APPENDIX E

Pattle Delamore Partners Preliminary Site Investigation

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24 June 2024

Tyler Sharratt
Winstone Aggregates, a division of Fletcher Concrete and Infrastructure Limited
812 Great South Road, Penrose
AUCKLAND 1061

Dear Tyler

PRELIMINARY SITE INVESTIGATION – 660 ROBINSONS ROAD, ROLLESTON, SELWYN DISTRICT

1.0 Introduction

Pattle Delamore Partners Limited (PDP) has been engaged by Winstone Aggregates, a division of Fletcher Concrete and Infrastructure Limited (the owners) to conduct a preliminary site investigation (PSI) for the land area defined as Lot 2 DP 80577 BLK IV LEESTON SD (identified as 660 Robinsons Road, Rolleston, Selwyn District ('the site'). Winstone Aggregates are intending to expand their Wheatsheaf quarry operation on the property immediately to the north and west into this land area and require this PSI to be completed to better understand the potential for any contaminants associated with previous and current land use activities and to support the resource consenting process. The area inspected as part of this PSI is identified as the 'investigation area' and shown on Figure 1.

The objectives of this investigation are to:

- Identify through the review of available information any current and historical areas where potentially hazardous and contaminating activities (as identified from the Ministry for the Environment (MfE) Hazardous Activities and Industries List (HAIL[1]) (MfE, 2011)) have been undertaken at the site.
- Determine the key contaminants of concern associated with any identified HAIL activities.
- Provide a report summarising the available site history information including the applicability of the *Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soils to Protect Human Health) Regulations 2011* (referred to as the NESCS) with regard to the change in land use and soil disturbance associated with the proposed quarrying activity.

This letter has been prepared by a suitably qualified and experienced practitioner (SQEP), as outlined by the NESCS.

[1] The HAIL is a compilation of activities and industries that are considered likely to cause land contamination resulting from hazardous substance use, storage or disposal. The HAIL is intended to identify most situations in New Zealand where hazardous substances could cause, and in many cases have caused, land contamination.

2.0 Site Details

The site is zoned as General Rural under the Partially Operative Selwyn District Plan – Appeals Version (POSDP). The legal description for the site is Lot 2 DP 80577 BLK IV LEESTON SD and the approximate grid reference for the centre of the investigation area is NZ Topo50 map reference BX23:5671-7322. The location of the site boundary, investigation area and immediate surrounding properties is presented as Figure 1.

The investigation area comprises pastoral grazing paddocks, with access to the site from Robinsons Road via a grass/gravel track in the southwestern corner of the site. A haybarn is located on the eastern property boundary.

The site is bounded by the current Winstone Aggregates Wheatsheaf Quarry to the north and west, with rural residential properties to the east, west and southwest, and a commercial chicken farming operation to the south.

The site's environmental setting is summarised in Table 1 below.

Table 1: Environmental Setting

Topography	Land contours vary between 1.0 to 1.5 metres across the site. An old pit is located in the southeastern corner.
Site Services	The Environment Canterbury (ECan) online GIS database shows there are no services present within the investigation area.
Regional Geology	The geological map for the area (Begg et al., 2015 1:50,000) reports that the surrounding area is underlain by river floodplain which contain Holocene River deposits of Halkett Surface and is part of the Pakihi Supergroup.
Groundwater	The ECan online GIS database was searched for groundwater bores / wells located within a 200 m radius of the investigation area (refer bore plot in Appendix A). There are two groundwater bores recorded as being owned by 'Selwyn Quarries Limited' and one recorded as being owned by 'Sullivan Family Trust'. The two Selwyn Quarries Limited bores (M36/20450 and BX230271 were drilled to 18 m below ground level (bgl) and used for groundwater monitoring purposes and as a secondary use commercial/industrial for the quarry operation. The Sullivan Family Trust bore is recorded as being active/existing, drilled to 42 m bgl and used for domestic and stockwater. In general, there are a number of groundwater abstraction bores in the area used for domestic, stockwater and irrigation purposes. These draw groundwater from a range of depths. The underlying aquifer is not considered to be confined in this area. The site owner has installed two groundwater monitoring bores within the investigation area and these were noted during the site walk over. These are not recorded on the ECAN GIS database, but we understand they were installed to facilitate the quarterly groundwater monitoring programme and are included on a bore map (within 200 m) (Appendix A). Groundwater level monitoring data provided by Wheatsheaf Quarry associated with the quarry operations directly to the north indicate groundwater levels to be present at depths between 13.12 – 14.15 m bgl.

Table 1: Environmental Setting	
	Groundwater is expected to flow in a predominately southeasterly direction beneath the site. In accordance with Section 5.2.3 of the MfE *Guidelines for Assessing and Managing Petroleum Hydrocarbon Contaminated Sites in New Zealand* (revised 2011) (MfE, 2011b), the underlying aquifer is considered to be sensitive with respect to groundwater use.
Surface Water	The nearest surface water to the site is a stockwater race on Robinsons Road. There is a network of stockwater races in the area. These are not hydraulically connected to groundwater in the area. The nearest natural waste body source is Liffey Stream located approximately 5.3 km to the south, and Knights Stream approximately 6.3 km to the east.

3.0 Future Land Use

Winstone Aggregates intend to extend the current quarry operations into this land parcel. This would primarily involve the construction of bunds around the perimeter using overburden from the site prior to extraction of the underlying gravel resource for processing into various grades for sale.

4.0 Desktop Review of Site History

A desktop assessment was undertaken to provide an overview of any potential contaminants of concern that may be present within the investigation area as a result of any documented past and present activities. The following information was sourced in order to establish the history of the site:

- Historical aerial photographs;
- Environment Canterbury (ECan) Listed Land Use Register (LLUR), consents and groundwater bore information;
- Selwyn District Council property file information; and
- Site inspection.

