

# Appendix I. Ground Contamination Review

Te Tai Tokerau Water Trust  
Whangarei

Attention: Andrew Carvell

14 September 2020

WWLA0239

## Aratapu Water Storage Reservoir, Kaipara – Ground Contamination Review

Williamson Water & Land Advisory (WWLA) has prepared this letter to support design and resource consent applications for a new water storage reservoir on Redhill Rd, Te Kopuru, referred to as site the Aratapu Water Storage Reservoir.

### 1. Introduction

WWLA is assisting Te Tai Tokerau Water Trust with consenting of the Aratapu Water Storage Reservoir, at the headwaters of the Aratapu Creek Catchment, off West Coast Road, between Te Kopuru and Glinks Gully (Error! Reference source not found.). The proposed Aratapu Water Storage Reservoir was identified as a viable water storage option through the Northland Water Storage and Use Project (NWSUP), as a complementary part of a larger distributed community scheme. The reservoir is expected to be capable of supplying water to approximately 1,000 hectares of horticultural land.

This letter documents the work undertaken to inform the consenting process in terms of the National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health (2011) Regulation (NESCS). In summary, this letter confirms that the NESCS does not apply to the K13 reservoir footprint as no potentially contaminating activities were identified within the footprint.

### 2. Scope of Work

The K13 ground contamination review was undertaken to determine whether land use activities with potential to cause ground contamination had occurred within the reservoir and dam embankment footprint. The following scope of works was undertaken:

- Review of available historical information including:
  - Historical aerial photographs from 1959 to 2019, readily available on Google Earth and Retrolens; and
  - Interviews with the landowner.
- Assessment of available geological information in the project database including from geotechnical, archaeological and ecological studies;
- Assessment of identified land use activities against the Hazardous Activity and Industries List (HAIL)<sup>1</sup>; and
- Site walkover by a WWLA contaminated land specialist.

Intrusive investigations were not part of this report.

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<sup>1</sup> Ministry for the Environment Hazardous Activity and Industries List

This documentation is prepared in general accordance with CLMG 1<sup>2</sup> and industry best practice guidance whose use is directed by CLMG 2<sup>3</sup> in terms of assessing potential for contamination at the site and applicability of the NESCS.

### 3. Site Description and Setting

The footprint is located on properties along Redhill and West Coast Roads, Te Tokuru, as described by **Table 1**. The proposed reservoir boundaries are shown in **Figure 1**. The land is hilly with flat areas at ~40 m RL. Geologically, the site lies near the boundary between Awhitu Group cemented sands (east) and Early Quaternary dunes (west). Watercourses in the area drain to the Kaipara Harbour.

**Table 1: Property details**

Legal Description	Record of Title	Estate Type	Registered Owner
Allotment 127 PSH OF Kopuru	NA86D/19	Fee Simple	Smith Farms Ltd
Allotment 128 PSH OF Kopuru	NA86D/21	Fee Simple	Smith Farms Ltd
Allotment 129 PSH OF Kopuru	NA2D/640	Fee Simple	Smith Farms Ltd
Allotment 131E PSH OF Kopuru Allotment 131D PSH OF Kopuru	NA80D/995	Fee Simple	Neil Robert Doherty
Allotment 131C PSH OF Kopuru Allotment 131B PSH OF Kopuru Allotment 131D PSH OF Kopuru	NA80D/996	Fee Simple	Joy Helen Hadland and Michael Kevin Hadland



**Figure 1. Google Satellite imagery showing the proposed reservoir boundary.**

<sup>2</sup> Ministry for the Environment, 2011: Contaminated Land Management Guideline (CLMG) No.1 – Reporting on Contaminated Sites in New Zealand.

<sup>3</sup> Ministry for the Environment, 2011: Contaminated Land Management Guideline No.2 – Hierarchy and Application of Guideline Values in New Zealand.

#### 4. Land Use and History

The reservoir footprint is currently pastoral farmland and based on review of historical aerial imagery has been in pasture since the 1990s. Aerial imagery from 1957 indicates the land was undeveloped bush/ scrub at that time. Aside from construction of several small sheds (pump sheds), a pond and access tracks, no other activities were evident on aerial imagery post 1996. The aerial imagery review is provided as **Table A1, Attached**.

