ & PJ Spooner Trust**

**17 Mission Road, Kerikeri**

## **PLANNING REPORT AND ASSESSMENT OF EFFECTS**

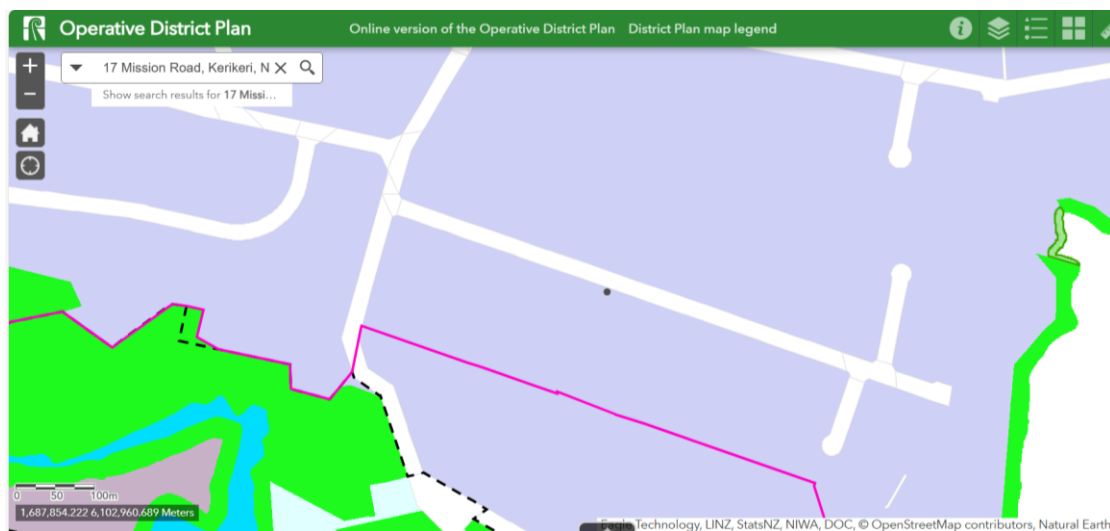
### **APPLICATION AND SITE DESCRIPTION**

- 1.01 Zenith Planning Consultants have been engaged by the NJ & PJ Spooner Trust to prepare and lodge a combined landuse and subdivision resource consent for their property at 17 Mission Road, Kerikeri. The application site is zoned Rural Living under the Far North Operative District Plan.
- 1.02 The property is 5905m<sup>2</sup> and has a legal description of Lot 1 DP 71930. The property contains an existing dwelling which is to be located within proposed Lot 1, while proposed Lot 2 is currently vacant. The existing onsite wastewater system for the existing dwelling is located within proposed Lot 1 as noted within the Engineering Report. The property is slightly higher than Mission Road with the property sloping up from the road. The site is primarily in lawn grassed with several fruit trees and perimeter landscaping / screening on all boundaries. On the northern boundary, larger trees and vegetation along the road frontage have recently been felled and there remains some landscaping along this boundary.
- 1.03 A new driveway on the eastern end of the property will be established adjacent to an existing driveway which runs along the entire eastern boundary. This access leg services several rear lots.
- 1.04 In addition to the subdivision, existing and proposed impermeable surfaces for the respective lots will exceed the permitted allowances and are detailed as follows:
- Proposed Lot 1 – 27% existing – includes dwelling, driveway and existing accessory buildings
- Proposed Lot 2 – 18% proposed – the site is vacant and it is considered that this percentage is appropriate for the zone.
- 1.05 In addition to impermeable surfaces there is also a request within this application to increase the allowable building coverage to a maximum of 15%. This will enable a reasonable dwelling and accessory buildings to be established on each of the respective lots. The management of stormwater overall falls within the proposed impermeable surfaces as noted. In the event that greater than the proposed percentages for either stormwater (impermeable surfaces) or building coverage are exceeded, then a further resource consent will be required.
- 1.06 The general area around Mission Road contains a number of larger residential properties which are also flanked along the coastal boundary (within the upper Kerikeri Inlet), by smaller residential properties many of which are only approximately 1000m<sup>2</sup> in size. This pattern of development and allotment arrangement is as a result of the former BOI District Plan which provided for large lots (Residential 5) and standard residential



(Residential 1) properties within this wider location. The previous zoning results in the somewhat unusual circumstance where arguably the more sensitive properties located adjacent to the Coastal Marine Area are more intensively developed, while sites further from the coast are typically larger lots and less intensively developed. Rules around the extent of impermeable surfaces place significant constraint on the larger sites.

- 1.07 Over time and with development placed strategically within the larger residential lots, there has been subdivision applications approved which result in lots of comparable size to those proposed within this application. It would appear that although the former lots of around 1000m<sup>2</sup> are very intensive for onsite servicing, lots around 2-3000m<sup>2</sup> have been approved where onsite servicing and effects are achievable and effectively managed. The proposed lot sizes are both close to 3000m<sup>2</sup> and remain larger than most of the former residentially zoned lots which are now also zoned Rural Living and within walking distance of the application site. The existing pattern and density of development in terms of lot size is a material consideration for this area and for this reason is noted accordingly within later sections of this report.
- 1.08 The site is zoned Rural Living as illustrated within the operative district plan.



*The site is located where the small black dot is positioned.*

- 1.09 It is contended within this application that the proposed density of development is reflective of the lifestyle zoning afforded to the surrounding area and would be an appropriate use for the site. A degree of intensification for lots with some Council services and the means to provide the remaining requirements on site, is considered to be an effective and efficient use of land and which does not contribute to unnecessary expansion of the residential area. The zoning infers that in the future this area would be serviced and become residential, and this application is reflective of this forward looking approach.
- 1.10 Buildings do not require resource consent within the Rural Living zone providing the development controls are satisfied however there are several rules which can be

challenging to meet. The permitted allowance for all impermeable surfaces is restricted to 12.5% of the site area. This means that for the application site of 5905m<sup>2</sup>, access, buildings and other impermeable surfaces are limited to only 738.13m<sup>2</sup> and building coverage of 10% or 590.5m<sup>2</sup>. The specific amounts of impermeable surfaces sought for each lot are noted in section 1.04 of this report. Impermeable and building coverage breaches are sought as part of this application.

- 1.11 Council is in the process of preparing a new district plan to replace the current operative plan. The process is reasonably lengthy but is progressing with the Proposed Far North District Plan first notified on 27<sup>th</sup> July 2022 when submissions were invited to be lodged. The Council has since produced a summary of submissions, closed the further submissions process, and has commenced hearings of submissions. Under the Proposed District Plan, the site is zoned Rural Residential. The site is also located within the Kerikeri Heritage Area – Part B. Discussions on the impact of this overlay will be discussed later within the report. There are no additional notations or overlays which affect the site.



*Planning Maps for the application site from the Proposed District Plan noting the zoning as Rural Residential and that the site is located within the Kerikeri Heritage Area – Part B.*

- 1.12 The vacant site will provide the opportunity for a dwelling to be provided in the future with a development tailored to meet the additional impermeable and building coverage allowances sought under the landuse component of this application.
- 1.13 As noted earlier and detailed on the plans provided, a new entrance for the vacant lot is proposed. The site enjoys good sight distances in both directions for the new access point. The new access will be constructed to Council's Engineering Standards for an urban access.
- 1.14 The indicative dwelling location requires some site clearance of fruit trees and other plantings to accommodate the future dwelling. The future landowner may decide to undertake more intensive perimeter landscaping which is common within the area. It is

however contended that this may only be required to be completed once the final house is designed and constructed.

- 1.15 For the purposes of the application, consultation with Chorus and Top Energy was completed with both agencies having no requirements for the proposed subdivision.

## **APPLICATION PROPOSAL**

- 2.01 The application being considered concerns the subdivision of land and related landuse consents to enable a reasonable percentage for impermeable surfaces and building coverage to be allowed for the future development of the respective lot(s). The landuse component for impermeable surfaces and building coverage ensures that a reasonable sized dwelling can be constructed without further resource consent being required providing other development standard rules are complied with. This combined landuse and subdivision approach is a common application within the Rural Living Zone where permitted allowances are not sufficient to enable a reasonably sized dwelling and access to be constructed under the permitted allowances particularly for those lots less than the controlled standard of 4000m<sup>2</sup>.
- 2.02 This application seeks the impermeable surfaces and building coverage as detailed within section 1.04 and 1.05 of this report. Conditions of the approval will direct the consent holder to undertake the required works to address stormwater. Applications requiring above 20% seek to ensure that there is additional flexibility available within the sites and this impermeable surface percentage is reasonably common amongst the smaller lots within the immediate area.
- 2.03 The site is zoned Rural Living and the rules for subdivision are noted within Table 13.7.2.1 of the Far North Operative District Plan. The Proposed Plan is not applicable from a subdivision perspective with respect to lot size.

### Rural Living Zone

- Controlled Lot size – 4000m<sup>2</sup>
- Discretionary – 3000m<sup>2</sup>

The proposed lot sizes within the subdivision are follows:

- Proposed Lot 1 – 2905m<sup>2</sup>
- Proposed Lot 2 – 3000m<sup>2</sup>

- 2.04 Proposed Lot 1 is less than the 3000m<sup>2</sup> minimum lot size for a Discretionary Activity and therefore from a lot size perspective the proposal is non-complying.
- 2.05 Rule 13.7.2.2 within the operative district plan details the required allotment dimensions for proposed lots within the Rural Living zone. The operative plan requires minimum allotment dimensions of 30m x 30m within the Rural Living zone which must not encroach the side yard requirements. The lots can both meet this requirement.

**The overall Subdivision component is Non-Complying**

2.06 Landuse considerations under this application fall into two matters:

- Building Coverage; and,
- Stormwater

Although the rules focus on the future development of the vacant proposed Lot 2, this breach request also applies to proposed Lot 1 for existing development and to enable re-development potential should this occur in the future.

2.07 The future development of proposed Lot 2 is limited by the permitted rules for development and for this reason additional allowances are sought for both Building Coverage and Stormwater. An indicative dwelling has been illustrated on a site plan to detail how a development on proposed Lot 2 might be established. Rules 8.7.5.1.5 and 8.7.5.1.13 are to be exceeded and resource consent is required. The following details the components for each lot.

Lot 1

- The Stormwater – Controlled standard of 20% is not satisfied (27%); and,
- The Building Coverage – Restricted Discretionary standard of 15% is satisfied.

Lot 2

- The Stormwater – Controlled standard of 20% is satisfied (18%); and,
- The Building Coverage – Restricted Discretionary standard of 15% is satisfied.

2.08 The exceedance of the above limits result in the landuse components for proposed Lot 1 being discretionary while the vacant proposed Lot 2 will fall under the controlled and restricted discretionary activity statuses.

**The Landuse component is Discretionary**

**PROPOSED DISTRICT PLAN**

2.09 As noted previously, the majority of rules within the Proposed District Plan do not have legal effect until such time as Council publicly notifies its decisions on submissions. There are however certain rules that have been identified within the proposed plan which have immediate legal effect and that may therefore apply and need to be considered in assessing this application. Such rules may affect the activity status of the application and may be required to be addressed.

2.10 The rules within the following subject matters have rules with immediate legal effect and these include the following: hazardous substances, scheduled sites or areas of significance to Maori, significant natural areas, scheduled heritage resources – none of these apply as none of these aspects are applicable to the site. Additionally, historic heritage rules, and Notable Trees and earthworks are also not applicable. However, the Heritage Area Overlays do apply with the site being located within the Kerikeri Heritage Area Overlay – Part B and these provisions having immediate legal effect. The following

is the descriptor for the overlay including the matters which are relevant and should be considered in any evaluation of the site and future development.

**Part B:**

*Covers the archaeologically sensitive slopes surrounding Kororipo Pā and the Church Missionary Settlement (CMS). The north and east ridge line also provide the sight lines from Kororipo Pa. There still remains a legacy of early horticultural subdivision pattern which supports the identity of Kerikeri, predominantly located along the Kerikeri Inlet Road ridgeline.*

- 2.11 In addition to the landuse implications which will apply when development of either site is undertaken, the act of subdivision also requires consideration of the relevant provisions. Consultation with interest persons/ agencies is required to be undertaken as part of the application process. The applicant has undertaken this consultative process in preparation of this application.
- 2.12 Therefore, the Heritage Overlay needs to be considered with rules having immediate legal effect under the Proposed District Plan. The application status being a non-complying subdivision and discretionary landuse consent require consideration of any other relevant objectives and policies from the Proposed District Plan.

## **ASSESSMENT OF EFFECTS**

- 3.01 With the subdivision lot size being Non-Complying there are no restrictions on the matters to be considered in assessing the application. In this respect the general subdivision assessment criteria is typically used for the application.
- 3.02 The landuse components of this application have their own assessment criteria and this is used for the purposes of this component. These aspects relate inherently to the future development potential of the proposed lots but also allowances are sought for existing development on Proposed Lot 1.
- 3.03 It is necessary to consider the potential of Permitted Baseline and Existing Environment comments in considering the relevant matters to be assessed.

## **PERMITTED BASELINE**

- 3.04 Pursuant to section 104(2) of the Act, when forming an opinion for the purposes of section 104(1)(a) a council may disregard an adverse effect of the activity on the environment if the plan or a NES permits an activity with that effect (i.e. a council may consider the "permitted baseline"). When considering an application for resource consent it is important to reference and place some reliance on Permitted Baseline arguments. This provides the expectation for development proposals within the zone and enables the consideration of the differences between what could be undertaken "as of right" and that which is proposed. When referencing and using "Permitted Baseline" such arguments should not be fanciful but based on realistic proposals and expectations.

- 3.05 In addition to Permitted Baseline considerations, Existing Use Right considerations could also apply especially where the proposed activity is similar in nature and previously lawfully established.
- 3.06 In this circumstance, any subdivision proposal requires a resource consent application. On this basis it is considered that the Permitted Baseline consideration is not useful to this application.
- 3.07 With respect to the extent of built form, the plan allows as a permitted activity 12.5% of impermeable surfaces with the controlled activity threshold up to 20%. The controlled activity allowance is comparable to that indicated within the site plan for the proposed vacant lot (Lot 2 – 18%) noting that the existing development contributes a greater percentage at 27%. The driveway is the most significant contributor high percentage with the house being relatively modest in size. The controlled allowance should be viewed as a starting point and has relevance when considering the extent of the allowance sought.
- 3.08 It is further noted that the level of impermeable surfaces sought are not dissimilar to lots located close to the application site. This when combined with the proposed lot sizes which is also comparable does not detract from the key objective which is that the proposal maintains the low density of residential development typical of the zone and the surrounding area.
- 3.09 The existing environment is a key consideration in justifying the proposed subdivision and this application seeks to continue this previous development. The rationale behind the additional impermeable surfaces requested is reflective of the reduced lot size.

## **ASSESSMENT CRITERIA EVALUATION**

### **SUBDIVISION**

- 3.10 The following assessment criteria is now considered for the subdivision component of the application.

#### **13.10 ASSESSMENT CRITERIA**

In considering whether or not to grant consent or impose conditions on this application, such work, needs to be completed prior to the issuance of the s224(c) Certificate.

##### **13.10.1 ALLOTMENT SIZES AND DIMENSIONS**

- (a) Whether the allotment is of sufficient area and dimensions to provide for the intended purpose or land use, having regard to the relevant zone standards and any District wide rules for land uses.
- (b) Whether the proposed allotment sizes and dimensions are sufficient for operational and maintenance requirements.
- (c) The relationship of the proposed allotments and their compatibility with the pattern of the adjoining subdivision and land use activities, and access arrangements.
- (d) Whether the cumulative and long term implications of proposed subdivisions are sustainable in terms of preservation of the rural and coastal environments.

- 3.11 The allotment sizes are less than the minimum lot size as noted within the district plan, but it is contended that there are many instances within the immediate and wider area where lots are comparable or smaller than those proposed. Some of these lots are historical lots but there have also been recent approvals which have created comparable sized lots to those proposed within this application. In these instances, the Council has been satisfied that the resultant effects from subdivision and the development thereof, are less than minor. The current use of the land as a large lot residential style is not removed by the proposal and the pattern of development is consistent with that which exists within Mission Road and the adjoining streets.
- 3.12 The proposed additional lot is of sufficient size to accommodate the establishment of a dwelling, and this has been illustrated within the indicative site plan. Whether the future owner of the lot decides to develop the proposed lot as suggested is for them to decide, but there remains suitable flexibility and potential onsite mitigation measures which could be implemented. It is further contended that the amenity values are not compromised by the proposal and ensures that there remains privacy both within the development and beyond the property boundaries. Further boundary treatment measures could be used to achieve this but should not be required until post construction of any dwelling so that appropriate landscaping can be completed. The Engineer's report confirms that onsite servicing can be readily achieved with more than adequate space for wastewater treatment and disposal as well as management and disposal of stormwater.
- 3.13 It is considered that the lot size is appropriate for the amenity and character of the area and delivers adequate space from a servicing perspective.
- 3.14 Although the lot is zoned Rural Living it is considered that the Mission Road and wider Riverview area is more appropriately considered residential with an emphasis on built form with higher-than-average amenity due to the larger lot sizes. None of these aspects are compromised with this proposal.

#### 13.10.2 NATURAL AND OTHER HAZARDS

In assessing any subdivision, and for the purposes of s106 of the Act, the Council will have regard to:

- (a) Any information held by the Council or the Northland Regional Council regarding natural hazards, contaminated sites or other hazards.
  - (b) Information obtained by suitably qualified experts, whose investigations are supplied for subdivision applications.
  - (c) Potential adverse effects on other land that may be caused by the subdivision or anticipated land use activities.
  - (g) In relation to contaminated sites, any soil tests establishing suitability, and methods to avoid, mitigate or remedy the effects, including removal to approved disposal points.
- 3.15 The application site contains no areas subject to natural hazards and this is evident within the onsite observations and Engineers Report. The site is slightly sloping towards the road and is not subject to any specific restrictions with respect to the development of the site.

- 3.16 There will be limited stormwater generated from the proposed subdivision because roof water from the buildings will be attenuated with tanks storage and soakage pits to pre-development levels. The new access will be designed to comply with Council Engineering standards and accommodate both the roadside drain and footpath. Wastewater treatment and disposal sees the existing onsite system being fully contained within the proposed new allotment configurations.
- 3.17 With the site having previously had a small number of old fruit trees present, it was necessary to consider potential for onsite contaminants from these activities. The applicant sourced a Preliminary Site Investigation which concluded that there was no risk to human health from undertaking the development of the respective lots. There are no issues from the change in use of the land.
- 3.18 There are no identified natural hazards which have cause to impact on the proposed subdivision or which could adversely affect the ability to undertake the subdivision and the development of a potential dwelling on the proposed lots.
- 3.19 The potential hazard related effects are considered to be less than minor with no conditions required to be imposed.

#### 13.10.3 WATER SUPPLY

- (a) Where there is no reticulated water supply available for connection, whether it would be appropriate to allow a private restricted flow rural-type water supply system; such supply being always available and complying with "Drinking Water Standards of New Zealand" (1995).
- (b) Whether the provisions of the "Engineering Standards and Guidelines 2004 – Revised March 2009" (to be used in conjunction with NZS 4404:2004) have been met in respect of fire fighting water supply requirements.
- 3.20 The existing dwelling has a connection to the Council provided municipal water supply. The proposed new lot will also be required to be connected with conditions likely to require a connection to be provided and be available for the new dwelling.
- 3.21 The stormwater mitigation measures which address the additional impermeable surfaces, require roof water to be adequately attenuated and this can be achieved with onsite tanks and overflow soakage pits. This water can be used to meet the demands of the future household.
- 3.22 The supply of water for firefighting purposes is provided for within the Council's existing water supply network and therefore is not required to be addressed within this application. There would be sufficient supply provided for this existing residential area within Mission Road.

#### 13.10.4 STORMWATER DISPOSAL

- (a) Whether the application complies with any regional rules relating to any water or discharge permits required under the Act, and with any resource consent issued to the District Council in relation to any urban drainage area stormwater management plan or similar plan.



- (b) Whether the application complies with the provisions of the Council's "Engineering Standards and Guidelines" (2004) - Revised March 2009 (to be used in conjunction with NZS 4404:2004).
  - (c) Whether the application complies with the Far North District Council Strategic Plan - Drainage.
  - (d) The degree to which Low Impact Design principles have been used to reduce site impermeability and to retain natural permeable areas.
  - (e) The adequacy of the proposed means of disposing of collected stormwater from the roof of all potential or existing buildings and from all impervious surfaces.
  - (j) The necessity to provide on-site retention basins to contain surface run-off where the capacity of the outfall is incapable of accepting flows, and where the outfall has limited capacity, any need to restrict the rate of discharge from the subdivision to the same rate of discharge that existed on the land before the subdivision takes place.
  - (k) Any adverse effects of the proposed subdivision on drainage to, or from, adjoining properties and mitigation measures proposed to control any adverse effects.
- 3.23 With the proposed subdivision and landuse proposal intensifying the overall development on site and the total impermeable surfaces exceeding the permitted allowances, it is necessary for suitable mitigation measures to be put in place. The objective of the proposed measures is to limit stormwater leaving the site to pre-development levels and this is achieved via roof harvesting which is then directed to onsite tanks with overflow placed into the onsite soakage pits. With onsite wastewater treatment and disposal required, the location of the soakage pit should be well away from the wastewater drainage locations and the proposed reserve areas.
- 3.24 In achieving a high level of stormwater management and restricting this to pre-development levels, there will be no downstream impacts on the receiving Council stormwater system. The double width entrance will be constructed to ensure that any roadside stormwater system maintains its functionality and effectiveness.
- 3.25 The water stored within the tanks onsite can be used for gardening or other uses that the household may choose to use it for. The overall stormwater effects are considered to be less than minor.
- 13.10.5 SANITARY SEWAGE DISPOSAL**
- (e) Where a reticulated system is not available, or a connection is impractical, whether a suitable sewage treatment or other disposal systems is provided in accordance with regional rules or a discharge system in accordance with regional rules or a discharge permit issued by the Northland Regional Council.
- 3.26 The proposed development will require onsite wastewater treatment and disposal which will be designed for the potential loading from the existing and proposed dwelling on each lot. The accompanying engineering memorandum confirms that onsite wastewater treatment and disposal is achievable. The existing wastewater system on proposed Lot 1 is fully located within proposed lot.
- 3.27 The final wastewater system design for the vacant lot will ultimately depend on the number of people and the house design but can provided for onsite. The building consent for the proposed dwelling would detail the wastewater requirements and provide a design accordingly in accordance with TP58. The treatment and disposal area will also need to provide the required reserve area. There are no nearby water sources or issues

with soil types which could result in any adverse effects from this onsite wastewater treatment and disposal process.

#### 13.10.6 ENERGY SUPPLY

- (f) Whether there will be potential adverse effects of the proposed reticulation system on amenity values.
- (g) Whether the subdivision design, location of building platforms and proposed electricity supply has had adequate regard to the future adoption of appropriate renewable energy initiatives and technologies.

3.28 As part of the preliminary consultative process, comments from Top Energy Limited (as the electricity network provider) were sought. Top Energy raised no concerns and advised that connections were available for the proposed subdivision.

3.29 The physical provision of a power supply to the property boundary is available with a pole located immediately beside the combined site entrance. A condition requiring a connection to be made available is expected within the large lot residential area.

#### 13.10.7 TOP ENERGY TRANSMISSION LINES

Where it is proposed to subdivide land to create new allotments within an area measured 20m of either side of the centre point of an electrical transmission line designed to operate at or above 50 kV, particular regard shall be had to the following matters:

3.30 This provision does not apply as there are no 50kV lines near the application site.

#### 13.10.8 TELECOMMUNICATIONS

- (a) Where the subdivision involves construction of new roads or formed rights of way, whether an extended reticulation system has been installed (at the subdivider's cost), having regard to the Council's "Engineering Standards and Guidelines 2004 – Revised March 2009 (to be used in conjunction with NZS 4404:2004) and "The National Environmental Standard for Telecommunication Facilities 2008".
- (c) Whether the proposed reticulation system will have potential adverse effects on amenity values.

3.31 As part of the preliminary consultative process comments from Chorus Limited (as the network provider) were sought. Chorus raised no concerns and advised that connections were available to the proposed lots. Supply to the property boundary is available and a connection can be readily provided. This is expected to be a condition of consent for this large lot residential area.

#### 13.10.9 EASEMENTS FOR ANY PURPOSE

Whether there is a need for an easement for any of the following purposes:

- (b) Easements in respect of other parties in favour of nominated allotments or adjoining Certificates of Title.
- (d) Easements for any of the following purposes:
  - (i) private ways, whether mutual or not;
  - (ii) stormwater, sanitary sewer, water supply, electric power, gas reticulation;
  - (iii) telecommunications;

3.32 There are no other easements required for the proposed subdivision.

#### 13.10.10 PROVISION OF ACCESS

- (a) Whether provision for access to and within the subdivision, including private roads, has been made in a manner that will avoid, remedy or mitigate adverse effects on the environment, including but not limited to traffic effects, including effects on existing roads, visual effects, effects on vegetation and habitats, and natural character.

3.33 Each lot will have its own entrance on to Mission Road as detailed on the plans provided. The entrances are onto a straight portion of road with excellent sight distances in both directions. The new entrance for proposed Lot 2 will be constructed to the appropriate Council Engineering Standards. The additional traffic generated by the additional lot (from an access perspective) is considered to be less than minor with conditions able to be imposed which ensures compliance with any Council Engineering Standards.

#### 13.10.11 EFFECT OF EARTHWORKS AND UTILITIES

- (a) Whether the effects of earthworks and the provision of services to the subdivision will have an adverse effect on the environment and whether these effects can be avoided, remedied or mitigated.

3.34 The proposed earthworks for the proposed subdivision will be minimal and related solely to access related requirements. Future development for either lot will be subject to the relevant rules at the time of construction. The effects are considered to be less than minor.

#### 13.10.12 BUILDING LOCATIONS

- (a) Whether the subdivision provides physically suitable building sites.
- (b) Whether or not development on an allotment should be restricted to parts of the site.
- (d) Whether the subdivision design in respect of the orientation and dimensions of new allotments created facilitates the siting and design of buildings able to take advantage of passive solar gain (e.g. through a northerly aspect on an east/west axis).

3.35 The proposed site plan for the purposes of the breach of stormwater and building coverage rules identifies the potential house site within proposed Lot 2. The house site is appropriately scaled and can readily meet all other development control rules which apply to this site. It is considered prudent to enable a practical scale of development to be also consented at the time of subdivision to provide certainty for the future landowners. This should apply to most Rural Living zoned lots especially with the relatively modest permitted thresholds which apply.

3.36 The proposed lots from an engineering perspective contain no onsite constraints where the potential house site is located. All services are able to be provided subject to the appropriate design for the proposed wastewater loading. Stormwater management for the additional impermeable surfaces are considered to be managed appropriately as described within the Engineering report.

3.37 The proposed lot and its subsequent development could have passive solar gains if the lot owner elects to use this energy source. The site is relatively open and could take advantage of the site's orientation if they chose to.

#### 13.10.13 PRESERVATION AND ENHANCEMENT OF HERITAGE RESOURCES, VEGETATION, FAUNA AND LANDSCAPE, AND LAND SET ASIDE FOR CONSERVATION PURPOSES

- (a) Whether any vegetation, habitats of indigenous fauna, heritage resources and landscape features are of sufficient value in terms of the objectives and policies in Chapter 12 of the Plan, that they should be protected.
- (b) Whether the means (physical and/or legal) by which ongoing preservation of the resource, area or feature will be achieved is adequate.

3.38 The application site is a typical large lot residential property within an urban area and contains little in the way of indigenous vegetation or areas requiring any form of formal protection. In this respect there is no intention for any existing vegetation to be protected noting that most of the site is in lawn with the occasional fruit tree and perimeter vegetation screening the application site from other properties. There may be some boundary treatments between the proposed lots and this will be at the discretion of the respective owners.

3.39 The additional built form requires consideration of related effects such as the building scale and the degree of impermeable surfaces. In reviewing the immediate area and those sites below the controlled lot size threshold there are no sites which could be considered as creating an adverse effect. The location involves a mixture of measures which break up the street scene and provide the character for the area. There is further discussion on this aspect later within the report.

#### 13.10.14 SOIL

- (a) The extent to which any subdivision will contribute to or affect the ability to safeguard the life supporting capability of soil.
- (b) The degree to which the life supporting capacity of the soil may be adversely affected by the subdivision and the degree to which any soils classified as I, II or III in the NZ Land Resource Inventory Worksheets are adversely affected by the subdivision.

3.40 The site is noted as having highly versatile soils but as the property and those surrounding it have been identified as residential, the NPS and related documents do not apply. The potential remains for private gardens to be established which would assist in maintaining the soils within the site.

#### 13.10.15 ACCESS TO WATERBODIES

3.41 The application site is not located adjacent to any water body.

#### 13.10.16 LAND USE INCOMPATIBILITY

- (a) The degree to which the proposed allotments take into account adverse effects arising from incompatible land use activities (including but not limited to noise, vibration, smell, smoke, dust and spray) resulting from an existing land use adjacent to the proposed subdivision.

3.42 The proposed uses for the respective lots will be residential which is what currently exists within the surrounding area. There are no neighbouring properties which undertake activities which could be considered incompatible with a residential use with only Riverview Primary School – several streets over, being a different activity within this residential area. The existing and proposed use of the site does not result in any incompatibility or reverse sensitivity concerns.

#### 13.10.17 PROXIMITY TO AIRPORTS

- 3.43 The application site is not close to an airport and therefore this provision does not apply to this application

#### 13.10.18 NATURAL CHARACTER OF THE COASTAL ENVIRONMENT

- 3.44 The application is not located within the Coastal Environment and therefore does not impact on the natural character of the upper Kerikeri Inlet which is the closest water body to the application site.

#### 13.10.19 ENERGY EFFICIENCY AND RENEWABLE ENERGY DEVELOPMENT /USE

The extent to which the application promotes energy efficiency and renewable energy development and use through the following initiatives:

- (a) ability to develop energy efficient buildings and structures (e.g. by providing a north-facing site with the ability to place a building on an east/west axis);

- 3.45 The district plan encourages the ability of lot owners to utilise renewable energy options and adopt energy efficient design in the development the any lot. This is most commonly achieved by the use of domestic sized solar energy systems. This application does not inhibit this potential with both lots able to utilise such measures if they wish too.

#### 13.10.20 NATIONAL GRID CORRIDOR

- 3.46 The application site contains no National Grid Corridor and therefore this provision does not apply to this application

### **LANDUSE COMPONENTS**

- 3.47 Within the application introduction it was noted that there is no proposed physical development such as a new dwelling is proposed under this resource consent application. What is sought is to pre-empt the likely breaches for the Stormwater Management and Building Coverage rules within the operative district plan. No other breaches are sought and as noted previously this type of consent is common within this zone due to the restrictive allowances.

- 3.48 The following assessment considers the breaches and the attached Engineering reports address the potential effects and offer appropriate mitigation measures. The objective of the proposed design is to achieve a pre-development level of stormwater discharge. The effects of the breaches are concluded as being less than minor and the following criteria provides assistance in reaching this conclusion.

- 3.49 The site plan provided highlights a potential building footprint which was used for the assessment

#### 11.3 STORMWATER MANAGEMENT

- (a) The extent to which building site coverage and impermeable surfaces result in increased stormwater runoff and contribute to total catchment impermeability and the provisions of any catchment or drainage plan for that catchment.

- 3.50 The proposal will ultimately increase the extent of impermeable surfaces within the site and will exceed the permitted allowances. However, notwithstanding this, the Engineer's design has been completed to ensure that stormwater leaving the site is at pre-development levels. The impact of this approach will be negligible for the overall Riverview catchment and results in less than minor effects. The combination of stormwater tanks and a soakage pit for additional water will address this issue.
- (b) The extent to which Low Impact Design principles have been used to reduce site impermeability.
- 3.51 The proposed Engineering solution for the additional impermeable surfaces proposed on site follows Low Impact design principles. This approach can be further utilised within the building design when a dwelling is eventually proposed on the vacant proposed lot and should redevelopment of the existing dwelling occur.
- (c) Any cumulative effects on total catchment impermeability.
- 3.52 The mitigation measures proposed which result in discharges at pre-development levels do not result in any cumulative effects for the catchment area.
- (d) The extent to which building site coverage and impermeable surfaces will alter the natural contour or drainage patterns of the site or disturb the ground and alter its ability to absorb water.
- 3.53 The additional impermeable surfaces will impact on the drainage pattern for the site and this can be controlled using appropriate drainage installed during the construction phase. Roof water as noted earlier will be collected and stored in an onsite water tank which can then be directed to an on-site soakage pit. This means to achieve pre-development levels is considered to result in less than minor effects.
- (e) The physical qualities of the soil type.
- 3.54 The physical qualities of the soil will remain unchanged and with the site being classified as urban is afforded no specific protection.
- (f) Any adverse effects on the life supporting capacity of soils.
- 3.55 The proposal does not impact on the life supporting capacity of soils within the site.
- (g) The availability of land for the disposal of effluent and stormwater on the site without adverse effects on the water quantity and water quality of water bodies (including groundwater and aquifers) or on adjacent sites.
- 3.56 The Engineering report and plans detail how onsite wastewater treatment and disposal can be managed for the two lots and how the onsite stormwater management will also be addressed. The wastewater and stormwater systems can easily be accommodated within the respective lots.
- (h) The extent to which paved, impermeable surfaces are necessary for the proposed activity.

- 3.57 The potential future dwelling on proposed Lot 2 and the potential re-development of proposed Lot 1. The indicative plans provided illustrate how a dwelling would be located and the type of dwelling which could be constructed on the proposed lot. The lot sizes although at, or slightly below, the discretionary threshold maintain their large lot residential appearance. The proposed lots are typical of the area with the lots being close to the median size for the immediate area. The permitted allowances for the zone are restrictive for stormwater and building coverage and by allowing the exceedances proposed, will enable a reasonable sized dwelling to be constructed with associated outdoor living space and access/ onsite vehicle manoeuvring. The allowances sought is not considered to be over development of the site and is considered to consistent with lots within the immediate area.
- (i) The extent to which landscaping may reduce adverse effects of run-off.
- 3.58 Landscaping is not proposed as part of this application. There has been some vegetation removed along the roadside frontage but there remains a degree of privacy with not all vegetation removed. There is existing perimeter landscaping on all of the property's boundaries. It is considered that additional landscaping is not required at the time of the subdivision but could be a requirement for any future development for the respective lots. The immediate area has a mixture of boundary treatments with some sites open to the neighbourhood while others display the only evidence of a dwelling being a driveway entrance with a mailbox. Boundary treatment between the proposed lots has also not been considered and can be left to the respective landowners when they see fit to identify the boundary. The supply of water within the stormwater tanks would be available for use for potential landscaping. A soakage pit will deal with any surplus water which may be generated.
- (j) Any recognised standards promulgated by industry groups.
- 3.59 The proposed designs take on board the usual industry standards for dealing with both wastewater and stormwater.
- (k) The means and effectiveness of mitigating stormwater run-off to that expected by the permitted activity threshold.
- 3.60 The Engineering report details how this will be achieved with a design objective of achieving stormwater runoff at pre-development levels. The tanks provide a means to secure and store most of the expected runoff with any excess directed to the soakage pit. Effects are less than minor.
- (l) The extent to which the proposal has considered and provided for climate change.
- 3.61 Engineering reports prepared account for climate change when detailing the range of parameters used for calculations.
- (m) The extent to which stormwater detention ponds and other engineering solutions are used to mitigate any adverse effects.
- 3.62 The proposal includes the use of water takes to store roof water and which can then be directed to soakage pits if the need arises. This will aid in the disposal of stormwater over time and result in less than minor effects.

## 11.24 BUILDING COVERAGE

- (a) the ability to provide adequate landscaping for all activities associated with the site.
- 3.63 There is sufficient space within the site for mitigation measures to be provided should these measures be required. It is however contended that the amenity of the area is largely unaffected by the proposed subdivision and the future development of a dwelling on the vacant lot. It is considered that the compliance with a boundary relationship rule such as the setback from boundary or sunlight rules are arguably more important for a neighbour. A modest amount of additional built form could be constructed on the application site as it exists today. The additional built form could be fully compliant with the relevant rules. As a permitted activity, landscaping for this additional permitted development would not be required and this is why additional landscaping is considered to be unnecessary. Therefore, without any visual amenity requirements to be addressed and the scale of development being not inconsistent with the surrounding development, the need for landscaping is considered to be unnecessary.
- 3.64 In the instance where landscaping is required by Council for the future vacant lot, then it is suggested that this be delayed until such time as a building design is finalised, dwelling constructed, and the related outdoor spaces and living rooms within the dwelling is confirmed.
- (b) the extent to which building(s) are consistent with the character and scale of the existing buildings in the surrounding environment.
- 3.65 The site and area description detail the relevant elements of the immediate and wider environment and highlights that for the purposes of proposed lot size that the proposed lot size would be close to the median size for the area. This is important because any reasonable sized dwelling as noted within the site plan attached would exceed the permitted allowances because of the overly restricted allowances for the zone. This is partially recognised with some urban servicing provided, and residential style use of properties is encouraged. The density of development is only the level it is currently because reticulated wastewater is not available within the area. If reticulated wastewater treatment and disposal was available, then this area would become residential as per the intent of the zone as a future residential area as noted in the proposed district plan.
- (c) the scale and bulk of the building in relation to the site.
- 3.66 The proposed impermeable surfaces for the proposed lots is 15% which could not be considered as over development with 85% free of any development. Several lots within the immediate area are well above this proposed 15% level and are not considered to be overdevelopment or considered to be out of character.
- (d) the extent to which private open space can be provided for future uses.
- 3.67 With the proposed lots seeking impermeable surface coverage of 27% and 18% respectively, the remaining open space on each of the proposed lots is remains very high. Up to 73% of the respective lots would be free from an impermeable surface. The proposed built form will be no greater than 15% on each lot which means at least 85% of the respective lots will be free of any form of buildings. Should further intensification



of the site be allowed in the future then development will not be compromised by this proposal.

- (e) the extent to which the cumulative visual effects of all the buildings impact on landscapes, adjacent sites and the surrounding environment.

3.68 Landscaping usually provides mitigation measures to any development proposal and in this instance it would also contribute. However, it is contended that landscaping is not required for the development of the application site. The cumulative effect of additional built form is considered to be less than minor. If Council is to require landscaping, then this should be required only when the development plans for the dwelling is finalised and implemented following the construction of the building. This will ensure that any landscaping is tailored to the building design and the outdoor space for that dwelling.

- (f) the extent to which the siting, setback and design of building(s) avoid visual dominance on landscapes, adjacent sites and the surrounding environment.

3.69 The indicative plans provide detail the potential location of a dwelling on the vacant lot which is compliant with all rules other than stormwater and building coverage. Setback from boundary and sunlight rules are particularly important boundary measures which protect neighbours from potentially inappropriate development. The maximum height of a building also reflects the scale and potential dominance of the building within the surrounding environment. When viewed from neighbouring properties development on the site would be difficult to view the dwellings and privacy is retained.

3.70 Built form is expected within the zone and visual dominance can be avoided providing boundary related rules are complied with. Landscaping assists in screening or breaking up the bulk of the building or activities on site but this is not the objective of the zone otherwise visual amenity rules would also apply where colours and scale and location are more important.

- (g) the extent to which landscaping and other visual mitigation measures may reduce adverse effects.