4.1 Historical Aerial Photographs

Historical aerial photographs from between 1942 and 2024 have been reviewed for the site, and these photographs have been sourced from Retrolens, Canterbury Map Partners administered by ECan and Google Earth. The historical aerial photographs reviewed are attached. Note that the review of the aerial photographs was carried out on the electronic versions, which provides a higher resolution compared with the printed versions appended.

- The 1942 and 1961 aerial photographs show the investigation area and much of the surrounding land being undeveloped, possibly used as pasture/stock grazing. Robinsons Road is shown in its current footprint;
- The 1973, 1984, 1994 and 2000 aerial photographs show the investigation area to still be undeveloped and possibly used as pasture. The property to the south shows some changes with large commercial buildings being progressively established over the years. The 2000 aerial photo starts to show increased residential development is evident in the wider area and a horse training track in the property to the north;
- The 2004 and 2010 aerial photographs show a shed (existing shed) has been constructed in the eastern corner of the investigation. The remainder of the investigation area is unchanged. There are no obvious changes to the surrounding area including the commercial property to the south.

- The 2013 and 2014 aerial images show what appears to be the excavation of a large pit in the southeastern corner of the investigation area as well as stockpiling of material. There is an obvious vehicle track between the pit/stockpiling and the neighbouring property to the south where there is significant redevelopment in progress where the former commercial buildings are being progressively demolished and reconstructed; and
- The 2019 and 2024 aerial photographs show the stockpiles have been removed, however there is still evidence of the pit while the rest of the investigation area remains unchanged. The land immediately to the northeast and west shows the development of the quarry. There is still evidence of a vehicle track between the commercial property to the south and the pit (possible waste pit).

The aerial photographs are attached as Appendix B.

4.2 Review of ECan's Listed Land Use Register

An online search was made via ECan for information from their LLUR on 30 May 2024. The Register is used to hold information about sites that have used, stored or disposed of hazardous substances, based on activities detailed on the HAIL (MfE, 2011). It should be noted that the LLUR is not complete and new sites are regularly being added as ECan receives information and conduct their own investigations into current and historical land uses.

The site itself is not recorded on the LLUR. However, the immediate area north of the site is recorded on the LLUR (Site ID 297563) due to the cleanfill currently operated by the owner of the site (HAIL Category G3). This has been applied as the site is consented to accept soil with contaminant levels up to rural residential, which is above background levels. Based on the expected groundwater flow direction in the area, this is in a cross-gradient direction to the investigation area.

A copy of the LLUR record is attached as Appendix D.

4.3 Review of Selwyn District Council Records

The property file records for the site were obtained from Selwyn District Council and reviewed. The files included building permits for the construction of a haybarn in 2001 and associated site plans. There is also reference of the subdivision of land in 1999. There was nothing noted that is of relevance to this investigation from a contaminated land perspective.

5.0 Site Inspection

A site inspection was carried out by a PDP Environmental Scientist on 6 June 2024. Photographs taken during the site inspection are attached as Appendix C.

A summary of the site inspection is provided below:

- The investigation comprised a large paddock with a haybarn in the eastern corner of the investigation area. The shed was constructed from corrugated iron and wood;
- The permitter of the site was fenced and a shelterbelt of trees along all boundaries;
- No staining or unusual vegetation growth was observed during the site inspection;
- Evidence of a partially filled pit was observed in the southeast corner of the investigation area corresponding to the excavation pit noted in the aerial photos. This part of the investigation area was fenced off separately and the grass was longer to keep stock out. The open portion of the pit was approximately 9 x 10 and approximately 2 to 3 m deep. The base of the pit was heavily vegetated, however, there was evidence of some domestic waste (plastics, etc) and construction

material in the pit. Inspection of the surrounding ground area suggested the original pit was much larger. Apart from the open pit area, there was no indication as to what the filled-in portion of the original pit was backfilled with; and

- There was evidence of a vehicle track entering the site from the neighbouring commercial property to the south, which is a large operational chicken farm.

The following information was provided by Jake Richardson (Winstone Aggregates employee) who provided access to the site for the inspection:

- Two groundwater monitoring wells have been installed by the owner of the site. These have been installed on the western and eastern corners of the site as part of the monitoring programme for the quarrying/clean filling operation; and
- Previous site owners reportedly farmed organically (meaning without the use of commercial pesticides), however, the period it was operated is not known. A comment was also made that the pit may have been used as a waste pit by the neighbouring chicken farm.

6.0 Summary of Site History and Potential Contamination Sources

The reviewed site historical information showed that the investigation area was largely undeveloped since at least 1941 till present and has been used for general grazing. There is no evidence intensive cropping has been undertaken at the site. Some low-level pesticide use typical for pastural use may have occurred in the past, but this is not considered to fall within the threshold of a HAIL activity.

The only structure on site is a haybarn in the eastern corner. This was constructed post 2000 and there was no evidence of any asbestos containing material (ACM) in its construction.

Evidence of an old pit partially backfilled was identified in the southern-eastern corner of the investigation area. This was excavated at the same time as the redevelopment of the chicken farm in the adjacent property to the south and a vehicle access track between the two areas was visible linking the two areas. It is possible that the pit was excavated to source suitable gravel material for the foundations/pavement surfaces as part of the redevelopment works as large stockpiles of material was observed. The pit was originally much larger than it currently is, so it has been partially backfilled. The exact extent of the pit is unknown, however, a reasonable estimate based on site observation and aerial photos has defined it to the southeastern corner (refer Figure 2). The material used to partially backfill the pit is also unknown. Given the pit was partially backfilled at the same time of the neighbouring redevelopment and this work involved the demolition of the former commercial buildings constructed between 1970 and 2000, there is the potential for hazardous material to have been dumped in the pit at the time (i.e. lead paint and/or ACM). There is also anecdotal information that the chicken farm may have more recently used the pit as a waste dump. During the site inspection some domestic waste and construction material was identified within the pit.

