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Project Number 26725.000.001

**Preliminary Environmental Site
Investigation**

638 Cambridge Road, Te Awamutu, Waikato

Submitted to:

Mitre 10 Holdings Limited

67 Corinthian Drive

Albany

Auckland 0632

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1 Introduction

ENGEO Ltd was requested by Mitre 10 Holdings Limited to undertake a preliminary environmental site investigation at 638 Cambridge Road, Te Awamutu, Waikato (herein referred to as ‘the site’, shown in Figure 1). This work has been carried out in accordance with our signed agreement dated 8 August 2024.

1.1 Scope

This preliminary site investigation (PSI) has been prepared to support the plan change application. The current land use shown on Waikato Regional Councils online GIS is residential while the proposed land use is commercial.

2 Site History

ENGEO reviewed aerial photographs, Waipa District Council property file documentation and Waikato Regional Council GSI Database. Relevant information obtained during this review is summarised below.

2.1 Aerial Photographs

Aerial photographs dating from 1944 to 2023 from LINZ Aerial Imagery, Retrolens and Google Earth Pro have been reviewed. Selected historical aerials have been included in Appendix 1. There have been several residential and farm utility buildings constructed on-site since at least 1944, and three distinct phases of site earthworks and filling which are summarised in Table 1 below.

Table 1: Historical Photograph Summary

Date	Description
1966 - 1967	Imported fill can be observed along the northern boundary of the site in the 1966 aerial image as well as the northern two thirds of the site appears to have been applied with a thin layer of topsoil. In the 1967 image, an area of recently placed fill can be observed in the north-western corner of the site. A commercial yard (possibly timber processing) off-site to the northeast first observed in the 1957 aerial image has expanded and is adjacent to road formed along the eastern boundary.
1971 - 1974	In the 1971 image, the former stream channel in the south of the site has been filled with imported material. Small buildings have been constructed in the north-western area of site. Likewise, in 1974, ongoing filling has been undertaken in the former stream channel in the south of the site.
2010	An aerial image from 2010 shows shallow earthworks and standing surface water in the southern third of the site.

2.2 Property File Review

The property file held by Waipa District Council was reviewed on 13 August 2024. A summary of the information considered relevant to this investigation is provided in Table 2 below.

Table 2: Property File Summary

Date	Description
November 2009	A suitability assessment for the installation of a septic tank system against a barn in the central north-western area of site (visible in the 2010 historical aerial in Appendix 1) includes a basic log of soils encountered in two shallow boreholes where the septic tank was to be installed. Material encountered did not indicate the presence of fill or staining, although the purpose of these boreholes was for septic tank design rather than an assessment for contaminants and was not logged in accordance with standard field descriptions NZGS (2004).

2.3 Previous Reporting

CMW Limited (2023) Geotechnical Due Diligence Report

This report was purely desktop based so soil logs were not provided. High level ground conditions were reported as likely to constitute topsoil with uncontrolled fill above the native Paiko Alluvium. The uncontrolled fill was considered to likely be at least partially derived from the development of the Te Awamutu Mega Centre site (immediately to the east). The thickness of the fill was anticipated to be up to 4 metres thick where it was used to backfill the former stream channel in the south of the site.

2.4 Other Sources

Waikato Regional Council GIS portal indicated that there are no current or proposed discharge permits for the site or the land parcels immediately surrounding the site.

3 Potential HAIL Activities

Based on the information reviewed as part of this environmental investigation, the following activities listed on the Hazardous Activities and Industries List (HAIL; MfE, 2011) may have historically occurred on-site:

- **HAIL ID I: Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment** – It is possible, that the fill imported to site between at least 1966 and 2010 contained contaminants at a concentration that may present an unacceptable risk to human health or environmental receptors. Additionally, the history of building construction and removal on-site may have introduced asbestos or lead impacts to shallow soil from weathering or maintenance and demolition.

4 Preliminary Conceptual Site Model

A preliminary conceptual site model (CSM) has been developed to assess the potential exposure pathways present at the site. A contamination conceptual site model consists of three primary components. For a contaminant to present a risk to human health or an environmental receptor, all three components are required to be present and connected. The three components of a conceptual site model are:

- Source of contamination.
- An exposure route, where the receptor and contaminants come into contact (e.g., ingestion, inhalation, dermal contact).
- Receptor(s) that may be exposed to the contaminants.