3.71 The discussion and assessment around the merits of landscaping have been detailed throughout this assessment and it is contended that landscaping is unnecessary in this instance. If landscaping was considered by Council to be required, then the timing for the landscaping should be linked to the construction of the dwelling and not required until the dwelling is constructed and any outdoor living space confirmed.

- (h) the extent to which non-compliance affects the privacy, outlook and enjoyment of private open spaces on adjacent sites.

3.72 The non-compliance of the rule does not impact on the neighbours because the required boundary relationship rules are complied with. If a future building was to be constructed which was within the setback from boundary or exceeded the sunlight or height rule limitations, then privacy or outlook could be impacted on. The proposal is not considered to conflict with this consideration.

## **ASSESSMENT OF EFFECTS CONCLUSION**

- 3.73 The subdivision application is non-complying from a lot size perspective but cannot be considered as being inappropriate based on the immediate area offering a range of lot sizes many of which are significantly smaller than that proposed within this application. The landuse components are related solely to proposed and existing development of the respective lots. The allowances sought seek to enable a reasonable impermeable surfaces allowance and building coverage which is not inconsistent with the smaller lots within the surrounding environment.
- 3.74 The proposal seeks to ensure that the future development of the respective lots not require a further consent unless a rule other than stormwater or building coverage is breached.
- 3.75 The proposal addresses the additional impermeable surfaces with an effective stormwater management system with a combination of water tanks and a soakage pit for any additional flow. The design has been completed to ensure that stormwater generated remains at pre-development levels.
- 3.76 It is further contended that there are no other mitigation measures required to be completed with landscaping considered to be unnecessary moving forward. If Council considers that this is required, then the landscaping should be completed only after the future dwelling is constructed and outdoor living space confirmed.
- 3.77 The Engineering report and PSI provided conclude that the key matters are satisfied and the effects confirmed as being less than minor.
- 3.78 The application is considered to represent a positive development for the immediate area with no adverse effects created or effects which could be considered as minor or more than minor. The proposal provides an appropriate use of the land and offers an opportunity for a new residence to be constructed and which will assist the new landowner in providing for their families' well being.

## **4.0 OPERATIVE DISTRICT PLAN – OBJECTIVES AND POLICIES**

- 4.01 The following assessment of objectives and policies focus on the relevant subdivision considerations particularly as the subdivision proposal creates the landuse breaches of the plan. The assessment of effects has covered the specific matters in more detail but as stated. Selected objectives and policies from the Rural Living Zone have also been included.
- 4.02 With the application having Non-Complying components, the presumption is that the proposal may be contrary to objectives and policies which apply to the site. The following considerations will provide commentary and details as to how the proposal is generally consistent with key objectives and policies for the Subdivision chapter. The following Objectives and Policies are considered to be the most relevant to the application.

## **SUBDIVISION**

### **13.3 OBJECTIVES**

- 13.3.1 To provide for the subdivision of land in such a way as will be consistent with the purpose of the various zones in the Plan, and will promote the sustainable management of the natural and physical resources of the District, including airports and roads and the social, economic and cultural well being of people and communities.
- 13.3.2 To ensure that subdivision of land is appropriate and is carried out in a manner that does not compromise the life-supporting capacity of air, water, soil or ecosystems, and that any actual or potential adverse effects on the environment which result directly from subdivision, including reverse sensitivity effects and the creation or acceleration of natural hazards, are avoided, remedied or mitigated.
- 13.3.5 To ensure that all new subdivisions provide a reticulated water supply and/or on-site water storage and include storm water management sufficient to meet the needs of the activities that will establish all year round.
- 13.3.8 To ensure that all new subdivision provides an electricity supply sufficient to meet the needs of the activities that will establish on the new lots created.
- 13.3.9 To ensure, to the greatest extent possible, that all new subdivision supports energy efficient design through appropriate site layout and orientation in order to maximise the ability to provide light, heating, ventilation and cooling through passive design strategies for any buildings developed on the site(s).
- 13.3.10 To ensure that the design of all new subdivision promotes efficient provision of infrastructure, including access to alternative transport options, communications and local services.

### **13.4 POLICIES**

- 13.4.1 That the sizes, dimensions and distribution of allotments created through the subdivision process be determined with regard to the potential effects including cumulative effects, of the use of those allotments on:
  - (d) amenity values;
  - (g) existing land uses.
- 13.4.2 That standards be imposed upon the subdivision of land to require safe and effective vehicular and pedestrian access to new properties.
- 13.4.5 That access to, and servicing of, the new allotments be provided for in such a way as will avoid, remedy or mitigate any adverse effects on neighbouring property, public roads (including State Highways), and the natural and physical resources of the site caused by silt runoff, traffic, excavation and filling and removal of vegetation.
- 13.4.13 Subdivision, use and development shall preserve and where possible enhance, restore and rehabilitate the character of the applicable zone in regards to s6 matters. In addition subdivision, use and development shall avoid adverse effects as far as practicable by using techniques including:
  - (b) minimising the visual impact of buildings, development, and associated vegetation clearance and earthworks, particularly as seen from public land and the coastal marine area;
  - (e) providing planting of indigenous vegetation in a way that links existing habitats of indigenous fauna and provides the opportunity for the extension,

enhancement or creation of habitats for indigenous fauna, including mechanisms to exclude pests;

- (g) achieving hydraulic neutrality and ensuring that natural hazards will not be exacerbated or induced through the siting and design of buildings and development.

13.4.14 That the objectives and policies of the applicable environment and zone and relevant parts of Part 3 of the Plan will be taken into account when considering the intensity, design and layout of any subdivision.

13.4.15 That conditions be imposed upon the design of subdivision of land to require that the layout and orientation of all new lots and building platforms created include, as appropriate, provisions for achieving the following:

- (a) development of energy efficient buildings and structures;
- (e) domestic or community renewable electricity generation and renewable energy use.

## **RURAL LIVING ZONE**

### **OBJECTIVES**

8.7.3.1 To achieve a style of development on the urban periphery where the effects of the different types of development are compatible.

8.7.3.2 To provide for low density residential development on the urban periphery, where more intense development would result in adverse effects on the rural and natural environment.

### **POLICIES**

8.7.4.1 That a transition between residential and rural zones is achieved where the effects of activities in the different areas are managed to ensure compatibility.

8.7.4.2 That the Rural Living Zone be applied to areas where existing subdivision patterns have led to a semi-urban character but where more intensive subdivision would result in adverse effects on the rural and natural environment.

8.7.4.3 That residential activities have sufficient land associated with each household unit to provide for outdoor space, and where a reticulated sewerage system is not provided, sufficient land for onsite effluent disposal.

8.7.4.4 That no limits be placed on the types of housing and forms of accommodation in the Rural Living Zone, in recognition of the diverse needs of the community.

8.7.4.7 That provision be made for ensuring that sites, and the buildings and activities which may locate on those sites, have adequate access to sunlight and daylight.

8.7.4.9 That activities with effects on amenity values greater than a single residential unit could be expected to have, be controlled so as to avoid, remedy or mitigate those adverse effects on adjacent activities.

8.7.4.10 That provision be made to ensure a reasonable level of privacy for inhabitants of buildings on adjoining sites.

### **COMMENTARY ON OBJECTIVES AND POLICIES**

4.03 As previously noted, the proposed allotment configuration does not comply with the lot size requirements and is non-complying. It is however contended that despite this lot size infringement that the relevant objectives and policies are not conflicted with. The

assessment of effects provides the detailed assessment based on the relevant assessment criteria and it is concluded that effects are less than minor.

- 4.04 Similarly, the landuse components relate to the reduced lot size and seek to ensure that a reasonable dwelling could be constructed without compromising the intent of the zone. The respective 27% impermeable surfaces allowance sought for existing development on proposed Lot 1 and 18% on proposed Lot 2 is more a feature of the extensive driveway which exists on proposed Lot 1. Building coverage for each lot shall be 15% which is the Restricted Discretionary threshold. This is still well below the 50% that could be expected within a standard residential zone and this is considered to be an appropriate level for consideration. It is further noted that as a controlled activity that up to 20% could be proposed which would be granted consent by Council.
- 4.05 The detailed objectives and policies are not considered to be conflicted with, and the conclusions are reinforced by the key outcomes sought and delivered by the application. It is further contended that the overall Riverview area is only zoned Rural Living because the required infrastructure is not available such as reticulated wastewater and the provision for greater stormwater management from more intensive development. The area includes many urban features including a primary school, footpaths, and residential vehicle speed limits.
- 4.06 As a general observation, the area is considered to be residential in nature and that the level of proposed development is not inconsistent with this premise. It is further considered that with the proposed lots being at or just under 3000m<sup>2</sup> in size and with impermeable surfaces capped at 27% and 18% respectively, that this is not compromising or conflicting with the intensity expected within the Rural Living zone. Past decisions for similar sized properties endorse this conclusion as well as the existing lots far smaller than those proposed under this application. The effects of the proposal are mitigated and effects concluded as being less than minor.
- 4.07 The proposed subdivision is considered to be generally consistent with the immediate area and beyond and also satisfies the intent of the plan.
- 4.08 The proposed subdivision will create an opportunity for an additional dwelling to be established. The creation of the additional lot will contribute to the new lot owners social and economic well-being.

#### **PROPOSED FAR NORTH DISTRICT PLAN**

- 4.09 The proposed district plan has called for submissions and further submissions and Council is now holding hearings with reports and recommendations provided for consideration. The subdivision rules for the Rural Residential do not apply to the application at this point in time. The development is however within the Kerikeri Heritage Overlay – Part B which directs applicants to consult with tangata whenua, Department of Conservation and Heritage New Zealand. The applicant has undertaken this consultation and with respect to possible conditions of consent it was agreed that the Accidental discovery Protocol apply for any onsite development.
- 4.10 With development on these sites likely to trigger consenting requirements on this aspect (assuming these provisions remain in place in the plan review process) this is the most appropriate means to address any concerns. The proposed lots are not located on the

Stone Store basin side of the hilltop and while there are remnants of horticultural use to the south of the site, there remains little evidence of horticultural use on adjoining sites and the application site itself. There are no other rules which apply but it is still necessary to consider the relevant Objectives and Policies due to the applications' non-complying activity status. The weighting generally afforded to the proposed district plan with this status is minor.

### **Objectives and Policies**

- 4.11 The objectives and policies for subdivision are noted as follows acknowledging that only those which are considered to be relevant have been included.

#### **SUBDIVISION OBJECTIVES**

SUB-01 Subdivision results in the efficient use of land, which:

- a. Achieves the objectives of each relevant zone, overlays and district wide provisions;
- b. Contributes to the local character and sense of place;
- c. Avoids reverse sensitivity issues that would prevent or adversely affect activities already established on land from continuing to operate;
- d. Avoids land use patterns which would prevent land from achieving the objectives and policies of the zone in which it is located;
- e. Does not increase the risk from natural hazards or risks are mitigated and existing risks reduced;
- f. Manages adverse effects on the environment.

SUB-O2 Subdivision provides for the:

- a. Protection of highly productive land; and
- b. Protection, restoration or enhancement of Outstanding Natural Features, Outstanding Natural Landscapes, Natural Character of the Coastal Environment, Areas of High Natural Character, Outstanding Natural Character, wetland, lake and river margins, Significant Natural Areas, Sites and Areas of Significance to Māori, and Historic Heritage.

#### **SUBDIVISION POLICIES**

SUB-P3 Provide for subdivision where it results in allotments that:

- a. are consistent with the purpose, characteristics and qualities of the zone;
- b. comply with the minimum allotment sizes for each zone;
- c. have an adequate size and appropriate shape to contain a building platform; and
- d. have legal and physical access.

SUB-P11 Manage subdivision to address the effects of the activity requiring resource consent including (but not limited to) consideration of the following matters where relevant to the application:

- a. consistency with the scale, density, design and character of the environment and purpose of the zone;
- b. the location, scale and design of buildings and structures;

- c. the adequacy and capacity of available or programmed development infrastructure to accommodate the proposed activity; or the capacity of the site to cater for on-site infrastructure associated with the proposed activity;
- d. managing natural hazards;
- e. any adverse effects on areas with historic heritage and cultural values, natural features and landscapes, natural character or indigenous biodiversity values; and
- f. any historical, spiritual, or cultural association held by tangata whenua, with regard to the matters set out in Policy TW-P6.

4.12 The key aspect for this application is that the level of residential intensity remains at a low intensity level and does not detract from the intent of the zone. The Engineering reports address all the onsite requirements. The matters for consideration remain generally consistent with the Operative District Plan and there is several elements which are broadly similar to the Proposed District Plan.

4.13 The applicant has (with the site being within a heritage overlay) consulted with tangata whenua, Department of Conservation and Heritage New Zealand. All of these key parties raised no concerns over the proposed subdivision.

4.14 The proposal is considered to be generally consistent with the relevant objectives and policies of the Proposed Far North District Plan.

## **5.0 REGIONAL POLICY STATEMENT CONSIDERATIONS**

5.01 The subdivision of land can be inconsistent with key objectives and policies of the Northland Regional Policy Statement. In this instance, however, there are no matters of relevance which need to be reviewed or considered.

## **6.0 PART 2 CONSIDERATIONS**

6.01 The application does not conflict with any matter or consideration under Part 2 of the Act. The proposal provides for the social and economic well-being of the district by improving the environment and enabling appropriate development to be established all while resulting and ensuring the potential effects of the proposal are less than minor.

6.02 It is therefore contended that the proposed subdivision is appropriate and consistent with the purpose of the Act.

## **7.0 NOTIFICATION ASSESSMENT S95A TO 95G OF THE ACT**

7.01 Sections 95A to 95G require Council to follow specific steps in determining whether to notify an application. In considering the conclusions findings within this report are relied upon.

7.02 [Public Notification section 95A](#)

### Step 1

Mandatory public notification in certain circumstances

(a) the applicant has requested that the application be publicly notified:

- (b) public notification is required under section 95C:
- (c) the application is made jointly with an application to exchange recreation reserve land under section 15AA of the Reserves Act 1977.

The applicant has not requested public notification and none of the remaining matters as described are applicable.

#### Step 2 Public Notification precluded in certain circumstances

The criteria for step 2 are as follows:

- (a) the application is for a resource consent for 1 or more activities, and each activity is subject to a rule or national environmental standard that precludes public notification:
- (b) the application is for a resource consent for 1 or more of the following, but no other, activities:
  - (i) a controlled activity:
  - (ii) a restricted discretionary or discretionary activity, but only if the activity is a subdivision of land or a residential activity:
  - (iii) a restricted discretionary, discretionary, or non-complying activity, but only if the activity is a boundary activity:
  - (iv) a prescribed activity (see section 360H(1)(a)(i)).

The subdivision itself is non-complying in terms of lot size. The landuse components are discretionary. Neither element is precluded from public notification.

#### Step 3 – Public Notification required in certain circumstances

The criteria for Step 3 are as follows:

- (a) the application is for a resource consent for 1 or more activities, and any of those activities is subject to a rule or national environmental standard that requires public notification:
- (b) the consent authority decides, in accordance with section 95D, that the activity will have or is likely to have adverse effects on the environment that are more than minor.

The NES Regulation (contaminated land) is relevant with a PSI completed for the site given some historical use of the site for horticultural purposes with an old orchard formally on the site. The PSI concludes that there is no risk to human health from the change in use of the land.

The effects from the proposed subdivision on the wider environment are considered to be less than minor as concluded within earlier sections of this report. The lot size although marginally below the discretionary threshold and assessed as non-complying is not inconsistent with lots sizes within the wider Riverview area.

The lot size as proposed could be viewed as being around the median size for the area. The proposal offers additional housing in a large lot residential location.



The potential effects from an additional dwelling on the wider environment are concluded as being less than minor.

### 7.03 Affected Persons Assessment – Limited Notification Section 95B

If the application is not required to be publicly notified, a Council must follow the steps of section 95B to determine whether to limited notify the application.

Step 1: certain affected groups and affected persons must be notified

- (2) Determine whether there are any—
- (a) affected protected customary rights groups; or
  - (b) affected customary marine title groups (in the case of an application for a resource consent for an accommodated activity).

There are no protected customary rights or customary marine titles which apply to the application site.

Step 2: if not required by step 1, limited notification precluded in certain circumstances  
The criteria for step 2 are as follows:

- (a) the application is for a resource consent for 1 or more activities, and each activity is subject to a rule or national environmental standard that precludes limited notification;
- (b) the application is for a resource consent for either or both of the following, but no other, activities:
  - (i) a controlled activity that requires consent under a district plan (other than a subdivision of land);
  - (ii) a prescribed activity (see section 360H(1)(a)(ii)).

The application is not precluded from Limited Notification as neither of the exemptions as described above apply to the application.

Step 3: if not precluded by step 2, certain other affected persons must be notified

- (7) Determine whether, in accordance with section 95E, the following persons are affected persons:
- (a) in the case of a boundary activity, an owner of an allotment with an infringed boundary; and
  - (b) in the case of any activity prescribed under section 360H(1)(b), a prescribed person in respect of the proposed activity.

The proposal is not considered to result in adverse effects on the immediate neighbours who are screened from the development or will remain unaffected. The potential development of the site does not impinge on boundary related rules which would likely impact on the neighbours in a minor or more than minor way. The proposal is noted as being not dissimilar to other sites within the area.

With respect to mitigation measures it is contended that additional built form could be constructed on the site to provide additional buildings for the existing residence. This

would have a similar effect to any additional dwelling on existing residencies which surround the site. The effects are concluded as being less than minor.

With the site being within the Kerikeri Heritage Overlay – Part B, there are rules which have immediate legal effect. The proposed plan directs an applicant within these overlay areas to consult with tangata whenua – Ngati Rehia, the Department of Conservation, and Heritage New Zealand. Consultation was undertaken by the applicant with these entities and no concerns were raised in this consultative process. The only requirement from both Iwi and Heritage New Zealand was to impose an Accidental Discovery Protocol which could be simply an Advice Note on the decision.

The matters or protection of the basin from inappropriate development does not apply as the site is not visible to the Stone Store Basin or Kororipo Pa. Furthermore, there is no remnant horticultural use present on the site or immediately adjacent to the site. While these horticultural elements may have been present in the past, there is no current evidence on site.

There are no other persons deemed to be potentially affected by the proposed development.

#### 7.04 Notification Assessment Conclusion

Pursuant to sections 95A to 95G it is recommended that the Council determine that the application can be processed non-notified for the following reasons:

- In accordance with section 95A, public notification is not required, and in particular the adverse effects on the wider environment are considered to be less than minor;
- In accordance with section 95B, written approvals have not been sought as based on the matters of particular concern, the effects are less than minor and therefore no persons are considered to be affected persons; and,
- In accordance with section 95A(9) and 95B(10), there are no special circumstances to require public or limited notification.

## 8. **S104D (GATEWAY TEST) ASSESSMENT**

8.01 Section 104D identifies particular restrictions for non-complying activities and also details the circumstances in which Council can approve an application notwithstanding its non-complying status. The provision has the following requirements:

- (1) Despite any decision made for the purpose of notification in relation to adverse effects, a consent authority may grant a resource consent for a non-complying activity only if it is satisfied that either—
  - (a) the adverse effects of the activity on the environment (other than any effect to which section 104(3)(a)(ii) applies) will be minor; or
  - (b) the application is for an activity that will not be contrary to the objectives and policies of—
    - (i) the relevant plan, if there is a plan but no proposed plan in respect of the activity; or
    - (ii) the relevant proposed plan, if there is a proposed plan but no relevant plan in respect of the activity; or

- (iii) both the relevant plan and the relevant proposed plan, if there is both a plan and a proposed plan in respect of the activity.

- 8.02 It is considered that the proposed subdivision and the development thereafter does not create adverse effects on the environment that are minor or more than minor. In considering effects the potential effects have been addressed and while no specific mitigation measures are offered there are several options available such as additional landscaping, should Council consider that the current levels are insufficient.
- 8.03 There are positive effects with an additional property available for an area with known housing shortages. The additional residential unit would not detract from the surrounding environment and is less intensive than some sites within close proximity to the application site.
- 8.04 It is further considered that the proposed subdivision is not contrary to the Objectives and Policies of the Plan or those relevant higher order documents. Particular attention was made to the subdivision provisions and those related to the Outstanding Landscape notation.
- 8.05 In reaching this conclusion, it is considered that the proposal meets both limbs of the test and therefore the thresholds of s104D of the Act, and that the Council can therefore grant the consent accordingly.

## **9 SUMMARY**

- 9.01 The application site is zoned Rural Living and located within the Riverview area which is essentially a residential area within the wider Kerikeri urban area. The proposal is a non-complying subdivision seeking consent to create one additional lot. The relatively restrictive stormwater (impermeable surfaces) and building coverage rules result in landuse consents also being required for any development within the proposed lots. An allowance of 27% and 18% is ought for the total impermeable surfaces under this application with building coverage for both lots proposed to be capped at 15%.
- 9.02 In considering the character and amenity values of the area it is noted that the proposed lot sizes are around the median size for the area with many lots well below the proposed lot sizes and an equal number above.
- 9.03 Although the site is reticulated with potable water there is no reticulated wastewater. There is a stormwater system capable of absorbing low density development with a roadside drain assisting in this capacity. The Engineer's report and the proposed design addresses the additional impermeable surfaces and has mitigation measures designed to ensure that stormwater leaving the site is at pre-development levels. A combination of water storage tanks and soakage pits are proposed. Onsite wastewater treatment and disposal can be readily achieved with the existing system on site required to be moved to accommodate the new proposed lot boundaries.
- 9.04 Additional landscaping is not proposed for the reasons as detailed previously however if this is considered by Council to be required, then it is recommended that any landscaping be completed after the construction of any dwelling and the establishment of outdoor living spaces. Depending on the eventual design and site layout there may

well be landscaping completed as part of the design. This conclusion has been reached based on a relatively inconsistent approach to boundary treatments within the area and that there is essentially landscaping on all four of the property boundaries. In the wider area there are some properties which are fully landscaped or screened while other use hard boundary treatments such as solid fencing or masonry walls and other lots have none at all. This mixed approach is reflective of the expectation of built form and the modest densities which the rules apply to every site.

- 9.05 Access is achieved directly off Mission Road with a new access to be established for proposed Lot 2 on the eastern end of the site. The plans provided indicate the general location for the new access which will be designed and constructed to Council's Engineering standards. These requirements need to be conditioned as part of the decision.
- 9.06 The impacts on the Kerikeri Heritage Overlay – Part B, is considered to be less than minor following consultation with the key agencies involved in the considerations. This aspect of the Proposed District Plan has immediate legal effect. No adverse effects were considered to be relevant and no concerns raised by the identified key stakeholders.
- 9.07 The effects of this subdivision application have been assessed and concluded as being less than minor. No persons are considered to be affected by the proposed subdivision. The effects on the wider environment are considered to be less than minor with appropriate mitigation measures proposed.
- 9.08 The proposal is not contrary to relevant objectives and policies of the Far North District Plan, Far North Proposed District Plan or the Regional Policy Statement.
- 9.09 It is considered that the application can be approved under s104B and 104D of the Act as the two limbs of the “gateway tests” have been met.
- 9.10 With respect to conditions of consent the applicant would appreciate sighting a draft set of conditions for review and comment (if necessary).

Should you have any queries in respect to this application please contact me.

Yours faithfully



**Wayne Smith**

Zenith Planning Consultants Ltd

Principal | Director

BPlan | BSocSci | MNZPI

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**RECORD OF TITLE  
UNDER LAND TRANSFER ACT 2017  
FREEHOLD  
Search Copy**



  
R. W. Muir  
Registrar-General  
of Land

**Identifier** NA42A/103  
**Land Registration District** North Auckland  
**Date Issued** 14 October 1977

**Prior References**  
NA28B/565

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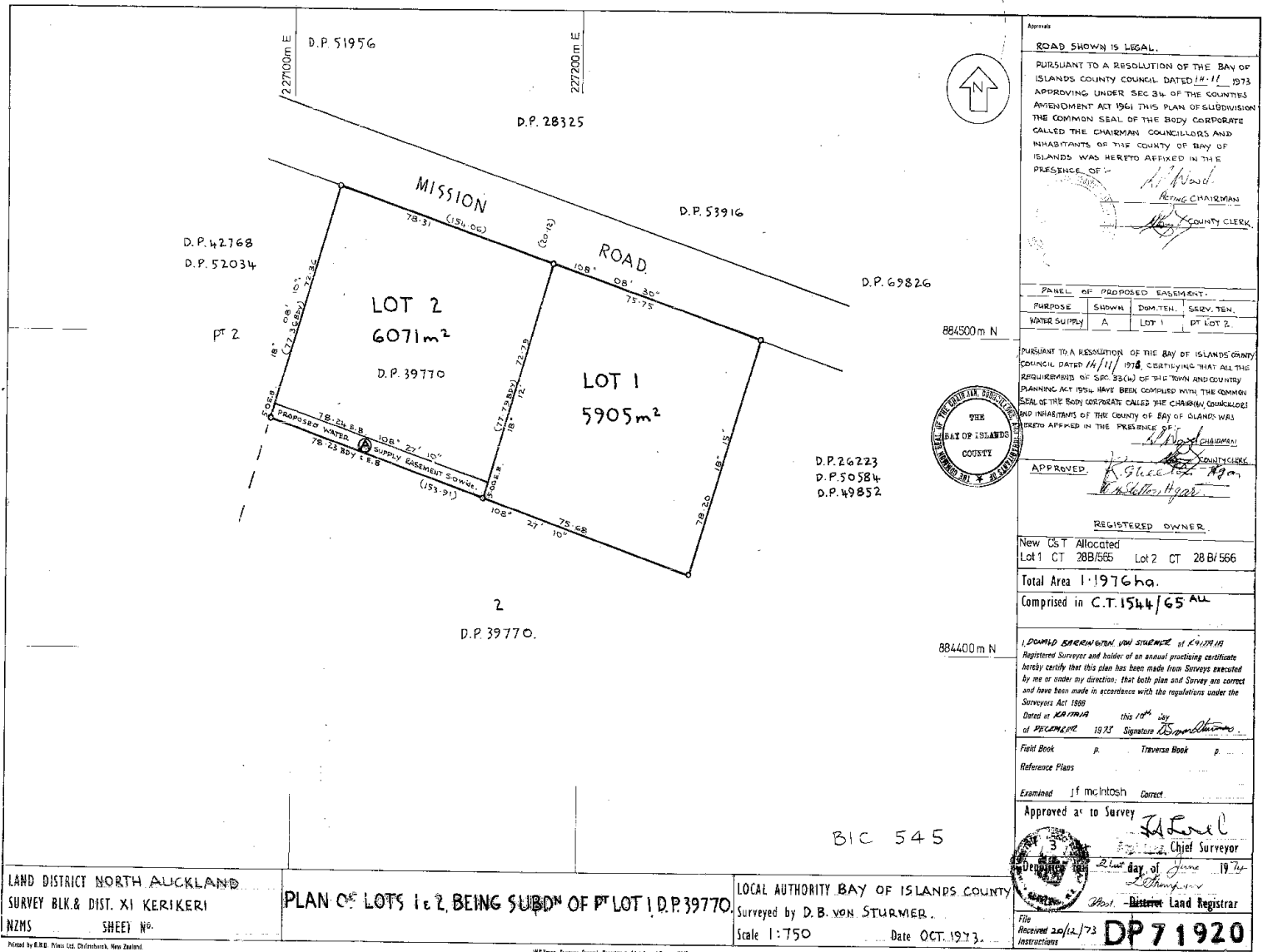
**Estate** Fee Simple  
**Area** 5905 square metres more or less  
**Legal Description** Lot 1 Deposited Plan 71920

**Registered Owners**  
Natalie Jane Spooner, Paul John Spooner and Mannivy Limited

---

**Interests**

11308152.6 Mortgage to ANZ Bank New Zealand Limited - 7.12.2018 at 12:37 pm



Approved

ROAD SHOWN IS LEGAL.

PURSUANT TO A RESOLUTION OF THE BAY OF ISLANDS COUNTY COUNCIL DATED 11/11/1973 APPROVING UNDER SEC 34 OF THE COUNTIES AMENDMENT ACT 1961 THIS PLAN OF SUBDIVISION THE COMMON SEAL OF THE BODY CORPORATE CALLED THE CHAIRMAN COUNCILLORS AND INHABITANTS OF THE COUNTY OF BAY OF ISLANDS WAS HERETO AFFIXED IN THE PRESENCE OF -

*R. Wood*  
CHAIRMAN

*[Signature]*  
COUNTY CLERK

PLAN OF PROPOSED EASEMENT.			
PURPOSE	SHOWN	DOM. TEN.	SEV. TEN.
WATER SUPPLY	A	LOT 1	PT LOT 2

PURSUANT TO A RESOLUTION OF THE BAY OF ISLANDS COUNTY COUNCIL DATED 14/11/1978 CERTIFYING THAT ALL THE REQUIREMENTS OF SEC 35(4) OF THE TOWN AND COUNTY PLANNING ACT 1976 HAVE BEEN COMPLIED WITH THE COMMON SEAL OF THE BODY CORPORATE CALLED THE CHAIRMAN COUNCILLORS AND INHABITANTS OF THE COUNTY OF BAY OF ISLANDS WAS HERETO AFFIXED IN THE PRESENCE OF -

*[Signature]* CHAIRMAN

*[Signature]* COUNTY CLERK

APPROVED

*[Signature]*

REGISTERED OWNER

New C.T. Allocated  
Lot 1 CT 28B/565 Lot 2 CT 28B/566

Total Area 1.1976 ha.  
Comprised in C.T. 1544/65 ALL

I, DONALD BUCHANAN, now SURVYOR of KAITIAKI Registered Surveyor and holder of an annual practicing certificate hereby certify that this plan has been made from Surveys executed by me or under my direction, that both plan and Survey are correct and have been made in accordance with the regulations under the Surveyors Act 1958

Dated at KAITIAKI this 10<sup>th</sup> day of FEBRUARY 1973 Signature *[Signature]*

Field Book p. Traverse Book p.

Reference Plans

Examined *Jf McIntosh* Correct

Approved as to Survey

*[Signature]*  
Chief Surveyor

21<sup>st</sup> day of June 1973  
*[Signature]*  
District Land Registrar

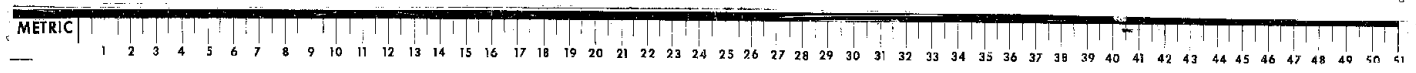
File Received 20/12/73 Instructions

**DP 71920**

LAND DISTRICT NORTH AUCKLAND SURVEY BLK. & DIST. XI KERIKERI NZMS SHEET No.

PLAN OF LOTS 1 & 2, BEING SUBD<sup>n</sup> OF PT LOT 1, D.P. 39770

LOCAL AUTHORITY BAY OF ISLANDS COUNTY Surveyed by D. B. VON STURMER. Scale 1:750 Date OCT. 1973.



## Engineering Assessment Report for Proposed Subdivision at 17 Mission Road, Kerikeri

Lot 1 DP 71920

for

NJ and PJ Spooner Trust

*Supporting report for RC Applications to Far North District Council  
Haigh Workman reference 24 066  
Rev A*

31 July 2024



**Revision History**

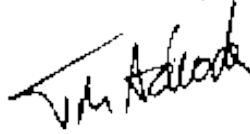
Revision N <sup>o</sup>	Issued By	Description	Date
A	Aaron Thorburn	Engineering Assessment Report for Resource Consent	31 July 2024

Prepared by



**Aaron Thorburn**  
Senior Environmental Advisor  
BAppSc (Env)

Reviewed by



**Tom Adcock**  
Senior Civil Engineer  
BEng (Civil), MEng NZ

Approved by



**John Papesch**  
Senior Civil Engineer  
BE (Civil Engineering),  
CPEng, CMEngNZ

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## Executive Summary

Haigh Workman Limited was commissioned by the NJ and PJ Spooner Trust (the client) to undertake an engineering assessment at 17 Mission Road, Kerikeri (the site). It is proposed to subdivide Lot 1 DP 71920 (5,905 m<sup>2</sup>) into two Lots, proposed Lot 1 – 2,905 m<sup>2</sup> and Lot 2 – 3,000 m<sup>2</sup>. Proposed Lot 1 contains a dwelling and associated structures and proposed Lot 2 is currently developed with fruit trees and gardens.

This report assesses suitable building platforms, earthworks, access, stormwater, and wastewater with specific regard to Council subdivision rules. A proposed subdivision concept plan prepared by Spooner Architectural Limited was made available to us at the time of writing this report.

The site is zoned '*Rural Living*' under the Far North District Council District Plan.

### Natural Hazards

The current site (Lot 1 DP 71920) is not subject to natural hazards.

### Access

The site has a single existing crossing off Mission Road, consisting of a single width concrete driveway that becomes gravel after the pedestrian footpath.

It is proposed that this existing crossing remain to service proposed Lot 1 and a new crossing be constructed off Mission Road approximately 50m east of the existing crossing to service the proposed Lot 2 site. We consider that the existing crossing and proposed new vehicle crossing are adequate to provide safe access to the proposed lots.

### Earthworks

We have calculated volumes for earthworks required for subdivision development for a permitted activity, based on the future site plans (yet to be confirmed) a resource consent may be required.

### Geotechnical

At the time of future building development, specific geotechnical investigations are recommended to provide site specific recommendations for foundation design.

### Proposed Stormwater Management

Following subdivision, the expected impermeable surfaces for Lots 1 and 2 are 27% and 18% respectively. Lot 2 is expected to comply with Far North District Council Controlled Activity criteria, whereas for Lot 1 the existing dwelling and driveway result in a technical breach making the activity discretionary.

As part of the proposed subdivision, land-use consent is sought for 27% impermeable surfaces on proposed Lot 1 and 18% for proposed Lot 2.

To comply with the permitted activity rules of the Far North District Council District Plan and Regional Plan for Northland, and the new Far North District Council Engineering Standards 2023. Attenuation shall be designed to 80% of pre-development peak flow rate for the 2, 5 and 10-year events with no adjustment for climate change.

For proposed Lot 1 a twin orifice 10,000L stormwater detention tank installed at time of subdivision will provide attenuation back to 80% of the permitted activity.

For proposed Lot 2 we recommend a consent notice requiring a stormwater management report by a Chartered Professional Engineering for the 2, 5 and 10-year events be submitted for the approval of Council at time of building.

### **Water Supply**

There is an existing council water main running along the Mission Road site frontage. According to Far North District Council GeoMaps, an existing water meter located at the existing entrance to 17 Mission Road services the current property. It is recommended that an application is made to council to install one additional water meter in the road reserve so that each lot has its own separate water meter. A separate water line will need to be run from the new meter onto the proposed Lot 2 location to service the proposed future dwelling.

Fire hydrants are located along Mission Road including a hydrant along the road frontage of lot 2. The Available Fireflow Assessment (Opus, July 2014) does not identify any issues with fire flow in this area, therefore it is expected that adequate supply for firefighting is available.

### **Onsite Effluent Disposal**

The existing house at 17 Mission Road / proposed Lot 1 has a septic tank north of the dwelling. The original dwelling was built in the 1930's and there is no building information available from that time. The location of the soakage pit is most likely in close proximity to the septic tank, meaning it should be well contained within the proposed lot boundaries. If it is required to demonstrate the location of the soakage pit, excavation would be required. An example disposal and reserve area is shown for Lot 1, should it need replacement in the future.

A new wastewater system will be required for Lot 2 at time of building. Wastewater volumes have been estimated on a three-bedroom dwelling with five occupants and wastewater generation of 825 litres per day. The soil type has been assessed as AS/NZS Category 3 which can sustain a land loading rate of 4 mm / day. The disposal area of 206m<sup>2</sup> and a 100 % reserve area has been allowed for subdivision allowances, totalling 412 m<sup>2</sup> for the proposed Lot 2 site.

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# 1 Introduction

## 1.1 Project Brief and Scope

Haigh Workman Ltd (Haigh Workman) were engaged by the NJ & PJ Spooner Trust (the client) to undertake an Engineering Assessment of land at 17 Mission Road, Kerikeri (the site) in association with the proposed two lot subdivision. It is proposed to subdivide the property (Lot 1 DP 71920) into two lots of similar size (Lot 1 – 2,905m<sup>2</sup> and Lot 2 – 3,000m<sup>2</sup>). Proposed Lot 1 contains an existing dwelling and associated structures, Lot 2 is grassed with fruit trees and other trees interspersed across the site, a dwelling is proposed on Lot 2.

This report assesses both lots for earthworks, access, stormwater, wastewater with specific regard to Far North District Council (FNDC) subdivision rules. A proposed subdivision concept plan prepared by Spooner Architectural Limited has been provided to Haigh Workman and is shown below in Figure 2 and is provided in **Appendix A**.

## 1.2 Limitations

This report has been prepared by Haigh Workman for the sole benefit of the NJ & PJ Spooner Trust (the client), with respect to the brief outlined to us. This report is to be used by the client and their consultants and may be relied upon by the FNDC when considering the application for the proposed subdivision and future development. The information and opinions contained within this report shall not be used in any other context for any other purpose without prior review and agreement by Haigh Workman Limited.

It has been assumed in the production of this report that the site is to be subdivided and subsequently redeveloped for low-rise residential end-use. At the time of writing the information available for proposed future development is the proposed dwelling footprint planned for Lot 2 (see Figure 2 below for the Concept Plan). If the proposed footprint or dwelling area is incorrect, then amendments to the recommendations made in this report may be required.

The comments and opinions presented in this report are based on the findings of the desk study and ground conditions encountered at a site visit performed by Haigh Workman. There may be other conditions prevailing on the site which have not been revealed by this investigation and which have not been taken into account by this report. Responsibility cannot be accepted for any conditions not revealed by this investigation. Any diagram or opinion on the possible configuration of strata or other spatially variable features between or beyond investigation positions is conjectural and given for guidance only.

## 2 Site Description and Proposed Development

### 2.1 Site Identification

**Site Address:** 17 Mission Road, Kerikeri  
**Legal Description:** Lot 1 DP 71920  
**Area:** 5,905 m<sup>2</sup>

in central Kerikeri.



Figure 1 below indicates the location of the site. The site is located in central Kerikeri.



Figure 1: Site Location (Source: FNDC GeoMaps)

## 2.2 Site Description

The site covers an area of 5,905 m<sup>2</sup> and contains a single dwelling and associated structures including two garages, implement shed and a swimming pool, the property is accessed via a gravel driveway from Mission Road to the north of the property. The balance of the property is covered in grass, interspersed with trees and fruit trees, the eastern, western and southern boundaries are lined with shelterbelts. The site has a slight gradient sloping towards the northeast and is bordered by rural residential properties.

## 2.3 Proposed Subdivision

The proposed subdivision comprises of two lots as follows:

Table 1: Proposed Lots

Lots	Proposed Area (m <sup>2</sup> )	End-use
Lot 1	2,905	Rural Living.
Lot 2	3,000	Rural Living.