ECan's LLUR does not identify the site as HAIL but the immediate area to the north is recorded on the LLUR due to the active cleanfill operated by the owner. This relates to the backfilling of the quarry, which is consented to take soils with contaminant levels up to rural residential. It is understood that this activity is restricted to the current quarry area and no activity associated with the consented cleanfill has occurred in the investigation area to date. The existing quarry/cleanfill is cross-hydraulic gradient to the investigation area so the potential for any contaminant migrating with groundwater flow beneath the investigation area is unlikely. Additionally, discussions with Winstone Aggregates clarified that between 10 to 15 m of separation will remain between the current quarry batters along the northeastern site boundary.

The reviewed information confirms there are potential contamination sources relating to the former land use activities across the investigation area. Based on the above information the following HAIL activity has been applied to the site:

- **HAIL category G3** (Landfill sites) - related to the partially backfilled pit located on the site where uncontrolled filling of potentially hazardous materials/contaminated soils may have occurred. Possible contaminants of concern include, but not limited to, heavy metals and ACM. Note this is unverified and based on aerial photos only.

The suspected HAIL area (piece of land) based on this desktop review is shown in Figure 2.

7.0 Conceptual Site Model

For a risk to human health to exist there has to be a hazard (in this case, a source of contaminated soil), a receptor (e.g., people) and an exposure pathway (e.g., ingestion of soil) linking the hazard and the receptor. An absence of any one of these components means that the source to receptor linkage is incomplete therefore there is an unlikely risk to the receptor. A conceptual site model (CSM) is designed to identify the hazards, receptors, and possible links between these.

The first stage of developing a CSM is to undertake a hazard assessment to determine potential contaminants of concern. The second stage of developing a CSM is to identify potential receptors who may come into contact with these contaminants. Then the CSM looks at possible scenarios (referred to as exposure pathways) that receptors may be exposed to the contaminants of concern.

7.1 Contaminants of Concern (Hazard Assessment)

As previously discussed, the potential contaminants of concern are heavy metals and/or asbestos that relate infilling the pit with hazardous materials/contaminated soils associated with the redevelopment of the neighbouring chicken farm. These types of contaminants have limited migration potential.

7.2 Exposure Pathways

For there to be a risk from soil contamination there must be a mechanism for the contaminants to get from the soil to the receptor.

Table 2 outlines the potential exposure pathways that have been assessed to be present on the site with respect to the proposed future use of the site, the potential contaminants of concern and which pathways are considered to be complete or incomplete.

This assessment has been undertaken based on the current and known future receptors.

Table 2: Conceptual Site Model

Potential Contaminants of Concern	Potential Exposure Pathways	Receptor(s)	Pathway Linkage
Heavy metals on building materials soils within the possible waste pit (potential).	Dermal contact and soil ingestion	Future site workers (quarry workers)	**Potentially Complete –** The pit is currently covered or has limited access. If the land area the pit is located was quarried in the future any hazardous materials/contaminated soils present would be encountered and a risk to exposure to quarry workers would exist.
	Leaching to groundwater	Groundwater bores used for potable, irrigation or stockwater supply	**Potentially Complete –** The pit is covered minimising direct contact with rainfall. The extent of the original excavated pit is unknown; however, it is unlikely the material used to backfill the pit is in contact with water given the limited volume of material required for the redevelopment. Heavy metals have limited mobility so any resulting contaminant plume would be limited in extent. There are no existing groundwater wells in the immediate vicinity of the pit that could be impacted. If any new wells were installed in the future for potable, irrigation or stockwater use, a potentially complete pathway could exist.
		Adjacent quarry material being extracted	**Incomplete –** Contaminants migrating from the backfilled material to the adjacent area to be quarry is unlikely. Any migration of contaminants would migrate vertically to the groundwater table and move in the direction of groundwater flow, which is cross-gradient of the proposed quarry area. As such the pathway is considered to be incomplete.
Asbestos within building materials and in soils within the possible waste pit (potential).	Inhalation of airborne respirable fibres during soil disturbance/ quarrying activities	Future site workers (quarry workers)	**Potentially Complete –** The pit is currently covered or has limited access. If the land area the pit is located was quarried in the future any hazardous materials/contaminated soils present would be encountered and a risk to exposure to quarry workers would exist.

8.0 Assessment of the NESCS

The NESCS seeks to control activities on contaminated land so as to protect human health. The regulations apply to land, which is described as having, has had or is more likely than not to have had an activity or industry described in the HAIL undertaken on it. As identified in Section 6.0, there is the potential for a partially infilled pit to contain hazardous materials/contaminated soils in the southeastern portion of the site. Therefore, this 'piece of land' (as shown in Figure 2) is considered HAIL and the requirements of NESCS will apply for any soil disturbance or land use changes in that specific area of the site.

If in the future the 'piece of land' is to be disturbed or the land use change, then then Regulation 5(4) - *soil disturbance* and Regulation 5(6)) - *change of land use* would need to be considered and consent may be required for the works. Alternatively, if this this area ('piece of land') is excluded from the area to be quarried within the site, the NESCS is not applicable.

9.0 Summary and Conclusions

PDP has reviewed the available information for the proposed expansion of the Winstone Aggregates Wheatsheaf Quarry into the property located at 660 Robinsons Road, Rolleston, Selwyn District, including; historical aerial photographs, Selwyn District Council Property Files and the ECan Listed Land Use Register. The objective of the PSI was to understand the historical and current land use practices at the site to assess if past or present activities have resulted in ground contamination and the applicability of the NESCS for the proposed future use of the site as a gravel quarry.

