

Appendix 8: Preliminary Site Investigation Report

Preliminary Site Investigation – 193 and 223 Creyke Road, and 1878 Telegraph Road, Darfield

✦ Prepared for

Judith Pascoe

✦ March 2016



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Limitations:

This report has been prepared by Pattle Delamore Partners Limited (PDP) on the basis of information provided by Judith Pascoe and others (not directly contracted by PDP for the work). PDP has not independently verified the provided information and has relied upon it being accurate and sufficient for use by PDP in preparing the report. PDP accepts no responsibility for errors or omissions in, or the currency or sufficiency of, the provided information.

This report has been prepared by PDP on the specific instructions of Judith Pascoe for the limited purposes described in the report. PDP accepts no liability if the report is used for a different purpose or if it is used or relied on by any other person. Any such use or reliance will be solely at their own risk.

Executive Summary

Pattle Delamore Partners Limited has been engaged by Judith Pascoe to undertake a preliminary site investigation (PSI) for the properties located at 193 and 223 Creyke Road, and 1878 Telegraph Road, Darfield (i.e. the site).

The investigation comprised a review of the site history, including a review of historical aerial photographs, the property file, Environment Canterbury (ECan) data for the site and a site inspection.

The objective of the investigation was to identify any potential sources of contamination from past and/or present land use activities at the site, which could be listed on the HAIL¹ (Ministry for the Environment; MfE, 2011), and to:

- ✧ Provide supporting information for a proposed plan change; and
- ✧ Assess compliance with the NES² for the future subdivision, change in land use and soil disturbance at the site.

Based on the available historical information the site appears to have been rural farmland with no notable features from prior to 1941 until the late 1980s. At this time three rural-residential properties were constructed/relocated to the site. A small scale domestic hazelnut orchard appears to have been associated with the property at 1878 Telegraph Road, however the limited extent and relatively recent nature of the orchard (i.e. 2000s), coupled with the information provided by previous land owners, suggest that no persistent pesticides/chemicals were used at the site.

As such, no HAIL activities have been identified as having occurred/be occurring at the site. Therefore, no further environmental investigations are considered to be necessary for the rezoning of the site. In addition, the NES is considered to not be applicable for any future subdivision of land, land use change or soil disturbance activities at the site.

¹ Hazardous Activity and Industry List.

² Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011.

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1.0 Introduction

Pattle Delamore Partners Limited has been engaged by Judith Pascoe to undertake a preliminary site investigation (PSI) for the properties located at 193 and 223 Creyke Road, and 1878 Telegraph Road, Darfield (i.e. the site).

The investigation comprised a review of the site history, including a review of historical aerial photographs, the property file, Environment Canterbury (ECan) data for the site and a site inspection.

The objective of the investigation is to identify any potential sources of contamination from past and/or present land use activities at the site, which could be listed on the HAIL³ (Ministry for the Environment; MfE, 2011), and to:

- ∴ Provide supporting information for a proposed plan change; and
- ∴ Assess compliance with the NES⁴ for the future subdivision, change in land use and soil disturbance at the site.

The investigation has been undertaken in general accordance with the relevant MfE guideline document (MfE, 2011a) and has been certified by a suitably qualified and experienced practitioner as described in the NES.

2.0 Site Details and Identification

2.1 Site Identification

The details of the site are provided below, while a site location map is presented as Figure 1, Appendix A and a land parcel layout plan is presented as Figure 2, Appendix A. Photographs of the site are presented in Appendix B.

³ Hazardous Activity and Industry List.

⁴ Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011.

Table 1: Site Identification	
Address	193, 233 Creyke Road and 1878 Telegraph Road, Darfield
Legal Description	Lot 1 & 2 DP 56120 and Lot 1 & 2 DP 391851
Owners	Judith Pascoe (193 Creyke Rd; Lot 2 DP 56120 and Lot 2 DP 391851) Benjamin and Emily Bloomfield (223 Creyke Rd; Lot 1 DP 391851) Craig Dye and Sandra Lyttle (1878 Telegraph Road; Lot 1 DP 56120)
Grid Reference	NZMS 260 NZMG L35:3877-4490
Area	134,865 m ²
Zoning	Living 2A Deferred
Land Use	Rural-residential
Surrounding Land Use	Rural land use in all directions around site

2.2 Environmental Setting

Geologically, the site is reportedly underlain by ‘unweathered, brownish-grey, variable mix of gravel/sand/silt/clay in low river terraces; locally up to 2 m silt cap’ (Forsyth *et al.*, 2008). The nearest surface waterway to the site is an unnamed drain located adjacent to the south-western site boundary along Telegraph Road.