Total	5,905	
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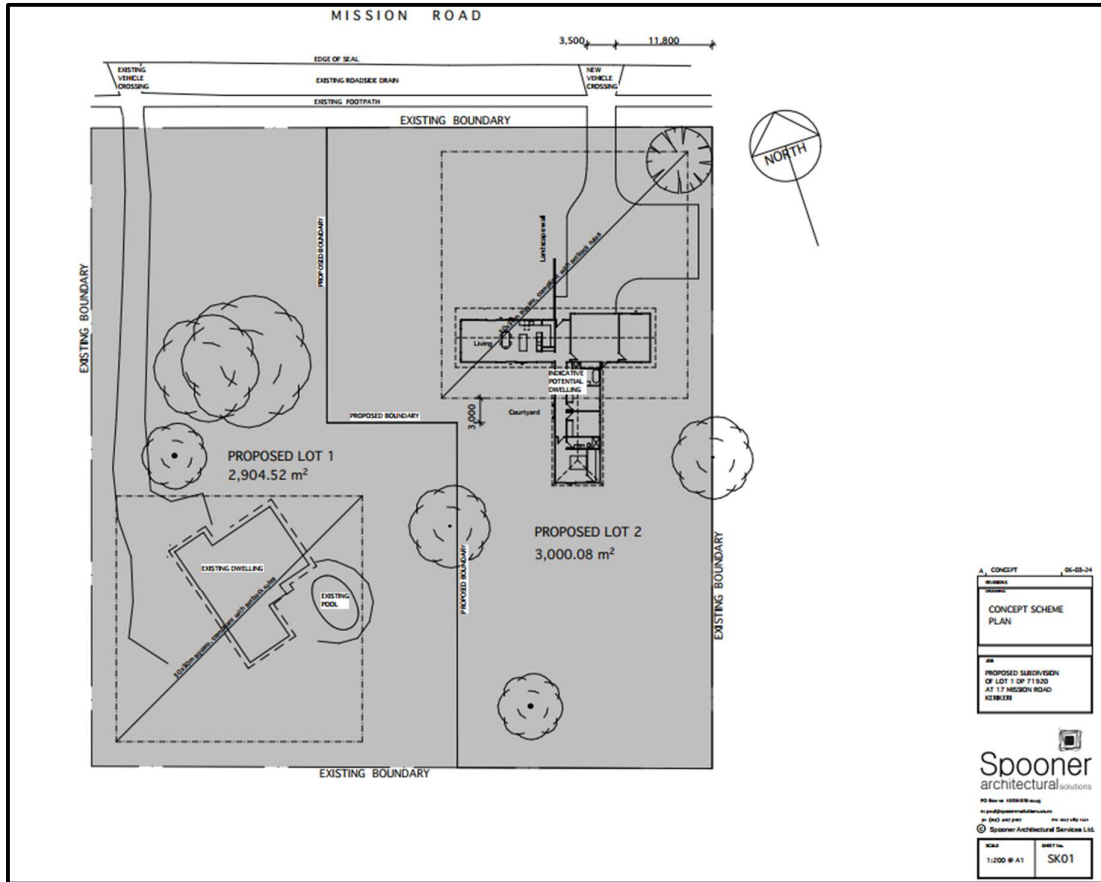


Figure 2: Proposed Subdivision Concept Plan (Source: Spooner Architectural Limited, dated 6 March 2024)

## 2.4 District Plan Zoning

The site is zoned as 'Rural Living' under the FNDC Operative District Plan.

It is our understanding that the proposed subdivision is a 'Restricted Discretionary Activity'.

Proposed Lot 1 contains an existing dwelling and associated structures, and no further development is planned for this site at this stage. Lot 2 is currently undeveloped. As per 13.7.2.2 for Allotment Dimensions for 'rural living' zone, the required minimum dimensions are 30m x 30m. This can be achieved within Lot 2.

## 3 Environmental Setting

### 3.1 Published Geology

Sources of Information:

- Institute of Geological & Nuclear Sciences (GNS) 1:250,000 Geological Map, and

- New Zealand Mainland Sheet (NZMS) 290 Sheet P 04/05, 1: 100,000 scale, 1980: “Whangaroa- Kaikohe” Soil.

The published geology shows the site to be underlain by the Kerikeri Volcanic Group which are basalt lava flows, volcanic plugs and minor tuff.

An extract of the geological map is shown in **Error! Reference source not found.** below, with geological units provided.



Figure 3 – GNS Geological Map (1:250,000)

Reference to the NZMS soils map in Figure 4 below, indicates the site is underlain by Kerikeri friable clay. The soils are typically described as ‘well to moderately drained’.



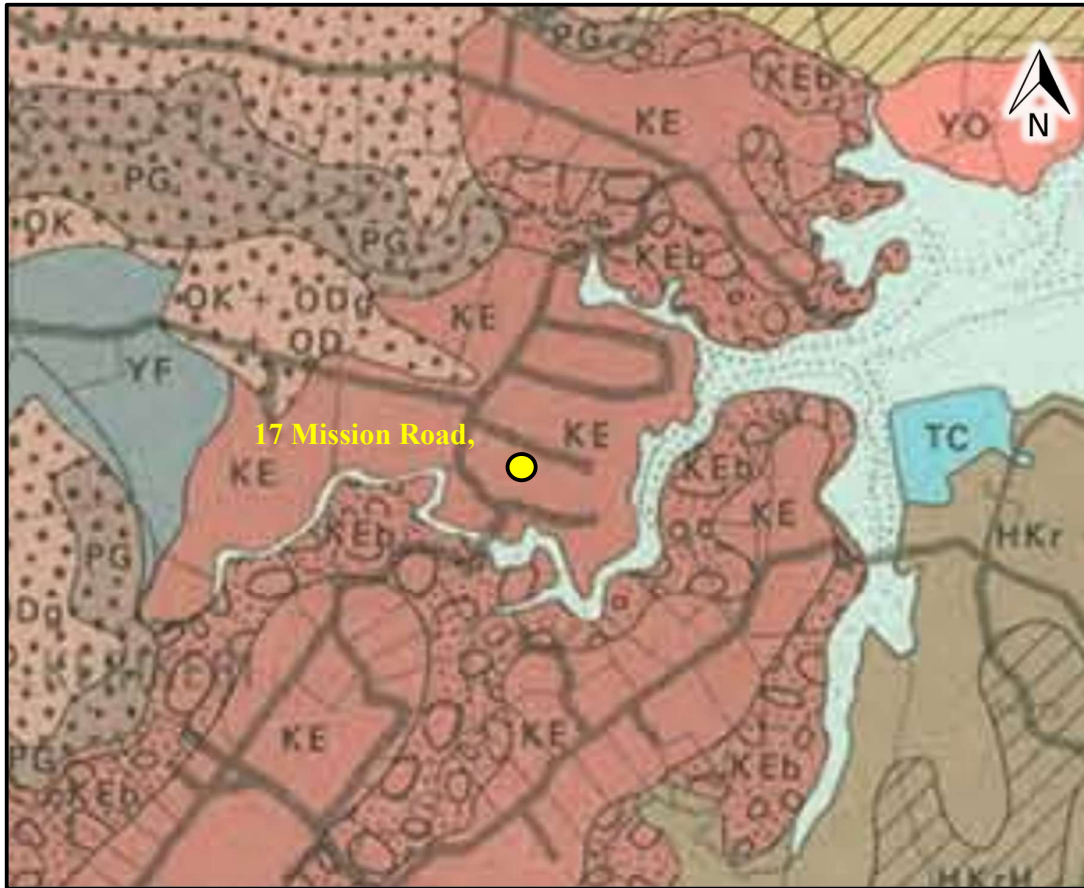


Figure 4 – NZMS 290 Sheet P 04/05 Map

### 3.2 Surface Water Features and Flooding

An examination of published environmental data relating to the site from FNDC and Northland Regional Council (NRC) online GIS databases is presented below.

The site does not lie within any mapped river or coastal flood hazards, as provided in Figure 5 below.

A summary of available information pertaining to hydrology and hydrogeology is presented in Table 2 below.

Table 2: Surface Water Features & Flooding

	Presence / Location	Comments
<b>Groundwater sources including springs / wells (within 200 m)</b>	There are no bores located nearby.	-
<b>Surface Water Features (Ponds, Lakes, etc.)</b>	None	-
<b>Watercourses (within 500 m)</b>	Approximately 120m north of the site.	An unnamed watercourse is located to the north of the site. At its closest point it is approximately 120m from the site with approximately 10m elevation difference.

<b>Flood Risk Status</b>	None	See Figure 5 – Mapped Flood Zones below.
<b>Flood Susceptibility</b>	None	See Figure 5 – Mapped Flood Zones below.

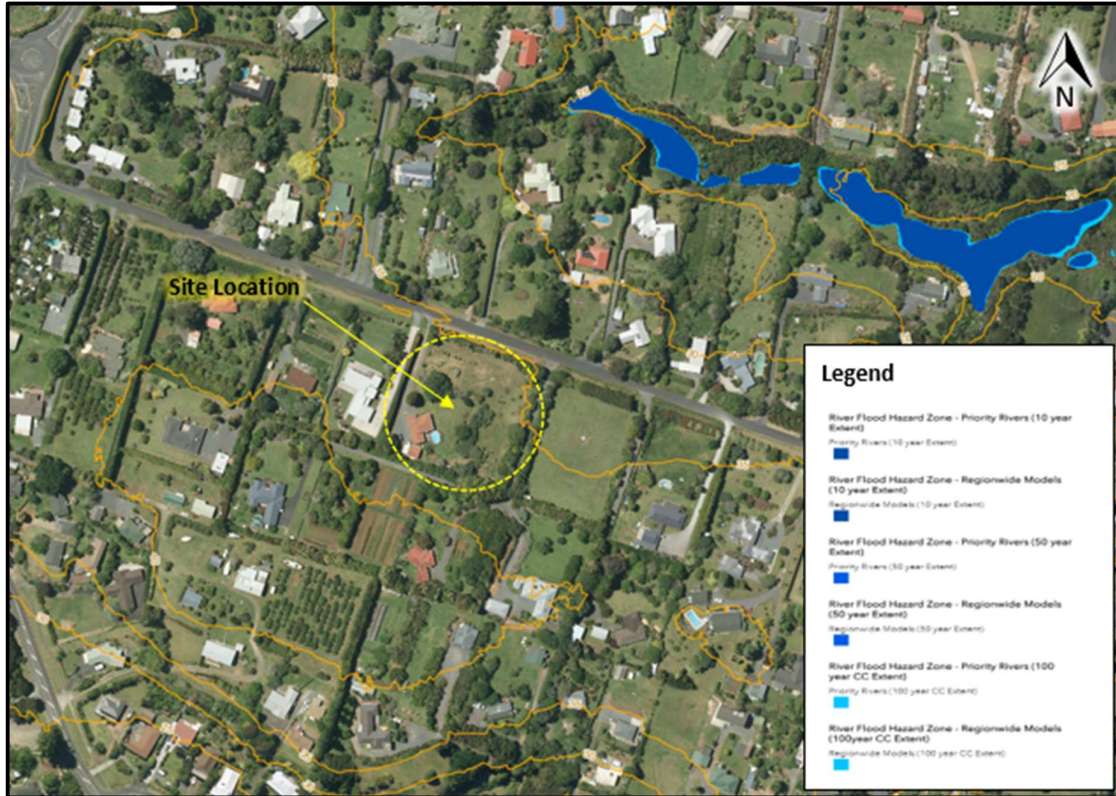


Figure 5 – Mapped Flood Zones (Source: Northland Regional Council GIS Website)

### 3.3 Natural Hazards

Under Section 2 of the Resource Management Act (RMA) 1991, **natural hazard** means any atmospheric or earth or water related occurrence (including earthquake, tsunami, erosion, volcanic and geothermal activity, landslip, subsidence, sedimentation, wind, drought, fire, or flooding) the action of which adversely affects or may adversely affect human life, property, or other aspects of the environment.

Natural hazards listed in Section 71(3) of the Building Act 2004 include: erosion, falling debris, subsidence, inundation or slippage. We assess the susceptibility of the proposed Lot 2 building platform to these potential hazards in Table 3 below.

**Table 3: Natural Hazards.**

Natural Hazard	Risk
Erosion (including coastal erosion, bank erosion, and sheet erosion)	Nil.
Falling debris (including soil, rock, snow, and ice)	Nil.
Subsidence (vertical settlement)	Nil.
Inundation (including flooding, overland flow, storm surge, tidal effects, and ponding)	Nil.
Slippage	Nil.

The nominated building site does not contain any natural hazards that would warrant action under Section 71(1) of the Building Act 2004. There is no significant risk from natural hazards that would cause Section 106 of the Resource Management Act to apply.

## 4 Access

### 4.1 Site Access

The site has a single existing crossing off Mission Road, consisting of a single width concrete driveway that becomes gravel after the pedestrian footpath.

It is proposed that this existing crossing remain to service proposed Lot 1 and a new crossing be constructed off Mission Road approximately 50m east of the existing crossing to service the proposed Lot 2 site. We consider that the existing crossing and proposed new vehicle crossing are adequate to provide safe access to the proposed lots.

### 4.2 Mission Road, Kerikeri

Mission Road is classified as an access road according to the One Network Road Classification. Mission Road is a unkerbed urban cross-section comprising an approximate 7m wide sealed carriageway, water table and culvert drainage and a speed limit of 50 km/hr.



*Figure 6: Photograph of existing vehicle crossing*



*Figure 7: Photograph of existing vehicle crossing adjoining to Mission Road.*



*Figure 8: Anticipated location of new vehicle crossing (east of existing site vehicle crossing).*

### 4.3 Parking and Manoeuvring

Proposed Lot 1 contains an existing dwelling with more than 2 car parking spaces. The proposed Lot 2 concept design (Figure 2 above) shows allowance for two vehicle parking spaces, as required in the District Plan.

## 5 Earthworks

### 5.1 Proposed Earthworks

As per District Plan Rule 12.3.6.1.2 excavation and / or filling in the Residential Zone is permitted, provided it does not exceed 300 m<sup>3</sup> in any 12-month period per site and does not involve a continuous cut or filled face exceeding an average of 1.5 m in height over the length of the face i.e. the maximum permitted average cut and fill height may be 3m.

Under the District Plan earthworks cut and fill are added together whilst drainage is not included. The proposed earthworks at the time of subdivision are associated with the new vehicle crossing and driveway, proposed dwelling, stormwater and wastewater formation stormwater connection into FNDC’s stormwater network.

An estimation of earthworks volumes is shown in Table below. The calculation demonstrates that the proposed earthworks will not breach permitted levels.

*Table 4: Earthworks calculation (estimated)*

Earthworks feature	Area (m <sup>2</sup> )	Depth (m)	Volume (m <sup>3</sup> )
Excavation for proposed future driveway / parking area	280	0.1	28
Excavation for proposed future dwelling	260	0.1	26

<b>TOTAL</b>	540	-	54
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## 5.2 National Environmental Standards

A combined Preliminary and Detailed Site Investigation has been completed by Haigh Workman (Ref. 24 066, *Preliminary and Detailed Site Investigation for Proposed Subdivision at 17 Mission Road, Kerikeri, 22 May 2024*). It is considered that the proposed subdivision and future development are covered under the National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health (NES-CS) Regulations.

The 'piece of land' for this investigation is the existing Lot which is 5,905m<sup>2</sup> which allows for 295.2m<sup>3</sup> soil disturbance and 59m<sup>3</sup> soil removal (per year) as a Permitted Activity under the NES-CS.

The above volumes will be split between the proposed new lots (Lot 1 and Lot 2) on a proportional basis once subdivision is completed.

# 6 Stormwater Management

## 6.1 Existing site drainage

Lot 1 has an existing dwelling and sheds. Roof runoff is connected to downpipes which discharge to the stormwater drain located on Mission Road. The sheds have stormwater gutters that discharge to ground on the southern boundary treeline. The open drains along the western and southern boundaries work as interception drains and prevent surface water from entering the site.

Lot 2 has no existing stormwater network. Excess stormwater runoff not soaking into the ground will shed as sheet flow via the natural contour in an easterly direction.

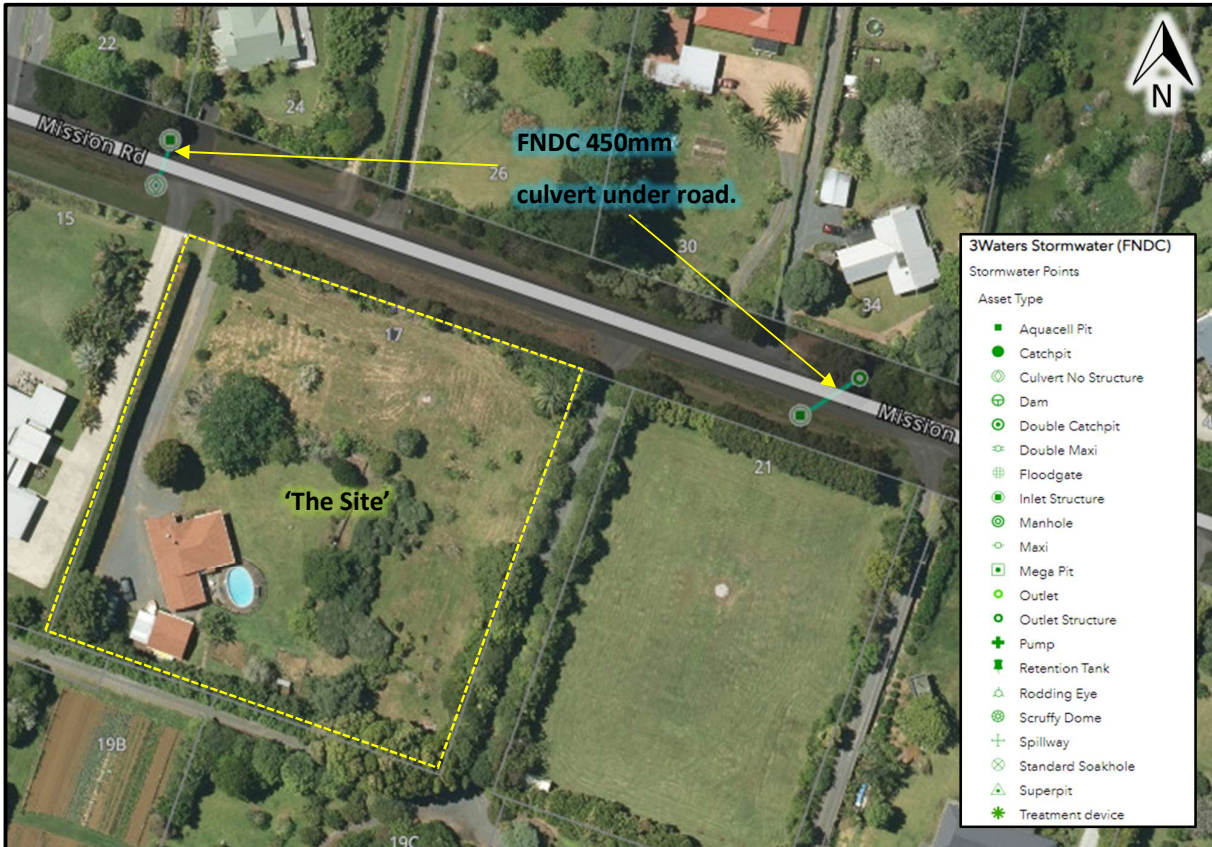


Figure 9: Current stormwater network arrangement (Source: FNDC Water Services GIS service).

## 6.2 Regulatory framework

### 6.2.1 Operative Far North District Plan Provisions

The Site is zoned as 'Rural Living'. The relevant activity rules for impermeable surfaces are as follows:

#### Permitted Activity

##### 8.6.5.1.5 STORMWATER MANAGEMENT

*The maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 12.5% or 3,000 m<sup>2</sup>, whichever is the lesser.*

#### Controlled Activity

##### 8.6.5.2.1 STORMWATER MANAGEMENT

*The maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 20% or 3,300 m<sup>2</sup>, whichever is the lesser.*

#### Discretionary Activity

Exceeds the controlled activity maximum of 20% or 3,300 m<sup>2</sup>, whichever is lesser

##### 8.6.5.4 DISCRETIONARY ACTIVITIES

*Does not comply with one or more of the other standards for permitted, controlled restricted discretionary activities in this zone as set under Rule 8.6.5.2.1.*

It is intended that the proposed stormwater management system complies with the rule for a Controlled Activity subdivision, Rules 13.7.3.4 **STORMWATER DISPOSAL**. The essential element of Rule 13.7.3.4 is:

*(a) All allotments shall be provided, within their net area, with a means for the disposal of collected stormwater from the roof of all potential or existing buildings and from all impervious surfaces, in such a way so as to avoid or mitigate any adverse effects of stormwater runoff on receiving environments, including downstream properties. This shall be done for a rainfall event with a 10% Annual Exceedance Probability (AEP).*

## 6.2.2 Regional Plan for Northland

The Regional Plan for Northland (operative in part, dated 13 October 2023) is now operative in respect of stormwater discharge rules.

Proposed Rule C.6.4.2 provides for the diversion and discharge of stormwater from outside a public stormwater network into water or onto land from an impervious area or by way of a stormwater collection system, is a permitted activity, provided (amongst other conditions):

*2) the diversion and discharge does not cause or increase flooding of land on another property in a storm event of up to and including a 10 percent annual exceedance probability, or flooding of buildings on another property in a storm event of up to and including a one percent annual exceedance probability, and  
6) the diversion and discharge does not cause permanent scouring or erosion of the bed of a water body at the point of discharge.*

Stormwater from the site is proposed to be disposed of within the boundaries of each respective lot.

The proposed stormwater management will comply with Rule C.6.4.2.

## 6.2.3 Council Engineering Standards 2023

The FNDC Engineering Standards were recently updated (May 2023) and Council is encouraging their use. The pertinent sections relating to stormwater management are:

### Chapter 4: Stormwater and Drainage

#### 4.1.3 Performance Standards

e. The primary stormwater system shall be capable of conveying 10% AEP design storm events without surcharge (see Section 4.3.9 Hydrological Design Criteria).

#### 4.1.6. Managing Effects of Land Use on Receiving Environments

Hydrological balance can be partly maintained by limiting the maximum rate of discharge and peak flood levels for post-development to that at pre-development levels and enabling infiltration to minimise impacts on base flow and ground water recharge.

Peak flow management can be achieved using detention storage, utilizing extended duration, for the duration of a limited peak flow event. Therefore, in the absence of more detailed assessment of stream stability, the discharges from detention devices into a stormwater network shall be constrained to 80% of pre-



development peak flow rate. These constraints may be relaxed, subject to detailed assessments and hydrological/hydraulic modelling of the catchment being provided.

#### **4.2.1. Discharge into a Stream or Watercourse**

All new and existing discharges to an existing FNDC owned and / or maintained watercourse(s) located within approximately 500m require specific approval from the Stormwater Manager before proceeding with design details and, if approved, FNDC shall apply appropriate conditions to the discharge.

#### **4.3.8. System Design**

##### **Table 4-1: Minimum Design Summary**

Current rainfall (i.e. not climate change adjusted) shall be used for the following:

- Determining pre-development stormwater runoff flows and volumes for use in combination with calculated post development flows to determine stormwater treatment (quantity and quality) requirements.

Climate change adjusted rainfall shall be used for the following:

- Determining post-development stormwater runoff flows and volumes for stormwater infrastructure design.

Flood Control (1% AEP event). Detention required, limiting the post-development 1% AEP event flow rates to 80% of the pre-development 1% AEP event flow rates.

Flow attenuation (Attenuation of the 50% and 20% AEP events). Limit the post-development 50% and 20% AEP event flow rates to 80% of the pre-development flows through controlled attenuation and release. Typically, always required in the upper catchment and sometimes not required where development site is located in proximity to the catchment outlet, discharging to a watercourse with sufficient network capacity, and where flow attenuation may worsen flooding hazards due to relative timing of peak flows. This is subject to assessment demonstrating no negative impacts would occur. If the proposed stormwater discharge is into a tidal zone, then no attenuation is required.

### **6.2.3 Discussion**

Although the existing impermeable surfaces on Lot 1 are a Discretionary activity in terms of the District Plan, proposed stormwater management has been designed to comply with the permitted activity rules of the District Plan and Regional Plan for Northland, and in compliance with FNDC Engineering Standards 2023. The site is less than 2ha detailed reporting addressing stormwater disposal has been provided.

The site is 550m from the tidal Kerikeri Inlet and flooding mapping shows no flooding downstream of the site. To comply with the District Plan and Regional Plan for Northland, the appropriate return event to design stormwater attenuation back to predevelopment levels is the 10-year.

To comply with the new FNDC Engineering Standards 2023, attenuation shall be designed to 80% of pre-development peak flow rate (for the permitted activity) for the 2, 5 and 10-year events with no adjustment for climate change.

When applying the 80% of pre-development, we take this to apply to that area of the site covered by impermeable surfaces.

Residential development is not generally considered to create a long-term impact on water quality. For this development, the nominated building platforms will be surrounded by grass surfaces providing a buffer to run-off,

trapping contaminants and sediments. Stormwater run-off from roof tank overflow will be clean rainwater and run-off from driveways will drain via open drains and flow paths.

### Existing and Proposed Development

In relation to existing development we interpret the requirements of the District Plan given at the end of Subdivision Rule 13.7.2.1 which states:

*'Provided that any existing development on any new lot in the subdivision must comply with all of the relevant zone rules and the rules in Part 3 of the Plan - District Wide Provisions for permitted or controlled activities.'*

Accordingly, if existing development within a new lot area breaches any permitted or controlled activity rule, land-use consent will be required for that breach as part of the subdivision consent application.

Similarly, building coverage and driveways / yarding of any existing development on a particular lot for which building consent has been granted may also be considered approved and exempted from the stormwater neutrality calculations.

### 6.3 Impermeable surfaces coverage

Estimated future surface coverage of the site is calculated as follows:

**Table 5: Expected Future Impermeable Surfaces Coverage (estimated)**

Proposed Lot	Area (m <sup>2</sup> )	Existing			Future (Proposed)		Total Impermeable Surface (m <sup>2</sup> )	Coverage (%)	Activity
		Structures (m <sup>2</sup> )	Driveways (m <sup>2</sup> )	Other (m <sup>2</sup> )	Structures (m <sup>2</sup> )	Driveways (m <sup>2</sup> )			
Lot 1	2,905	335	375	71	-	-	781	27%	Discretionary
Lot 2	3,000	-	-	-	260	280	540	18%	Controlled

As detailed above, the expected impermeable surfaces calculation for Lots 1 and 2 are 27% and 18% respectively. Lot 2 is expected to comply with FNDC Controlled Activity criteria, Lot 1 contains an existing dwelling and driveway, as a result of the reduction in lot area the percentage of impermeable surfaces will increase to 27% and has become a discretionary activity.

As part of the proposed subdivision, a land-use consent is sought for 27% impermeable surfaces on proposed Lot 1 which is largely a technical breach due to the property currently being 12% (based on current property area of 5,905m<sup>2</sup>), increasing to 27% due to the property being proposed for subdivision and area decrease to 2,905m<sup>2</sup>. Lot 2 requires land-use consent for 18%.

### 6.4 Proposed stormwater management

Stormwater neutrality shall be provided for the 2, 5 and 10-yr. events. For proposed Lot 1 where the existing consented development results in a technical breach, runoff will be attenuation to that allowed by the permitted activity rule, further reduced to 80%. For proposed Lot 2 it is recommended that stormwater runoff for future

development be attenuated back to 80% of pre-development (i.e. vacant section) by way of a consent notice requiring a stormwater management plan at Building Consent stage.

Stormwater flow rates have been calculated using the rational method with run-off coefficients specified in the FNDC Engineering Standards 2023 and historical rainfall data from HIRDS<sup>1</sup>

It is proposed that stormwater runoff from the roof surface of the existing dwelling be collected via dedicated attenuation water tank before being discharged to the existing roadside stormwater open drain.

### 6.4.1 Proposed Lot 1

**Table 6: Lot 1 existing development**

Component	Area (m <sup>2</sup> )
Driveway & parking (gravel)	375.0
Existing dwelling roof	192.0
Sheds	143.0
Swimming pool	26.0
Swimming pool surround (pavers)	45.0
Grass	2124.0
Total imp.	781.0
Site Area	2,905.0
% Coverage	26.9%

**Table 7: Runoff coefficients**

Surface	Runoff coefficient, C
Roof	0.96
Driveway / parking area (gravel)	0.96
Swimming Pool	1.0
Pavers surrounding swimming pool	0.96
Grass Cover	0.59

The minimum time of concentration of 10 minutes is adopted.

Adopting rational formula:

$$Q = \frac{C I A}{3600}$$

Where:

- Q = run-off (litres / second)
- C = run-off coefficient (unitless)
- I = rainfall intensity (mm / hour)
- A = catchment area (m<sup>2</sup>)

We calculate the following runoff for the proposed Lot 1 development that includes existing dwelling and structures, using the rational method.

<sup>1</sup> National Institute of Water and Atmospheric Research, *High Intensity Rainfall Design System (HIRDS)*.

**Table 8: Lot 1 runoff existing development**

Component	Area m <sup>2</sup>	C	i2 mm/hr	Q2 L/s	i5 mm/hr	Q5 L/s	i10 mm/hr	Q10 L/s
Driveway & parking (gravel)	375.0	0.96	66	6.6	85.8	8.6	100.2	10.0
Existing dwelling roof	192.0	0.96	66	3.4	85.8	4.4	100.2	5.1
Sheds	143.0	0.96	66	2.5	85.8	3.3	100.2	3.8
Swimming pool	26.0	1.00	66	0.5	85.8	0.6	100.2	0.7
Swimming pool surround (pavers)	45.0	0.96	66	0.8	85.8	1.0	100.2	1.2
Grass	2124.0	0.59	66	23.0	85.8	29.9	100.2	34.9
<b>Total</b>	<b>2905.0</b>			<b>36.7</b>		<b>47.8</b>		<b>55.8</b>

**Table 9: Permitted runoff (80% of predevelopment as per FNDC Engineering Standards 2023 - Cl. 4.1.6)**

	Area m <sup>2</sup>	C	i2 mm/hr	Q2 L/s	i5 mm/hr	Q5 L/s	i10 mm/hr	Q10 L/s
Permitted imp. 12.5%	363.0	*0.96	66	6.4	85.8	8.3	100.2	9.7
80% pre-development				5.1		6.7		7.8
Balance grass	2,542.0	0.59	66	27.5	85.8	35.7	100.2	41.7
<b>Total</b>	<b>2,905</b>			<b>32.6</b>		<b>42.4</b>		<b>49.5</b>

**Attenuation required**

**4.1**

**5.4**

**6.3**

\*C value based on aggregate of Lot 1 existing surfaces

As the runoff from the roof areas of the proposed development is greater than that of the excess runoff it is possible to attenuate the stormwater via a roof water collection tank detention model.

The outlet from the detention tank will be piped to the roadside water table.

#### 6.4.2 Hydraulic Neutrality

It is proposed to reduce run-off using a 2.16m diameter 10,000L above ground detention tank fitted with two outlet control orifices. Our calculations show that by using a 25mm diameter orifice located at the base of the tank and a second 15mm diameter orifice 1.59m below the top of the tank, peak runoff for the 2, 5 and 10yr. design storm events will be attenuated. Detention tank (10,000L) details are provided in Appendix A.

A hydrograph with nested 50, 20 and 10% Annual Exceedance Probability (AEP) storm events from 10-minute to 360-minute durations was created to simulate how the tank will function. This method will promote a conservative design suited to a variety of storm lengths and is considered as the 'design event'.

During a design event (intense 50, 20 and 10% AEP storms), the maximum storage depth will be 2.20m and the required volume 9.20m<sup>3</sup>. Refer and flow and storage graphs, plus detention tank details appended. The tank effectively drains out 1hr. after the end of the 6hr. rainfall event.

### 6.4.3 Proposed Lot 2

Experience shows that stormwater neutrality for Lot 2 can be achieved in the same manner as Lot 1 using a roof water collection detention tank. Should the ground based impermeable surfaces be greater in relation to the buildings such that a roof water collection detention tank does not provide sufficient attenuation, then the ground conditions are suitable and for an onsite soakage pit.

We recommend a consent notice for Lot 2 requiring a stormwater management plan by a chartered Professional Engineer be submitted for the approval of Council at time of building development. The plan shall demonstrate attenuation of site runoff back to pre-development levels for the 50, 20 and 10% AEP events.

### 6.4.4 Assessment Criteria

The proposed stormwater management system has been assessed in accordance with Rule 13.10.4 for discretionary (subdivision) activities as follows:

**Table 10: Far North District Plan – Subdivision Assessment Criteria (Section 13.10.4)**

Stormwater Disposal Assessment Criteria	Comment
(a) Whether the application complies with any regional rules relating to any water or discharge permits required under the Act, and with any resource consent issued to the District Council in relation to any urban drainage area stormwater management plan or similar plan.	The proposed stormwater management complies with both the 'Proposed Regional Plan, permitted activity rules.
(b) Whether the application complies with the provisions of the Council's "Engineering Standards and Guidelines" (2004) - Revised March 2009 (to be used in conjunction with NZS 4404:2004).	The proposed stormwater management complies with both the Council's "Engineering Standards and Guidelines" (2004) - Revised March 2009, the new 2023 standards.
(c) Whether the application complies with the Far North District Council Strategic Plan - Drainage.	The proposed stormwater management complies with Far North District Council Strategic Plan - Drainage rules.
(d) The degree to which Low Impact Design principles have been used to reduce site impermeability and to retain natural permeable areas.	Low impact design in accordance with GD01 is provided for by the proposed attenuation. Grassed and landscaped areas of the site will be preserved.
(e) The adequacy of the proposed means of disposing of collected stormwater from the roof of all potential or existing buildings and from all impervious surfaces.	Both lots will have stormwater attenuation with collected stormwater being disposed to the Council stormwater system on Mission Road.
(f) The adequacy of any proposed means for screening out litter, the capture of chemical spillages, the containment of contamination from roads and paved areas, and of siltation.	Not applicable for residential development.
(g) The practicality of retaining open natural waterway systems for stormwater disposal in preference to piped	No changes are proposed to the existing Council stormwater system on Mission Road.

or canal systems and adverse effects on existing waterways.	
(h) Whether there is sufficient capacity available in the Council's outfall stormwater system to cater for increased run-off from the proposed allotments.	Stormwater attenuation is proposed to limit runoff to no more than existing/pre-development.
(i) Where an existing outfall is not capable of accepting increased run-off, the adequacy of proposals and solutions for disposing of run-off.	Stormwater attenuation is proposed to limit runoff to no more than existing/pre-development
(j) The necessity to provide on-site retention basins to contain surface run-off where the capacity of the outfall is incapable of accepting flows, and where the outfall has limited capacity, any need to restrict the rate of discharge from the subdivision to the same rate of discharge that existed on the land before the subdivision takes place.	Stormwater attenuation is proposed to limit runoff to no more than existing/pre-development
(k) Any adverse effects of the proposed subdivision on drainage to, or from, adjoining properties and mitigation measures proposed to control any adverse effects.	No adjoining properties will be adversely affected by stormwater discharges from the proposed subdivision.
(l) In accordance with sustainable management practices, the importance of disposing of stormwater by way of gravity pipelines. However, where topography dictates that this is not possible, the adequacy of proposed pumping stations put forward as a satisfactory alternative.	No stormwater pumping is proposed.
(m) The extent to which it is proposed to fill contrary to the natural fall of the country to obtain gravity outfall; the practicality of obtaining easements through adjoining owners' land to other outfall systems; and whether filling or pumping may constitute a satisfactory alternative.	NA
(n) For stormwater pipes and open waterway systems, the provision of appropriate easements in favour of either the registered user or in the case of the Council, easements in gross, to be shown on the survey plan for the subdivision, including private connections passing over other land protected by easements in favour of the user.	NA
(o) Where an easement is defined as a line, being the centre line of a pipe already laid, the effect of any alteration of its size and the need to create a new easement.	NA
(p) For any stormwater outfall pipeline through a reserve, the prior consent of the Council, and the need for an appropriate easement.	NA

(q) The need for and extent of any financial contributions to achieve the above matters.	NA
(r) The need for a local purpose reserve to be set aside and vested in the Council as a site for any public utility required to be provided.	NA

When considering a discretionary activity application, the Council will have regard to the assessment criteria set out under Chapter 11.

**Table 11: Far North District Plan – Land-Use Consent Assessment Criteria (Section 11.3)**

Criterion	Comment
a) The extent to which building site coverage and impermeable surfaces result in increased stormwater runoff and contribute to total catchment impermeability and the provisions of any catchment or drainage plan for that catchment.	Additional runoff created through the formation of this subdivision will be fully managed and attenuated back to pre-development levels.
(b) The extent to which Low Impact Design principles have been used to reduce site impermeability.	Stormwater control practices have been designed in accordance with the TP10 (GD01) publication which include design principles with low impact design such as detention tanks.
(c) Any cumulative effects on total catchment impermeability.	Run-off will be attenuated back to predevelopment levels therefore there will be negligible impact on the total catchment impermeability.
(d) The extent to which building site coverage and impermeable surfaces will alter the natural contour or drainage patterns of the site or disturb the ground and alter its ability to absorb water.	Existing flowpaths will not be affected by the development, natural drainage patterns are not altered.
(e) The physical qualities of the soil type.	The soils represent good draining properties. Basalt is the underlying rock type with Kerikeri friable clay overlaying the site, described as well to moderately well drained.
(f) Any adverse effects on the life supporting capacity of soils.	None.
(g) The availability of land for the disposal of effluent and stormwater on the site without adverse effects on the water quantity and water quality of water bodies (including groundwater and aquifers) or on adjacent sites.	There is sufficient space on each lot for on-site wastewater disposal.
(h) The extent to which paved, impermeable surfaces are necessary for the proposed activity.	Proposed impermeable surfaces are in keeping with surrounding land use and necessary for the proposed activity.
(i) The extent to which landscaping may reduce adverse effects of run-off.	Lots are likely to be planted up when converted to residential, which will assist with ground soakage.
(j) Any recognised standards promulgated by industry groups.	NA
(k) The means and effectiveness of mitigating stormwater run-off to that expected by the permitted activity threshold.	For Lot 1 stormwater will be attenuated back to the permitted activity threshold, and for Lot 2 pre-development levels.
(l) The extent to which the proposal has considered and provided for climate change.	Climate change has been factored into the stormwater water management calculations.
(m) The extent to which stormwater detention ponds and other engineering solutions are used to mitigate any adverse effects.	NA

## 7 Water Supply

### 7.1 Potable water supply

There is an existing council water main on Mission Road. According to FNDC Maps, an existing water meter located at the existing entrance to 17 Mission Road services the current property. It is recommended that an application is made to council to install one additional water meter in the road reserve so that each lot has its own separate water meter. A separate water line will need to be run from the new meter onto the proposed Lot 2 location to service the proposed future dwelling.



Figure 9: Current water supply network arrangement (Source: FNDC Water Services GIS service).

### 7.2 Fire Fighting

New Zealand Standard PAS 4509:2008 is the accepted code of practise regarding firefighting water supply requirements. To comply with the standard there shall be a hydrant within 135 m of the building that can provide at least 12.5 L/s and a second hydrant available at 270 m which can also supply 12.5 L/s. There is one hydrant located outside of lot 2 and a second 155 m to the west. Based upon review of the Available Fireflow Assessment (Opus, July 2014) there are no known issues with hydrant flow in this street.



## 8 Onsite Effluent Disposal

### 8.1 Regulatory Framework

#### Regional Plan for Northland

The discharge of sewage effluent on to land is controlled by the permitted activity rules C.6.1.3 of the Regional Plan for Northland. Exclusion areas and setback distances are provided in Table 9 of the Regional Plan for Northland provided in Table 12 below.