The reviewed site historical information showed that the investigation area was largely undeveloped since at least 1941 till present and has been used for general grazing. Evidence of an old pit partially backfilled was identified in the southeastern corner of the investigation area, which is suspected to have been originally excavated to supply gravel to the redevelopment of a neighbouring chicken farm, but the nature of the material used to partially backfill the pit is unknown. Given the redevelopment also included the demolition of older buildings, there is the potential that the infilling may have included hazardous materials/contaminated soils such as heavy metals and asbestos. This is currently unverified. However, based on the information obtained, **HAIL category G3** (Landfill sites) has been applied to this area of the site ('piece of land').

It is understood that following the identification of the partially backfilled pit and potential for hazardous materials/contaminated soils to be present, this area has been excluded from the area to be quarried within the site. Therefore, as the 'piece of land' is not being modified in any way as part of the future quarrying activities, the NESCS is not applicable for the associated soil disturbance and land use change.

If in the future the 'piece of land' is to be disturbed or the land use change, then then Regulation 5(4) - *soil disturbance* and Regulation 5(6)) - *change of land use* would need to be considered and consent may be required for the works. It is recommended that an intrusive investigation (Detail Site Investigation) be conducted to better understand the nature of the infilled material at to assist with this process.

10.0 References

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

Ministry for the Environment, 2021. *Contaminated Land Management Guidelines No. 1: Reporting on Contaminated Sites in New Zealand (Revised 2021)*. Ministry for the Environment, Wellington.

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

ECan LLUR, 2024. <https://llur.ecan.govt.nz/home>.

11.0 Limitations

This letter has been prepared on the basis of information provided by Winstone Aggregates, a division of Fletcher Concrete and Infrastructure Limited, and others (not directly contracted by PDP for the work), including Environment Canterbury and Selwyn District Council. PDP has not independently verified the provided information and has relied upon it being accurate and sufficient for use by PDP in preparing the letter. PDP accepts no responsibility for errors or omissions in, or the currency or sufficiency of, the provided information.

This letter has been prepared by PDP on the specific instructions of Winstone Aggregates, a division of Fletcher Concrete and Infrastructure Limited, for the limited purposes described in the letter. PDP accepts no liability to any other person for their use of or reliance on this letter, and any such use or reliance will be solely at their own risk.

Owing to the limited nature of this assessment (as described in Section 1.0), there could be conditions at the site that have not been identified and which have not been considered in this letter. Although the assessment has shown no specific knowledge of sources of soil contamination, there is a risk that sources of soil contamination could exist that have not been identified by the assessment. This risk could be reduced by undertaking further research or subsoil investigation.

Yours faithfully

PATTLE DELAMORE PARTNERS LIMITED

Prepared by

Ethan de Guzman

Environmental Scientist

Reviewed by

Holly Eeg

Environmental Scientist

Approved by

Scott Wilson

Technical Director – Contaminated Land

Certifying Statement

I, Scott Wilson, of Pattle Delamore Partners Limited certify that:

1. This preliminary site investigation meets the requirements of the *Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011* (the NESCS) because it has been:
    a. done by a suitably qualified and experienced practitioner, and
    b. reported on in accordance with the current edition of *Contaminated land management guidelines No 1 – Reporting on contaminated sites in New Zealand*, and
    c. the report is certified by a suitably qualified and experienced practitioner.

2. This preliminary site investigation concludes that:

    The site has had an activity or industry described in the HAIL undertaken on it in the past and therefore under Regulation 5(7), the NESCS is applicable for any activity described in Regulation 5(2 – 6) being undertaken within the 'piece of land'.

Evidence of the qualifications and experience of the suitably qualified and experienced practitioner(s) who have done this investigation and certified this report is provided below.

This certification applies to the date of this report.

Signed

Scott Wilson
Technical Director – Contaminated Land

Scott Wilson – Project Director

Scott is an environmental engineer with over 23 years of consulting experience in environmental, contaminated land, air, soil-air and groundwater site investigations in New Zealand. He has a B.E (Hons)(Nat.Res)(1st Class), University of Canterbury (2000). Scott has worked on a wide variety of contaminated sites over the years, including commercial/industrial redevelopments, closed and operating landfills, former market gardens, sheep dip sites, petroleum sites, chlorinated solvent sites, timber treatment sites, asbestos sites and proposed residential and commercial subdivisions. Scott also specialises in remedial design, conducting pilot trials and implementation of remedial work for the petroleum industry and is a key technical specialist for PDP nationwide. Scott has experience in the assessment of data (including statistical analysis) to undertake risk assessments, including Tier 2 risk assessments.

Scott has familiarity with and understanding of the current contaminated land regulation and practice in New Zealand including assessments against the NESCS; and in the consenting of contaminated sites.

Figures

SOURCE:
1. SATELLITE IMAGERY DERIVED FROM GOOGLE EARTH (MAY NOT BE SPATIALLY ACCURATE).
2. CADASTRAL/TOPOGRAPHICAL INFORMATION AND INSET SOURCED FROM THE LINZ DATA SERVICE https://data.linz.govt.nz/ AND LICENSED FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 INTERNATIONAL LICENCE.

FIGURE 1 : SITE BOUNDARY AND INVESTIGATION AREA

SCALE : 1:3,000 (A4)

0 25 50 100 150

METRES

PATTLE DELAMORE PARTNERS LTD

SOURCE:
1. SATELLITE IMAGERY DERIVED FROM GOOGLE EARTH (MAY NOT BE SPATIALLY ACCURATE).
2. CADASTRAL/TOPOGRAPHICAL INFORMATION AND INSET SOURCED FROM THE LINZ DATA SERVICE https://data.linz.govt.nz/ AND LICENSED FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 INTERNATIONAL LICENCE.