According to the ECan online GIS database, there are no ‘active-existing’ bores located on the site or within a 500 m radius of the site.

3.0 Desktop Review of the Site History

A desktop assessment was undertaken to provide an overview of any potential contaminants of concern that may be present at the site 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;
- ✧ ECan Listed Land Use Register (LLUR);
- ✧ ECan Resource Consents;
- ✧ Selwyn District Council (SDC) Information; and

- ✧ Site Inspection.

3.1 Historical Aerial Photographs

Historical aerial photographs for the site have been reviewed. The reviewed aerial photographs are presented in Appendix C.

Table 2: Historical Aerial Photograph Review	
1941, 1958, 1982, 1985	The site is farmland with no notable features.
1998	Houses have been constructed in the present day locations. Rows of trees are located within the northern portion of the site (i.e. 1878 Telegraph Road), with farmland across most of the rest of the site.
2004	Little change from 1998 with the exception of cropping/orchard activities to the south-west of the trees in the northern portion of the site at 1878 Telegraph Road.
2012, 2015	Trees in the northern portion of the site have been cleared and the area grassed in 2015. The hazelnut orchard still remains.
Notes: <ol style="list-style-type: none"> 1. Historical aerial photographs sourced from Canterbury Map Partners, administered by Environment Canterbury and Google Earth Pro (2015). 2. It should be noted that some aerial images are at a large scale and therefore of relatively low quality. 	

3.2 Environment Canterbury Information

The ECan LLUR 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. A search was also undertaken for any LLUR sites within a 100 m radius of the site in order to assess the risk (if any) of offsite contaminants migrating towards the site. A copy of the LLUR documentation is presented in Appendix D.

Part of the 1878 Telegraph Road property in the northern portion of the site is listed on the LLUR as containing a potential HAIL activity, based on the 1998 to present aerial photographs showing horticultural activities (potential persistent pesticide use). In addition, two investigations have been undertaken on sites within 100 m of the investigation site. Details of the nearby investigations are provided on the attached LLUR.

The ECan online GIS database was searched for resource consents located within a 500 m radius of the site. There were no resource consents recorded for the site. While a total of 111 resource consents were located within a 500 m radius

of the site boundary, none of these were reported to be ‘active’. Inactive consents located to the north of the site are for the collection and discharge of residential stormwater and the disposal of effluent. A table and plot of resource consents within a 500 m radius of the site are attached in Appendix E.

3.3 Selwyn District Council Information

The property files for the site were reviewed at the SDC offices located in Rolleston and information from the files is provided below.

- ✧ The house at 193 Creyke Road was constructed in approximately 1989;
- ✧ A house was relocated to the 223 Creyke Road property in 1998; and
- ✧ Plans dated 1990 show the proposed construction of a house, small orchard, small tunnel house and a vegetable/herb garden for the 1878 Telegraph Road property. To the east of the house an 8 acre area is noted to be a ‘wood lot of various varieties for timber’.

3.4 Site Inspection/Interview

A site inspection was undertaken by a PDP environmental scientist on 9 March 2016. Details of the site are presented on Figure 3, Appendix A, and noted below. Photographs of the site are presented in Appendix B:

- ✧ 193 Creyke Road is a rural-residential property with a house, garage and two hay barn sheds. Sheep, horses and ponies are grazed at the site. A small burn pile of predominantly greenwaste is located in one paddock;
- ✧ 223 Creyke Road is a small rural-residential property with a house and garage. Two sheep and a pony are grazed at the site; and
- ✧ 1878 Telegraph Road is a rural-residential property with a house and garage. The property was largely overgrown and the remnants of a small scale domestic orchard were visible to the rear (east) of the house.

