

MEMORANDUM

To:	The Planning Collective	Sender:	Geosciences Ltd
Attention:	Burnette O'Connor	From:	Johan Faurie
Date:	13 August 2021	Reference:	Mem-1645/13Aug21
Subject:	Riverhead Retirement Village and Structure Planning Work - 1092 Coatesville Riverhead Highway		

Geosciences Ltd (GSL) provides services and advice on the risks associated with contaminated land. Our clients stem from a variety of sectors that include industrial, commercial, residential, and agricultural fraternities throughout New Zealand. We also provide advice on the restoration of contaminated land through sustainable solutions to meet the regulatory environmental controls that are in place. We are New Zealand owned and have offices in both Auckland and the Hawkes Bay.

Our experience includes a wide range of matters relating to contamination and discharges of pollutants from industrial operations, closed landfills, retired orchard and market garden sites and suburban land requiring risk assessment for residential development. We have a good knowledge of the legal framework and processes described in Regional Plans, the National Environmental Standard for soil quality (NES) and the Resource Management Act.

The property under investigation is located on the outskirts of the township of Riverhead within an area that has been predominantly used for dry stock farming up to the 1970s when large portions of land was transformed into market gardens, orchards, hothouse cultivation activities and vineyards. Although horticulture and viniculture is not recognised as contaminating activities, the use and bulk storage of persistent pesticides like DDT and Dieldrin that is generally associated with former horticulture activities and dry stock farming is listed on the Ministry for the Environment's (MfE's) Hazardous Activities and Industries List (HAIL). Under the NES and the Auckland Unitary Plan (Part Operative) any horticultural or former horticultural land designated for redevelopment will have to be investigated in order to establish the soil quality of the land and its suitability for the proposed new landuse.

Geosciences Ltd has conducted many investigations of current and former horticultural land over the last ten years and when the impact of the former use of persistent pesticide chemicals on soil quality was first realised in the late 1990s and early 2000s, Johan Faurie has advised the former Waitakere City Council and assisted the former Auckland Regional Council for many years on the regulatory requirements and assessment of such investigation reports.

Similar projects that we are involved in or have recently completed include:

- **Frimley Retirement Village**, a gated retirement village located within the residential development of the Frimley Estate which comprised of 24 Ha of retired apple orchard land located 2.5 km from the Hastings CBD. The former land usages included orcharding, agrichemical spraying chemicals storage, mixing and application as well as underground fuel storage and dispenser systems and vehicle work and repair shops. The first soil investigation

works commenced in 2005 on the residential development and were completed in 2017 with the establishment of the 4 Ha retirement village in 2017.

- **Matua Residential Estate**, a residential development on the outskirts of Huapai that covers approximately 12 Ha of former farm and horticultural land. The development involved the disturbance of approximately 44,000 m³ of soil. The investigations included preliminary and detailed site investigations, delineation soil sampling of identified hot spots and the preparation of a remediation action plan. Remedial works were conducted by ex situ soil mixing and the remediated soil was reused on site. GSL conducted the validation investigation and produced the site completion report for the development.

With respect to the property located at 1092 Coatesville-Riverhead Road, we note that the client has engaged Geosciences Ltd early in 2021 to conduct a desktop due diligence investigation into the suitability of the property for the proposed development, and in conjunction with our local experience gained through other investigations of land in the general area of the subject site, provide a preliminary soil contamination risk assessment for the land under investigation.

The investigation revealed the following potential sources of contaminants exist on the land under investigation:

- Bulk storage and application of persistent pesticides.
- Potential use of lead-based paint on exterior surfaces of buildings constructed prior to the 1970's.
- Potential use of asbestos containing materials on buildings constructed prior to 1 January 2000.
- Possible back fill of a gully in the northern portion of the site with soil of unknown origin.

Although potentially contaminating activities have occurred on site, the risk for gross soil contamination is regarded as low across most of the site (cultivated land) and low to medium in the proximity of the buildings and structures on site and within the potentially backfilled gully. Appropriate testing should be undertaken on those areas to quantify and delineate any impacts.

It is further noted that soil contamination from the application of persistent pesticides to crop or orchard trees generally results in low concentrations of contamination that only affects the top layer of surface soil and can generally be remediated by conventional methods that include mixing or blending of the affected topsoil layers with "clean" unaffected soil to dilute the levels of contaminants to acceptable levels. Soil contamination from the other sources noted above could be of higher concentrations but will be of limited extent and confined to relatively small areas. Remediation by excavation and off-site disposal at a managed fill facility is generally the preferred option for such occurrences.

I trust that the above provides enough information from a site contamination perspective to support the fast-track process for obtaining resource consent. Should you require any further information please don't hesitate in contacting us at any time.

Regards



Johan
Principal
Geosciences Ltd