FIGURE 2 : INVESTIGATION AND HAIL AREA

SCALE : 1:3,000 (A4)

0 25 50 100 150
METRES

PATTLE DELAMORE PARTNERS LTD

Appendix A: Bore Plot

SOURCE:
1. SATELLITE IMAGERY (FLOWN 2024) DERIVED FROM GOOGLE EARTH PRO (MAY NOT BE SPATIALLY ACCURATE).
2. CADASTRAL/TOPOGRAPHICAL INFORMATION AND INSET SOURCED FROM THE LINZ DATA SERVICE https://data.linz.govt.nz/ AND LICENSED FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 INTERNATIONAL LICENCE.

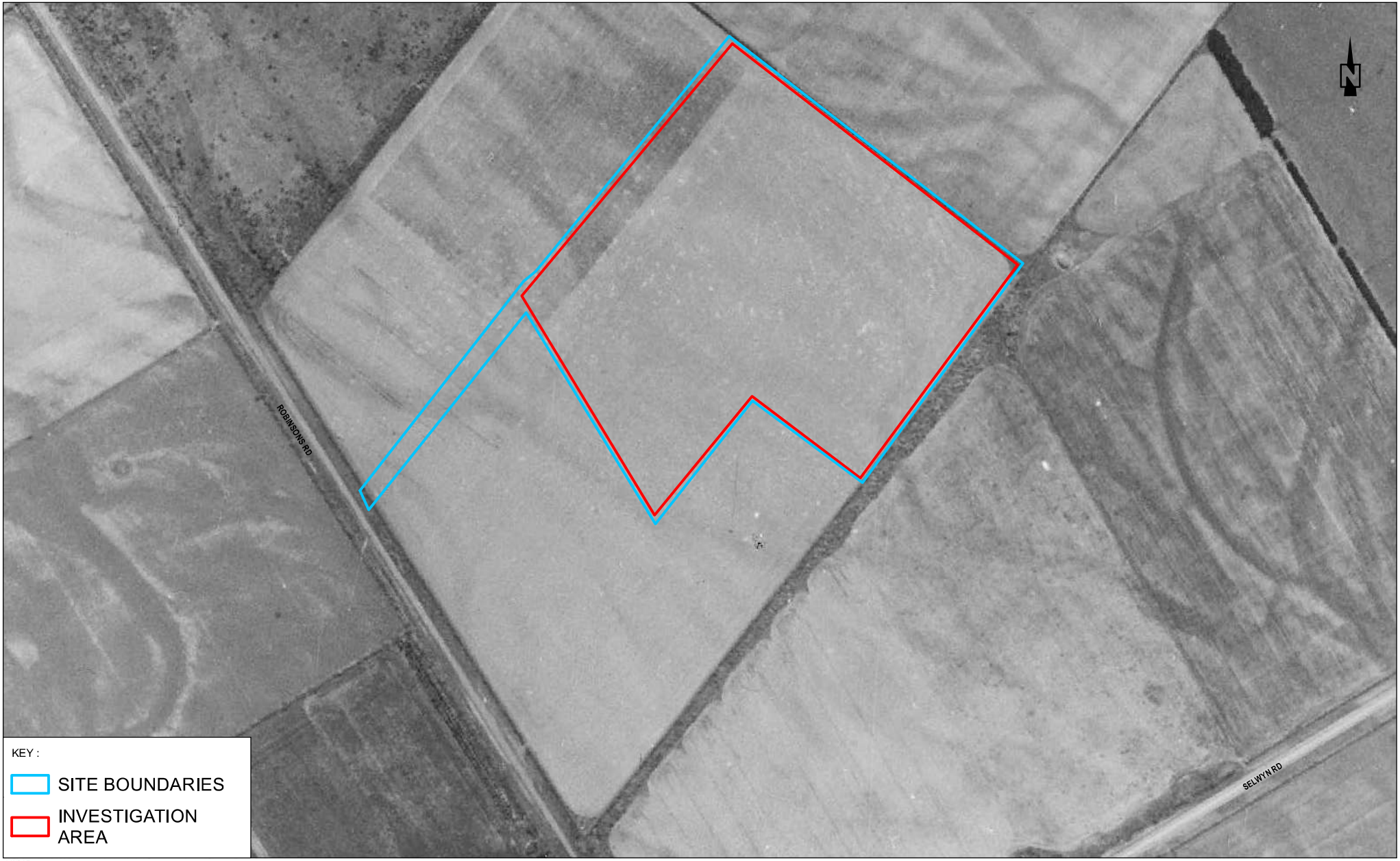
BORES WITHIN 200 METERS OF SITE

SCALE : 1:5,000 (A4)

0 25 50 100 150

METRES

Appendix B: Historical Aerial Photographs



SOURCE:
1. SATELLITE IMAGERY DERIVED FROM RETROLENS (MAY NOT BE SPATIALLY ACCURATE).
2. CADASTRAL/TOPOGRAPHICAL INFORMATION AND INSET SOURCED FROM THE LINZ DATA SERVICE https://data.linz.govt.nz/ AND LICENSED FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 INTERNATIONAL LICENCE.

1942 AERIAL PHOTOGRAPH

SCALE : 1:3,000 (A4)

0 25 50 100 150

METRES

PATTLE DELAMORE PARTNERS LTD

SOURCE:
1. SATELLITE IMAGERY DERIVED FROM RETROLENS (MAY NOT BE SPATIALLY ACCURATE).
2. CADASTRAL/TOPOGRAPHICAL INFORMATION AND INSET SOURCED FROM THE LINZ DATA SERVICE https://data.linz.govt.nz/ AND LICENSED FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 INTERNATIONAL LICENCE.