The previous owners of 1878 Telegraph Road provided the following information on a hazelnut orchard at the site:

- ✧ Mrs Lisa Reily owned the 1878 Telegraph Road property between 2005 and 2008. The trees were planted approximately five years before they purchased the land (i.e. around 2000). No chemicals/sprays were ever used on the orchard; and
- ✧ Mrs Carolyn Mead owned the property between 2009 and 2011. Only water was used on the hazelnut trees rather than any chemicals/sprays.

4.0 Summary of Site History Review

Based on the available historical information, the site appears to have been rural farmland with no notable features from prior to 1941 until the late 1980s. At this time three rural-residential properties were constructed/relocated to the site. A small scale domestic hazelnut orchard appears to have been associated with the property at 1878 Telegraph Road, however the limited extent and relatively recent nature of the orchard (i.e. 2000s), coupled with the information provided by previous land owners, suggest that no persistent pesticides/chemicals were used at the site.

As such, no HAIL activities have been identified following a review of the readily available historical information.

5.0 Conclusions

PDP has undertaken a PSI for the properties located at 193 and 223 Creyke Road, and 1878 Telegraph Road, Darfield (i.e. the site). The investigation comprised a review of the site history, including a review of historical aerial photographs, the property file, ECan data for the site and a site inspection.

Based on the readily available historical information, no HAIL activities have been identified as having occurred/be occurring at the site. As such, no further environmental investigations are considered to be necessary for the rezoning of the site. In addition, the NES is considered to not be applicable for any future subdivision of land, land use change or soil disturbance activities at the site.

6.0 References

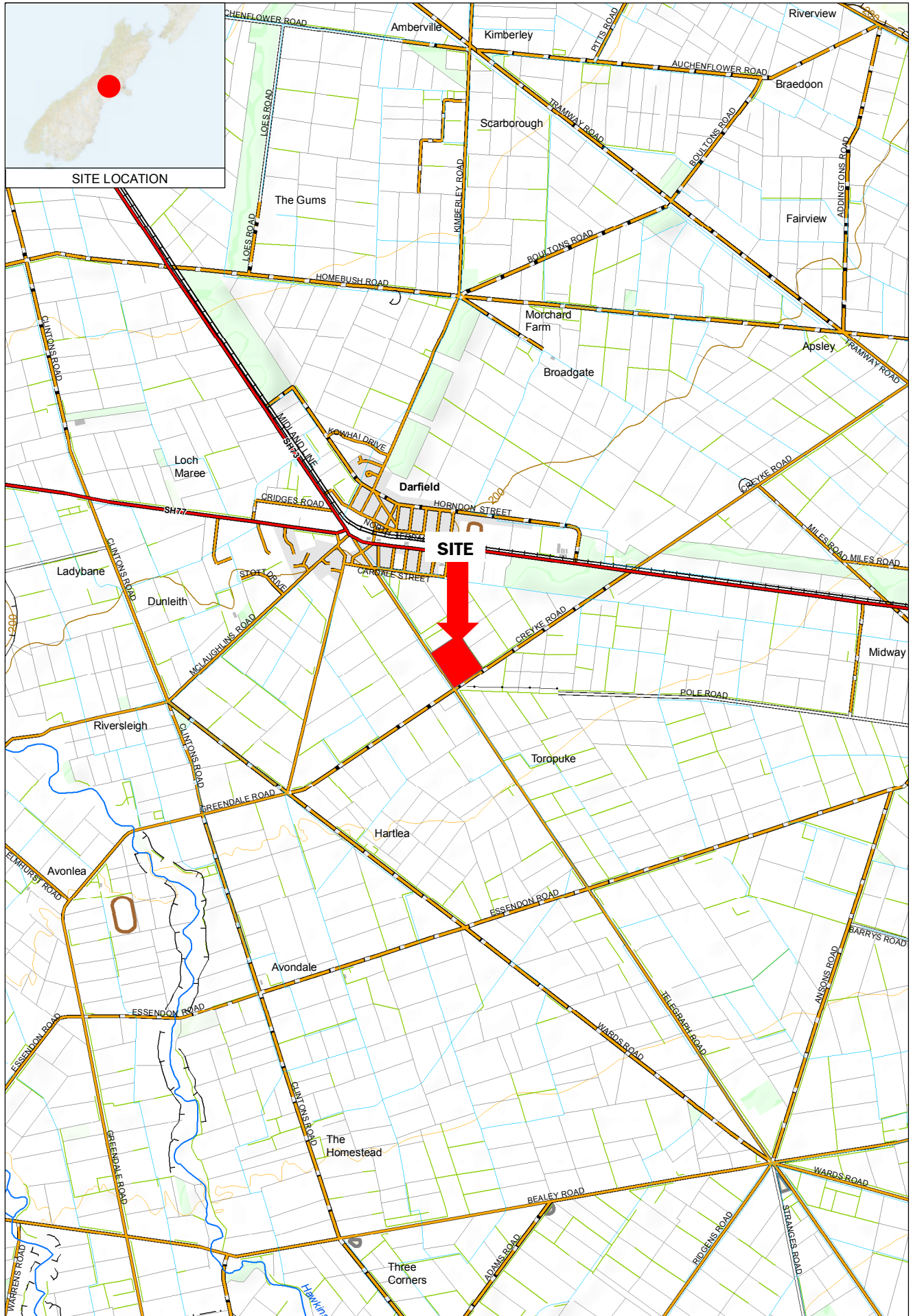
Forsyth, P.J., Barrell, D.J.A. and Jongens, R., 2008. *Geology of the Christchurch Area: Scale 1:250,000*. Lower Hutt, Institute of Geological and Nuclear Sciences.