The preliminary CSM based on the findings of the desktop investigation is summarised in Table 3.

Table 3: Preliminary Conceptual Site Model

Potential Source of Contamination	Primary Contaminants of Concern	Possible Extent of Contamination	Potential Pathway	Potential Receptors
Undocumented filling (HAIL ID: I)	Depends on the source of fill material. Common contaminants associated with fill include heavy metals / metalloids, polycyclic aromatic hydrocarbons (PAHs) and asbestos.	Undocumented fill material	Soil ingestion, inhalation of dust, and / or dermal contact	Future site users / site redevelopment workers during redevelopment works. Surrounding residents if contaminants allowed to migrate offsite during disturbance.
			Leaching of contaminants	Surrounding environment
Building materials containing asbestos (HAIL ID: I)	Asbestos fines and fibrous asbestos	Shallow soil within and adjacent to the former dwelling footprint	Inhalation of asbestos fibres released from impacted soils / dust	Future site users / site redevelopment workers Surrounding residents
Historical buildings weathering of or dirty removal of lead based paint (HAIL ID: I)	Lead	Topsoil in former building halos or mixed with imported fill during earthworks	Soil ingestion, inhalation of dust, and / or dermal contact	Future site users / site redevelopment workers during redevelopment works. Surrounding residents if contaminants allowed to migrate off-site during disturbance.
			Leaching of contaminants	Surrounding environment

5 Conclusions

The filling of a gully at the south of the site, and earthworks across the wider site, may represent a HAIL land use due to potential contaminants in imported fill or spreading of on-site impacts from historical buildings. The scope of this investigation did not include visual assessment of soils or fill on-site, and no information on the nature of this fill material is available. On that basis, ENGEO considered that the NESCS should be considered to apply to the site.

ENGEO considers that rezoning to facilitate a change in land use from residential to commercial is a Permitted Activity under Regulation 8(4) of the NESCS, as it is *highly unlikely that there will be a risk to human health if the activity is done to the piece of land*.

ENGEO recommends that an assessment of the nature of the fill material is conducted to inform consent requirements for future soil disturbance.

6 Limitations

- i. We have prepared this report in accordance with the brief as provided. This report has been prepared for the use of our client, Mitre 10 Holdings Limited, their professional advisers and the relevant Territorial Authorities in relation to the specified project brief described in this report. No liability is accepted for the use of any part of the report for any other purpose or by any other person or entity.
- ii. This Limitation should be read in conjunction with the Engineering NZ/ACENZ Standard Terms of Engagement.
- iii. This report is not to be reproduced either wholly or in part without our prior written permission.

We trust that this information meets your current requirements. Please do not hesitate to contact the undersigned on (09) 972 2205 if you require any further information.

Report prepared by



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Environmental Scientist

Report reviewed by



Jamie Rhodes, CEnvP (SC)

Associate Environmental Engineer

7 References

CMW Limited, 2023, CMW Geosciences Limited. (2023). Geotechnical Due Diligence Assessment – Mitre 10 Te Awamutu – 638 Cambridge Road, Te Awamutu. Ref: HAM2023-0058AB Rev 0. Dated 11 July 2023.

MfE, 2011. Ministry for the Environment. (2011). Hazardous Activities and Industries List (HAIL).

NESCS, 2011. The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations (2011).

NZGS, 2004. New Zealand Geotechnical Society Limited. (2004). Field Description of Soil and Rock.



FIGURES



19.08.2024

26725.000.001_01



Leg

Site Boundary

0 25 m 50 m
LINZ CC BY 4.0 © Imagery Basemap contributors

ENGEO

Produced by **Datanest.earth**

Title: Site Location Plan

Client: Mitre 10 Holdings Ltd

Size:
A4

Project:
Mitre 10 - Te Awamutu

Drawn: VP

Figure No.: 2

Date: 12-08-2024

Checked: JR

Proj No: 26725.000.001

Scale: 1:2134

Version: 1.0



APPENDIX 1: Historical Aerial Photographs



1966 (Retrolens New Zealand). Indicative property boundaries drawn by ENGEO.





1971 (Retrolens New Zealand). Indicative property boundaries drawn by ENGEO.



1974 (Retrolens New Zealand). Indicative property boundaries drawn by ENGEO.



2010 (Google Earth Pro). Indicative property boundaries drawn by ENGEO.