1961 AERIAL PHOTOGRAPH

SCALE : 1:3,000 (A4)

0 25 50 100 150

METRES

PATTLE DELAMORE PARTNERS LTD

SOURCE:
1. SATELLITE IMAGERY DERIVED FROM RETROLENS (MAY NOT BE SPATIALLY ACCURATE).
2. CADASTRAL/TOPOGRAPHICAL INFORMATION AND INSET SOURCED FROM THE LINZ DATA SERVICE https://data.linz.govt.nz/ AND LICENSED FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 INTERNATIONAL LICENCE.

1973 AERIAL PHOTOGRAPH

SCALE : 1:3,000 (A4)

0 25 50 100 150

METRES

PATTLE DELAMORE PARTNERS LTD

SOURCE:
1. SATELLITE IMAGERY DERIVED FROM RETROLENS (MAY NOT BE SPATIALLY ACCURATE).
2. CADASTRAL/TOPOGRAPHICAL INFORMATION AND INSET SOURCED FROM THE LINZ DATA SERVICE https://data.linz.govt.nz/ AND LICENSED FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 INTERNATIONAL LICENCE.

1984 AERIAL PHOTOGRAPH

SCALE : 1:3,000 (A4)

0 25 50 100 150

METRES

PATTLE DELAMORE PARTNERS LTD

SOURCE:
1. SATELLITE IMAGERY DERIVED FROM RETROLENS (MAY NOT BE SPATIALLY ACCURATE).
2. CADASTRAL/TOPOGRAPHICAL INFORMATION AND INSET SOURCED FROM THE LINZ DATA SERVICE https://data.linz.govt.nz/ AND LICENSED FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 INTERNATIONAL LICENCE.

1994 AERIAL PHOTOGRAPH

SCALE : 1:3,000 (A4)

0 25 50 100 150

METRES

PATTLE DELAMORE PARTNERS LTD

SOURCE:
1. SATELLITE IMAGERY DERIVED FROM RETROLENS (MAY NOT BE SPATIALLY ACCURATE).
2. CADASTRAL/TOPOGRAPHICAL INFORMATION AND INSET SOURCED FROM THE LINZ DATA SERVICE https://data.linz.govt.nz/ AND LICENSED FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 INTERNATIONAL LICENCE.

2000 AERIAL PHOTOGRAPH

SCALE : 1:3,000 (A4)

0 25 50 100 150

METRES

PATTLE DELAMORE PARTNERS LTD

SOURCE:
1. SATELLITE IMAGERY DERIVED FROM GOOGLE EARTH PRO (MAY NOT BE SPATIALLY ACCURATE).
2. CADASTRAL/TOPOGRAPHICAL INFORMATION AND INSET SOURCED FROM THE LINZ DATA SERVICE https://data.linz.govt.nz/ AND LICENSED FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 INTERNATIONAL LICENCE.

2004 AERIAL PHOTOGRAPH

SCALE : 1:3,000 (A4)

0 25 50 100 150

METRES

PATTLE DELAMORE PARTNERS LTD

SOURCE:
1. SATELLITE IMAGERY DERIVED FROM GOOGLE EARTH PRO (MAY NOT BE SPATIALLY ACCURATE).
2. CADASTRAL/TOPOGRAPHICAL INFORMATION AND INSET SOURCED FROM THE LINZ DATA SERVICE https://data.linz.govt.nz/ AND LICENSED FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 INTERNATIONAL LICENCE.

2010 AERIAL PHOTOGRAPH

SCALE : 1:3,000 (A4)

0 25 50 100 150

METRES

PATTLE DELAMORE PARTNERS LTD

SOURCE:
1. SATELLITE IMAGERY DERIVED FROM GOOGLE EARTH PRO (MAY NOT BE SPATIALLY ACCURATE).
2. CADASTRAL/TOPOGRAPHICAL INFORMATION AND INSET SOURCED FROM THE LINZ DATA SERVICE https://data.linz.govt.nz/ AND LICENSED FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 INTERNATIONAL LICENCE.

2013 AERIAL PHOTOGRAPH

SCALE : 1:3,000 (A4)

0 25 50 100 150

METRES

PATTLE DELAMORE PARTNERS LTD

SOURCE:
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2. CADASTRAL/TOPOGRAPHICAL INFORMATION AND INSET SOURCED FROM THE LINZ DATA SERVICE https://data.linz.govt.nz/ AND LICENSED FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 INTERNATIONAL LICENCE.

2014 AERIAL PHOTOGRAPH

SCALE : 1:3,000 (A4)

0 25 50 100 150

METRES

PATTLE DELAMORE PARTNERS LTD

SOURCE:
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2019 AERIAL PHOTOGRAPH

SCALE : 1:3,000 (A4)

0 25 50 100 150

METRES

PATTLE DELAMORE PARTNERS LTD

SOURCE:
1. AERIAL IMAGERY (FLOWN 2020) SOURCED FROM THE LINZ DATA SERVICE https://data.linz.govt.nz AND LICENCED BY ENVIRONMENTAL CANTERBURY FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 INTERNATIONAL LICENCE.
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2020 AERIAL PHOTOGRAPH

SCALE : 1:3,000 (A4)

0 25 50 100 150

METRES

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2024 AERIAL PHOTOGRAPH

SCALE : 1:3,000 (A4)

0 25 50 100 150

METRES

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Appendix C: Site Photos

Photograph 1: Investigation Area facing south-east

Photograph 2: Extent of the pit facing south-east

Photograph 3: Fenced area covering the pit.