**Table 12: Exclusion areas and setback distances for onsite domestic wastewater systems** (Source: Table 9 of the Regional Plan for Northland)

Feature	Primary treated domestic type wastewater	Secondary and tertiary treated domestic type wastewater	Greywater
<b>Exclusion areas</b>			
Floodplain	5% annual exceedance probability	5% annual exceedance probability	5% annual exceedance probability
<b>Horizontal setback distances</b>			
Identified <b>stormwater</b> flow path (including a formed road with kerb and channel, and water-table drain) that is down-slope of the disposal area	5 metres	5 metres	5 metres
River, lake, stream, pond, <b>dam</b> or <b>natural wetland</b>	20 metres	15 metres	15 metres
Coastal marine area	20 metres	15 metres	15 metres
Existing water supply <b>bore</b>	20 metres	20 metres	20 metres
<b>Property</b> boundary	1.5 metres	1.5 metres	1.5 metres
<b>Vertical setback distances</b>			
Winter groundwater table	1.2 metres	0.6 metres	0.6 metres

#### FNDC District Plan

The District Plan contains an additional rule relating to wastewater discharges to land:

- District Plan Rule 12.7.6.1.4 specifies that effluent fields shall be located no closer than 30 m from any river, lake, wetland or the Coastal Marine Area.

## 8.2 Existing Wastewater System

The existing house at 17 Mission Road / proposed Lot 1 has a septic tank north of the dwelling. The original dwelling was built in the 1930's and there is no building information available from that time, however plans submitted for a proposed extension to the building in 1978 show the position of the existing septic tank. No details are provided of the soakage system, however wastewater systems built in that era comprised a deep pit filled with a truck load of drainage aggregate. The location of the soakage pit is most likely in close proximity to the septic tank, meaning it should be well contained within the proposed lot boundaries. If it is required to demonstrate the location of the soakage pit, excavation would be required.

If the aforementioned system fails, a new wastewater treatment and disposal system may be required. The following assesses the ability of the site to provide wastewater disposal on each lot that complies with current regulations.

## 8.3 Wastewater Assessment

### Design Occupancy Rating

For the purpose of this assessment we have allowed for a three-bedroom dwelling with a five person occupancy.

### Source of Water Supply

Water supply is reticulated community supply.

### Design Flows

For the purpose of this assessment we have assumed households with standard water reduction fixtures in accordance with table H2 of AS/NZS1547:2012. On this basis, the design household wastewater flow is  $5 \times 165$  litres / day = 925 litres per day.

### Effluent Field Design Area

The soil type onsite is volcanic loam, described as Soil Category 3 (loams – moderately well drained) in accordance with AS/NZS 1547. This soil type can be expected to sustain a land loading rate of 4mm / day. On this basis, the new wastewater system discharging 1,080 litres / day would require  $925 / 4 = 206 \text{ m}^2$  of disposal area.

### Possible Effluent Field Locations

To ensure a suitable setback from boundaries and buildings, siting restrictions listed in Section 9.4 of this report will need to be adhered to. In addition, effluent disposal systems will need to be cited to avoid surface runoff and natural seepage from higher ground or protected by using interception drains. Ground slopes percentage where effluent fields are likely to be placed is < 1%, as Lot 2 is near level.

## **Dripper Irrigation**

The sites are suitable for surface or sub-surface irrigation system. The design of the dripper field should be specified as part of the building consent documentation.

## **Reserve Area**

Regional Plan rules require a reserve area of 30% of the design area for secondary treatment. However, FNDC requests a reserve area of 100% is available at the time of the subdivision. Indicative location for a 206 m<sup>2</sup> design effluent field plus 100 % reserve are indicated on Haigh Workman drawing 24 066 / 3.

## **8.4 Design for Treatment System**

### **Treatment Plan Design Sizing**

The secondary treatment plant will be decided by the new owner at the building consent stage when the position and scale of the proposed future dwelling are known. Treatment plants must meet the requirements of AS / NZS 1546.3:2001.

The system is to meet the quality output of AS / NZS 1546.3:2003, producing effluent of less than:

- 20 g/m<sup>3</sup> – 5-day biochemical oxygen demand (BOD<sub>5</sub>), and
- 30 g/m<sup>3</sup> – total suspended solids (TSS).

### **Siting Requirements**

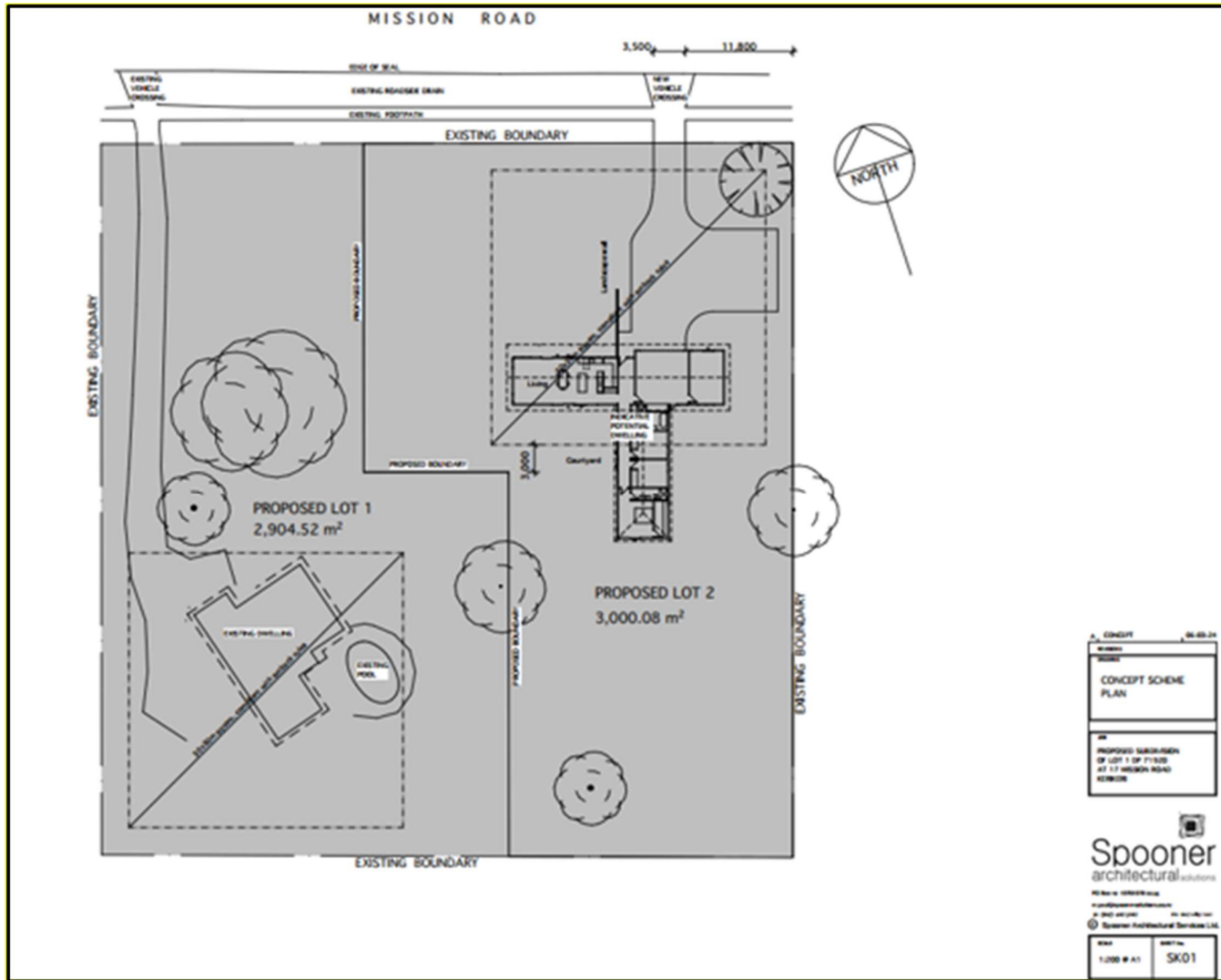
Restrictions on siting secondary treatment plants are:

- Invert level at inlet not less than 0.5m below floor level,
- Greater than 3m from any dwelling,
- Greater than 1.5m from any boundary, and
- Easily accessible for routine maintenance.

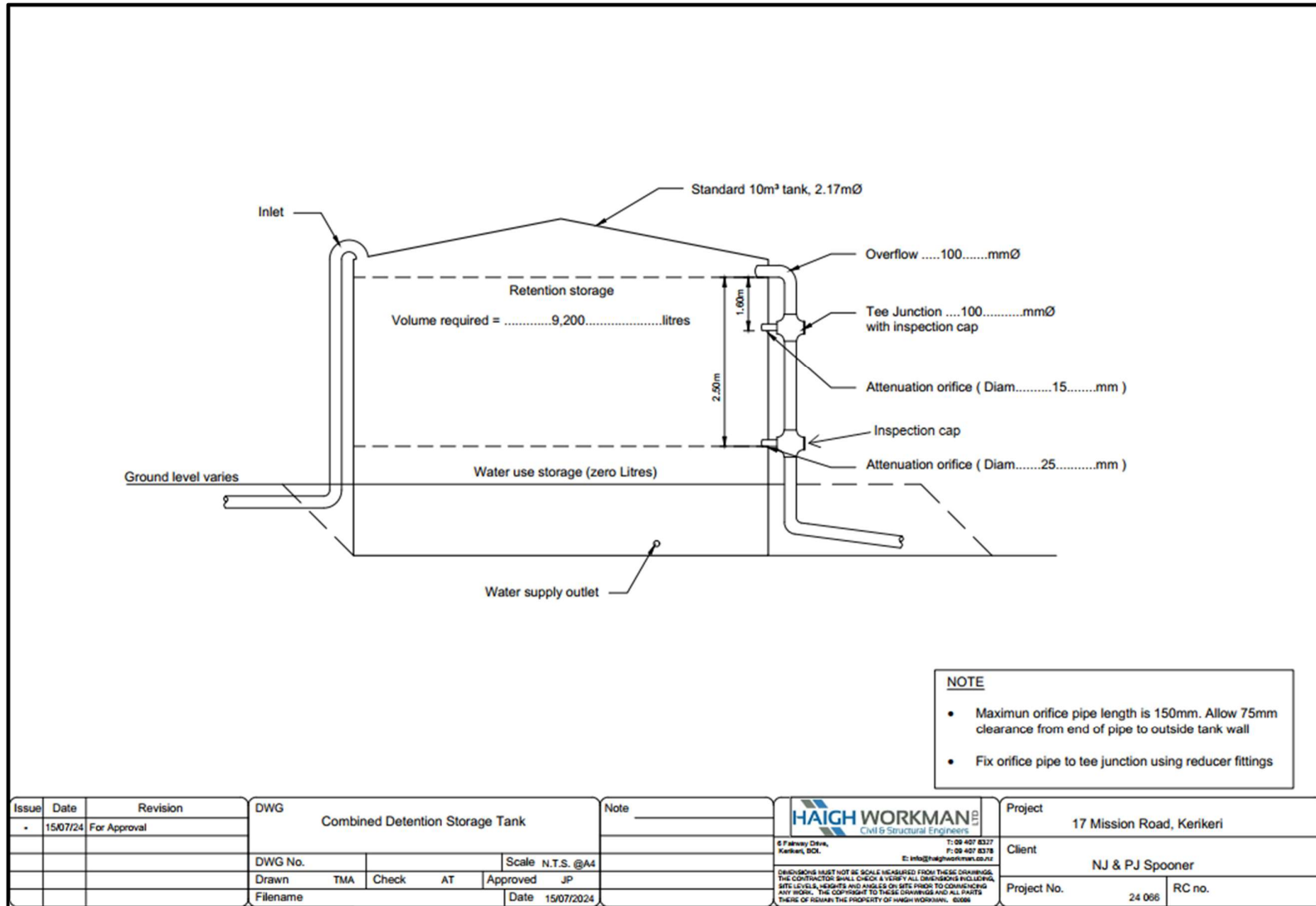
**End of Report – Appendices to follow.**

## Appendix A – Drawings

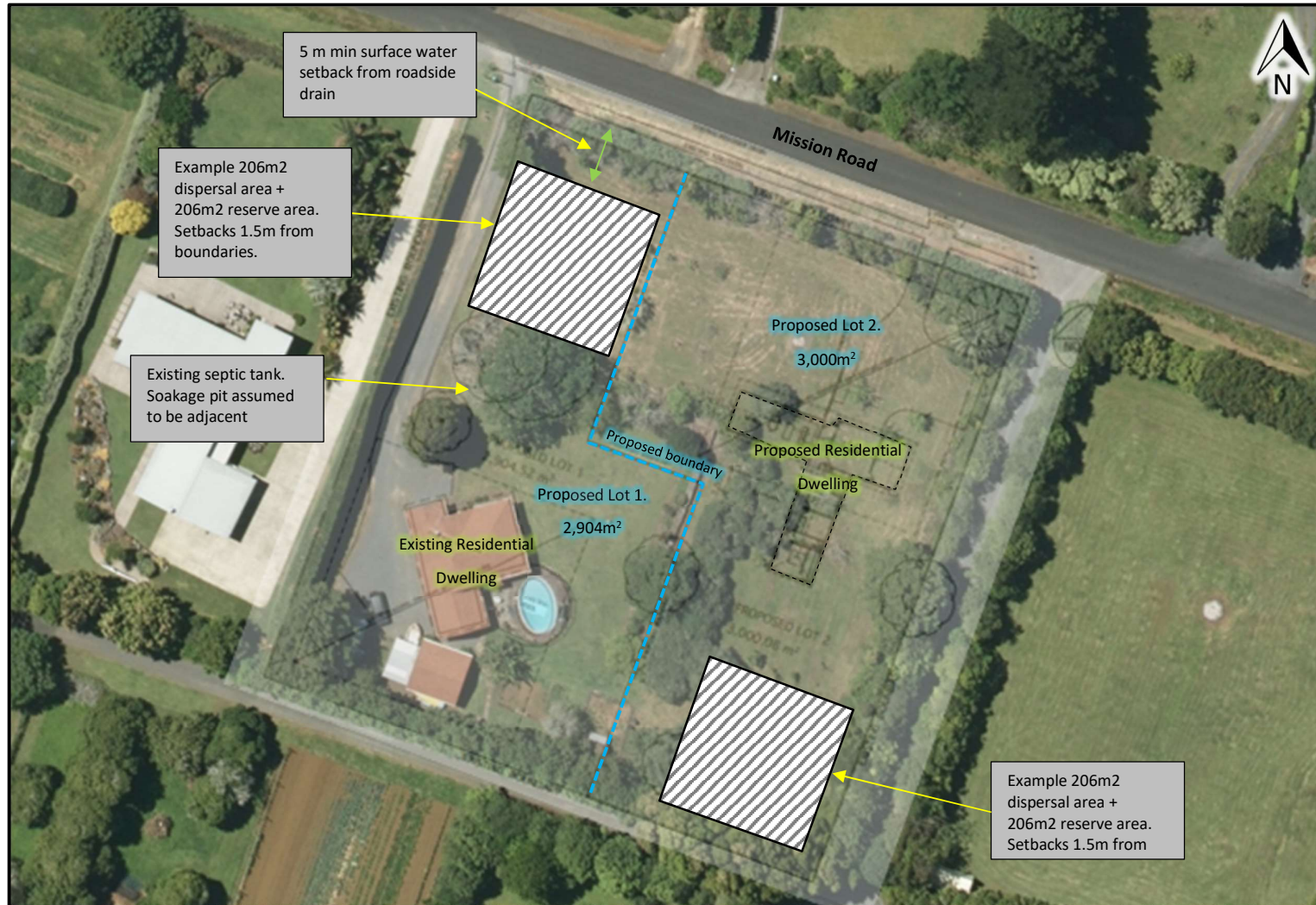
Drawing No.	Title
24 066 / 1	Proposed Subdivision Concept Plan ( <i>Spooner Architects Limited</i> )
24 066 / 2	Detention Tank (10,000L) Details
24 066 / 3	Effluent and Reserve Field Area (indicative)



24 066 / 1 – Proposed Subdivision Concept Plan (Spooner Architects Limited)



24 066 / 2 – Detention Tank (10,000L) Details



24 066 / 3 – Effluent and Reserve Area (Indicative)

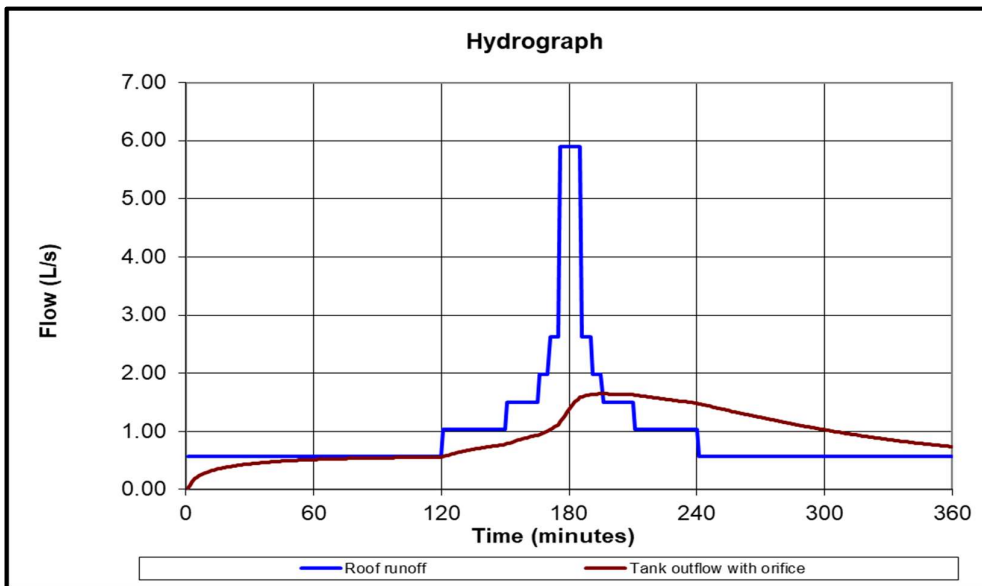
## Appendix B – Stormwater Neutrality



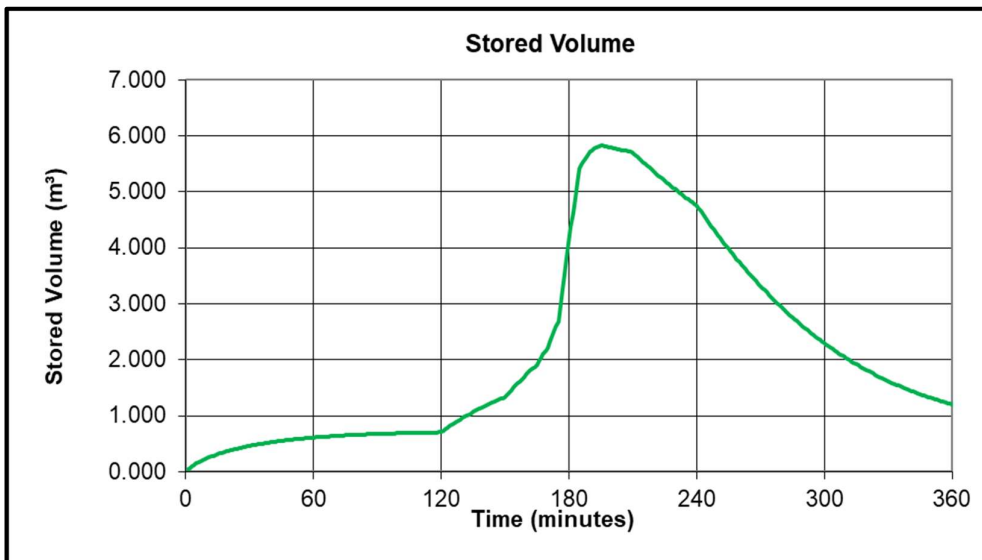
**2yr. Year Design Storm Attenuation**

Roof area: 335m<sup>2</sup>  
 Area of tank: 3.68m<sup>2</sup> (Dia. 2.17m)  
 Diameter of lower orifice: 25mm  
 Maximum attenuation required: 4.3L/s  
 Maximum attenuation provided: 4.1L/s  
 Maximum Storage Height: 1.585m  
 Maximum Storage Volume: 5.831m<sup>3</sup>  
 Stored depth after 7 hours: 8mm

**Tank Outflow**



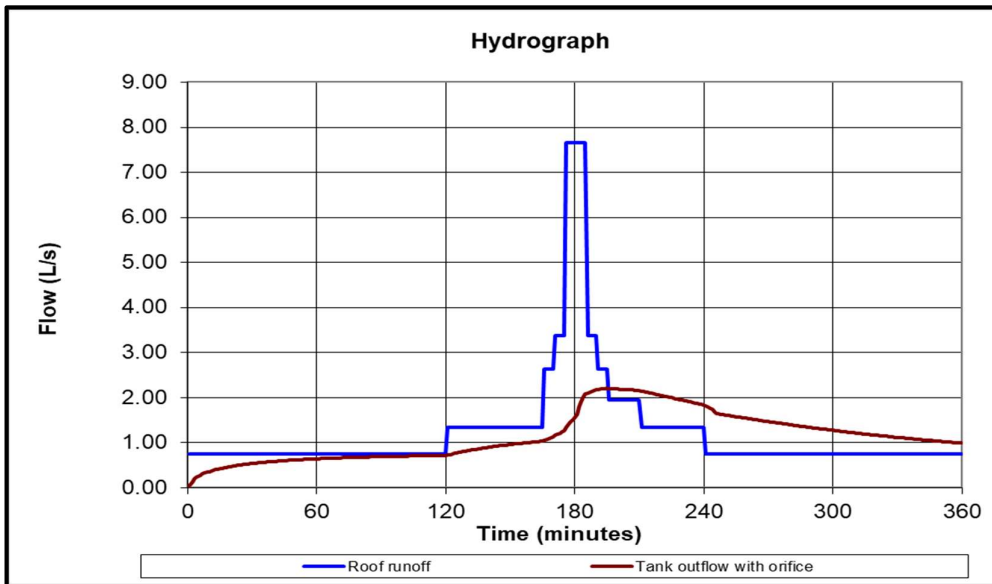
**Stored Volume**



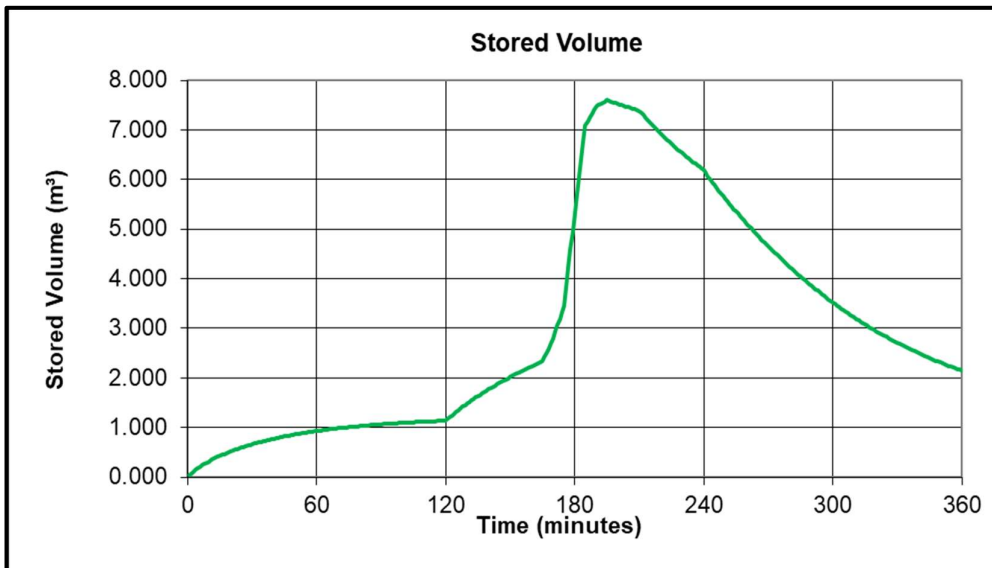
**5yr. Year Design Storm Attenuation**

Roof area: 335m<sup>2</sup>  
 Area of tank: 3.68m<sup>2</sup> (Dia. 2.17m)  
 Diameter of lower orifice: 25mm  
 Diameter of upper orifice: 15mm  
 Higher orifice elevation: 1.585m  
 Maximum attenuation required: 5.4L/s  
 Maximum attenuation provided: 5.5L/s  
 Maximum Storage Height: 2.066m  
 Maximum Storage Volume: 7.603m<sup>3</sup>  
 Stored depth after 7 hours: 24mm

**Tank Outflow**



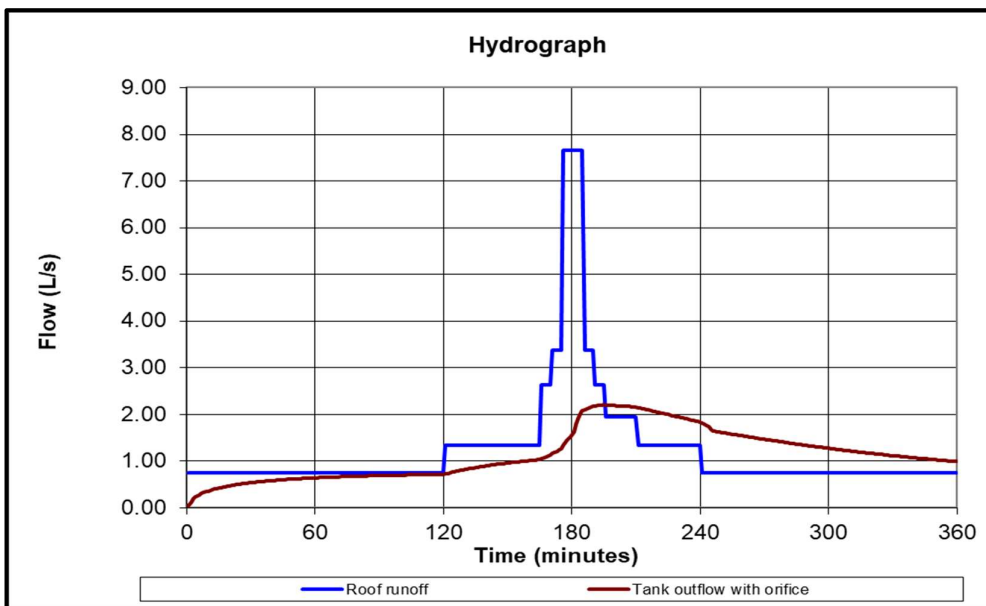
**Stored Volume**



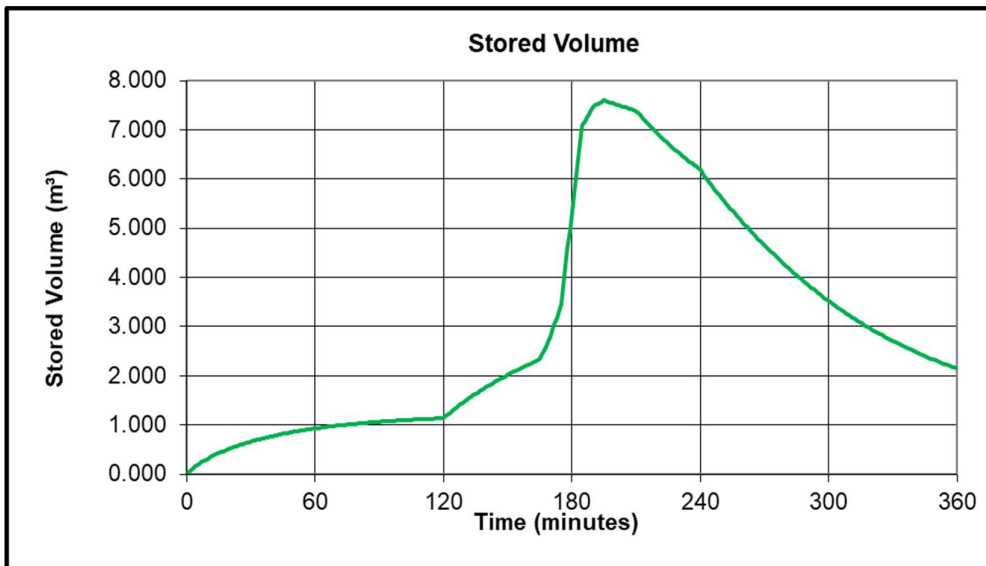
**10yr. Year Design Storm Attenuation**

Roof area:	335m <sup>2</sup>	
Area of tank:	3.68m <sup>2</sup>	(Dia. 2.17m)
Diameter of lower orifice:	25mm	
Diameter of upper orifice:	15mm	
Higher orifice elevation:	1.585m	
Maximum attenuation required:	6.4L/s	
Maximum attenuation provided:	6.3L/s	
Maximum Storage Height:	2.501m	
Maximum Storage Volume:	9.203m <sup>3</sup>	
Stored depth after 7 hours:	72mm	






**Tank Outflow**




**Stored Volume**



## Appendix C – Borehole Log

PO Box 89, 8245 6 Fairway Drive Kerikeri, 8230 New Zealand		Phone 09 407 8327 Fax 09 407 8378 <a href="http://www.haighworkman.co.nz">www.haighworkman.co.nz</a> <a href="mailto:info@haighworkman.co.nz">info@haighworkman.co.nz</a>							
<b>Borehole Log - BH01</b> <span style="float: right;">Hole Location: Proposed Lot 2</span> <span style="float: right;">JOB No. 24 066</span>									
CLIENT: NJ & PJ Spooner Trust    SITE: 17 Mission Road, Kerikeri Date Started: 19/04/2024    DRILLING METHOD: Hand Auger    LOGGED BY: AT Date Completed: 19/04/2024    HOLE DIAMETER (mm) 50mm    CHECKED BY: JP									
<b>Soil Description</b> <small>Based on NZGS Logging Guidelines 2005</small>	Depth (m)	Geology	Geop Hic L og	Water Level	Penetration	Vane Shear and Remoulded Vane Shear Strengths (kPa)	Scaia Penetrometer (blows/100mm)		
TOPSOIL - SILT, brown, dry, contains trace rootlets.	0.0	T.S. Kerikeri Volcanic Group		Ground water not encountered	0.0	0	0		
Clayey SILT - brown, dry, stiff, no plasticity.	0.5						0	0	0
Silty CLAY - reddish brown, moist, firm, low plasticity.	1.0						0	0	0
End of hole at 1.2m (Target Depth)	1.5								
	2.0								
	2.5								
	3.0								
	3.5								
	4.0								
	4.5								
<b>LEGEND</b> 									
<a href="https://haighworkman2020-my.sharepoint.com/personal/aaron_haighworkman_co_nz/Documents/Documents/Haigh%20Workman/Projects/24%20066%20-%2017%20Mission%20Road,%20Kerikeri%20(PSIDSI%20&amp;%20SMP)/Engineering%20Assessment/BH%20log">https://haighworkman2020-my.sharepoint.com/personal/aaron_haighworkman_co_nz/Documents/Documents/Haigh Workman/Projects/24 066 - 17 Mission Road, Kerikeri (PSIDSI &amp; SMP)/Engineering Assessment/BH log</a>									

## Appendix D – Detention Tank Details



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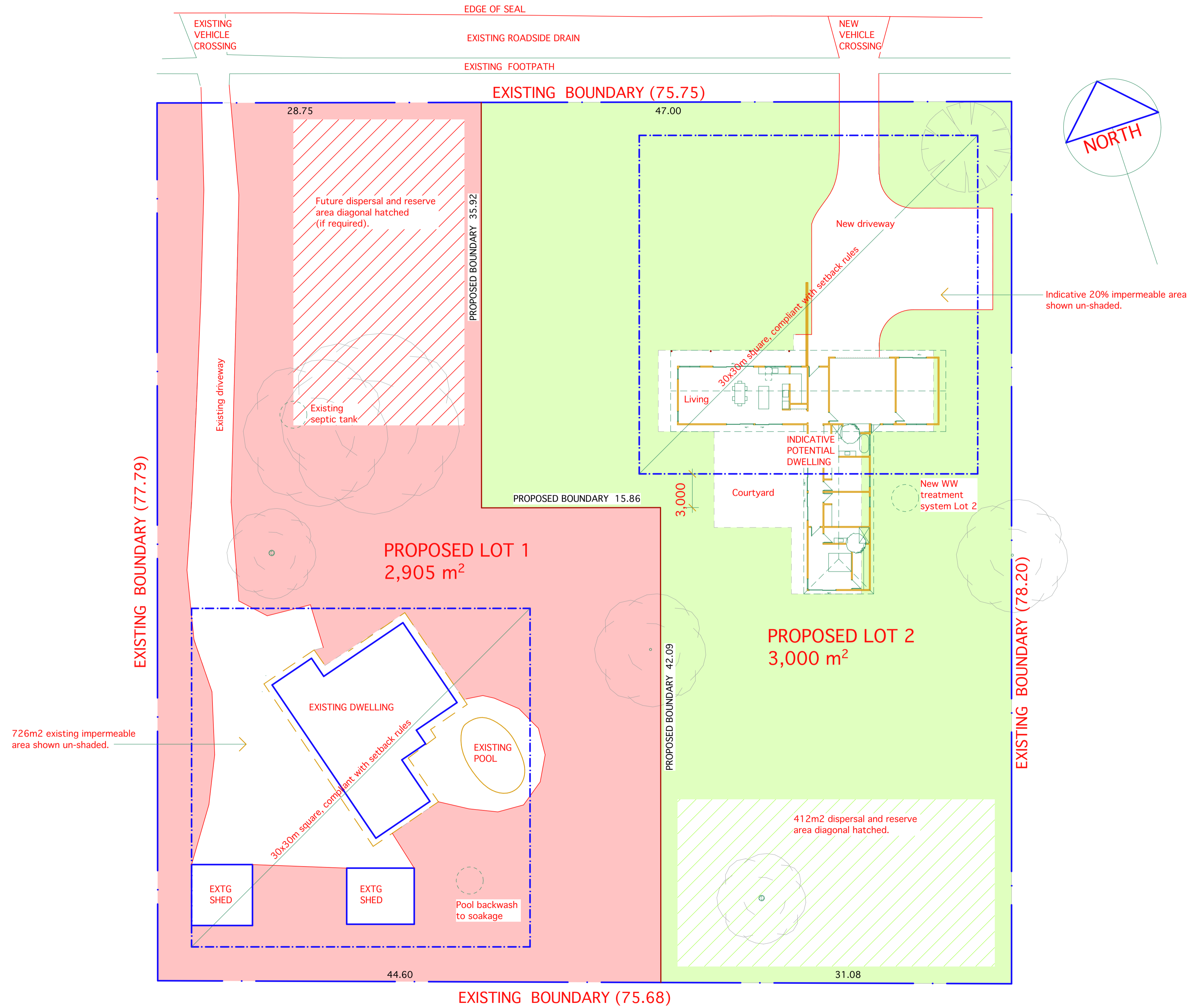
Code	Description	Capacity(L)	Diameter(mm)	Height(mm)	Weight(kg)	Manhole Dia(mm)	Outlets(mm)
EN1010000	ENDURO Water Tank 10,000 Ltr - North Island	10000	2165	2900	175	450	1x50mm





MISSION ROAD

3,500 11,800



A RC APPLICATION 02-09-24

REVISIONS
DRAWING
<b>SUBDIVISION SCHEME PLAN</b>

JOB
PROPOSED SUBDIVISION OF LOT 1 DP 71920 AT 17 MISSION ROAD KERIKERI

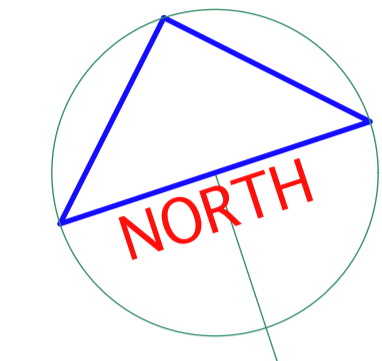
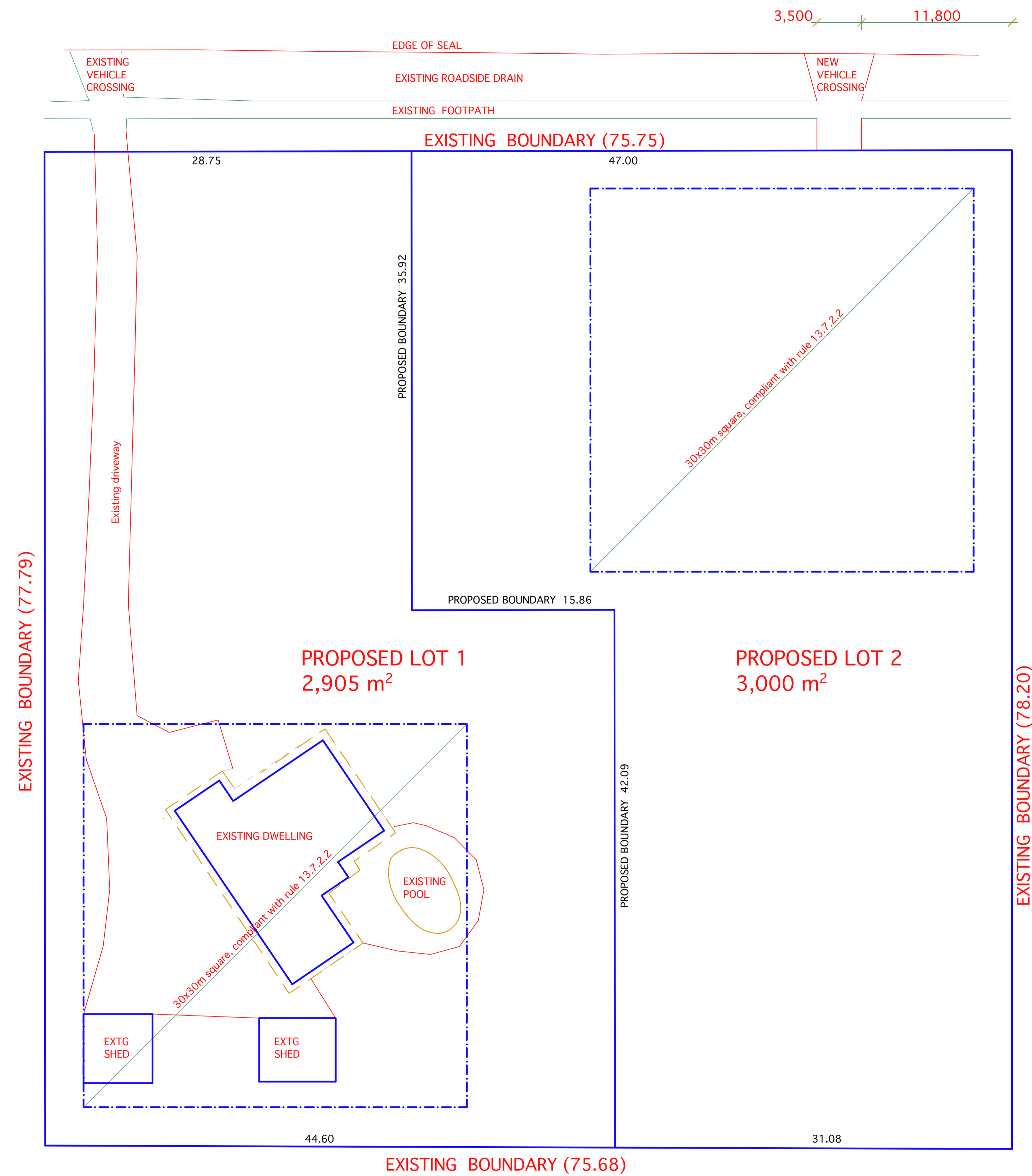
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SCALE	SHEET No.
1:200 @ A1	SP01



MISSION ROAD



A	RC APPLICATION	02-09-24
REVISIONS		
DRAWING		
PROPOSED ALLOTMENT AREA PLAN		
JOB		
PROPOSED SUBDIVISION OF LOT 1 DP 71920 AT 17 MISSION ROAD KERIKERI		

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SCALE	SHEET No.
1:200 @ A1	SP02

## Preliminary and Detailed Site Investigation for Proposed Subdivision at:

### 17 Mission Road, Kerikeri

NJ & PJ Spooner Trust  
*Haigh Workman reference 24 066*  
*Rev A*

**22 May 2024**



## Document History and Status

Revision N <sup>o</sup>	Date	Description	Issued By
A	22 May 2024	Preliminary and Detailed Site Investigation (PSI / DSI)	Aaron Thorburn

### Prepared by



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CMEngNZ, CPEng

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## Executive Summary

Haigh Workman Limited completed a desktop assessment and field investigation for the preparation of a Preliminary and Detailed Site Investigation for the proposed subdivision and future residential development at 17 Mission Road, Kerikeri.