Ministry for the Environment, 2011. *Hazardous Activities and Industries List*. Ministry for the Environment, Wellington.

Ministry for the Environment, 2011a. *Contaminated Land Management Guidelines No.1: Reporting on Contaminated Sites in New Zealand (revised 2011)*. Ministry for the Environment, Wellington.

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

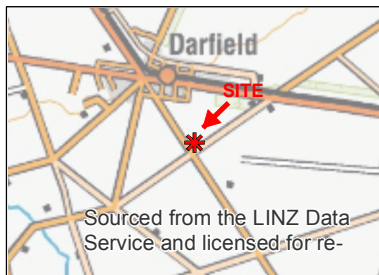
Appendix A: Figures



SOURCE:
1. TOPOGRAPHICAL INFORMATION SUPPLIED BY LINZ.

FIGURE 1 : SITE LOCATION

SCALE : 1:50,000 (A4)
0 250 500 1,000 1,500 2,000
METRES



SITE LOCATION



SOURCE:
1. AERIAL PHOTOGRAPH SOURCED FROM CANTERBURY
MAP PARTNERS ADMINISTERED BY ENVIRONMENT
CANTERBURY.
2. CADASTRAL INFORMATION DERIVED FROM LINZ DATA.

FIGURE 2 : LAND PARCELS

KEY :
SITE BOUNDARY

SCALE : 1:4,000 (A4)
0 10 20 40 60 80 100
Meters



SOURCE:
1. AERIAL PHOTOGRAPH SOURCED FROM CANTERBURY
MAP PARTNERS ADMINISTERED BY ENVIRONMENT
CANTERBURY.
2. CADASTRAL INFORMATION DERIVED FROM LINZ DATA.

JUDITH PASCOE - PRELIMINARY SITE INVESTIGATION – 193 AND 223 CREYKE ROAD, AND
1878 TELEGRAPH ROAD, DARFIELD

Appendix B: Site Photographs



Photograph 1: View looking south-east towards Creyke Road within the 223 Creyke Road property.



Photograph 2: View looking north-west from within the 223 Creyke Road property.



Photograph 3: View of the residential property at 223 Creyke Road.



Photograph 4: View looking north-west from the driveway of the 193 Creyke Road property.



Photograph 5: View looking north-east towards the hay shed at 193 Creyke Road.



Photograph 6: View looking north-east towards the former orchard and area of trees at 1878 Telegraph Road.



Photograph 7: View of the residential property at 1878 Telegraph Road.



Photograph 8: View looking north-west across the front lawn area of 1878 Telegraph Road.