The site walkover confirmed the most recent aerial imagery review (Google Earth, 2020) with fencing, isolated farm sheds (of steel and wood construction) present in the east, and farm tracks, metalled with sandstone, which run through the site. Man-made drainage trenches were also noted, predominantly along fence lines.



Photograph 1. Current features within the reservoir footprint.

#### 5. Potential for Contamination

The historical review confirms only a pastoral use within the proposed reservoir footprint, and within land immediately surrounding the footprint. Therefore, no contaminated land-related land uses included on the HAIL have been identified within the current Aratapu Water Storage Reservoir footprint.

#### 6. NESCS Applicability

The NESCS came into effect on 1 January 2012. The legislation sets out nationally consistent planning controls appropriate to district and city councils for assessing potential human health effects related to contaminants in soil. The regulation applies to specific activities (including land use change and soil disturbance, activities associated with reservoir development) on land where an activity included on the HAIL has occurred.

Our assessment of the NESCS applicability is set out in **Table 2**. The checklist review confirms the NESCS does not apply to the reservoir development works.

**Table 2. NESCS applicability checklist**

NESCS Requirement	Applicable to site
Is an activity described on the HAIL currently being undertaken on the piece of land to which this application applies?	No
Has an activity described on the HAIL ever been undertaken on the piece of land to which this application applies?	No
Is it more likely than not that an activity described on HAIL is being or has been undertaken on the piece of land to which this application applies?	No
<b>If 'Yes' to any of the above, then the NES Soil may apply. The five activities to which the NES applies are:</b>	
Is the activity you propose to undertake removing or replacing a fuel storage system or parts of it?	No
Is the activity you propose to undertake sampling soil?	No
Is the activity you propose to undertake disturbing soil?	Yes
Is the activity you propose to undertake subdividing land?	Potentially
Is the activity you propose to undertake changing the use of the land?	Yes
<b>CONCLUSION: The NESCS does not apply to the Aratapu reservoir development.</b>	

## 7. Conclusions

A desk-study and site walkover review within the proposed Aratapu Water Storage Reservoir footprint shows the site has been pastoral farmland over most of its history, with no current or previously occurring HAIL activities present.

There are no contaminated land constraints outside of the current reservoir footprint so any modifications to the reservoir footprint are unlikely to trigger additional considerations from a contaminated land perspective.

No contaminated land related mitigation or management is required for consenting or construction based on the information available at this time.

Please do not hesitate to contact the undersigned should you require any further clarification.

Yours sincerely,



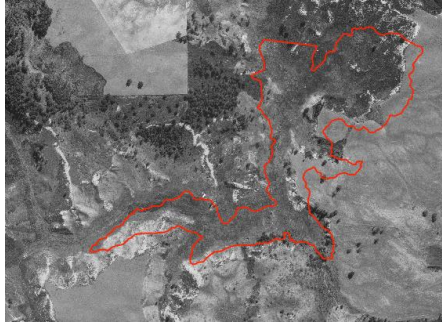




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### Attached:

Table A1. Historical aerial imagery review



**Table A1. Historical aerial photograph review.**

Photograph date (source)	Activities	Aerial image
1957 Retrolens	The footprint is within a broad gully feature, vegetated with scrub. No anthropogenic development is visible.	
1966 Retrolens	No changes are visible between the 1957 and 1966 imagery.	
1996 Retrolens	Roading has been established within and to the south and west of the reservoir footprint, vegetation cleared, with pasture and associated fencing established.	
2004 and 2012 Google Earth	Vegetation/ trees have been established adjacent to the western reaches of the reservoir footprint. No changes are apparent between the 2004 and 2012 imagery. The imagery is from 2004.	
2016 Google Earth	No major changes are visible from the 2012 imagery. A small rectangular pond is visible in the westernmost part of the footprint.	

<b>Photograph date (source)</b>	<b>Activities</b>	<b>Aerial image</b>
2020 Google Earth	The site can be seen to have been separated into distinctive fields of irregular shapes. Small humps arranged in regular distances at the edge of drainage channel outlines, likely to be piles of material deposited during drainage trench clean-out.	