It is proposed that the site be subdivided into two separate lots (Lot 1 and Lot 2) for future rural residential use. The dwelling and associated features on proposed Lot 1 are to remain as is (future redevelopment is not proposed at the writing of this report) and Lot 2 be developed in the future with a residential dwelling and associated structures with associated earthworks.

The assessment of available information and observations from our site walkover indicate that the following Hazardous Activities and Industries List activities have, or potentially have, occurred at the site:

- Persistent pesticide bulk storage or use including sports turfs, market gardens, orchards, glasshouses or spray sheds (Cat. A.10),
- Potential contamination from Asbestos / Asbestos Containing Materials in historical construction materials (Cat. E.1), and
- Lead-based paint on historical structures (Cat. I).

Ten shallow soil samples were collected and analysed as two composite samples and four samples analysed as individual samples, including one duplicate soil sample for Quality Assurance / Quality Control purposes.

Laboratory analytical results reported:

- All Metals concentrations were at or below applicable Human Health criteria (one sample for Metals [Arsenic] was at the applicable Human Health criteria value),
- Metals concentrations were above Background Soil Concentrations in all soil samples analysed, and
- Organochlorine Pesticides concentrations were above laboratory Method Detection Limits in two soil samples analysed.

A further five shallow soil samples were collected following the initial investigation and analysed for Metals. This further sampling event was undertaken to delineate the extent of the elevated Metals (Arsenic) result to determine if a possible nearby source area exceeding applicable Human Health criteria was / was not present.

Laboratory analytical results reported:

- All Metals concentrations were below applicable Human Health criteria, and
- Metals concentrations were above Background Soil Concentrations in all soil samples analysed.

Based on these findings:

- A Site Management Plan has been prepared for the site,
- Soil / fill material with concentrations above Background Levels is not considered as 'Cleanfill' for disposal purposes:
  - If soil / fill material exceeding Background Level criteria must be removed from site it is to be disposed of at a facility licensed to accept such materials,
  - Soil / fill material exceeding Background Level criteria could be retained and re-used on-site as a sustainable option and to reduce disposal costs if suitable,

- Any visual / olfactory evidence of contamination discovered during site works must be segregated and analysed by a Suitably Qualified and Experienced Practitioner prior to disposal.

It is considered that the proposed subdivision and future development are covered under the National Environmental Standard for Contaminants in Soils regulations. The National Environmental Standard for Contaminants in Soils describes a 'piece of land' as the piece of land that has had, or currently has, or most likely has had, activities listed on the Hazardous Activities and Industries List and soil disturbance is proposed.

The proposed subdivision is a Controlled Activity (9) under the National Environmental Standard for Contaminants in Soils as this Preliminary Site Investigation / Detailed Site Investigation states the soil contamination is less than the applicable standard in regulation 7.

The 'piece of land' for this investigation is the existing property which is 5,905m<sup>2</sup>, this allows for 295.2m<sup>3</sup> soil disturbance and 59m<sup>3</sup> soil removal (per year) as a Permitted Activity under the National Environmental Standard for Contaminants in Soils. The above volumes will be split between the created lots on a proportional basis once subdivision is completed.

Our findings, conclusions and recommendations are detailed in the following report and appendices.

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## Appendices

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Appendix B – Photographic Documentation

Appendix C – Historical Aerial Photography

Appendix D – Certificates of Title

Appendix E – Contamination Enquiry Request

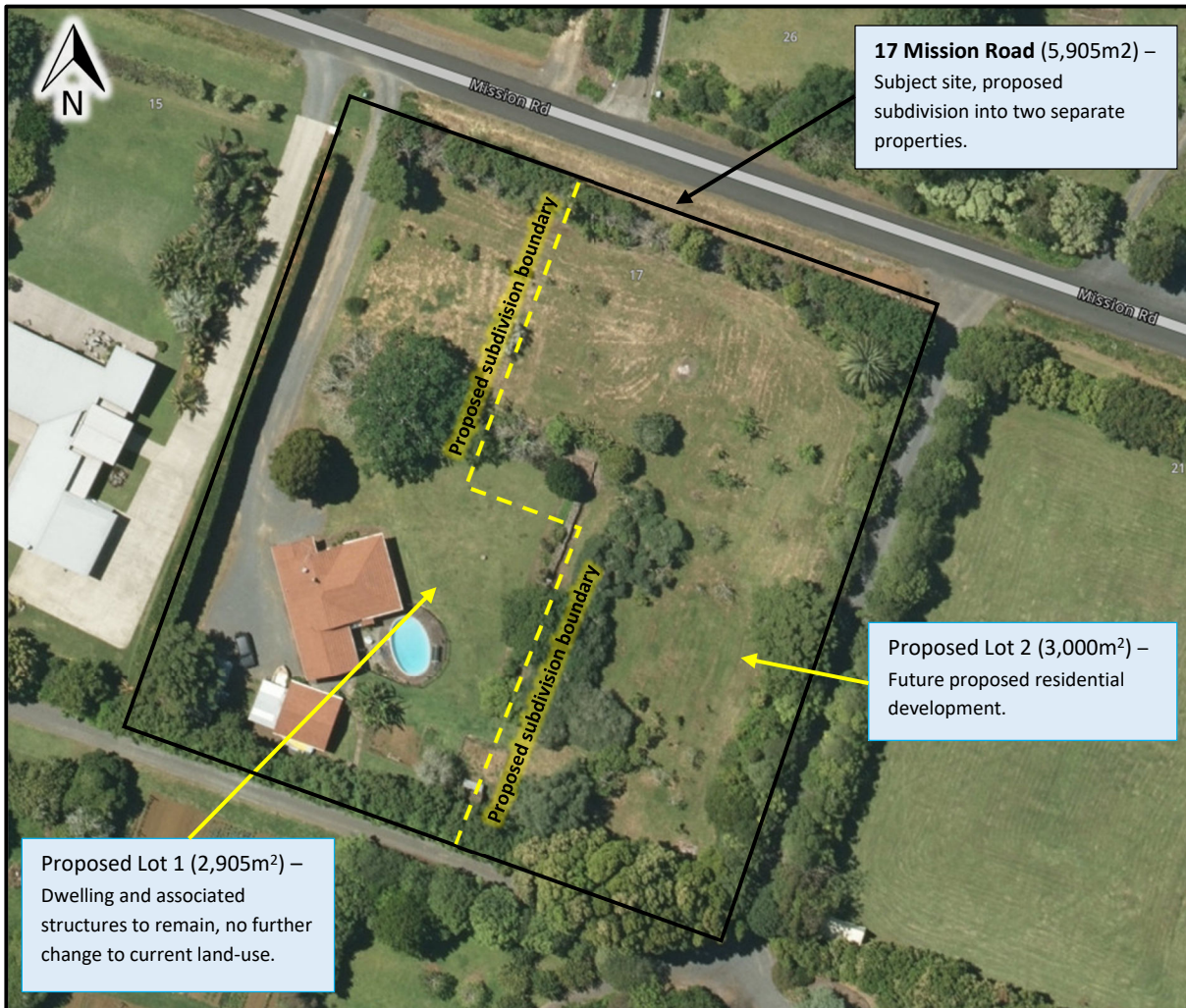
Appendix F – Property Files (available on request)

Appendix G – Soil Sample Descriptions

Appendix H – Laboratory Analytical Results and Chain of Custody Documentation

# 1 Introduction

Haigh Workman Limited (Haigh Workman) were engaged by the NJ & PJ Spooner Trust (the client) to undertake a Preliminary and Detailed Site Investigation (PSI / DSI) in association with the proposed subdivision and future residential development at 17 Mission Road, Kerikeri, the 'piece of land' hereafter referred to as the 'site' is shown in Figure 1 below and provided in **Appendix A**.



**Figure 1: Site Location** (Source: Far North District Council GeoMaps)

## 1.1 Legislative Requirements

An assessment has been conducted under the Hazardous Activities and Industries List (HAIL)<sup>1</sup> and the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations (NES-CS)<sup>2</sup>.

<sup>1</sup> Ministry for Environment, *Hazardous Activities and Industries List (HAIL)*, March 2023.

<sup>2</sup> Resource Management (National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations, 2011



Assessment of the land-uses and exposure scenarios has been carried out in accordance with Ministry for Environment (MfE) Contaminated Land Management Guidelines<sup>3</sup> (CLMG), *Methodology for Deriving Contaminants for the Protection of Human Health*<sup>4</sup> (*Methodology*) and the NES-CS.

The Far North District Council (FNDC) Operative District Plan identifies the site zoning as: **Rural Living**.

The proposed development comes under the adopted exposure scenario in the *Methodology* as: **Rural Residential**.

## 1.2 Purpose and Scope

The purpose of the PSI / DSI investigation, under the NES-CS, is required:

1. To establish whether or not the site is HAIL or has been HAIL (it is more likely than not that an activity or industry described in the HAIL is being or has been undertaken on it) (Regulation 5(7) or 6(3)), and
2. If the site is HAIL and the activity is a change of use or subdivision, to show the activity is permitted by demonstrating that it is highly unlikely that there will be a risk to human health in the particular circumstances of the site and proposed use or subdivision (Regulation 8(4)).

The investigation comprises a combined PSI / DSI, which includes the following:

- Site walkover,
- Review of available environmental investigation reports previously prepared for the site (or parts of the site),
- Review of environmental setting including topography, geology and hydrogeology,
- Review of historical aerial photographs, historical titles, Northland Regional Council (NRC) Contamination Enquiry and FNDC Property Files,
- Collection and laboratory analysis of soil samples for identified Contaminants of Concern (CoC),
- Interpretation of laboratory analytical results, and
- PSI / DSI reporting (this report).

This report comprises a PSI / DSI prepared by Haigh Workman in general accordance with MfE guidelines for contaminated site investigations, NES-CS and FNDC requirements. This investigation and reporting have been prepared, reviewed and authorised by Suitably Qualified and Experienced Practitioners (SQEP), in general accordance with MfE CLMG No. 1 Reporting on Contaminated Sites in New Zealand.

## 1.3 Limitations

This report has been prepared by Haigh Workman for the sole benefit of the NJ & PJ Spooner Trust (the client), with respect to the brief outlined to us. This report is to be used by the client and their consultants and may be relied upon when considering geo-environmental advice. Furthermore, we confirm that FNDC can rely on this report for the purposes of determining compliance with the NES-CS guidelines with respect to the development identified in this investigation and may be utilised in the preparation of resource consent applications with local authorities. The information and opinions contained within this report shall not be used in other context for any other purpose without prior review and agreement by Haigh Workman.

---

<sup>3</sup> Ministry for Environment, *Contaminated Land Management Guidelines Nos. 1 to 5, 2011 (Guidelines Nos. 1 & 5, Revised 2021)*,

<sup>4</sup> Ministry for Environment, *Methodology for Deriving Contaminants for Protection of Human Health, 2011*

The comments and opinions presented in this report are based on the findings of a desktop study, and subsurface conditions encountered. Responsibility cannot be accepted for any conditions not revealed by this investigation. Should conditions encountered differ to those outlined in this report we should be notified. Allowance for a review of the design should be made should ground conditions vary from these assumed.

## 2 Site Description

The site is located at 17 Mission Road, Kerikeri. The legal descriptions for the site are provided below in Table 1. The site is shown in Figure 1 above and provided in **Appendix A**.

*Table 1: Site Details*

<b>Street Address</b>	17 Mission Road, Kerikeri
<b>Legal Description</b>	Lot 1 DP 71920
<b>Certificate of Title(s)</b>	NA28b / 565 (issued 21 June 1974), and NA42A / 103 (issued 14 October 1977)
<b>FNDC Zoning</b>	Rural Living
<b>Grid Reference NZ Map Grid</b>	N 6664850.72 E 2598696.21
<b>Approx. Site Area (m<sup>2</sup>)</b>	5,905 m <sup>2</sup>
<b><i>Piece of land under investigation (m<sup>2</sup>)</i></b>	5,905 m <sup>2</sup>

Built development on the site currently comprises existing dwelling and associated structures (what appears to be a sleep-out, garden sheds and garaging) and an inbuilt swimming pool, the site is accessed by a gravelled driveway on the sites western boundary, the balance of the site is grass, domestic gardens, fruit trees, other trees and shelterbelt trees along the southern, eastern and western boundaries. There is a recently stockpiled area of garden waste inside the proposed Lot 1 area that will be removed from site.

### 2.1 Proposed Development

Based on the information provided to Haigh Workman and Concept Plan prepared by Spooner Architectural Limited (dated 6 March 2024), it is understood that the proposed development will comprise the subdivision of the existing property into two separate lots (Lot 1 and Lot 2) of similar size with soil disturbance proposed for Lot 2 as part of the works to create access and to install the necessary services for the proposed development of a residential dwelling. No further development is planned for the proposed Lot 1 site. The Concept Plan is shown in Figure 2 below and is provided in **Appendix A**.

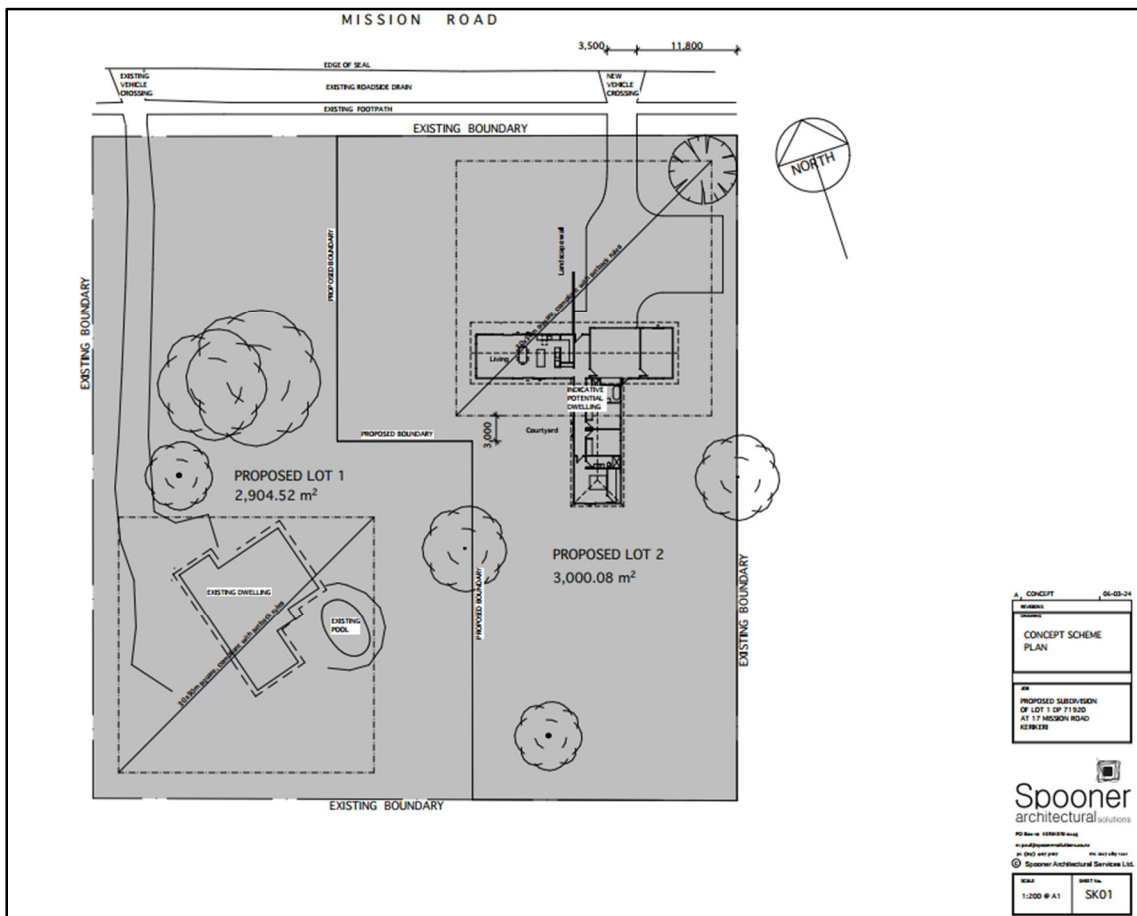


Figure 2: Subdivision Concept Plan (Source: Spooner Architectural Limited, dated 6 March 2024)

### 3 Environmental Setting

#### 3.1 Site Layout and Surrounds

Site walkovers were undertaken on 2 April, 19 April and 14 May 2024. Photographs from the 2 April, 19 April and 14 May 2024 site walkovers are provided in **Appendix B**.

The following was observed on the site:

- The site is located in a residential setting within the Kerikeri Township,
- Site access is from the north via Mission Road,
- Built development comprises a dwelling, three sheds, swimming pool and a chicken house in the southwest corner of the site. A small rock wall is located in the middle of the site running north to south,
- The existing dwelling and one of the two sheds are constructed of fibreboard cladding and concrete tile roofing, the remaining two sheds are steel, all structures are in good condition, no change to the existing built development configuration is proposed,
- The site surface is predominantly grass, with a gravel driveway running north to south along the site’s western boundary. The western, southern and eastern boundaries of the site are lined with mature tall and medium sized trees and hedging,
- The ground surface is generally flat with a gentle slope towards the northeast,

- The site was clean and tidy and site conditions were fine during the site walkover, no areas of surface water pooling was observed.

### 3.2 Geology and Hydrogeology

According to the GNS Science New Zealand Geology Web Map, 1:250,000 Scale, the site is underlain by basalt lavas of the Kerikeri Volcanic Group. Approximately 450m to the east, south and southwest are pockets of Waipapa Group sandstone and siltstone.

A geologic map of the site and surrounding area is provided in Figure 3 below.

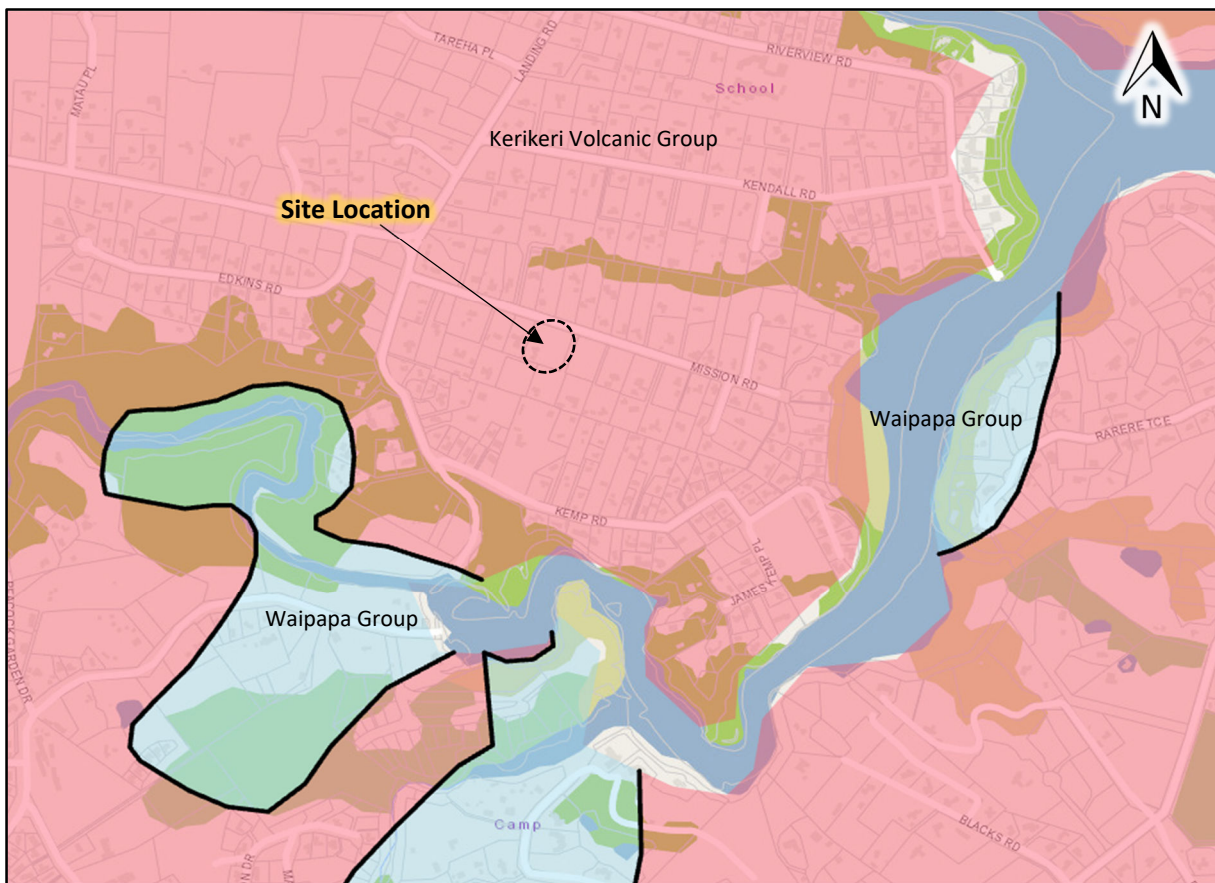


Figure 3: Geological Map (Source: GNS Sciences Geology Website)

The nearest surface water to the site is an unnamed watercourse located approximately 120m to the north of the site. The unnamed watercourse flows to the east to the Waipapakoura River that flows into the Kerikeri Inlet and beyond to the Bay of Islands.

The site surface and surrounding area are generally flat with a gentle slope towards the northeast. Surface water runoff from the site is anticipated to dissipate naturally through the vegetated area.

Relevant information relating to nearby hydrological sources and potential flood risks are provided in Table 2 below.

Table 1 - Hydrology and Flooding (Source: NRC GIS WebMaps)

	Presence / Location	Comments
Watercourses & Water Features within 200 m (Coast, rivers, lakes)	An unnamed watercourse is located to the north of the site. At its closest point it is approximately 120m from the site.	The unnamed watercourse flows east for approximately 600m before flowing into the Waipekakoura River that flows into the Kerikeri Inlet and beyond to the Bay of Islands.
Flood Risk	The site is shown on the NRC natural hazards map as land that is not subjected to flooding.	The site is outside of mapped flood hazards.
Private wells within 200 m	None recorded.	Not applicable.
Source Protection Zones within 200 m	The site is shown to be within the NRC Main Northland Aquifers (Kerikeri) overlay.	Site contamination (if any) is considered to be localised to immediately beneath the soil surface and unlikely to infiltrate the underlying aquifer.

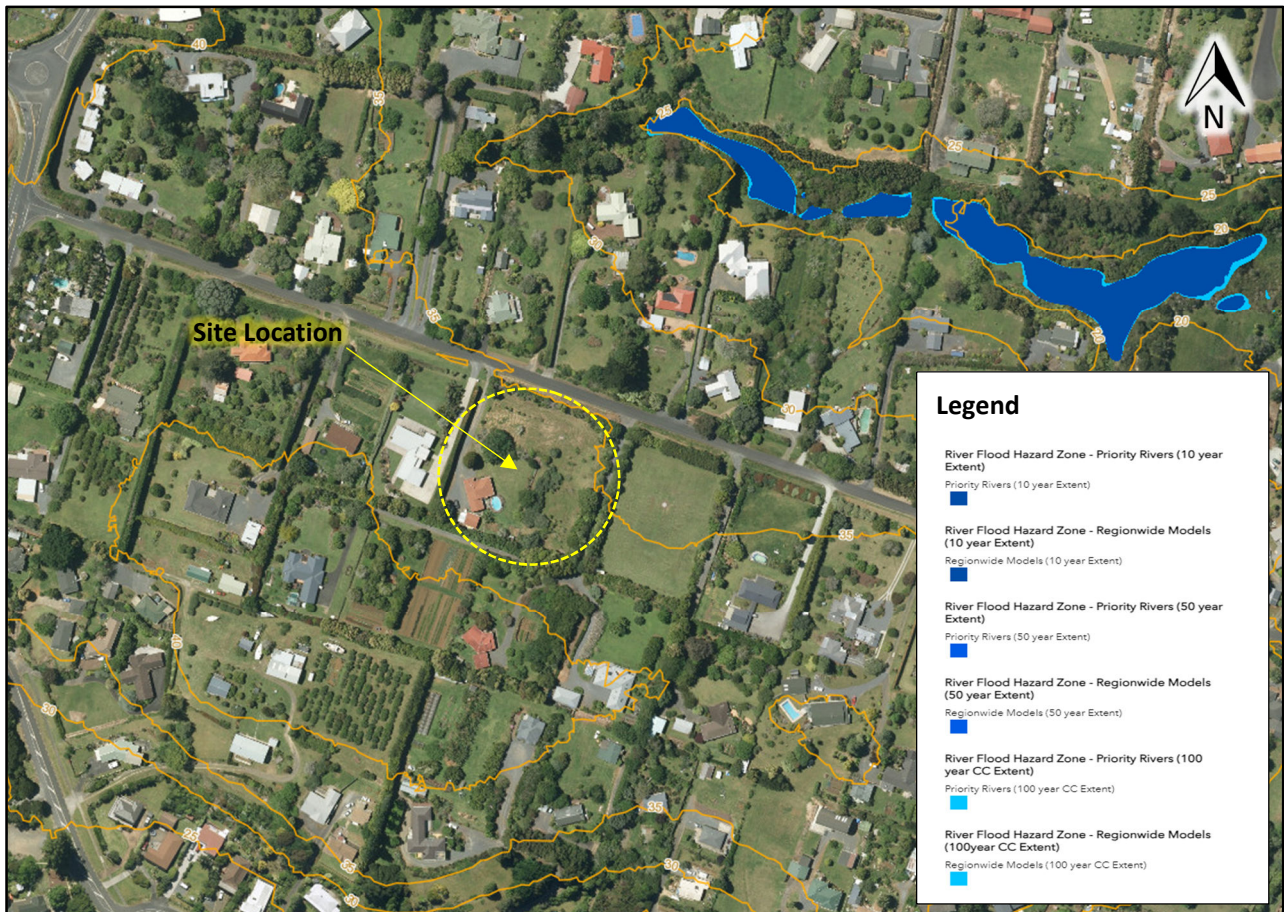


Figure 4: Flood Modelled Areas (Source: Northland Regional Council GIS Website)

## 4 Historical Information

The history of the site was established through a review of historical aerial photography, Land Information New Zealand (LINZ) Certificates of Title, NRC Contamination Enquiry, and FNDC Property Files.

#### 4.1 Historical Aerial Photography

Historical aerial photography of the site was obtained from the Retrolens website (<http://retrolens.nz/map>) and Google Earth Pro. Photographs available for the subject area are dated from 1953 to 2023. A review of the historical aerial photography is provided in Table 3 below.

Historical aerial photographs are included in **Appendix C**.

*Table 3 - Historical Aerial Photography review*

Date	Source	Review
1953	Retrolens	<ul style="list-style-type: none"> <li>• A dwelling and garage are visible in the southwest corner of the site,</li> <li>• To the north and east of the existing dwelling the site is utilised for horticultural land-use (orchard),</li> <li>• The surrounding area is horticultural land-use (orchard's) in all directions, and</li> <li>• The nearest dwelling to the site is approximately 30m north of the site, north of Mission Road.</li> </ul>
1968	Retrolens	<ul style="list-style-type: none"> <li>• The site is similar to the 1953 aerial photograph, and</li> <li>• Rural residential development is visible to the northeast, south and southeast.</li> </ul>
1978	Retrolens	<ul style="list-style-type: none"> <li>• An extension on the southern side of the existing dwelling is visible, and</li> <li>• A new structure is visible, approximately 50m from the western boundary of the site.</li> </ul>
1981	Retrolens	<ul style="list-style-type: none"> <li>• A new swimming pool is visible immediately east of the existing dwelling,</li> <li>• Possibility of a shed or similar structure visible in the southeast corner of the site, and</li> <li>• The surrounding area is similar to the 1978 aerial photography.</li> </ul>
2003	Google Earth Pro	<ul style="list-style-type: none"> <li>• A garage is visible in the southwest corner of the site,</li> <li>• Orchard trees have been removed from across the site, with a few remaining to the north and east of the existing dwelling,</li> <li>• Horticultural land-use has reduced significantly around the site, with orchard trees removed for rural residential development, with some trees remaining for private use,</li> <li>• A new dwelling is under construction immediately west of the site,</li> <li>• A market garden is visible immediately south of the site, and</li> <li>• Horticultural land-use is visible approximately 75m south of the site and 170m west of the site.</li> </ul>
2009	Google Earth Pro	<ul style="list-style-type: none"> <li>• An area has been cleared immediately east of the existing dwelling, in the approximate location of where the chicken pen and hutch are today,</li> <li>• The property immediately east of the site has been cleared of orchard trees and is now vacant grassland, and</li> </ul>

		<ul style="list-style-type: none"> <li>The market garden and horticultural land-use are visible to the south of the site.</li> </ul>
2016	Google Earth Pro	<ul style="list-style-type: none"> <li>The site is similar to the 2009 aerial photograph, and</li> <li>The previously vacant grassland property immediately east of the site has been developed with a residential dwelling, and</li> <li>The market garden and horticultural land-use areas visible to the south of the site.</li> </ul>
November 2023	Google Earth Pro	<ul style="list-style-type: none"> <li>The site is similar to the 2009 and 2016 aerial photography, and</li> <li>The surrounding area is similar to the 2016 aerial photography.</li> </ul>

The most recent historical aerial photograph is dated November 2023 and is sourced from Google Earth Pro. Site conditions observed in the November 2023 historical aerial photograph are similar to those observed during the 2 April, 19 April and 14 May 2024 site walkovers.

#### 4.2 Certificates of Title

A review of Certificates of Title held by LINZ was completed for the site. No additional potential HAIL activities were identified through the title review.

- The site was under the ownership of Derek and Elizabeth Russell from 14 October 1977, and
- The site was transferred to Paul and Natalie Spooner and Manniv Limited (current owner) on 7 December 2018.

Copies of the Certificates of Title are provided in **Appendix D**.

#### 4.3 Contamination Enquiry

A site contamination enquiry was requested from the NRC Contaminated Land Team.

The Contamination Enquiry did not identify any current or historical HAIL activities for the site. It was noted, however, that historical aerial photography of the site shows the possible presence of horticultural activities and therefore HAIL Category A.10. (Persistent pesticide bulk storage or use including sports turfs, market gardens, orchards, glasshouses or spray sheds).

The Contamination Enquiry also reports records of pollution incidents, bores, contaminated site and air discharges and industrial trade process consents, closed landfills and air quality permitted activities within approximately 200m of the site.

Based on information in the Contamination Enquiry, no activities considered likely to cause contamination at the site were identified within 200m.

A copy of the Contamination Enquiry is attached in **Appendix E**

#### 4.4 Property File

A Property File request was lodged with FNDC. Relevant information including Resource Consents and Building Consents / Permits issued for developments that have occurred on-site is summarised below in Table 4. Due to the large size of the documents summarised below in Table, documents will be made available on request.

**Table 4 – Relevant Property Files**

Date	Details	Owner / Applicant	Description
July 1974	Application for Resource Consent (Subdivision) (79545-TCPBIC)	J.R & D.M Skelton-Agar	Application to subdivide section into two lots of similar size.
March 1978	Application for Building Permit (BP # 8157227)	Derek & Elizabeth Russell	Building Permit for new addition to the existing dwelling.
April 1986	Application for Building Permit (BP # 4058891)	Frank Dodson	Building Permit for new garage.

## 5 HAIL Assessment

Based on previous land-use and development information for the property, Table 5 below summarises the potential for contamination associated with previous site activities and land-uses classified under the HAIL.

HAIL Cat. E.1 and I below are potential HAIL activities under proposed Lot 1. Lot 1 is not being further developed at this stage, if development is proposed in the future an Environmental Site Assessment is recommended.

**Table 5 – Site Activities / Land Uses and Potential HAIL categories**

Date	HAIL Activity	Primary Source	Potential Contaminants	Investigation Locations
pre. 1953 – present	E. 1 – Potential Contamination from possible Asbestos / Asbestos Containing Materials (ACM) in historical buildings.	Site walkover, Historical Aerial Photography and Property File	Asbestos	Existing dwelling and garage. (structures located on proposed Lot 1 site - not planned for redevelopment)
pre. 1953 – present	I – Potential contamination from possible lead-based paint use on historical buildings.	Site walkover, Historical Aerial Photography and Property File	Lead	Existing dwelling and garage. (structures located on proposed Lot 1 site - not planned for redevelopment)
pre. 1953 – c. 2003	A.10 - Persistent pesticide storage or use including sport turfs, market gardens, orchards, glass houses or spray houses.	Historical Aerial Photography and Contamination Enquiry	Metals and OCP	Former orchard area

## 6 Soil Contamination Investigation

### 6.1 Identified Contaminants of Concern

The site was identified for potential soil contamination during the review of historical documents and the 2 April site walkover. Relevant to the HAIL assessment and site history, the potential CoC for the site investigation area included:

- Metals, and
- Organochlorine Pesticides (OCP).



## 6.2 Soil Investigation

Soil sampling from the site investigation area was undertaken on 19 April and 14 May 2024 and comprised soil sampling by a SQEP from Haigh Workman. Sampling locations are provided in **Appendix A**. Photographic documentation from the investigation is provided in **Appendix B**.

Minor ground disturbance for sampling activities was conducted as a permitted activity under NESCS regulation 8(2), where soil sampling is defined within regulation 5(3).

Soil sampling consisted of targeted sampling of historical horticultural land-use area across the property with samples collected every 30m (approximately).

Ten shallow soil samples were collected and analysed as two composite samples and four samples analysed as individual samples, including one duplicate soil sample for Quality Assurance / Quality Control (QA / QC) purposes. A total of six soil samples were submitted to the laboratory (Eurofins) for analysis of Metals and OCP.

The exposure scenarios for the priority contaminants listed in Section 6.1 include soil ingestion, dermal exposure, and inhalation, soil samples were retrieved from below the surface between 0 – 0.075m bgl.

- Encountered sub-surface soil comprised natural soils, comprising of silty topsoil material.

Soil sample descriptions are provided in **Appendix G**.

During the fieldwork access was made available to Haigh Workman across the whole investigation area.

## 6.3 Soil Sampling Protocol

Soil samples were collected from a spade or hand trowel (between 0 – 0.075 m bgl) from nine locations across the site investigation area. Soil sampling equipment was decontaminated between sampling locations and disposable nitrile gloves were used and replaced between sampling locations in order to prevent cross-contamination. All samples were collected in accordance with strict environmental sampling protocols to ensure reliable and representative results.

All sample containers and preservatives, where applicable, were supplied by the subcontract laboratory and were consistent with the specifications provided in Section 6.4 – Sample Handling, of the Contaminated Land Management Guidelines No. 5 – Site Investigation and Analysis of Soils (MfE, Revised 2021). All samples were labelled with unique identifiers indicating the sampling location. Samples were couriered directly to the laboratory (Eurofins) under continuous Chain of Custody (COC) documentation. Each COC form had a unique laboratory number.

### 6.3.1 Composite Testing

Composite sampling involves collecting individual samples from different locations, typically between two and four samples, and mixing an equal mass of each of the samples (subsamples) together to form one composite sample (undertaken at the laboratory). A composite sample can then be analysed, and the results will represent the average of the constituent sub-samples.

Composite sampling was appropriate for this investigation because:

- Site history of low-level broad contamination may exist from historical spraying,
- The investigation was focussed on non-volatile contaminants,

- 
- Sub-samples were the same soil type, same exposure to contaminants and similar depth
- The maximum number of sub-samples composited together was three, and
- The composite was assembled in the laboratory and not in the field.

When the average concentration represented by the composite sample exceeds the adopted guideline criteria, analysis of individual samples should be undertaken to clarify the contaminant distribution.

### 6.3.2 Duplicate samples

A duplicate sample involves collecting two separate samples from a single sample location, storing these in separate containers, and submitting them for analysis to the laboratory as two separate samples. Samples are given separate sample numbers so the laboratory is unaware that the sample is a duplicate.

A duplicate sample measures the contaminant concentration difference between the two samples because of soil heterogeneity, the variability or error within the laboratory analysis and the variability or error related to field sampling technique. The results of duplicate variance analysis are presented in Section 9.1. One duplicate for every 10 results was adopted.

## 7 Assessment Criteria

### 7.1 Human Health Assessment

The adopted assessment criteria for this investigation have been selected in accordance with the hierarchy defined by MfE Contaminated Land Management Guidelines No. 2 (MfE, 2011) and are summarized below. Assessment criteria for commercial / industrial land-use have been adopted:

- Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2012: Rural Residential (25% produce) land-use,
- National Environmental Protection (Assessment of Site Contamination) Amendment Measure (NEPM), Guideline on Investigation Levels for Soil and Groundwater, Schedule B1 (NEPM, 2013). Table 1-A Health Investigation Levels for soil contaminants – Residential (A) land-use, and
- Managing Risks Associated with Former Sheep-Dip Sites (MfE, 2006).

### 7.2 Background Concentrations Assessment

Background levels are particularly relevant when considering whether soils can be considered as 'Cleanfill'. Results have been assessed against the following criteria:

- Maanaki Whenua Landcare Research, Predicted Background Soil Concentrations.

Guideline assessment criteria is included with the Soil Analytical Results summarized in Table 5 below.

## 8 Analytical Results

Ten shallow soil samples were collected and analysed as two composite samples and four samples analysed as individual samples, including one duplicate soil sample for QA / QC purposes, were submitted to the laboratory (Eurofins) for analysis of Metals and OCP.

Following receipt of laboratory results a further six soil samples were analysed for Metals, due to two composite samples analysed reporting elevated background concentrations, the two composite samples consisting of three individual samples each were tested individually.

Laboratory analytical results reported:

- All Metals concentrations were at or below applicable Human Health criteria,
  - Sample MIS-SS10 for Metals (Arsenic) at MIS-SS10, comprising shallow topsoil material (<0.1 m bgl) was at the applicable MfE NES Rural Residential [25% produce] Human Health criteria value,
- Metals concentrations were above Background Soil Concentrations in all soil samples analysed, and
- OCP concentrations were above laboratory Method Detection Limits (MDL) in two soil samples analysed.

On 14 May 2024, a further five shallow soil samples (between 0.2m and 0.3m bgl) were collected and submitted to Eurofins for analysis of Metals (MIS-SS11, MIS-SS12 – MIS-SS16). This further sampling event was undertaken to delineate the extent of the Metals (Arsenic) result at MIS-SS10 to determine if a possible nearby source area exceeding applicable Human Health criteria was / was not present.