Photograph 4: Pit area

Photograph 5: Content of pit, presence of some construction material (circled in red)

Photograph 6: General rubbish present in pit (circled in red)

Photograph 7: Vegetated portion of pit

Photograph 8: Haybarn located in the eastern property boundary

Photograph 9: Southern boundary of Investigation Area

Photograph 10: Investigation Area facing north

Appendix D: Environment Canterbury Listed Land Use Register (LLUR)

Environment Canterbury
Regional Council
Kaunihera Taiao ki Waitaha

Customer Services
P. 03 353 9007 or 0800 324 636

PO Box 345
Christchurch 8140

P. 03 365 3828
F. 03 365 3194
E. ecinfo@ecan.govt.nz

www.ecan.govt.nz

Dear Sir/Madam

Thank you for submitting your property enquiry from our Listed Land Use Register (LLUR). The LLUR holds information about sites that have been used or are currently used for activities which have the potential to cause contamination.

The LLUR statement shows the land parcel(s) you enquired about and provides information regarding any potential LLUR sites within a specified radius.

Please note that if a property is not currently registered on the LLUR, it does not mean that an activity with the potential to cause contamination has never occurred, or is not currently occurring there. The LLUR database is not complete, and new sites are regularly being added as we receive information and conduct our own investigations into current and historic land uses.

The LLUR only contains information held by Environment Canterbury in relation to contaminated or potentially contaminated land; additional relevant information may be held in other files (for example consent and enforcement files).

Please contact Environment Canterbury if you wish to discuss the contents of this property statement.

Yours sincerely

Contaminated Sites Team

Property Statement
from the Listed Land Use Register

Visit ecan.govt.nz/HAIL for more information or
contact Customer Services at ecan.govt.nz/contact/ and quote ENQ380343

Date generated: 29 May 2024
Land parcels: Lot 1 DP 25127
Lot 2 DP 80577

The information presented in this map is specific to the property you have selected. Information on nearby properties may not be shown on this map, even if the property is visible.

Sites at a glance

Sites within enquiry area

There are no sites associated with the area of enquiry.

More detail about the sites

There are no sites associated with the area of enquiry.

Disclaimer

The enclosed information is derived from Environment Canterbury's Listed Land Use Register and is made available to you under the Local Government Official Information and Meetings Act 1987.

The information contained in this report reflects the current records held by Environment Canterbury regarding the activities undertaken on the site, its possible contamination and based on that information, the categorisation of the site. Environment Canterbury has not verified the accuracy or completeness of this information. It is released only as a copy of Environment Canterbury's records and is not intended to provide a full, complete or totally accurate assessment of the site. It is provided on the basis that Environment Canterbury makes no warranty or representation regarding the reliability, accuracy or completeness of the information provided or the level of contamination (if any) at the relevant site or that the site is suitable or otherwise for any particular purpose. Environment Canterbury accepts no responsibility for any loss, cost, damage or expense any person may incur as a result of the use, reference to or reliance on the information contained in this report.

Any person receiving and using this information is bound by the provisions of the Privacy Act 1993.

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Listed Land Use Register

What you need to know

Everything is connected

What is the Listed Land Use Register (LLUR)?

The LLUR is a database that Environment Canterbury uses to manage information about land that is, or has been, associated with the use, storage or disposal of hazardous substances.

Why do we need the LLUR?

Some activities and industries are hazardous and can potentially contaminate land or water. We need the LLUR to help us manage information about land which could pose a risk to your health and the environment because of its current or former land use.

Section 30 of the Resource Management Act (RMA, 1991) requires Environment Canterbury to investigate, identify and monitor contaminated land. To do this we follow national guidelines and use the LLUR to help us manage the information.

The information we collect also helps your local district or city council to fulfil its functions under the RMA. One of these is implementing the National Environmental Standard (NES) for Assessing and Managing Contaminants in Soil, which came into effect on 1 January 2012.

For information on the NES, contact your city or district council.

How does Environment Canterbury identify sites to be included on the LLUR?

We identify sites to be included on the LLUR based on a list of land uses produced by the Ministry for the Environment (MfE). This is called the Hazardous Activities and Industries List (HAIL)[1]. The HAIL has 53 different activities, and includes land uses such as fuel storage sites, orchards, timber treatment yards, landfills, sheep dips and any other activities where hazardous substances could cause land and water contamination.

We have two main ways of identifying HAIL sites:

- We are actively identifying sites in each district using historic records and aerial photographs. This project started in 2008 and is ongoing.
- We also receive information from other sources, such as environmental site investigation reports submitted to us as a requirement of the Regional Plan, and in resource consent applications.

[1] The Hazardous Activities and Industries List (HAIL) can be downloaded from MfE's website www.mfe.govt.nz, keyword search HAIL

How does Environment Canterbury classify sites on the LLUR?

Where we have identified a HAIL land use, we review all the available information, which may include investigation reports if we have them. We then assign the site a category on the LLUR. The category is intended to best describe what we know about the land use and potential contamination at the site and is signed off by a senior staff member.

Please refer to the Site Categories and Definitions factsheet for further information.

What does Environment Canterbury do with the information on the LLUR?

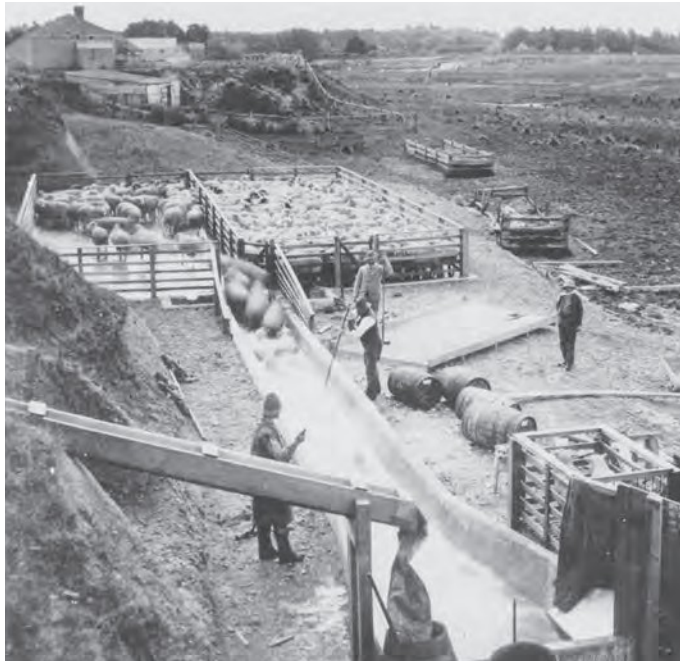
The LLUR is available online at www.llur.ecan.govt.nz. We mainly receive enquiries from potential property buyers and environmental consultants or engineers working on sites. An inquirer would typically receive a summary of any information we hold, including the category assigned to the site and a list of any investigation reports.