JUDITH PASCOE - PRELIMINARY SITE INVESTIGATION – 193 AND 223 CREYKE ROAD, AND
1878 TELEGRAPH ROAD, DARFIELD

Appendix C: Historical Aerial Photographs



SOURCE:
1. AERIAL PHOTOGRAPH SOURCED FROM CANTERBURY
MAP PARTNERS ADMINISTERED BY ENVIRONMENT
CANTERBURY.
2. CADASTRAL INFORMATION DERIVED FROM LINZ DATA.

1941 AERIAL PHOTOGRAPH

KEY :
 SITE BOUNDARY

SCALE : 1:4,000 (A4)
0 10 20 40 60 80 100
Meters



SOURCE:
1. AERIAL PHOTOGRAPH SOURCED FROM CANTERBURY
MAP PARTNERS ADMINISTERED BY ENVIRONMENT
CANTERBURY.
2. CADASTRAL INFORMATION DERIVED FROM LINZ DATA.

1958 AERIAL PHOTOGRAPH

KEY :
 SITE BOUNDARY

SCALE : 1:4,000 (A4)
0 10 20 40 60 80 100
Meters

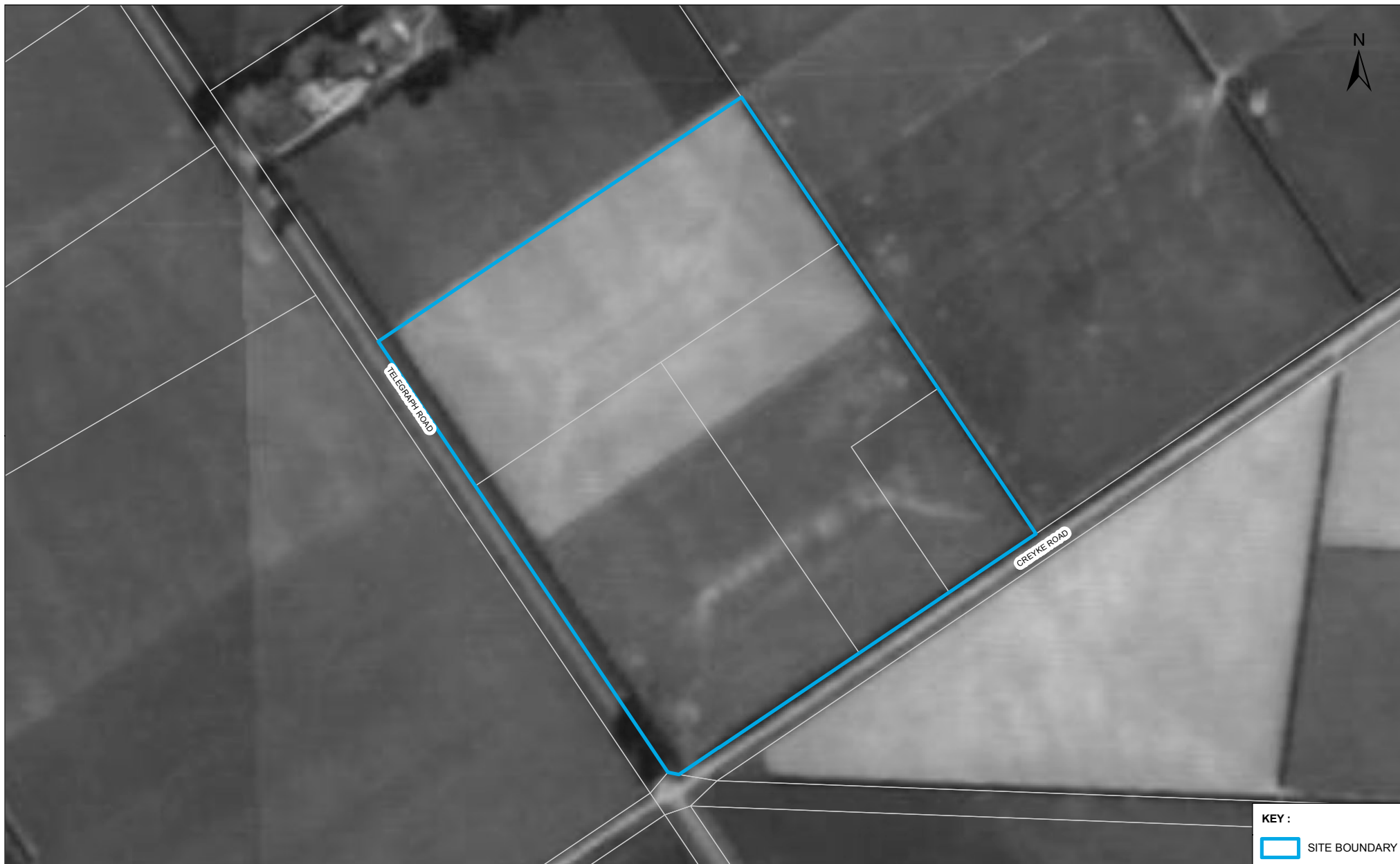


SOURCE:
1. AERIAL PHOTOGRAPH SOURCED FROM CANTERBURY
MAP PARTNERS ADMINISTERED BY ENVIRONMENT
CANTERBURY.
2. CADASTRAL INFORMATION DERIVED FROM LINZ DATA.

1982 AERIAL PHOTOGRAPH

KEY :
 SITE BOUNDARY


SCALE : 1:4,000 (A4)
0 10 20 40 60 80 100
Meters



SOURCE:
1. AERIAL PHOTOGRAPH SOURCED FROM CANTERBURY
MAP PARTNERS ADMINISTERED BY ENVIRONMENT
CANTERBURY.
2. CADASTRAL INFORMATION DERIVED FROM LINZ DATA.

1985 AERIAL PHOTOGRAPH

KEY :
 SITE BOUNDARY

SCALE : 1:4,000 (A4)
0 10 20 40 60 80 100

Meters



SOURCE:
1. AERIAL PHOTOGRAPH SOURCED FROM CANTERBURY
MAP PARTNERS ADMINISTERED BY ENVIRONMENT
CANTERBURY.
2. CADASTRAL INFORMATION DERIVED FROM LINZ DATA.