Laboratory analytical results reported:

- All Metals concentrations were below applicable MfE NES Rural Residential (25% produce) Human Health criteria, and
- Metals concentrations were above Background Soil Concentrations in all soil samples analysed.

Laboratory analytical results are summarised in Table 5 below. Soil sampling locations are provided in Haigh Workman Drawing 24 066 / 2 provided in **Appendix A**. Laboratory analytical results and COC documentation are provided in **Appendix H**.

Table 5 – Soil Analytical Results

Sample Reference		Test Analysis Levels (mg/kg)								MfE	Background Soil Concentrations <sup>2</sup>
		Composite # 1 (MIS-SS05 to MIS-SS07)	Composite # 1 (individual sample test)			Composite # 2 (MIS-SS08 to MIS-SS10)	Composite # 2 (individual sample test)				
Sample Date		19 April 2024								NES <sup>1</sup>	
Sample Depth (m)		0-0.075	0-0.075	0-0.075	0-0.075	0-0.075	0-0.075	0-0.075	0-0.075		
Metals	As	3.5	3.5	3.6	4.3	8.8	5.2	5.8	17 *	17	4.1
	Cd	0.46	0.39	0.39	0.65	0.23	0.16	0.15	0.41	0.8	0.2
	Cr	190	150	160	260	220	220	220	240	290	765
	Cu	100	180	73	67	74	48	50	120	10,000	23.5
	Pb	11	16	7.7	13	36	18	22	71	160	11.4
	Ni	36	20	26	34	35	29	29	33	400 <sup>3</sup>	41.6
	Zn	61	60	54	76	130	71	74	270	7,400 <sup>3</sup>	47.5
OCP	ΣDDT	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	45	12 <sup>4</sup>
	Aldrin	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	1.1	-
	Dieldrin	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	1.1	-
	Lindane	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	33 <sup>5</sup>	-

		Test Analysis Levels (mg/kg)				MfE	Background Soil Concentrations <sup>2</sup>
Sample Reference		MIS-SS01	MIS-SS02	MIS-SS03	MIS-SS04 (duplicate of MIS-SS03)	NES <sup>1</sup>	
Sample Date		19 April 2024					
Sample Depth (m)		0-0.075	0-0.075	0-0.075	0-0.075		
Metals	As	3.2	3.7	7.2	7.8	17	4.1
	Cd	0.25	0.26	0.47	0.52	0.8	0.2
	Cr	170	240	160	170	290	765
	Cu	46	51	110	120	10,000	23.5
	Pb	7.2	8	21	23	160	11.4
	Ni	23	28	26	30	400 <sup>3</sup>	41.6
	Zn	27	30	220	250	7,400 <sup>3</sup>	47.5
OCP	ΣDDT	< MDL	< MDL	0.2	0.2	45	12 <sup>4</sup>
	Aldrin	< MDL	< MDL	< MDL	< MDL	1.1	-
	Dieldrin	< MDL	< MDL	< MDL	< MDL	1.1	-
	Lindane	< MDL	< MDL	< MDL	< MDL	33 <sup>5</sup>	-

		Test Analysis Levels (mg/kg)					MfE	Background Soil Concentrations <sup>2</sup>
Sample Reference		MIS-SS11	MIS-SS13	MIS-SS14	MIS-SS15	MIS-SS16	NES <sup>1</sup>	
Sample Date		14 May 2024						
Sample Depth (m)		0.3	0.2	0.2	0.2	0.2		
Metals	As	2.9	3.9	4.5	3.5	4.3	17	4.1
	Cd	0.09	0.55	0.29	0.24	0.69	0.8	0.2
	Cr	210	180	210	210	200	290	765
	Cu	46	49	100	56	79	10,000	23.5
	Pb	6	10	27	8.3	8.6	160	11.4
	Ni	26	24	38	27	29	400 <sup>3</sup>	41.6
	Zn	22	63	150	41	70	7,400 <sup>3</sup>	47.5

**Notes:** Concentration: Values below accepted Background Levels (Metals) and / or laboratory MDL (OCP)  
Concentration: Values above accepted Background Levels and / or laboratory MDL but in compliance with relevant criteria

\* CLMG Guidelines No. 5 (Section 7.4.2) – Soil contamination is not considered to exceed the NES-CS if the following conditions are met:  
o all reported concentrations are at or below the guideline.

<sup>1</sup> NES – MfE NES Human Health Criteria for Rural Residential (25% produce) Use (MfE, 2012).

<sup>2</sup> Manaaki Whenua Landcare Research – Trace element background concentration explorer (Landcare Research, 2023)  
(<https://experience.arcgis.com/experience/4e6e25842cc6427ca850bdf644010922/page/Explorer/>).

<sup>3</sup> NEPM – Guideline on Investigation Levels for Soil and Groundwater (Schedule B1) for Residential (A) sites (NEPM, revised 2013).

<sup>4</sup> In the absence of Environmental criteria for Total DDT, the Auckland Unitary Plan (AUP) Permitted Activity Soil Acceptance Criteria for Environmental Discharge: AUP Operative in part (AUP, 2024) has been applied.

<sup>5</sup> MfE Soil Guidelines for Former Sheep-Dip Sites for Commercial / Industrial sites (MfE, 2006).

## 9 Quality Assurance / Quality Control

Quality assurance (QA) and quality control (QC) are essential elements for site investigation. QA relates to the planned activities implemented so that quality requirements will be met, and QC relates to the observation techniques and activities used to demonstrate the quality requirements have been met. Soils were inspected for visual and olfactory indicators of contamination and logged and are attached in **Appendix G**.

Between samples equipment was decontaminated by brushing, spraying with clean potable water and rinsing with high purity de-ionised water. To reduce the potential for cross-contamination, each sample was taken using disposable nitrile gloves that were discarded following the collection of each sample.

Appropriate Personal Protective Equipment (PPE) was used by Haigh Workman staff including disposable nitrile gloves, highly visible vest and steel toe capped boots. All disposable PPE was treated as contaminated and disposed of appropriately.

Soil samples were placed in sample containers supplied by Eurofins Laboratories, which were then capped, labelled with a unique identifier and placed in a chilly bin prior to transport by Courier. Standard chain of custody documentation is enclosed in **Appendix H**.

Any laboratory analysing samples of contaminated media must be able to show it has in-house quality assurance procedures and quality control checks (QA / QC) to ensure accurate testing and reporting of analyses. IANZ, or equivalent overseas accreditation, provides confidence that the receiving laboratory has appropriate QA / QC procedures in place. Eurofins Environmental Testing NZ Limited<sup>5</sup> is IANZ and NZS/ISO/IEC 17025:2018 accredited, and was the laboratory elected for testing.

Following receipt of the samples by Eurofins Laboratories, the samples were scheduled for analysis of the identified contaminants of concern. Records of laboratory QA / QC and the results of chemical testing including methodologies as received from the laboratory and Chain of Custody documentation, are presented in **Appendix H**.

### 9.1 QA / QC Relative Percentage Difference

One duplicate soil sample set (MIS-SS04 as a duplicate of MIS-SS03) was collected for QA / QC purposes. The duplicate soil sample was collected using the same soil sampling procedures and analysed at the laboratory (Eurofins) using the same sample preparation and analysis procedures as the original soil samples. One QA / QC sample was collected for every 10 soil samples collected.

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<sup>5</sup> Eurofins Environmental Testing NZ Limited, an IANZ<sup>5</sup> and NZS/ISO/IEC 17025:2018<sup>5</sup> accredited laboratory incorporating the aspects of ISO 9000:2015<sup>5</sup> relevant to testing laboratories. International Accreditation New Zealand which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). New Zealand Standard, General Requirements for the Competence of Testing and Calibration Laboratories, 2018. ISO9000: Quality Management Systems.

Relative Percentage Difference (RPD) calculations for analytes reported above the laboratory MDL ranged from 0.0 to 14.3%. RPD values for the duplicate pairs met Haigh Workman QA / QC acceptance criteria of less than 50%.

QA / QC results are presented in Table 6 below. Laboratory analytical results are provided in **Appendix H**.

**Table 6 – Quality Assurance / Quality Control Results**

Contaminants of Concern		Results (mg/kg)		RPD (%)
		MIS-SS03	MIS-SS04	
Metals	As	7.2	7.8	8.0
	Cd	0.47	0.52	10.1
	Cr	160	170	6.1
	Cu	110	120	8.7
	Pb	21	23	9.1
	Ni	26	30	14.3
	Zn	220	250	12.8
OCP	ΣDDT	0.2	0.2	0.0
	Aldrin	< MDL	< MDL	-
	Dieldrin	< MDL	< MDL	-
	Lindane	< MDL	< MDL	-

MDL – Method Detection Limit

mg/kg – milligrams per kilogram

RPD – Relative Percentage Difference

## 10 Discussion

### 10.1 Conceptual Site Model

The assessment provided in Table 7 below expands on the potential sources of contamination identified within the area of the proposed residential development and exposure pathways. It is based on the potential effects of the proposed land-use and soil disturbance activities on human health and the environment associated with the rural residential land-use.



**Table 7 - Conceptual Site Model**

Potential Source	Potential Receptors	Potential Pathways	Assessment
Contaminated Soils (Metals).	Construction, maintenance / excavation workers.	Inhalation of dust / ingestion and dermal contact.	<u>Incomplete Pathway:</u> Contaminant concentrations are at or below applicable Human Health criteria.
	Future site user(s).	Inhalation of dust / Ingestion / dermal contact with exposed soils	
CoC across remainder of the site (below Applicable Criteria and / or laboratory MDL)	Construction, maintenance / excavation workers / future site user(s).	Inhalation of dust / ingestion / dermal contact with exposed soils.	<u>Incomplete Pathway:</u> Contaminant concentrations are below applicable Human Health criteria.
	Future site user(s).	Inhalation of dust / contact with exposed soils	

## 11 Regulatory Requirements

### 11.1 NES - CS

It is considered that the proposed subdivision and future development are covered under the NES-CS regulations.

The NES-CS describes a ‘piece of land’ as the piece of land that has had, or currently has, or most likely has had, activities listed on the HAIL and soil disturbance is proposed.

#### 11.1.1 Subdividing or changing use

Based on findings from this investigation, this proposal is a Controlled Activity (9) under the NES-CS as this DSI states the soil contamination exceeds the applicable standard in regulation 7.

Table 8 below presents potential Resource Consent requirements for the proposed activity under the provisions of the NES-CS. This investigation presents factual information for the site. Matters of control and discretion, however, rest with the consenting authority (FNDC) based on their assessment of this report. It would be appropriate to seek clarification of FNDC or an Environmental Planning Specialist for further information on resource consenting requirements.

**Table 8 –Potential Resource Consent Requirements**

Potential Source	Potential Applicable Planning Rules
National Environmental Standards (NES)	<p>CONTROLLED ACTIVITY (subject to requirements under Rule 9)</p> <ul style="list-style-type: none"> <li>• A DSI (this investigation) has been prepared,</li> <li>• Contamination concentrations comply with NES Human Health (Rural Residential 25% produce) criteria,</li> <li>• The consenting authority must have the report.</li> </ul> <p>Conditions of Rule 9 must be complied with.</p>

### 11.1.2 Disturbing Soil

The NES-CS describes a ‘piece of land’ as the area that has had, currently has, or has most likely has had activities listed on the HAIL:

#### 8(3) Disturbing Soil

- 8(3)(c) *The volume of the disturbance of soil of the piece of land must be no more than 25m<sup>3</sup> per 500m<sup>2</sup>.*
- 8(3)(d)(ii) *Soil must not be taken away in the course of the activity, except that for all other purposes combined, a maximum of 5m<sup>3</sup> per 500m<sup>2</sup> of soil may be taken away per year.*

The ‘piece of land’ for this investigation is the existing Lot which is 5,905m<sup>2</sup>. This allows for 295.2m<sup>3</sup> soil disturbance and 59m<sup>3</sup> soil removal (per year) as a Permitted Activity under the NES-CS.

The above volumes will be split between the proposed new lots (Lot 1 and Lot 2) on a proportional basis once subdivision is completed.

## 11.2 Northland Regional Council

As per Rule C.6.8.1 of the Proposed Regional Plan for Northland, copies of site investigation reports must be provided to the regional council within three months of completion of the investigation (reports can be sent to: [contamination@nrc.govt.nz](mailto:contamination@nrc.govt.nz)).

## 12 Conclusion & Recommendations

This PSI / DSI was carried out for the investigation site in accordance with the scope of work and current applicable regulations. This report has been prepared in accordance with MfE Guidelines for Contaminated Site Investigations and FNDC requirements. This investigation and reporting have been prepared, reviewed and authorised by a SQEP, as required under the NES-CS.

It is proposed that the site be subdivided into two separate lots (Lot 1 and Lot 2) for rural residential use. The dwelling and associated features on proposed Lot 1 are to remain as is (future redevelopment is not proposed at the writing of this report) and Lot 2 be developed with a residential dwelling and associated structures with associated earthworks.

Historical information available for the site and observations from the 2 April, 19 April and 14 May 2024 site walkovers indicate that the following HAIL activities have, or potentially have occurred at the site:

- HAIL Cat. A.10 – Persistent pesticide bulk storage or use including sports turfs, market gardens, orchards, glasshouses or spray sheds,
  - The site has historically been utilized as historically as an orchard (pre. 1953 – c. 2003), since c. 2003 the site has been rural residential covered in grass and a few remaining orchard trees to the east and north of the site for personal use and shelter belt trees for privacy, and
  - Surrounding historical land-use being horticultural land-use (orchards and market gardens) may possibly apply an additional environmental risk to the proposed site and proposed future development.

While specifically not proposed for future redevelopment, following site walkover of proposed Lot 1 (existing dwelling and associated structures), the following HAIL activities have, or potentially have occurred at the site and may warrant further consideration if redevelopment is proposed in the future:

- HAIL Cat. E.1 – Asbestos / Asbestos Containing Materials in historical construction materials,
  - The dwelling and associated garage (built pre. 1953) contain Asbestos Containing Materials (ACM) that is currently in good condition, and
- HAIL Cat. I – Lead-based paint on historical structures,
  - The dwelling and associated garage (built pre. 1953) may possibly contain lead-based paints from use on historical buildings.

Ten shallow soil samples were collected and analysed as two composite samples and four samples analysed as individual samples, including one duplicate soil sample for QA / QC purposes, were submitted to the laboratory (Eurofins) for analysis of Metals and OCP.

Following receipt of laboratory results a further six soil samples were analysed for Metals, due to two composite samples analysed reporting elevated background concentrations, the two composite samples consisting of three individual samples each were tested individually.

Laboratory analytical results reported:

- All Metals concentrations were at or below applicable Human Health criteria,
  - Sample MIS-SS10 for Metals (Arsenic) at MIS-SS10, comprising shallow topsoil material (<0.1 m bgl) was at the applicable MfE NES Rural Residential [25% produce] Human Health criteria value,
- Metals concentrations were above Background Soil Concentrations in all soil samples analysed, and
- OCP concentrations were above laboratory Method Detection Limits (MDL) in two soil samples analysed.

On 14 May 2024, a further five shallow soil samples (between 0.2m and 0.3m bgl) were collected and submitted to Eurofins for analysis of Metals (MIS-SS11, MIS-SS12 – MIS-SS16). This further sampling event

was undertaken to delineate the extent of the Metals (Arsenic) result at MIS-SS10 to determine if a possible nearby source area exceeding applicable Human Health criteria was / was not present.

Laboratory analytical results reported:

- All Metals concentrations were below applicable MfE NES Rural Residential (25% produce) Human Health criteria, and
- Metals concentrations were above Background Soil Concentrations in all soil samples analysed.

Based on these findings:

- A Site Management Plan / Remediation Action Plan has been prepared for the site,
- Soil / fill material with Metals concentrations above applicable Human Health criteria shall be remediated (excavated and disposed of off-site or otherwise isolated),
- Any soil / fill material with Metals above Background Levels and / or OCP concentrations above laboratory MDL are not considered 'Cleanfill' for disposal purposes and must be disposed of at a facility licensed to accept such materials:
  - If soil / fill material exceeding Background Level criteria must be removed from site it is to be disposed of at a facility licensed to accept such materials,
  - Soil / fill material exceeding Background Level criteria could be retained and re-used on-site as a sustainable option and to reduce disposal costs if suitable,
- Any visual / olfactory evidence of contamination discovered during site works must be segregated and analysed by a SQEP prior to disposal.

## 13 Unverified Material Discovery

Should visual and / or olfactory evidence of gross contamination be identified during excavation works. It is recommended that works cease in that area and a SQEP familiar with the site attends to inspect the impacted soils. If required, the SQEP will undertake sampling to confirm the level and scope of contamination. The area should also be physically isolated using a high visibility fence if practicable.

Indications that uncontrolled filling with waste and / or unverified material may have occurred on site include:

- Buried Rubbish,
- Buried construction or demolition waste,
- Un-anticipated soil colours or odours,
- Buried tanks or drums, and
- Encountering materials that may contain Asbestos, including fibrous building materials and fibre cement construction products.

Site management should brief operatives onsite of the above signs during site inductions.

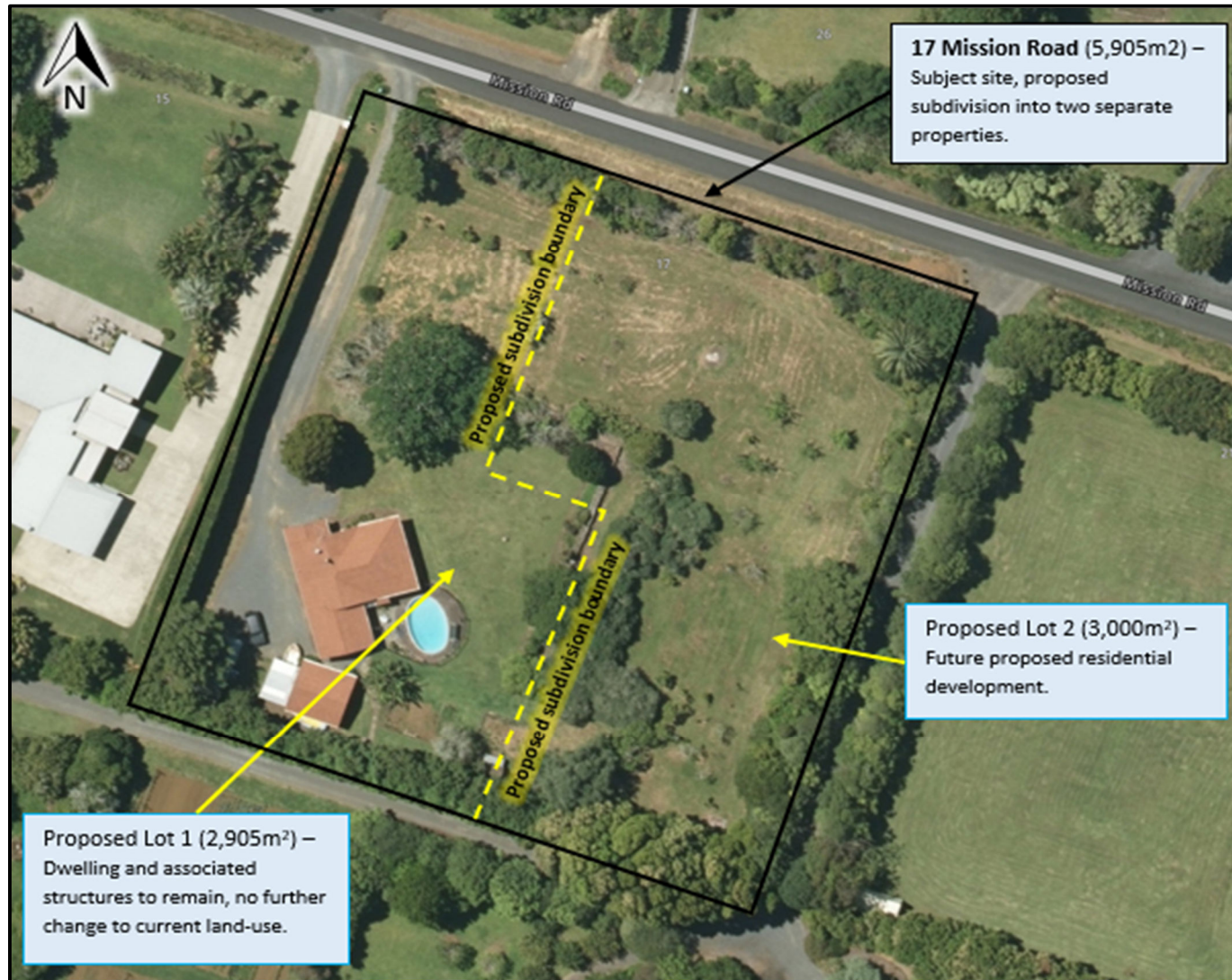
**End of Report – Appendices to follow.**

## ***Appendix A – Site Plans***

<b>Drawing No.</b>	<b>Title</b>
24 066 / 1	Site Location Plan
24 066 / 2	Sample Location Plan
24 066 / 3	Concept Plan



24 066 / 1 – Site Location Plan

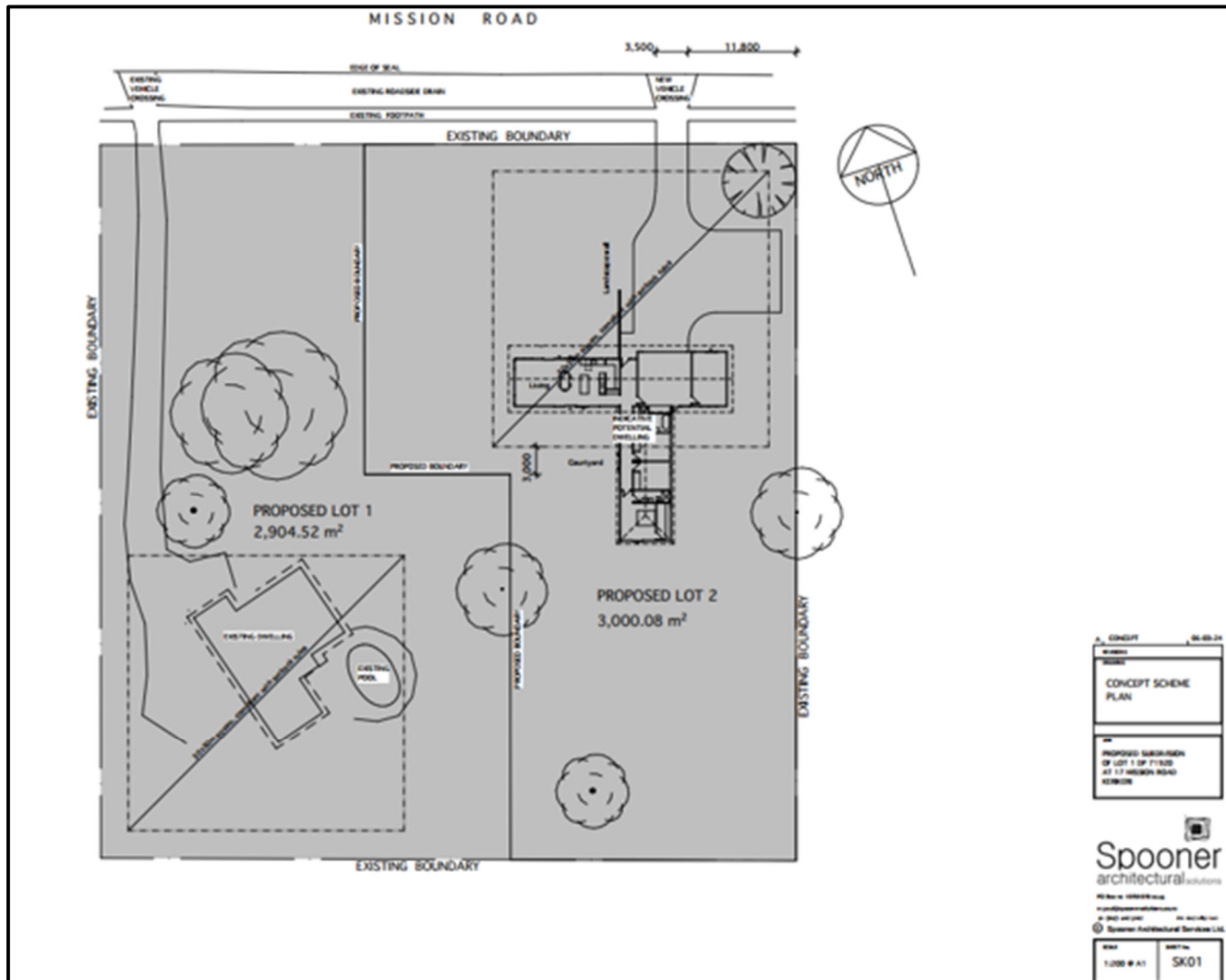


24 066 / 1 – Site Location Plan



24 066 / 2 – Sample Location Plan (Site Location Plan with Contour Plan overlay)





A. CONCEPT		06-09-24
CONCEPT SCHEME PLAN		
PROPOSED SUBDIVISION OF LOT 1 OF 17/102 AT 17 MISSION ROAD KERRIB		
 <b>Spooner</b> architectural solutions		
<small>           15/16a-16/16b/16c/16d            17/17a/17b/17c/17d/17e/17f/17g/17h/17i/17j/17k/17l/17m/17n/17o/17p/17q/17r/17s/17t/17u/17v/17w/17x/17y/17z            PO BOX 40000            SPOONER PROFESSIONAL SERVICES LTD         </small>		
SCALE	DATE	
1:200 @ A1	SK01	

24 066 / 3 – Concept Plan

## ***Appendix B – Photographic Documentation***



**Photograph 1:** View from the northern boundary looking towards the southeast corner across proposed Lot 2. The pile to the right of the photograph is a recently stockpiled area of garden waste only that will be removed from site.



**Photograph 2:** View from northeast corner of the site looking to the northwest across the site, to the right of the photograph is Mission Road.



**Photograph 3:** View of the dwelling (left of the photograph) and associated structures located in the southwest corner of the site.



**Photograph 4:** View from the southwest corner of the site looking north along the western boundary and the existing dwelling.



**Photograph 5:** View from the southern boundary looking north towards the existing dwelling and associated swimming pool, the eastern side of the dwelling is surrounded in well maintained lawn.



**Photograph 6:** View from the southern boundary looking west towards the associated secondary structure (to the left of the banana tree) immediately south of the existing dwelling (to the right of the banana tree).



**Photograph 7: View from southeast corner of the site looking north across the proposed Lot 2 area. The site contains many fruit trees and a garden visible centre right of the photograph.**

## ***Appendix C - Historical Aerial Photography***

**NOTE: Site boundaries indicative only**



Retrolens  
1953





Retrolens  
1968



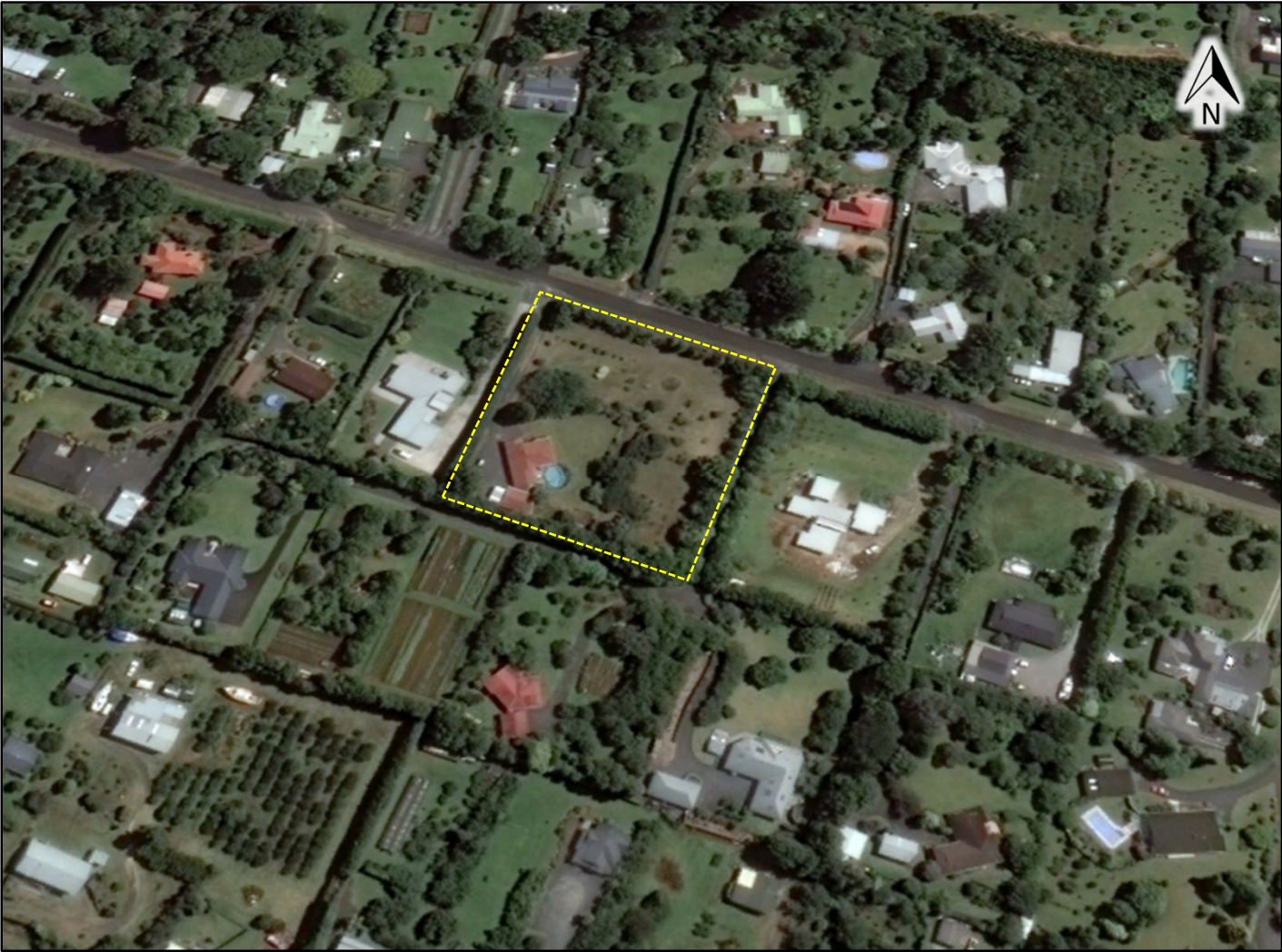
Retrolens  
1978



Retrolens  
1981









Google Earth Pro

November 2023

## ***Appendix D – Certificate of Title***



References  
Prior C/T 1544/65

Transfer No.  
N/C. Order No. 30589.2



*Dyke & Co*  
Land and Deeds 69  
**REGISTER**

No. 288

565

### CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT

This Certificate dated the 21st day of June one thousand nine hundred and Seventyfour under the seal of the District Land Registrar of the Land Registration District of NORTH AUCKLAND

WITNESSETH that the person (s) last named in the First Schedule hereto are

is seized of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial underwritten or endorsed hereon) in the land hereinafter described, delineated with bold black lines on the plan hereon, be the several admeasurements a little more or less, that is to say: All that parcel of land containing 5905 square metres more or less being Lot 1 Deposited Plan 71920 and being



*L. Thompson*  
Assistant Land Registrar

#### First Schedule (continued overleaf)

JOHN REGINALD SHELTON AGAR of Kerikeri  
retired and DAISY MARJORIE SHELTON AGAR  
his wife

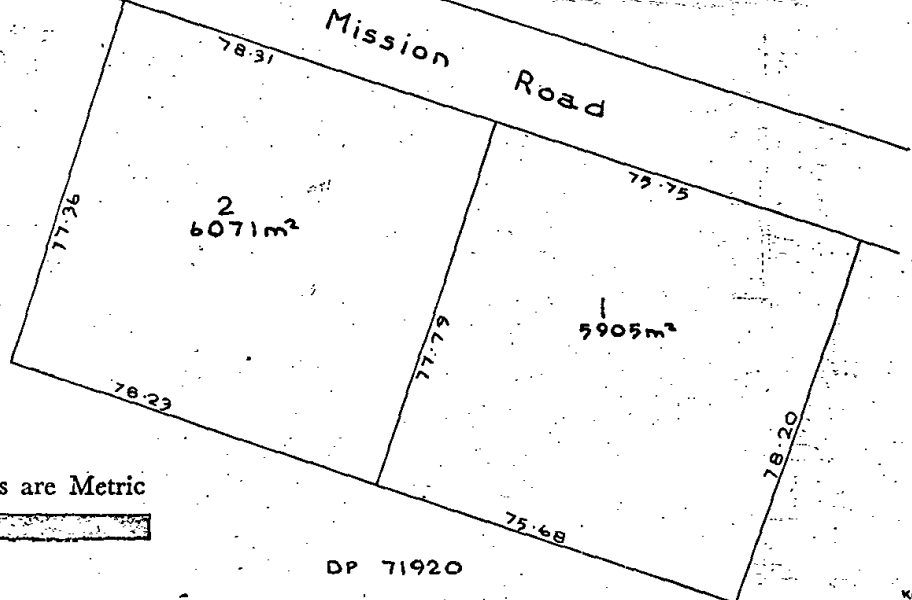
#### Second Schedule (Reservations encumbrances liens and interests)(continued overleaf)

Fencing covenant in Transfer 282556

513586 Mortgage to (now) Jack McCreedy  
13.11.1961 at 11.27 o'clock and  
various charges at 9.30 o'clock  
and 25.11.1961 at 11.07 o'clock.

XI Kerikeri SD

*J.A.L.R.*



Measurements are Metric

DP 71920

Register copy for L. & D. 69, 71, 72

No. 288 / 565

CERTIFICATE OF TITLE No. \_\_\_\_\_

INSTRUMENT		FIRST SCHEDULE (CONTINUED)			AUTHENTICATED
Number	Nature	Date	Particulars	Date	Authenticated
57792.2	Transfer	19.6.1977 at 9.03 a.m.	to DEREK CAMPBELL RUSSELL of Tamara Russell and ELIZABETH JANE RUSSELL his wife 42A/103		<i>Alamu</i>
			<i>Cancelled</i>		
SECOND SCHEDULE (CONTINUED)		FIRST SCHEDULE (CONTINUED)			AUTHENTICATED
Number	Nature	Date	Particulars	Date	Authenticated
201589.3	Easement Certificate affecting Lots 71920 on Plan 71920	21.6.1974 at 9.30 a.m.	SERVIENT LAND pt. Lot 2-A (C.T.28B/566) DOMINANT LAND herein		<i>L. Thompson</i>

30,000/1270-09763 W

ENTRIES RULED THROUGH ARE NO LONGER SUBSISTING





**RECORD OF TITLE  
UNDER LAND TRANSFER ACT 2017  
FREEHOLD  
Search Copy**



  
R. W. Muir  
Registrar-General  
of Land

**Identifier** NA42A/103  
**Land Registration District** North Auckland  
**Date Issued** 14 October 1977

**Prior References**  
NA28B/565

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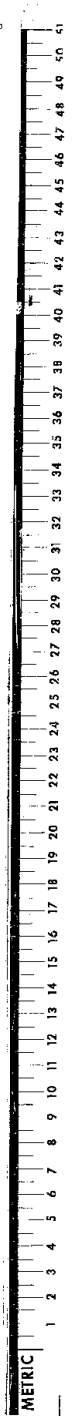
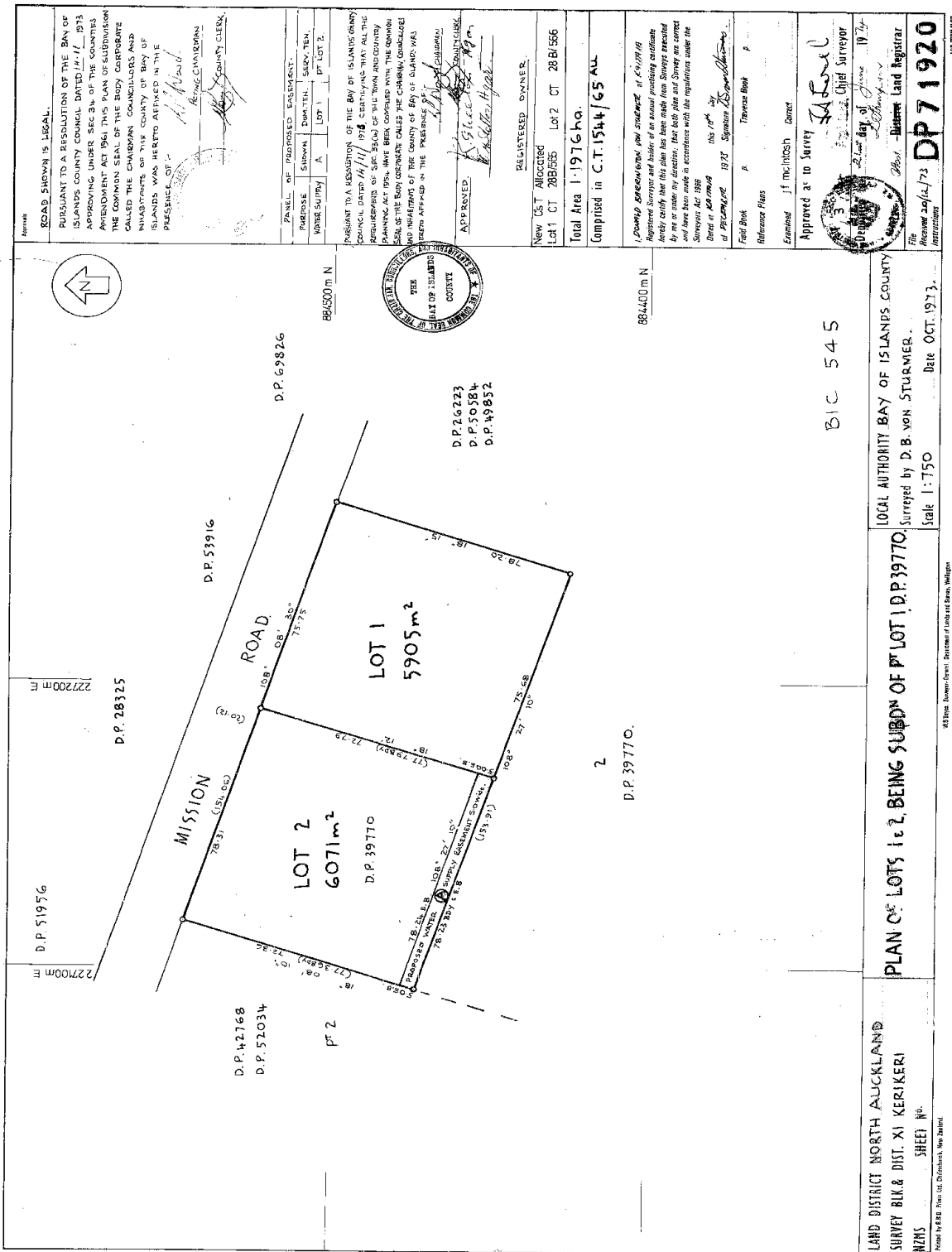
**Estate** Fee Simple  
**Area** 5905 square metres more or less  
**Legal Description** Lot 1 Deposited Plan 71920

**Registered Owners**  
Natalie Jane Spooner, Paul John Spooner and Mannivy Limited

---

**Interests**

11308152.6 Mortgage to ANZ Bank New Zealand Limited - 7.12.2018 at 12:37 pm



## ***Appendix E – Northland Regional Council Contamination Enquiry***

## Aaron Thorburn

---

**From:** Contaminated Land Management Team <contamination@nrc.govt.nz>  
**Sent:** Tuesday, 9 April 2024 11:20 am  
**To:** Aaron Thorburn  
**Subject:** RE: Contam Enquiry - 17 Mission Road, Kerikeri (NRC Ref# REQ.619953)

Hi Aaron

Regarding your site query for Lot 1 DP 71920 (17 Mission Road, Kerikeri):

The property that you have enquired about is not listed on the NRC Selected Land-use Register (SLR) for any current or historical Hazardous Activities and Industries List (HAIL) activities. Please note that the SLR is not a comprehensive list of all sites that have a HAIL land use history. It is a live record and therefore continually being updated. It is noted that aerial images of the site show the possible presence of horticultural activities and therefore HAIL Activity A10. Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds may apply.