We may also use the information to prioritise sites for further investigation, remediation and management, to aid with planning, and to help assess resource consent applications. These are some of our other responsibilities under the RMA.

If you are conducting an environmental investigation or removing an underground storage tank at your property, you will need to comply with the rules in the Regional Plan and send us a copy of the report. This means we can keep our records accurate and up-to-date, and we can assign your property an appropriate category on the LLUR. To find out more, visit www.ecan.govt.nz/HAIL.

IMPORTANT!

The LLUR is an online database which we are continually updating. A property may not currently be registered on the LLUR, but this does not necessarily mean that it hasn't had a HAIL use in the past.



Sheep dipping (ABOVE) and gas works (TOP) are among the former land uses that have been identified as potentially hazardous. (Photo above by Wheeler & Son in 1987, courtesy of Canterbury Museum.)

My land is on the LLUR – what should I do now?

IMPORTANT! Just because your property has a land use that is deemed hazardous or is on the LLUR, it doesn't necessarily mean it's contaminated. The only way to know if land is contaminated is by carrying out a detailed site investigation, which involves collecting and testing soil samples.

You do not need to do anything if your land is on the LLUR and you have no plans to alter it in any way. It is important that you let a tenant or buyer know your land is on the Listed Land Use Register if you intend to rent or sell your property. If you are not sure what you need to tell the other party, you should seek legal advice.

You may choose to have your property further investigated for your own peace of mind, or because you want to do one of the activities covered by the National Environmental Standard for Assessing and Managing Contaminants in Soil. Your district or city council will provide further information.

If you wish to engage a suitably qualified experienced practitioner to undertake a detailed site investigation, there are criteria for choosing a practitioner on www.ecan.govt.nz/HAIL.

I think my site category is incorrect – how can I change it?

If you have an environmental investigation undertaken at your site, you must send us the report and we will review the LLUR category based on the information you provide. Similarly, if you have information that clearly shows your site has not been associated with HAIL activities (eg. a preliminary site investigation), or if other HAIL activities have occurred which we have not listed, we need to know about it so that our records are accurate.

If we have incorrectly identified that a HAIL activity has occurred at a site, it will be not be removed from the LLUR but categorised as Verified Non-HAIL. This helps us to ensure that the same site is not re-identified in the future.

Contact us

Property owners have the right to look at all the information Environment Canterbury holds about their properties.

It is free to check the information on the LLUR, online at www.llur.ecan.govt.nz.

If you don't have access to the internet, you can enquire about a specific site by phoning us on (03) 353 9007 or toll free on 0800 EC INFO (32 4636) during business hours.

Contact Environment Canterbury:

Email: ecinfo@ecan.govt.nz

Phone:
Calling from Christchurch: (03) 353 9007
Calling from any other area: 0800 EC INFO (32 4636)

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Everything is connected

Promoting quality of life through balanced resource management.

www.ecan.govt.nz E13/101

Listed Land Use Register

Site categories and definitions

When Environment Canterbury identifies a Hazardous Activities and Industries List (HAIL) land use, we review the available information and assign the site a category on the Listed Land Use Register. The category is intended to best describe what we know about the land use.

If a site is categorised as **Unverified** it means it has been reported or identified as one that appears on the HAIL, but the land use has not been confirmed with the property owner.

If the land use has been confirmed but analytical information from the collection of samples is not available, and the presence or absence of contamination has therefore not been determined, the site is registered as:

Not investigated:

- A site whose past or present use has been reported and verified as one that appears on the HAIL.
- The site has not been investigated, which might typically include sampling and analysis of site soil, water and/or ambient air, and assessment of the associated analytical data.
- There is insufficient information to characterise any risks to human health or the environment from those activities undertaken on the site. Contamination may have occurred, but should not be assumed to have occurred.

If analytical information from the collection of samples is available, the site can be registered in one of six ways:

At or below background concentrations:

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

Below guideline values for:

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 so low as to be acceptable. The site may have been remediated to reduce contamination to this level, and samples taken after remediation confirm this.

Managed for:

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, those 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.

Partially investigated:

The site has been partially investigated. Results:

- demonstrate there are hazardous substances present at the site; however, there is insufficient information to quantify any adverse effects or risks to people or the environment; or
- do not adequately verify the presence or absence of contamination associated with all HAIL activities that are and/or have been undertaken on the site.

Significant adverse environmental effects:

The site has been investigated. Results show that sediment, groundwater or surface water contains hazardous substances that:

- have significant adverse effects on the environment; or
- are reasonably likely to have significant adverse effects on the environment.

Contaminated:

The site has been investigated. Results show that the land has a hazardous substance in or on it that:

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

If a site has been included incorrectly on the Listed Land Use Register as having a HAIL, it will not be removed but will be registered as:

Verified non-HAIL:

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

Please contact Environment Canterbury for further information:

(03) 353 9007 or toll free
on 0800 EC INFO (32 4636)
email ecinfo@ecan.govt.nz

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

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