There are no environmental incidents, resource consents or bores recorded on the property.

NRC has aerial images of the site for the following years that can be provided upon request - 1978, 2000, 2007, 2008, 2010, 2014, 2017, 2023.

Within 200 metres of the site there are there are 8 environmental incidents recorded in our database as detailed below. If you require any further information on any of these please let me know. There are no records of consents, bores or other SLU records within 200m of the site.

Reference number	Date	Subject	Description	Further information from file
REQ.400565	20/09/1994	Sewage	Septic tank discharge	No further information on file
REQ.402998	1/07/1997	Structures in CMA	Dam in watercourse	Small dam created, but no adverse effects or further action taken by NRC
REQ.403766	2/05/1998	Burning and smoke nuisance	Acid smell from burning plastic/tyres	Vegetation fire started using tyres. Contractor advised of rules
REQ.403970	10/08/1998	Sewage	Domestic sewage discharge to stream	Alleged failure of sewage soak hole. Unable to confirm location of failing sewerage system
REQ.415204	2/4/2007	Spraydrift	Strong chemical odour	Source of odour could not be confirmed
REQ.420499	19/07/2010	Burning and smoke nuisance	Smoke nuisance	Smoke nuisance created from the burning of vegetation (shelter belt trees)
REQ.588232	12/02/2018	Burning and smoke nuisance	Smoke nuisance @ Mission Rd, Kerikeri	Site investigation did not confirm smoke nuisance
REQ.606576	14/01/2021	Burning and smoke nuisance	Smoke nuisance @ Mission Rd, Kerikeri	Site visit not carried out as fire was almost out when phone call was received by NRC

Please note, as per Rule C.6.8.1 of the Proposed Regional Plan for Northland, copies of site investigation reports, where land disturbance has occurred, must be provided to the regional council within three months of completion of the investigation.

Reports can be sent to [contamination@nrc.govt.nz](mailto:contamination@nrc.govt.nz).

If I can be of any further assistance, please do not hesitate to contact me.

Regards  
Nicola

**Nicola Bull**

Compliance Specialist - Waste Management

P 09 470 1210 (extension 9123)

M 0274 343 674



Disclaimer

Unless specifically included in the response above, council warns that information is not available about building materials that can cause land contamination at any property, including, but not limited to, wood that has been chemically treated, lead-based paint and asbestos containing materials. Caution is advised with regard to these materials, including undertaking a comprehensive due diligence investigation to establish whether these materials are or have been present at any time, past and present.

The information provided in this email is information from the Selected Land Use Register and Northland Regional Council Incident Records only, unless otherwise specified. Council may hold information about the site in other registers or databases. A full search of council records will need to be undertaken to determine if this is the case, and the requestor must specifically request this, and cover council's reasonable costs. The information supplied in this email should not be solely relied upon for determining whether there is contamination at a site, for remediation of the site or any other purpose. Compliance with R6.2 of the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 ('NES') requires that territorial authority records are searched, and any information supplied in this e-mail is required to form part of that search. If contamination is confirmed, there may be contaminant guideline values that apply to the land, in addition to the NES soil contamination guidelines. We cannot accept any liability arising from the absence of information from our registers. We advise clients to engage the services of a suitably qualified and experienced contaminated land specialist where uncertainty exists.

---

**From:** Aaron Thorburn <aaron@haighworkman.co.nz>

**Sent:** Thursday, March 28, 2024 1:44 PM

**To:** Contaminated Land Management Team <contamination@nrc.govt.nz>

**Subject:** Contam Enquiry - 17 Mission Road, Kerikeri

Hi Team,

Can I please request a contaminated land enquiry (environmental incidents, consents, bores and the SLU record) for:

17 Mission Road, Kerikeri (Lot 1 DP 71920)

Specifically, anything within a 200m radius of the location provided below.



Kind Regards,

**Aaron Thorburn**

Senior Environmental Advisor

Mobile: 027 331 2728

[aaron@haighworkman.co.nz](mailto:aaron@haighworkman.co.nz)



[Website](#) . [LinkedIn](#) . [Careers](#)



# Site classification definitions

Please note that the SLR is currently under review and classifications will be updated from existing classifications to new classifications.

## Existing classifications

### Unverified HAIL

Anecdotal evidence suggests that a HAIL activity took place at the site, but confirmation is required.

### Verified HAIL

Sufficient evidence exists to confirm that a HAIL activity took place on the site.

### Managed

The site has been tested, exceeds guideline values (it is contaminated) but contamination is managed.

### Remediated

The site was contaminated but has been remediated.

### Tested – Contaminated

The site has been tested and exceeds guideline values.

### Tested – Not contaminated

The site has been tested, but guideline values have not been exceeded.

## New classifications

### Unverified HAIL

Information sources suggest a HAIL land use has occurred, however the reported use has not been confirmed.

### Verified Non-HAIL: Admin error

Information shows that the site has never been associated with any of the activities or industries on the HAIL.

### Verified Non-HAIL: HAIL did not occur

Information shows that the site has never been associated with any of the activities or industries on the HAIL.

### Verified HAIL: Risk not quantified

Insufficient information to quantify adverse effects or risks to people or the environment from known HAIL activity. The site may not have been investigated, or if it has, sampling may be inadequate to assess risk, or some activities on site may not have been investigated. Contamination may have occurred, but should not be assumed to have occurred.

#### Verified HAIL: At or below background – natural state

The site has been investigated. The investigation results confirm there are no hazardous substances above local background concentrations other than those that occur naturally in the area. The investigation sampling has been sufficiently detailed to characterise the site.

#### Verified HAIL: At or below background – remediated

The site has been investigated and remediated. The post remediation validation results confirm there are no hazardous substances above local background concentrations other than those that occur naturally in the area. The validation sampling has been sufficiently detailed to characterise the site.

#### Verified HAIL: Suitable for land use – natural state

The site has been investigated. Results show that there are hazardous substances present at the site but indicate that any adverse effects or risks to people and/or the environment are considered to be acceptable for the specified land use.

#### Verified HAIL: Suitable for land use – remediated

The site has been investigated and remediated. Results show that there are hazardous substances present at the site but indicate that any adverse effects or risks to people and/or the environment are considered to be so low as to be acceptable for the specified land use. The site has been remediated to reduce contamination to this level, and samples taken after remediation confirm this.

#### Verified HAIL: Managed for land use

The site has been investigated. Results show that there are hazardous substances present at the site in concentrations that have the potential to cause adverse effects or risks to people and/or the environment. However, these risks are considered managed because:

- the nature of the use of the site prevents human and/or ecological exposure to the risks; and/or
- the land has been altered in some way and/or restrictions have been placed on the way it is used which prevent human and/or ecological exposure to the risks.

#### Verified HAIL: Contaminated for land use – human health

The site has been investigated. Results show that the site has a hazardous substance in or on it, or in groundwater or surface water that:

- has significant adverse effects on human health; and/or
- is reasonably likely to have significant adverse effects on human health.

#### Verified HAIL: Contaminated for land use – environment

The site has been investigated. Results show that the site has a hazardous substance in or on it, or in groundwater or surface water that:

- has significant adverse effects on the environment; and/or
- is reasonably likely to have significant adverse effects on the environment.

#### Verified HAIL: Contaminated for land use – human health and environment

The site has been investigated. Results show that the site has a hazardous substance in or on it, or in groundwater or surface water that:

- has significant adverse effects on human health and the environment; and/or
- is reasonably likely to have significant adverse effects on human health and the environment.

## ***Appendix F – Far North District Council Property Files***

NOTE: Available on request

## ***Appendix G – Soil Sample Descriptions***

Date	Sample #	Depth (m bgl)	Soil Description	Analysis
19 April 2024	MIS-SS01	0-0.075	SILT, dry, brown (Topsoil)	Metals and OCP
	MIS-SS02	0-0.075	SILT, dry, brown (Topsoil)	Metals and OCP
	MIS-SS03	0-0.075	SILT, dry, brown (Topsoil)	Metals and OCP
	MIS-SS04 (dup of MIS-SS04)	0-0.075	SILT, dry, brown (Topsoil)	Metals and OCP
	MIS-SS05	0-0.075	SILT, dry, brown (Topsoil)	Metals and OCP
	MIS-SS06	0-0.075	SILT, dry, brown (Topsoil)	Metals and OCP
	MIS-SS07	0-0.075	SILT, dry, brown (Topsoil)	Metals and OCP
	MIS-SS08	0-0.075	SILT, dry, brown (Topsoil)	Metals and OCP
	MIS-SS09	0-0.075	SILT, dry, brown (Topsoil)	Metals and OCP
	MIS-SS10	0-0.075	SILT, dry, brown (Topsoil)	Metals and OCP
14 May 2024	MIS-SS11	0.3	SILT, dry, brown (Topsoil)	Metals
	MIS-SS13	0.2	SILT, dry, brown (Topsoil)	Metals
	MIS-SS14	0.2	SILT, dry, brown (Topsoil)	Metals
	MIS-SS15	0.2	SILT, dry, brown (Topsoil)	Metals
	MIS-SS16	0.2	SILT, dry, brown (Topsoil)	Metals

SS – Soil Sample    dup – Duplicate sample    m bgl – meters below ground level    OCP – Organochlorine Pesticides

## ***Appendix H – Laboratory Analytical Results & Chain of Custody Documentation***

Haigh Workman Limited  
 6 Fairway Drive  
 Kerikeri  
 NZ 0230



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

Attention: **Aaron Thorburn**

Report **1090131-S-V2**  
 Project name **17 MISSION ROAD KERIKERI**  
 Project ID **24066**  
 Received Date **Apr 23, 2024**

Client Sample ID			MIS-SS01	MIS-SS02	MIS-SS03	MIS-SS04
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K24- Ap0058020	K24- Ap0058021	K24- Ap0058022	K24- Ap0058023
Date Sampled			Apr 19, 2024	Apr 19, 2024	Apr 19, 2024	Apr 19, 2024
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides (NZ MfE)</b>						
Comments			G01	G01	G01	G01
2.4'-DDD	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2.4'-DDE	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2.4'-DDT	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDE	0.01	mg/kg	< 0.1	< 0.1	0.17	0.17
4.4'-DDT	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
DDT + DDE + DDD (Total)*	0.01	mg/kg	< 0.1	< 0.1	0.2	0.2
a-HCH	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aldrin	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
b-HCH	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Chlordanes - Total	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
cis-Chlordane	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
d-HCH	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dieldrin	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endosulfan I	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endosulfan II	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endosulfan sulphate	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endrin	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endrin aldehyde	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endrin ketone	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
g-HCH (Lindane)	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Heptachlor	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Heptachlor epoxide	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Methoxychlor	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toxaphene	0.5	mg/kg	< 5	< 5	< 5	< 5
trans-Chlordane	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	54	INT	55	INT
Tetrachloro-m-xylene (surr.)	1	%	87	67	69	67
<b>Metals M7 (NZ MfE)</b>						
Arsenic	0.1	mg/kg	3.2	3.7	7.2	7.8
Cadmium	0.01	mg/kg	0.25	0.26	0.47	0.52
Chromium	0.1	mg/kg	170	240	160	170
Copper	0.1	mg/kg	46	51	110	120

Client Sample ID			MIS-SS01	MIS-SS02	MIS-SS03	MIS-SS04
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K24- Ap0058020	K24- Ap0058021	K24- Ap0058022	K24- Ap0058023
Date Sampled			Apr 19, 2024	Apr 19, 2024	Apr 19, 2024	Apr 19, 2024
Test/Reference	LOR	Unit				
<b>Metals M7 (NZ MfE)</b>						
Lead	0.1	mg/kg	7.2	8.0	21	23
Nickel	0.1	mg/kg	23	28	26	30
Zinc	5	mg/kg	27	30	220	250
<b>Sample Properties</b>						
% Moisture	1	%	27	28	24	24

Client Sample ID			COMP 1 (MIS-SS05 SS06 SS07)	COMP 2 (MIS-SS08 SS09 SS10)	MIS-SS05	MIS-SS06
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K24- Ap0058024	K24- Ap0058025	K24- Ap0058026	K24- Ap0058027
Date Sampled			Apr 19, 2024	Apr 19, 2024	Apr 19, 2024	Apr 19, 2024
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides (NZ MfE)</b>						
Comments			G01	G01	G01	G01
2,4'-DDD	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4'-DDE	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4'-DDT	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4,4'-DDD	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4,4'-DDE	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4,4'-DDT	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
DDT + DDE + DDD (Total)*	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
a-HCH	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aldrin	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
b-HCH	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Chlordanes - Total	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
cis-Chlordane	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
d-HCH	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dieldrin	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endosulfan I	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endosulfan II	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endosulfan sulphate	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endrin	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endrin aldehyde	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endrin ketone	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
g-HCH (Lindane)	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Heptachlor	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Heptachlor epoxide	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Methoxychlor	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toxaphene	0.5	mg/kg	< 5	< 5	< 5	< 5
trans-Chlordane	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	INT	INT	INT	INT
Tetrachloro-m-xylene (surr.)	1	%	69	65	69	99



Client Sample ID			COMP 1 (MIS-SS05 SS06 SS07)	COMP 2 (MIS-SS08 SS09 SS10)	MIS-SS05	MIS-SS06
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K24-Ap0058024	K24-Ap0058025	K24-Ap0058026	K24-Ap0058027
Date Sampled			Apr 19, 2024	Apr 19, 2024	Apr 19, 2024	Apr 19, 2024
Test/Reference	LOR	Unit				
Metals M7 (NZ MfE)						
Arsenic	0.1	mg/kg	3.5	8.8	3.5	3.6
Cadmium	0.01	mg/kg	0.46	0.23	0.39	0.39
Chromium	0.1	mg/kg	190	220	150	160
Copper	0.1	mg/kg	100	74	180	73
Lead	0.1	mg/kg	11	36	16	7.7
Nickel	0.1	mg/kg	36	35	20	26
Zinc	5	mg/kg	61	130	60	54
Sample Properties						
% Moisture	1	%	24	27	26	22

Client Sample ID			MIS-SS07	MIS-SS08	MIS-SS09	MIS-SS10
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K24-Ap0058028	K24-Ap0058029	K24-Ap0058030	K24-Ap0058031
Date Sampled			Apr 19, 2024	Apr 19, 2024	Apr 19, 2024	Apr 19, 2024
Test/Reference	LOR	Unit				
Organochlorine Pesticides (NZ MfE)						
Comments			G01	G01	G01	G01
2,4'-DDD	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4'-DDE	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4'-DDT	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4,4'-DDD	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4,4'-DDE	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4,4'-DDT	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
DDT + DDE + DDD (Total)*	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
a-HCH	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aldrin	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
b-HCH	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Chlordanes - Total	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
cis-Chlordane	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
d-HCH	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dieldrin	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endosulfan I	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endosulfan II	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endosulfan sulphate	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endrin	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endrin aldehyde	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endrin ketone	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
g-HCH (Lindane)	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Heptachlor	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Heptachlor epoxide	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Methoxychlor	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toxaphene	0.5	mg/kg	< 5	< 5	< 5	< 5
trans-Chlordane	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	INT	INT	INT	INT
Tetrachloro-m-xylene (surr.)	1	%	70	75	65	86

Client Sample ID			MIS-SS07	MIS-SS08	MIS-SS09	MIS-SS10
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K24- Ap0058028	K24- Ap0058029	K24- Ap0058030	K24- Ap0058031
Date Sampled			Apr 19, 2024	Apr 19, 2024	Apr 19, 2024	Apr 19, 2024
Test/Reference	LOR	Unit				
<b>Metals M7 (NZ MfE)</b>						
Arsenic	0.1	mg/kg	4.3	5.2	5.8	17
Cadmium	0.01	mg/kg	0.65	0.16	0.15	0.41
Chromium	0.1	mg/kg	260	220	220	240
Copper	0.1	mg/kg	67	48	50	120
Lead	0.1	mg/kg	13	18	22	71
Nickel	0.1	mg/kg	34	29	29	33
Zinc	5	mg/kg	76	71	74	270
<b>Sample Properties</b>						
% Moisture	1	%	22	26	27	24

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
<b>Organochlorine Pesticides (NZ MfE)</b> - Method: LTM-ORG-2220 OCP & PCB in Soil and Water by GCMSMS	Auckland	May 02, 2024	14 Days
<b>Metals M7 (NZ MfE)</b> - Method: LTM-MET-3040 Metals in Waters Soils Sediments by ICP-MS	Auckland	May 02, 2024	6 Months
<b>% Moisture</b> - Method: LTM-GEN-7080 Moisture Content in Soil by Gravimetry	Auckland	May 02, 2024	14 Days

<b>Auckland</b> 35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	<b>Auckland (Focus)</b> Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	<b>Christchurch</b> 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	<b>Tauranga</b> 1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402
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<b>Melbourne</b> 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	<b>Geelong</b> 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	<b>Sydney</b> 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	<b>Canberra</b> Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	<b>Brisbane</b> 1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794	<b>Newcastle</b> 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079 & 25289
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<b>Perth</b> 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370
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<b>Perth ProMicro</b> 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2561 Site# 2554
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 email: EnviroSales@eurofins.com

**Company Name:** Haigh Workman Limited  
**Address:** 6 Fairway Drive  
 Kerikeri  
 NZ 0230

**Project Name:** 17 MISSION ROAD KERIKERI  
**Project ID:** 24066

**Order No.:**  
**Report #:** 1090131  
**Phone:** 09 4078 327  
**Fax:**

**Received:** Apr 23, 2024 9:28 AM  
**Due:** May 6, 2024  
**Priority:** 8 Day  
**Contact Name:** Aaron Thorburn

Eurofins Analytical Services Manager : Katyana Gausel

Sample Detail						Moisture Set	Organochlorine Pesticides (NZ MFE)	Metals M7 (NZ MFE)
<b>Auckland Laboratory - IANZ# 1327</b>						X	X	X
<b>Auckland (Focus) Laboratory - IANZ# 1308</b>								
<b>Christchurch Laboratory - IANZ# 1290</b>								
<b>Tauranga Laboratory - IANZ# 1402</b>								
<b>External Laboratory</b>								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	MIS-SS01	Apr 19, 2024		Soil	K24-Ap0058020	X	X	X
2	MIS-SS02	Apr 19, 2024		Soil	K24-Ap0058021	X	X	X
3	MIS-SS03	Apr 19, 2024		Soil	K24-Ap0058022	X	X	X
4	MIS-SS04	Apr 19, 2024		Soil	K24-Ap0058023	X	X	X
5	COMP 1 (MIS-SS05 SS06 SS07)	Apr 19, 2024		Soil	K24-Ap0058024	X	X	X
6	COMP 2 (MIS-SS08 SS09 SS10)	Apr 19, 2024		Soil	K24-Ap0058025	X	X	X
7	MIS-SS05	Apr 19, 2024		Soil	K24-Ap0058026	X	X	X

web: www.eurofins.com.au  
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<b>Auckland</b> 35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	<b>Auckland (Focus)</b> Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	<b>Christchurch</b> 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	<b>Tauranga</b> 1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402
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<b>Melbourne</b> 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	<b>Geelong</b> 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	<b>Sydney</b> 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	<b>Canberra</b> Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	<b>Brisbane</b> 1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794	<b>Newcastle</b> 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079 & 25289
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<b>Perth</b> 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370	<b>Perth ProMicro</b> 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2561 Site# 2554
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<b>Company Name:</b> Haigh Workman Limited <b>Address:</b> 6 Fairway Drive Kerikeri NZ 0230  <b>Project Name:</b> 17 MISSION ROAD KERIKERI <b>Project ID:</b> 24066	<b>Order No.:</b> <b>Report #:</b> 1090131 <b>Phone:</b> 09 4078 327 <b>Fax:</b>	<b>Received:</b> Apr 23, 2024 9:28 AM <b>Due:</b> May 6, 2024 <b>Priority:</b> 8 Day <b>Contact Name:</b> Aaron Thorburn
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**Eurofins Analytical Services Manager : Katyana Gausel**

Sample Detail						Moisture Set	Organochlorine Pesticides (NZ MFE)	Metals M7 (NZ MFE)
<b>Auckland Laboratory - IANZ# 1327</b>						X	X	X
<b>Auckland (Focus) Laboratory - IANZ# 1308</b>								
<b>Christchurch Laboratory - IANZ# 1290</b>								
8	MIS-SS06	Apr 19, 2024		Soil	K24-Ap0058027	X	X	X
9	MIS-SS07	Apr 19, 2024		Soil	K24-Ap0058028	X	X	X
10	MIS-SS08	Apr 19, 2024		Soil	K24-Ap0058029	X	X	X
11	MIS-SS09	Apr 19, 2024		Soil	K24-Ap0058030	X	X	X
12	MIS-SS10	Apr 19, 2024		Soil	K24-Ap0058031	X	X	X
<b>Test Counts</b>						12	12	12

## Internal Quality Control Review and Glossary

### General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
- Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
- Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
- For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
- Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
- SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
- This report replaces any interim results previously issued.

### Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

### Units

<b>mg/kg:</b> milligrams per kilogram	<b>mg/L:</b> milligrams per litre	<b>ppm:</b> parts per million
<b>µg/L:</b> micrograms per litre	<b>ppb:</b> parts per billion	<b>%:</b> Percentage
<b>org/100 mL:</b> Organisms per 100 millilitres	<b>NTU:</b> Nephelometric Turbidity Units	<b>MPN/100 mL:</b> Most Probable Number of organisms per 100 millilitres
<b>CFU:</b> Colony Forming Unit	<b>Colour:</b> Pt-Co Units (CU)	

### Terms

<b>APHA</b>	American Public Health Association
<b>CEC</b>	Cation Exchange Capacity
<b>COC</b>	Chain of Custody
<b>CP</b>	Client Parent - QC was performed on samples pertaining to this report
<b>CRM</b>	Certified Reference Material (ISO17034) - reported as percent recovery.
<b>Dry</b>	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
<b>Duplicate</b>	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
<b>LOR</b>	Limit of Reporting.
<b>LCS</b>	Laboratory Control Sample - reported as percent recovery.
<b>Method Blank</b>	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
<b>NCP</b>	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
<b>RPD</b>	Relative Percent Difference between two Duplicate pieces of analysis.
<b>SPIKE</b>	Addition of the analyte to the sample and reported as percentage recovery.
<b>SRA</b>	Sample Receipt Advice
<b>Surr - Surrogate</b>	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
<b>TBTO</b>	Tributyltin oxide ( <i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
<b>TCLP</b>	Toxicity Characteristic Leaching Procedure
<b>TEQ</b>	Toxic Equivalency Quotient or Total Equivalence
<b>QSM</b>	US Department of Defense Quality Systems Manual Version 6.0
<b>US EPA</b>	United States Environmental Protection Agency
<b>WA DWER</b>	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

### QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

### QC Data General Comments

- Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

**Quality Control Results**

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Method Blank</b>							
<b>Organochlorine Pesticides (NZ MfE)</b>							
2.4'-DDD	mg/kg	< 0.01			0.01	Pass	
2.4'-DDE	mg/kg	< 0.01			0.01	Pass	
2.4'-DDT	mg/kg	< 0.01			0.01	Pass	
4.4'-DDD	mg/kg	< 0.01			0.01	Pass	
4.4'-DDE	mg/kg	< 0.01			0.01	Pass	
4.4'-DDT	mg/kg	< 0.01			0.01	Pass	
a-HCH	mg/kg	< 0.01			0.01	Pass	
Aldrin	mg/kg	< 0.01			0.01	Pass	
b-HCH	mg/kg	< 0.01			0.01	Pass	
cis-Chlordane	mg/kg	< 0.01			0.01	Pass	
d-HCH	mg/kg	< 0.01			0.01	Pass	
Dieldrin	mg/kg	< 0.01			0.01	Pass	
Endosulfan I	mg/kg	< 0.01			0.01	Pass	
Endosulfan II	mg/kg	< 0.01			0.01	Pass	
Endosulfan sulphate	mg/kg	< 0.01			0.01	Pass	
Endrin	mg/kg	0.01			0.01	Pass	
Endrin ketone	mg/kg	< 0.01			0.01	Pass	
g-HCH (Lindane)	mg/kg	< 0.01			0.01	Pass	
Heptachlor	mg/kg	< 0.01			0.01	Pass	
Heptachlor epoxide	mg/kg	< 0.01			0.01	Pass	
Hexachlorobenzene	mg/kg	< 0.01			0.01	Pass	
Methoxychlor	mg/kg	< 0.01			0.01	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
trans-Chlordane	mg/kg	< 0.01			0.01	Pass	
<b>Method Blank</b>							
<b>Metals M7 (NZ MfE)</b>							
Arsenic	mg/kg	< 0.1			0.1	Pass	
Chromium	mg/kg	< 0.1			0.1	Pass	
Copper	mg/kg	< 0.1			0.1	Pass	
Lead	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 0.1			0.1	Pass	
Zinc	mg/kg	< 5			5	Pass	
<b>Method Blank</b>							
<b>Organochlorine Pesticides (NZ MfE)</b>							
2.4'-DDD	mg/kg	< 0.01			0.01	Pass	
2.4'-DDE	mg/kg	< 0.01			0.01	Pass	
2.4'-DDT	mg/kg	< 0.01			0.01	Pass	
4.4'-DDD	mg/kg	< 0.01			0.01	Pass	
4.4'-DDE	mg/kg	< 0.01			0.01	Pass	
4.4'-DDT	mg/kg	< 0.01			0.01	Pass	
a-HCH	mg/kg	< 0.01			0.01	Pass	
Aldrin	mg/kg	< 0.01			0.01	Pass	
b-HCH	mg/kg	< 0.01			0.01	Pass	
cis-Chlordane	mg/kg	< 0.01			0.01	Pass	
d-HCH	mg/kg	< 0.01			0.01	Pass	
Dieldrin	mg/kg	< 0.01			0.01	Pass	
Endosulfan I	mg/kg	0.01			0.01	Pass	
Endosulfan II	mg/kg	< 0.01			0.01	Pass	
Endosulfan sulphate	mg/kg	< 0.01			0.01	Pass	
Endrin	mg/kg	< 0.01			0.01	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin aldehyde	mg/kg	< 0.01			0.01	Pass	
Endrin ketone	mg/kg	< 0.01			0.01	Pass	
g-HCH (Lindane)	mg/kg	< 0.01			0.01	Pass	
Heptachlor	mg/kg	< 0.01			0.01	Pass	
Heptachlor epoxide	mg/kg	< 0.01			0.01	Pass	
Hexachlorobenzene	mg/kg	< 0.01			0.01	Pass	
Methoxychlor	mg/kg	< 0.01			0.01	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
trans-Chlordane	mg/kg	< 0.01			0.01	Pass	
<b>Method Blank</b>							
<b>Metals M7 (NZ MfE)</b>							
Arsenic	mg/kg	< 0.1			0.1	Pass	
Chromium	mg/kg	< 0.1			0.1	Pass	
Copper	mg/kg	< 0.1			0.1	Pass	
Lead	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 0.1			0.1	Pass	
Zinc	mg/kg	< 5			5	Pass	
<b>LCS - % Recovery</b>							
<b>Organochlorine Pesticides (NZ MfE)</b>							
2.4'-DDD	%	77			70-130	Pass	
2.4'-DDE	%	78			70-130	Pass	
2.4'-DDT	%	72			70-130	Pass	
4.4'-DDD	%	80			70-130	Pass	
4.4'-DDE	%	85			70-130	Pass	
4.4'-DDT	%	89			70-130	Pass	
a-HCH	%	92			70-130	Pass	
Aldrin	%	88			70-130	Pass	
b-HCH	%	86			70-130	Pass	
cis-Chlordane	%	95			70-130	Pass	
d-HCH	%	89			70-130	Pass	
Dieldrin	%	94			70-130	Pass	
Endosulfan I	%	84			70-130	Pass	
Endosulfan II	%	83			70-130	Pass	
Endosulfan sulphate	%	81			70-130	Pass	
Endrin	%	76			70-130	Pass	
Endrin aldehyde	%	94			70-130	Pass	
Endrin ketone	%	77			70-130	Pass	
g-HCH (Lindane)	%	81			70-130	Pass	
Heptachlor	%	90			70-130	Pass	
Heptachlor epoxide	%	93			70-130	Pass	
Hexachlorobenzene	%	88			70-130	Pass	
Methoxychlor	%	78			70-130	Pass	
trans-Chlordane	%	89			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Metals M7 (NZ MfE)</b>							
Arsenic	%	110			80-120	Pass	
Cadmium	%	109			80-120	Pass	
Chromium	%	113			80-120	Pass	
Copper	%	113			80-120	Pass	
Lead	%	112			80-120	Pass	
Nickel	%	113			80-120	Pass	
Zinc	%	112			80-120	Pass	
<b>LCS - % Recovery</b>							
<b>Organochlorine Pesticides (NZ MfE)</b>							



Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
2.4'-DDD	%	98			70-130	Pass		
2.4'-DDE	%	86			70-130	Pass		
4.4'-DDD	%	84			70-130	Pass		
4.4'-DDE	%	102			70-130	Pass		
4.4'-DDT	%	83			70-130	Pass		
a-HCH	%	89			70-130	Pass		
Aldrin	%	97			70-130	Pass		
b-HCH	%	104			70-130	Pass		
cis-Chlordane	%	96			70-130	Pass		
d-HCH	%	113			70-130	Pass		
Dieldrin	%	100			70-130	Pass		
Endosulfan I	%	94			70-130	Pass		
Endosulfan II	%	108			70-130	Pass		
Endosulfan sulphate	%	96			70-130	Pass		
Endrin	%	96			70-130	Pass		
Endrin ketone	%	109			70-130	Pass		
g-HCH (Lindane)	%	107			70-130	Pass		
Heptachlor	%	127			70-130	Pass		
Heptachlor epoxide	%	77			70-130	Pass		
Hexachlorobenzene	%	88			70-130	Pass		
Methoxychlor	%	109			70-130	Pass		
trans-Chlordane	%	86			70-130	Pass		
<b>LCS - % Recovery</b>								
<b>Metals M7 (NZ MfE)</b>								
Arsenic	%	117			80-120	Pass		
Cadmium	%	115			80-120	Pass		
Chromium	%	113			80-120	Pass		
Copper	%	113			80-120	Pass		
Lead	%	109			80-120	Pass		
Nickel	%	112			80-120	Pass		
Zinc	%	116			80-120	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>								
<b>Organochlorine Pesticides (NZ MfE)</b>								
				Result 1				
2.4'-DDD	K24-Ap0063221	NCP	%	80		70-130	Pass	
2.4'-DDE	K24-Ap0063221	NCP	%	75		70-130	Pass	
4.4'-DDD	K24-Ap0063221	NCP	%	90		70-130	Pass	
4.4'-DDE	K24-Ap0063221	NCP	%	91		70-130	Pass	
4.4'-DDT	K24-Ap0076364	NCP	%	81		70-130	Pass	
a-HCH	K24-Ap0063221	NCP	%	92		70-130	Pass	
Aldrin	K24-Ap0063221	NCP	%	92		70-130	Pass	
b-HCH	K24-Ap0063221	NCP	%	86		70-130	Pass	
cis-Chlordane	K24-Ap0063221	NCP	%	90		70-130	Pass	
d-HCH	K24-Ap0063221	NCP	%	93		70-130	Pass	
Dieldrin	K24-Ap0063221	NCP	%	96		70-130	Pass	
Endosulfan I	K24-Ap0063221	NCP	%	85		70-130	Pass	
Endosulfan II	K24-Ap0063221	NCP	%	98		70-130	Pass	
Endosulfan sulphate	K24-Ap0063221	NCP	%	80		70-130	Pass	
Endrin	K24-Ap0063221	NCP	%	79		70-130	Pass	
Endrin aldehyde	K24-Ap0063221	NCP	%	102		70-130	Pass	
Endrin ketone	K24-Ap0063221	NCP	%	87		70-130	Pass	
g-HCH (Lindane)	K24-Ap0063221	NCP	%	85		70-130	Pass	
Heptachlor	K24-Ap0063221	NCP	%	93		70-130	Pass	
Heptachlor epoxide	K24-Ap0063221	NCP	%	94		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Hexachlorobenzene	K24-Ap0063221	NCP	%	86			70-130	Pass	
Methoxychlor	K24-Ap0076364	NCP	%	75			70-130	Pass	
trans-Chlordane	K24-Ap0063221	NCP	%	91			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Metals M7 (NZ MfE)</b>				Result 1					
Arsenic	K24-Ap0058021	CP	%	92			75-125	Pass	
Cadmium	K24-Ap0058021	CP	%	103			75-125	Pass	
Chromium	K24-Ap0058021	CP	%	101			75-125	Pass	
Copper	K24-Ap0058021	CP	%	108			75-125	Pass	
Lead	K24-Ap0058021	CP	%	102			75-125	Pass	
Nickel	K24-Ap0058021	CP	%	108			75-125	Pass	
Zinc	K24-Ap0058021	CP	%	103			75-125	Pass	
<b>Spike - % Recovery</b>									
<b>Organochlorine Pesticides (NZ MfE)</b>				Result 1					
2.4'-DDD	K24-Ap0058030	CP	%	75			70-130	Pass	
2.4'-DDT	K24-Ap0058030	CP	%	77			70-130	Pass	
4.4'-DDD	K24-Ap0058030	CP	%	75			70-130	Pass	
4.4'-DDE	K24-Ap0058030	CP	%	70			70-130	Pass	
a-HCH	K24-Ap0058030	CP	%	79			70-130	Pass	
Aldrin	K24-Ap0058030	CP	%	74			70-130	Pass	
cis-Chlordane	K24-Ap0058030	CP	%	82			70-130	Pass	
d-HCH	K24-Ap0058030	CP	%	92			70-130	Pass	
Dieldrin	K24-Ap0058030	CP	%	72			70-130	Pass	
Endosulfan II	K24-Ap0058030	CP	%	74			70-130	Pass	
Endosulfan sulphate	K24-Ap0058030	CP	%	70			70-130	Pass	
Endrin ketone	K24-Ap0058030	CP	%	86			70-130	Pass	
g-HCH (Lindane)	K24-Ap0058030	CP	%	77			70-130	Pass	
Heptachlor	K24-Ap0058030	CP	%	130			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Organochlorine Pesticides (NZ MfE)</b>				Result 1	Result 2	RPD			
2.4'-DDD	K24-Ap0054759	NCP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
2.4'-DDE	K24-Ap0054759	NCP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
2.4'-DDT	K24-Ap0054759	NCP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
4.4'-DDD	K24-Ap0054759	NCP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
4.4'-DDE	K24-Ap0054759	NCP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
4.4'-DDT	K24-Ap0054759	NCP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
a-HCH	K24-Ap0054759	NCP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Aldrin	K24-Ap0054759	NCP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
b-HCH	K24-Ap0054759	NCP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
cis-Chlordane	K24-Ap0054759	NCP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
d-HCH	K24-Ap0054759	NCP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Dieldrin	K24-Ap0054759	NCP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Endosulfan I	K24-Ap0054759	NCP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Endosulfan II	K24-Ap0054759	NCP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Endosulfan sulphate	K24-Ap0054759	NCP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Endrin	K24-Ap0054759	NCP	mg/kg	0.01	< 0.01	67	30%	Fail	Q15
Endrin aldehyde	K24-Ap0054759	NCP	mg/kg	0.01	0.01	32	30%	Fail	Q15
Endrin ketone	K24-Ap0054759	NCP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
g-HCH (Lindane)	K24-Ap0054759	NCP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Heptachlor	K24-Ap0054759	NCP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Heptachlor epoxide	K24-Ap0054759	NCP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Hexachlorobenzene	K24-Ap0054759	NCP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Methoxychlor	K24-Ap0054759	NCP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
trans-Chlordane	K24-Ap0054759	NCP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	

<b>Duplicate</b>								
<b>Metals M7 (NZ MfE)</b>				Result 1	Result 2	RPD		
Arsenic	Z24-Ap0041492	NCP	mg/kg	3.3	3.3	<1	30%	Pass
Cadmium	Z24-Ap0041492	NCP	mg/kg	0.07	0.06	9.2	30%	Pass
Chromium	Z24-Ap0041492	NCP	mg/kg	14	14	1.4	30%	Pass
Copper	Z24-Ap0041492	NCP	mg/kg	7.0	7.1	2.1	30%	Pass
Lead	Z24-Ap0041492	NCP	mg/kg	13	13	<1	30%	Pass
Nickel	Z24-Ap0041492	NCP	mg/kg	8.5	8.7	2.0	30%	Pass
Zinc	Z24-Ap0041492	NCP	mg/kg	41	42	1.1	30%	Pass
<b>Duplicate</b>								
<b>Sample Properties</b>				Result 1	Result 2	RPD		
% Moisture	K24-Ap0058020	CP	%	27	27	<1	30%	Pass

**Comments**

This report has been revised (V2) to include M7 and OCP analysis for samples Ap0058026, Ap0058027, Ap0058028, Ap0058029, Ap0058030, and Ap0058031.

**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

**Qualifier Codes/Comments**

Code	Description
G01	The LORs have been raised due to matrix interference
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

**Authorised by:**

Katjana Gausel	Analytical Services Manager
Raymond Siu	Senior Analyst-Metal
Raymond Siu	Senior Analyst-Organic



**Raymond Siu**  
**Senior Instrument Chemist (Key Technical Personnel)**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

\* Indicates IANZ accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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# CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Auckland Office

35 O'Rorke Road, Penrose, Auckland 1061, NZ  
0800 856450 (free dial) OnurMehmet@eurofins.com

Wellington Office

85 Port Road, Seaview, Lower Hutt 5011, NZ  
0800 856450 (free dial) OnurMehmet@eurofins.com

Christchurch Office

43 Detroit Drive Rolleston 7675, NZ  
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Melbourne Laboratory

2 Kingston Town Close, Oakleigh, VIC 3166, AU  
+61 3 8564 5000 EnviroSampleVic@eurofins.com

Company		Haigh Workman Ltd				Purchase Order				Project Manager				Aaron Thorburn				Project Name		17 Mission Road, Kerikeri					
Address		Unit 3, 30 Rauiri Drive, Marsden Cove, WHANGAREI 1180				Quote ID №				Project №				24 066				Report Format		pdf, xls					
Contact Name		Aaron Thorburn				Analysis (Note: Where metals are requested, please specify "Total" or "Filtered")				Metals (M7)				OCP				Email for Results		aaron@haighworkman.co.nz					
Phone №		0273312728																Turn Around Requirements		<input type="checkbox"/> 1 DAY* <input type="checkbox"/> 2 DAY* <input type="checkbox"/> 3 DAY* <input checked="" type="checkbox"/> 5 DAY (Std.) <input type="checkbox"/> Other (   )		Containers 1L Plastic   250mL Plastic   125mL Plastic   200mL Amber Glass   40mL Vial   125mL Amber Glass   Jar   Asbestos bag		Method of Shipment <input checked="" type="checkbox"/> Courier (#   ) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal	
Special Direction																		* Surcharges apply							
Relinquished by (Signature) (Time / Date)		_____ ____ : ____ / ____ / ____																						Sample Comments / DG Hazard Warning	
No	Client Sample ID	Date	Matrix																						
1	MIS-SS01	19/04/24	Soil	X	X													X							
2	MIS-SS02	19/04/24	Soil	X	X													X							
3	MIS-SS03	19/04/24	Soil	X	X													X							
4	MIS-SS04	19/04/24	Soil	X	X													X							
5	Composite # 1 (MIS-SS05, MIS-SS06 & MIS-SS07)	19/04/24	Soil	X	X													X							
6	Composite # 2 (MIS-SS08, MIS-SS09 & MIS-SS10)	19/04/24	Soil	X	X													X							
7																									
8																									
9																									
10																									
Total Counts																									
Laboratory Use Only		Received By	AUCK   WELL   CHCH   MELB				Date	___/___/___	Time	__:__	Signature					Temperature									
		Received By	AUCK   WELL   CHCH   MELB				Date	___/___/___	Time	__:__	Signature					Report №									



Date/Time: 23.04.24  
 Chilled:  Yes / No  
 Temp: 17.3°C  
 Correction: -0.6°C  
 Final Temp: 16.7°C

Environment Testing

Haigh Workman Limited  
6 Fairway Drive  
Kerikeri  
NZ 0230



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

Attention: Aaron Thorburn

Report **1094167-S**  
Project name **ADDITIONAL: 17 MISSION ROAD KERIKERI**  
Project ID **24066**  
Received Date **May 02, 2024**

Client Sample ID			MIS-SS05	MIS-SS06	MIS-SS07	MIS-SS08
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K24-My0015898	K24-My0015899	K24-My0015900	K24-My0015901
Date Sampled			Apr 19, 2024	Apr 19, 2024	Apr 19, 2024	Apr 19, 2024
Test/Reference	LOR	Unit				
<b>Metals M7 (NZ MfE)</b>						
Arsenic	0.1	mg/kg	3.5	3.6	4.3	5.2
Cadmium	0.01	mg/kg	0.39	0.39	0.65	0.16
Chromium	0.1	mg/kg	150	160	260	220
Copper	0.1	mg/kg	180	73	67	48
Lead	0.1	mg/kg	16	7.7	13	18
Nickel	0.1	mg/kg	20	26	34	29
Zinc	5	mg/kg	60	54	76	71
<b>Sample Properties</b>						
% Moisture	1	%	26	22	22	26

Client Sample ID			MIS-SS09	MIS-SS10
Sample Matrix			Soil	Soil
Eurofins Sample No.			K24-My0015902	K24-My0015903
Date Sampled			Apr 19, 2024	Apr 19, 2024
Test/Reference	LOR	Unit		
<b>Metals M7 (NZ MfE)</b>				
Arsenic	0.1	mg/kg	5.8	17
Cadmium	0.01	mg/kg	0.15	0.41
Chromium	0.1	mg/kg	220	240
Copper	0.1	mg/kg	50	120
Lead	0.1	mg/kg	22	71
Nickel	0.1	mg/kg	29	33
Zinc	5	mg/kg	74	270
<b>Sample Properties</b>				
% Moisture	1	%	27	24

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

<b>Description</b>	<b>Testing Site</b>	<b>Extracted</b>	<b>Holding Time</b>
Metals M7 (NZ MfE) - Method: LTM-MET-3040 Metals in Waters Soils Sediments by ICP-MS	Auckland	May 02, 2024	6 Months
% Moisture - Method: LTM-GEN-7080 Moisture Content in Soil by Gravimetry	Auckland	May 02, 2024	14 Days

web: www.eurofins.com.au  
 email: EnviroSales@eurofins.com

<b>Auckland</b> 35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	<b>Auckland (Focus)</b> Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	<b>Christchurch</b> 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	<b>Tauranga</b> 1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402
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<b>Melbourne</b> 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	<b>Geelong</b> 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	<b>Sydney</b> 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	<b>Canberra</b> Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	<b>Brisbane</b> 1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794	<b>Newcastle</b> 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079 & 25289
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<b>Perth</b> 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370	<b>Perth ProMicro</b> 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2561 Site# 2554
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<b>Company Name:</b> Haigh Workman Limited <b>Address:</b> 6 Fairway Drive Kerikeri NZ 0230  <b>Project Name:</b> ADDITIONAL: 17 MISSION ROAD KERIKERI <b>Project ID:</b> 24066	<b>Order No.:</b> <b>Report #:</b> 1094167 <b>Phone:</b> 09 4078 327 <b>Fax:</b>	<b>Received:</b> May 2, 2024 4:10 PM <b>Due:</b> May 7, 2024 <b>Priority:</b> 3 Day <b>Contact Name:</b> Aaron Thorburn
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**Eurofins Analytical Services Manager : Katyana Gausel**

<b>Sample Detail</b>						Moisture Set	Metals M7 (NZ MFE)
<b>Auckland Laboratory - IANZ# 1327</b>						X	X
<b>Auckland (Focus) Laboratory - IANZ# 1308</b>							
<b>Christchurch Laboratory - IANZ# 1290</b>							
<b>Tauranga Laboratory - IANZ# 1402</b>							
<b>External Laboratory</b>							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	MIS-SS05	Apr 19, 2024		Soil	K24-My0015898	X	X
2	MIS-SS06	Apr 19, 2024		Soil	K24-My0015899	X	X
3	MIS-SS07	Apr 19, 2024		Soil	K24-My0015900	X	X
4	MIS-SS08	Apr 19, 2024		Soil	K24-My0015901	X	X
5	MIS-SS09	Apr 19, 2024		Soil	K24-My0015902	X	X
6	MIS-SS10	Apr 19, 2024		Soil	K24-My0015903	X	X
<b>Test Counts</b>						6	6



## Internal Quality Control Review and Glossary

### General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
- Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
- Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
- For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
- Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
- SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
- This report replaces any interim results previously issued.

### Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

### Units

<b>mg/kg:</b> milligrams per kilogram	<b>mg/L:</b> milligrams per litre	<b>ppm:</b> parts per million
<b>µg/L:</b> micrograms per litre	<b>ppb:</b> parts per billion	<b>%:</b> Percentage
<b>org/100 mL:</b> Organisms per 100 millilitres	<b>NTU:</b> Nephelometric Turbidity Units	<b>MPN/100 mL:</b> Most Probable Number of organisms per 100 millilitres
<b>CFU:</b> Colony Forming Unit	<b>Colour:</b> Pt-Co Units (CU)	

### Terms

<b>APHA</b>	American Public Health Association
<b>CEC</b>	Cation Exchange Capacity
<b>COC</b>	Chain of Custody
<b>CP</b>	Client Parent - QC was performed on samples pertaining to this report
<b>CRM</b>	Certified Reference Material (ISO17034) - reported as percent recovery.
<b>Dry</b>	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
<b>Duplicate</b>	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
<b>LOR</b>	Limit of Reporting.
<b>LCS</b>	Laboratory Control Sample - reported as percent recovery.
<b>Method Blank</b>	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
<b>NCP</b>	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
<b>RPD</b>	Relative Percent Difference between two Duplicate pieces of analysis.
<b>SPIKE</b>	Addition of the analyte to the sample and reported as percentage recovery.
<b>SRA</b>	Sample Receipt Advice
<b>Surr - Surrogate</b>	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
<b>TBTO</b>	Tributyltin oxide ( <i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
<b>TCLP</b>	Toxicity Characteristic Leaching Procedure
<b>TEQ</b>	Toxic Equivalency Quotient or Total Equivalence
<b>QSM</b>	US Department of Defense Quality Systems Manual Version 6.0
<b>US EPA</b>	United States Environmental Protection Agency
<b>WA DWER</b>	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

### QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

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Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

### QC Data General Comments

- Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

**Quality Control Results**

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Method Blank</b>									
<b>Metals M7 (NZ MfE)</b>									
Arsenic			mg/kg	< 0.1			0.1	Pass	
Chromium			mg/kg	< 0.1			0.1	Pass	
Copper			mg/kg	< 0.1			0.1	Pass	
Lead			mg/kg	< 0.1			0.1	Pass	
Nickel			mg/kg	< 0.1			0.1	Pass	
Zinc			mg/kg	< 5			5	Pass	
<b>LCS - % Recovery</b>									
<b>Metals M7 (NZ MfE)</b>									
Arsenic			%	117			80-120	Pass	
Cadmium			%	115			80-120	Pass	
Chromium			%	113			80-120	Pass	
Copper			%	113			80-120	Pass	
Lead			%	109			80-120	Pass	
Nickel			%	112			80-120	Pass	
Zinc			%	116			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Sample Properties</b>				Result 1	Result 2	RPD			
% Moisture	K24-My0003806	NCP	%	23	24	2.4	30%	Pass	

**Comments****Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

**Authorised by:**

Katyana Gausel	Analytical Services Manager
Raymond Siu	Senior Analyst-Metal



**Raymond Siu**  
**Senior Instrument Chemist (Key Technical Personnel)**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

\* Indicates IANZ accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

## Somal Kaur

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**From:** Aaron Thorburn <aaron@haighworkman.co.nz>  
**Sent:** Thursday, 2 May 2024 1:17 p.m.  
**To:** Katyana Gausel  
**Cc:** Andre Halkyard; !NZ01\_CAU001\_EnviroSampleAKL  
**Subject:** FW: Eurofins Test Results, Invoice - Report 1090131 : Site 17 MISSION ROAD KERIKERI (24066)  
**Attachments:** 1090131\_data.csv; 1090131\_COC.pdf; 1090131\_invoice\_NZ07-853293.pdf; 1090131-S\_report.pdf

**CAUTION: EXTERNAL EMAIL** - Sent from an email domain that is not formally trusted by Eurofins.

Do not click on links or open attachments unless you recognise the sender and are certain that the content is safe.

Hi Katyana,

Can I please have Comp # 1 and 2 split into individual samples and re-tested please.

Can you please advise when I can expect to have the re-test results.

Kind Regards,

**Aaron Thorburn**

Senior Environmental Advisor

Mobile: 027 331 2728

[aaron@haighworkman.co.nz](mailto:aaron@haighworkman.co.nz)



[Website](#) . [LinkedIn](#) . [Careers](#)

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**From:** KatyanaGausel@eurofins.com <KatyanaGausel@eurofins.com>  
**Sent:** Wednesday, 1 May 2024 12:29 pm  
**To:** Aaron Thorburn <aaron@haighworkman.co.nz>  
**Subject:** Eurofins Test Results, Invoice - Report 1090131 : Site 17 MISSION ROAD KERIKERI (24066)

Hi Aaron,

Please find attached results and invoice for your Site 17 MISSION ROAD KERIKERI (24066).

Kind regards,

Katyana Gausel  
**Analytical Services Manager**

**Eurofins Environment Testing New Zealand Ltd**

Haigh Workman Limited  
 6 Fairway Drive  
 Kerikeri  
 NZ 0230



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

Attention: Aaron Thorburn

Report **1097561-S**  
 Project name **17 MISSION ROAD KERIKERI**  
 Project ID **24066**  
 Received Date **May 16, 2024**

Client Sample ID			MIS-SS11	MIS-SS13	MIS-SS14	MIS-SS15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K24-My0043716	K24-My0043717	K24-My0043718	K24-My0043719
Date Sampled			May 14, 2024	May 14, 2024	May 14, 2024	May 14, 2024
Test/Reference	LOR	Unit				
<b>Metals M7 (NZ MfE)</b>						
Arsenic	0.1	mg/kg	2.9	3.9	4.5	3.5
Cadmium	0.01	mg/kg	0.09	0.55	0.29	0.24
Chromium	0.1	mg/kg	210	180	210	210
Copper	0.1	mg/kg	46	49	100	56
Lead	0.1	mg/kg	6.0	10	27	8.3
Nickel	0.1	mg/kg	26	24	38	27
Zinc	5	mg/kg	22	63	150	41
<b>Sample Properties</b>						
% Moisture	1	%	27	24	26	25

Client Sample ID			MIS-SS16
Sample Matrix			Soil
Eurofins Sample No.			K24-My0043720
Date Sampled			May 14, 2024
Test/Reference	LOR	Unit	
<b>Metals M7 (NZ MfE)</b>			
Arsenic	0.1	mg/kg	4.3
Cadmium	0.01	mg/kg	0.69
Chromium	0.1	mg/kg	200
Copper	0.1	mg/kg	79
Lead	0.1	mg/kg	8.6
Nickel	0.1	mg/kg	29
Zinc	5	mg/kg	70
<b>Sample Properties</b>			
% Moisture	1	%	24

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

**Description**

Metals M7 (NZ MfE)

- Method: LTM-MET-3040 Metals in Waters Soils Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture Content in Soil by Gravimetry

**Testing Site**

Auckland

Auckland

**Extracted**

May 16, 2024

May 16, 2024

**Holding Time**

6 Months

14 Days

<b>Auckland</b> 35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	<b>Auckland (Focus)</b> Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	<b>Christchurch</b> 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	<b>Tauranga</b> 1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402
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<b>Melbourne</b> 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	<b>Geelong</b> 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	<b>Sydney</b> 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	<b>Canberra</b> Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	<b>Brisbane</b> 1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794	<b>Newcastle</b> 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079 & 25289
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<b>Perth</b> 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370
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<b>Perth ProMicro</b> 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2561 Site# 2554
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web: www.eurofins.com.au  
email: EnviroSales@eurofins.com

<b>Company Name:</b> Haigh Workman Limited	<b>Order No.:</b>	<b>Received:</b> May 16, 2024 9:42 AM
<b>Address:</b> 6 Fairway Drive Kerikeri NZ 0230	<b>Report #:</b> 1097561	<b>Due:</b> May 23, 2024
	<b>Phone:</b> 09 4078 327	<b>Priority:</b> 5 Day
	<b>Fax:</b>	<b>Contact Name:</b> Aaron Thorburn
<b>Project Name:</b> 17 MISSION ROAD KERIKERI		
<b>Project ID:</b> 24066		

**Eurofins Analytical Services Manager : Katyana Gausel**

Sample Detail						HOLD	Moisture Set	Metals M7 (NZ MFE)
Auckland Laboratory - IANZ# 1327						X	X	X
Auckland (Focus) Laboratory - IANZ# 1308								
Christchurch Laboratory - IANZ# 1290								
Tauranga Laboratory - IANZ# 1402								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	MIS-SS11	May 14, 2024		Soil	K24-My0043716		X	X
2	MIS-SS13	May 14, 2024		Soil	K24-My0043717		X	X
3	MIS-SS14	May 14, 2024		Soil	K24-My0043718		X	X
4	MIS-SS15	May 14, 2024		Soil	K24-My0043719		X	X
5	MIS-SS16	May 14, 2024		Soil	K24-My0043720		X	X
6	MIS-SS12	May 14, 2024		Soil	K24-My0043721	X		
7	MIS-SS17	May 14, 2024		Soil	K24-My0043722	X		
8	MIS-SS18	May 14, 2024		Soil	K24-My0043723	X		
9	MIS-SS19	May 14, 2024		Soil	K24-My0043724	X		
10	MIS-SS20	May 14, 2024		Soil	K24-My0043725	X		

web: www.eurofins.com.au  
 email: EnviroSales@eurofins.com

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<b>Company Name:</b>	Haigh Workman Limited	<b>Order No.:</b>		<b>Received:</b>	May 16, 2024 9:42 AM
<b>Address:</b>	6 Fairway Drive Kerikeri NZ 0230	<b>Report #:</b>	1097561	<b>Due:</b>	May 23, 2024
<b>Project Name:</b>	17 MISSION ROAD KERIKERI	<b>Phone:</b>	09 4078 327	<b>Priority:</b>	5 Day
<b>Project ID:</b>	24066	<b>Fax:</b>		<b>Contact Name:</b>	Aaron Thorburn
<b>Eurofins Analytical Services Manager : Katyana Gausel</b>					

<b>Sample Detail</b>						HOLD	Moisture Set	Metals M7 (NZ MFE)
<b>Auckland Laboratory - IANZ# 1327</b>						X	X	X
<b>Auckland (Focus) Laboratory - IANZ# 1308</b>								
<b>Christchurch Laboratory - IANZ# 1290</b>								
11	MIS-SS21	May 14, 2024		Soil	K24-My0043726	X		
12	MIS-SS22	May 14, 2024		Soil	K24-My0043727	X		
13	MIS-SS23	May 14, 2024		Soil	K24-My0043728	X		
14	MIS-SS24	May 14, 2024		Soil	K24-My0043729	X		
<b>Test Counts</b>						9	5	5



**Internal Quality Control Review and Glossary**
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<b>Surr - Surrogate</b>	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
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<b>QSM</b>	US Department of Defense Quality Systems Manual Version 6.0
<b>US EPA</b>	United States Environmental Protection Agency
<b>WA DWER</b>	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

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PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

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<b>Metals M7 (NZ MfE)</b>											
Arsenic			mg/kg	< 0.1			0.1	Pass			
Chromium			mg/kg	< 0.1			0.1	Pass			
<b>Method Blank</b>											
<b>Metals M7 (NZ MfE)</b>											
Cadmium			mg/kg	< 0.01			0.01	Pass			
Copper			mg/kg	< 0.1			0.1	Pass			
Lead			mg/kg	< 0.1			0.1	Pass			
Nickel			mg/kg	< 0.1			0.1	Pass			
Zinc			mg/kg	< 5			5	Pass			
<b>LCS - % Recovery</b>											
<b>Metals M7 (NZ MfE)</b>											
Arsenic			%	108			80-120	Pass			
<b>LCS - % Recovery</b>											
<b>Metals M7 (NZ MfE)</b>											
Cadmium			%	110			80-120	Pass			
Chromium			%	109			80-120	Pass			
Copper			%	106			80-120	Pass			
Lead			%	104			80-120	Pass			
Nickel			%	109			80-120	Pass			
Zinc			%	115			80-120	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
<b>Spike - % Recovery</b>											
<b>Metals M7 (NZ MfE)</b>											
Chromium					Result 1						
			K23-No0053646	NCP	%	119	75-125	Pass			
<b>Spike - % Recovery</b>											
<b>Metals M7 (NZ MfE)</b>											
Arsenic					Result 1						
			K24-My0043717	CP	%	103	75-125	Pass			
Cadmium					Result 1						
			K24-My0043717	CP	%	104	75-125	Pass			
Copper					Result 1						
			K24-My0043717	CP	%	110	75-125	Pass			
Lead					Result 1						
			K24-My0043717	CP	%	100	75-125	Pass			
Nickel					Result 1						
			K24-My0043717	CP	%	104	75-125	Pass			
Zinc					Result 1						
			K24-My0043717	CP	%	112	75-125	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
<b>Duplicate</b>											
<b>Metals M7 (NZ MfE)</b>											
Arsenic					Result 1	Result 2	RPD				
			K23-No0052522	NCP	mg/kg	7.3	5.9	21	30%	Pass	
Cadmium					Result 1	Result 2	RPD				
			K23-No0052522	NCP	mg/kg	0.47	0.34	30	30%	Pass	
Chromium					Result 1	Result 2	RPD				
			K23-No0052522	NCP	mg/kg	15	16	6.0	30%	Pass	
Copper					Result 1	Result 2	RPD				
			K23-No0052522	NCP	mg/kg	28	21	29	30%	Pass	
Lead					Result 1	Result 2	RPD				
			K23-No0052522	NCP	mg/kg	63	42	40	30%	Fail	Q02
Nickel					Result 1	Result 2	RPD				
			K23-No0052522	NCP	mg/kg	14	14	<1	30%	Pass	
Zinc					Result 1	Result 2	RPD				
			K23-No0052522	NCP	mg/kg	150	120	23	30%	Pass	
<b>Duplicate</b>											
<b>Sample Properties</b>											
% Moisture					Result 1	Result 2	RPD				
			Z24-My0038901	NCP	%	12	11	4.0	30%	Pass	

**Comments**
**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

**Qualifier Codes/Comments**

Code	Description
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause

**Authorised by:**

Katyana Gausel	Analytical Services Manager
Raymond Siu	Senior Analyst-Metal



**Raymond Siu**  
**Senior Instrument Chemist (Key Technical Personnel)**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

\* Indicates IANZ accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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# CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

**Auckland Office**

35 O'Rorke Road, Penrose, Auckland 1061, NZ  
0800 856450 (free dial) OnurMehmet@eurofins.com

**Wellington Office**

85 Port Road, Seaview, Lower Hutt 5011, NZ  
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**Christchurch Office**

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**Melbourne Laboratory**

2 Kingston Town Close, Oakleigh, VIC 3166, AU  
+61 3 8564 5000 EnviroSampleVic@eurofins.com

Company		Haigh Workman Ltd				Purchase Order				Project Manager				Aaron Thorburn				Project Name		17 Mission Road, Kerikeri	
Address		Unit 3, 30 Rauiri Drive, Marsden Cove, WHANGAREI 1180				Quote ID №				Project №				24 066				Report Format		pdf, xls	
Contact Name		Aaron Thorburn				Analysis (Note: Where metals are requested, please specify "Total" or "Filtered")				Metals (M7) COLD HOLD				Containers				Email for Results		aaron@haighworkman.co.nz	
Phone №		0273312728																			
Special Direction																					
Relinquished by (Signature) (Time / Date)																					
Turn Around Requirements														<input type="checkbox"/> 1 DAY* <input type="checkbox"/> 2 DAY* <input type="checkbox"/> 3 DAY* <input checked="" type="checkbox"/> 5 DAY (Std.) <input type="checkbox"/> Other (    ) <small>* Surcharges apply</small>							
Method of Shipment														<input checked="" type="checkbox"/> Courier (#    ) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal							
Sample Comments / DG Hazard Warning																					
№	Client Sample ID	Date	Matrix																		
1	MIS-SS11	14/05/24	Soil	×														×			
2	MIS-SS12	14/05/24	Soil		×														×		
3	MIS-SS13	14/05/24	Soil	×															×		
4	MIS-SS14	14/05/24	Soil	×															×		
5	MIS-SS15	14/05/24	Soil	×															×		
6	MIS-SS16	14/05/24	Soil	×															×		
7	MIS-SS17	14/05/24	Soil		×														×		
8	MIS-SS18	14/05/24	Soil		×														×		
9	MIS-SS19	14/05/24	Soil		×														×		
10	MIS-SS20	14/05/24	Soil		×														×		
Total Counts																					
Laboratory Use Only		Received By	AUCK   WELL   CHCH   MELB				Date	___/___/___	Time	__:__	Signature					Temperature					
		Received By	AUCK   WELL   CHCH   MELB				Date	___/___/___	Time	__:__	Signature					Report №					

Date/Time: 16.05.24  
 Chilled:  Yes /  No  
 Temp: 15°C  
 Correction: +2.8°C  
 Final Temp: 17.8°C



# CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

**Auckland Office**  
35 O'Rorke Road, Penrose, Auckland 1061, NZ  
0800 856450 (free dial) OnurMehmet@eurofins.com

**Wellington Office**  
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**Christchurch Office**  
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0800 856450 (free dial) OnurMehmet@eurofins.com

**Melbourne Laboratory**  
2 Kingston Town Close, Oakleigh, VIC 3166, AU  
+61 3 8564 5000 EnviroSampleVic@eurofins.com

Company		Haigh Workman Ltd				Purchase Order				Project Manager				Aaron Thorburn				Project Name		17 Mission Road, Kerikeri					
Address		Unit 3, 30 Rauiri Drive, Marsden Cove, WHANGAREI 1180				Quote ID №				Project №				24 066				Report Format		pdf, xls					
Contact Name		Aaron Thorburn				Analysis (Note: Where metals are requested, please specify "Total" or "Filtered")				Metals (M7)				COLD HOLD				Email for Results		aaron@haighworkman.co.nz					
Phone №		0273312728																Turn Around Requirements		<input type="checkbox"/> 1 DAY* <input type="checkbox"/> 2 DAY* <input type="checkbox"/> 3 DAY* <input checked="" type="checkbox"/> 5 DAY (Std.) <input type="checkbox"/> Other (    )		Containers 1L Plastic    250mL Plastic    125mL Plastic    200mL Amber Glass    40mL Vial    125mL Amber Glass    Jar    Asbestos bag		Method of Shipment <input checked="" type="checkbox"/> Courier (#    ) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal	
Special Direction																		* Surcharges apply							
Relinquished by (Signature)		_____				Sample Comments / DG Hazard Warning																			
(Time / Date)		__ : __ / __ / __																							
№	Client Sample ID			Date	Matrix																				
1	MIS-SS21			14/05/24	Soil													X							
2	MIS-SS22			14/05/24	Soil													X							
3	MIS-SS23			14/05/24	Soil													X							
4	MIS-SS24			14/05/24	Soil													X							
5																									
6																									
7																									
8																									
9																									
10																									
Total Counts																									
Laboratory Use Only		Received By	AUCK   WELL   CHCH   MELB				Date	__ / __ / __		Time	__ : __		Signature			Temperature									
		Received By	AUCK   WELL   CHCH   MELB				Date	__ / __ / __		Time	__ : __		Signature			Report №									

Submission of samples to the laboratory will be deemed as acceptance of Eurofins Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins Standard Terms and Conditions is available on request.

Haigh Workman Limited  
6 Fairway Drive  
Kerikeri  
NZ 0230



All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

Attention: Aaron Thorburn

Report **1094167-S-V2**  
Project name **ADDITIONAL: 17 MISSION ROAD KERIKERI**  
Project ID **24066**  
Received Date **May 02, 2024**

Client Sample ID			MIS-SS05	MIS-SS06	MIS-SS07	MIS-SS08
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K24-My0015898	K24-My0015899	K24-My0015900	K24-My0015901
Date Sampled			Apr 19, 2024	Apr 19, 2024	Apr 19, 2024	Apr 19, 2024
Test/Reference	LOR	Unit				
<b>Metals M7 (NZ MfE)</b>						
Arsenic	0.1	mg/kg	3.5	3.6	4.3	5.2
Cadmium	0.01	mg/kg	0.39	0.39	0.65	0.16
Chromium	0.1	mg/kg	150	160	260	220
Copper	0.1	mg/kg	180	73	67	48
Lead	0.1	mg/kg	16	7.7	13	18
Nickel	0.1	mg/kg	20	26	34	29
Zinc	5	mg/kg	60	54	76	71
<b>Sample Properties</b>						
% Moisture	1	%	26	22	22	26

Client Sample ID			MIS-SS09	MIS-SS10
Sample Matrix			Soil	Soil
Eurofins Sample No.			K24-My0015902	K24-My0015903
Date Sampled			Apr 19, 2024	Apr 19, 2024
Test/Reference	LOR	Unit		
<b>Metals M7 (NZ MfE)</b>				
Arsenic	0.1	mg/kg	5.8	17
Cadmium	0.01	mg/kg	0.15	0.41
Chromium	0.1	mg/kg	220	240
Copper	0.1	mg/kg	50	120
Lead	0.1	mg/kg	22	71
Nickel	0.1	mg/kg	29	33
Zinc	5	mg/kg	74	270
<b>Sample Properties</b>				
% Moisture	1	%	27	24

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

**Description**

Metals M7 (NZ MfE)

- Method: LTM-MET-3040 Metals in Waters Soils Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture Content in Soil by Gravimetry

**Testing Site**

Auckland

Auckland

**Extracted**

May 24, 2024

May 02, 2024

**Holding Time**

6 Months

14 Days

<b>Auckland</b> 35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	<b>Auckland (Focus)</b> Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	<b>Christchurch</b> 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	<b>Tauranga</b> 1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402
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<b>Melbourne</b> 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	<b>Geelong</b> 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	<b>Sydney</b> 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	<b>Canberra</b> Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	<b>Brisbane</b> 1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794	<b>Newcastle</b> 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079 & 25289
---	--	--	--	--	--

<b>Perth</b> 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370	<b>Perth ProMicro</b> 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2561 Site# 2554
---	--

<b>Company Name:</b> Haigh Workman Limited <b>Address:</b> 6 Fairway Drive Kerikeri NZ 0230  <b>Project Name:</b> ADDITIONAL: 17 MISSION ROAD KERIKERI <b>Project ID:</b> 24066	<b>Order No.:</b> <b>Report #:</b> 1094167 <b>Phone:</b> 09 4078 327 <b>Fax:</b>	<b>Received:</b> May 2, 2024 4:10 PM <b>Due:</b> May 7, 2024 <b>Priority:</b> 3 Day <b>Contact Name:</b> Aaron Thorburn
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**Eurofins Analytical Services Manager : Katyana Gausel**

Sample Detail						Moisture Set	Metals M7 (NZ MFE)
Auckland Laboratory - IANZ# 1327						X	X
Auckland (Focus) Laboratory - IANZ# 1308							
Christchurch Laboratory - IANZ# 1290							
Tauranga Laboratory - IANZ# 1402							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	MIS-SS05	Apr 19, 2024		Soil	K24-My0015898	X	X
2	MIS-SS06	Apr 19, 2024		Soil	K24-My0015899	X	X
3	MIS-SS07	Apr 19, 2024		Soil	K24-My0015900	X	X
4	MIS-SS08	Apr 19, 2024		Soil	K24-My0015901	X	X
5	MIS-SS09	Apr 19, 2024		Soil	K24-My0015902	X	X
6	MIS-SS10	Apr 19, 2024		Soil	K24-My0015903	X	X
<b>Test Counts</b>						6	6



## Internal Quality Control Review and Glossary

### General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
- Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
- Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
- For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
- Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
- SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
- This report replaces any interim results previously issued.

### Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

### Units

<b>mg/kg:</b> milligrams per kilogram	<b>mg/L:</b> milligrams per litre	<b>ppm:</b> parts per million
<b>µg/L:</b> micrograms per litre	<b>ppb:</b> parts per billion	<b>%:</b> Percentage
<b>org/100 mL:</b> Organisms per 100 millilitres	<b>NTU:</b> Nephelometric Turbidity Units	<b>MPN/100 mL:</b> Most Probable Number of organisms per 100 millilitres
<b>CFU:</b> Colony Forming Unit	<b>Colour:</b> Pt-Co Units (CU)	

### Terms

<b>APHA</b>	American Public Health Association
<b>CEC</b>	Cation Exchange Capacity
<b>COC</b>	Chain of Custody
<b>CP</b>	Client Parent - QC was performed on samples pertaining to this report
<b>CRM</b>	Certified Reference Material (ISO17034) - reported as percent recovery.
<b>Dry</b>	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
<b>Duplicate</b>	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
<b>LOR</b>	Limit of Reporting.
<b>LCS</b>	Laboratory Control Sample - reported as percent recovery.
<b>Method Blank</b>	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
<b>NCP</b>	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
<b>RPD</b>	Relative Percent Difference between two Duplicate pieces of analysis.
<b>SPIKE</b>	Addition of the analyte to the sample and reported as percentage recovery.
<b>SRA</b>	Sample Receipt Advice
<b>Surr - Surrogate</b>	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
<b>TBTO</b>	Tributyltin oxide ( <i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
<b>TCLP</b>	Toxicity Characteristic Leaching Procedure
<b>TEQ</b>	Toxic Equivalency Quotient or Total Equivalence
<b>QSM</b>	US Department of Defense Quality Systems Manual Version 6.0
<b>US EPA</b>	United States Environmental Protection Agency
<b>WA DWER</b>	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

### QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

### QC Data General Comments

- Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

**Quality Control Results**

Test	Lab Sample ID	Units	Result	Repeat				Qualifying Code
<b>Repeat Analysis</b>								
<b>Metals M7 (NZ MfE)</b>								
Arsenic	K24-My0015903	mg/kg	17	17				
<b>Test</b>		<b>Units</b>	<b>Result 1</b>			<b>Acceptance Limits</b>	<b>Pass Limits</b>	<b>Qualifying Code</b>
<b>Method Blank</b>								
<b>Metals M7 (NZ MfE)</b>								
Arsenic		mg/kg	< 0.1			0.1	Pass	
Chromium		mg/kg	< 0.1			0.1	Pass	
Copper		mg/kg	< 0.1			0.1	Pass	
Lead		mg/kg	< 0.1			0.1	Pass	
Nickel		mg/kg	< 0.1			0.1	Pass	
Zinc		mg/kg	< 5			5	Pass	
<b>Method Blank</b>								
<b>Metals M7 (NZ MfE)</b>								
Arsenic		mg/kg	< 0.1			0.1	Pass	
Cadmium		mg/kg	< 0.01			0.01	Pass	
Chromium		mg/kg	< 0.1			0.1	Pass	
Copper		mg/kg	< 0.1			0.1	Pass	
Lead		mg/kg	< 0.1			0.1	Pass	
Nickel		mg/kg	< 0.1			0.1	Pass	
Zinc		mg/kg	< 5			5	Pass	
<b>LCS - % Recovery</b>								
<b>Metals M7 (NZ MfE)</b>								
Arsenic		%	117			80-120	Pass	
Cadmium		%	115			80-120	Pass	
Chromium		%	113			80-120	Pass	
Copper		%	113			80-120	Pass	
Lead		%	109			80-120	Pass	
Nickel		%	112			80-120	Pass	
Zinc		%	116			80-120	Pass	
<b>LCS - % Recovery</b>								
<b>Metals M7 (NZ MfE)</b>								
Arsenic		%	120			80-120	Pass	
Cadmium		%	111			80-120	Pass	
Chromium		%	111			80-120	Pass	
Copper		%	109			80-120	Pass	
Lead		%	104			80-120	Pass	
Nickel		%	110			80-120	Pass	
Zinc		%	119			80-120	Pass	
<b>Test</b>	<b>Lab Sample ID</b>	<b>QA Source</b>	<b>Units</b>	<b>Result 1</b>		<b>Acceptance Limits</b>	<b>Pass Limits</b>	<b>Qualifying Code</b>
<b>Spike - % Recovery</b>								
<b>Metals M7 (NZ MfE)</b>								
Arsenic	K24-My0049634	NCP	%	117		75-125	Pass	
Cadmium	K24-My0049634	NCP	%	115		75-125	Pass	
Chromium	K24-My0049634	NCP	%	111		75-125	Pass	
Copper	K24-My0049634	NCP	%	108		75-125	Pass	
Lead	K24-My0049634	NCP	%	110		75-125	Pass	
Nickel	K24-My0049634	NCP	%	110		75-125	Pass	
Zinc	K24-My0049634	NCP	%	112		75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Sample Properties</b>				Result 1	Result 2	RPD			
% Moisture	K24-My0003806	NCP	%	23	24	2.4	30%	Pass	
<b>Duplicate</b>									
<b>Metals M7 (NZ MfE)</b>				Result 1	Result 2	RPD			
Arsenic	K24-My0015903	CP	mg/kg	17	15	15	30%	Pass	
Cadmium	K24-My0015903	CP	mg/kg	0.46	0.32	35	30%	Fail	Q02
Chromium	K24-My0015903	CP	mg/kg	230	200	15	30%	Pass	
Copper	K24-My0015903	CP	mg/kg	120	100	14	30%	Pass	
Lead	K24-My0015903	CP	mg/kg	67	56	17	30%	Pass	
Nickel	K24-My0015903	CP	mg/kg	31	29	5.8	30%	Pass	
Zinc	K24-My0015903	CP	mg/kg	280	240	15	30%	Pass	

**Comments**

This report has been revised (V2) following repeat analysis. Arsenic results for sample 24-My0015903 have been confirmed. Repeat data is available at the start of the QC section.

**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

**Qualifier Codes/Comments**

Code	Description
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause

**Authorised by:**

Katya Gausel	Analytical Services Manager
Raymond Siu	Senior Analyst-Metal



**Raymond Siu**  
**Senior Instrument Chemist (Key Technical Personnel)**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

\* Indicates IANZ accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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26<sup>th</sup> September 2024

Paul Spooner  
Spooner architectural Solutions  
PO Box 10 Kerikeri

Email: paul@spoonersolutions.co.nz

Tēnā koe,

**Subject: Support for Proposed Subdivision at 17 Mission Road, Kerikeri**

Te Rūnanga o Ngāti Rēhia Trust acknowledges your ongoing efforts to engage with Ngāti Rēhia regarding the proposed subdivision of your property at 17 Mission Road, Kerikeri. We appreciate the open dialogue and the opportunity to participate in the process, which is essential to maintaining the integrity of our cultural and environmental values.

Following the site visit on 16 September 2024, conducted with representatives from Ngāti Rēhia, and subsequent discussions, we are pleased to confirm the following:

1. Te Rūnanga o Ngāti Rēhia supports your application
2. There is an accidental discovery clause in place should any discoveries be made Ngāti Rēhia is informed immediately.

We trust this confirmation will assist in the processing of your application.

Please feel free to reach out if further consultation is required.

Naku noa, nā

A handwritten signature in blue ink, appearing to be "Whati Rameka".

Whati Rameka

**General Manager**

**Te Rūnanga o Ngāti Rēhia Trust**

**From:** Mike Butler <[MButler@heritage.org.nz](mailto:MButler@heritage.org.nz)>  
**Date:** Tuesday, 3 September 2024 at 11:52 AM  
**To:** Paul Spooner <[Paul@spoonersolutions.co.nz](mailto:Paul@spoonersolutions.co.nz)>  
**Subject:** RE: Proposed 2 lot subdivision at 17 Mission Road Kerikeri

Kia ora,

**RE: Resource Consent Pre-App at 17 Mission Road, Kerikeri**

Thank you for consulting with Heritage New Zealand Pouhere Taonga on this proposal.

Heritage New Zealand Pouhere Taonga (HNZPT) is an autonomous Crown Entity with statutory responsibility under the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA) for the identification, protection, preservation, and conservation of New Zealand's historical and cultural heritage. HNZPT is New Zealand's lead agency for heritage protection.

Historic heritage is a matter of national importance under Section 6(f) of the Resource Management Act 1991 (the RMA). The definition of historic heritage under Part 2 of the RMA includes archaeology. Under section 104(1) of the RMA, a territorial authority must consider Part 2 matters (which includes section 6(f)) when making a decision on an application. Therefore, effects on archaeological sites must be taken into account by council when assessing a consent application.

The proposal has been discussed with our Northland Area Office who have undertaken a desktop study and we recommend that if any unexpected archaeological material is uncovered during the development of the subject site that the attached Accidental Discovery Protocol (ADP) is actioned.

Ngā mihi | Kind regards,

Mike Butler | Kaiwhakamāhere | Planner – Northern Regional Team | Heritage New Zealand Pouhere Taonga | for Area Manager Bill Edwards UD/21 Hobson Avenue, Kerikeri 0245 | PO Box 836, Kerikeri 0245 | DDI: (64 9) 407 0470 email [infonorthland@heritage.org.nz](mailto:infonorthland@heritage.org.nz) <<mailto:infonorthland@heritage.org.nz>> | visit [www.heritage.org.nz](http://www.heritage.org.nz) <<http://www.heritage.org.nz/>> and learn more about NZ's heritage places.

Tairangahia a tua whakarere; Tatakihia nga reanga o amuri ake nei – Honouring the past; Inspiring the future  
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**From:** InfoNorthland <[InfoNorthland@heritage.org.nz](mailto:InfoNorthland@heritage.org.nz)>  
**Sent:** Tuesday, September 3, 2024 10:09 AM  
**To:** Mike Butler <[MButler@heritage.org.nz](mailto:MButler@heritage.org.nz)>; James Robinson <[jrobinson@heritage.org.nz](mailto:jrobinson@heritage.org.nz)>  
**Subject:** FW: Proposed 2 lot subdivision at 17 Mission Road Kerikeri