1998 AERIAL PHOTOGRAPH

KEY :
 SITE BOUNDARY

SCALE : 1:4,000 (A4)
0 10 20 40 60 80 100
Meters



SOURCE:
 1. AERIAL PHOTOGRAPH SOURCED FROM CANTERBURY
 MAP PARTNERS ADMINISTERED BY ENVIRONMENT
 CANTERBURY.
 2. CADASTRAL INFORMATION DERIVED FROM LINZ DATA.

2004 AERIAL PHOTOGRAPH

KEY :
 SITE BOUNDARY

SCALE : 1:4,000 (A4)
 0 10 20 40 60 80 100
 Meters



SOURCE:
1. AERIAL PHOTOGRAPH SOURCED FROM CANTERBURY
MAP PARTNERS ADMINISTERED BY ENVIRONMENT
CANTERBURY.
2. CADASTRAL INFORMATION DERIVED FROM LINZ DATA.

2012 AERIAL PHOTOGRAPH

KEY :
 SITE BOUNDARY

SCALE : 1:4,000 (A4)
0 10 20 40 60 80 100
Meters



SOURCE:
1. AERIAL PHOTOGRAPH SOURCED FROM GOOGLE EARTH PRO
(MAY NOT BE SPATIALLY ACCURATE).
2. CADASTRAL INFORMATION DERIVED FROM LINZ DATA.

2015 AERIAL PHOTOGRAPH

KEY :
 SITE BOUNDARY

SCALE : 1:4,000 (A4)
0 10 20 40 60 80 100
Meters

JUDITH PASCOE - PRELIMINARY SITE INVESTIGATION – 193 AND 223 CREYKE ROAD, AND
1878 TELEGRAPH ROAD, DARFIELD

Appendix D: Environment Canterbury Listed Land Use Register

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 in regards to our Listed Land Use Register (LLUR) which holds information about sites that have been used, or are currently used for activities which have the potential to have caused contamination.

The LLUR statement provided indicates the location of the land parcel(s) you enquired about and provides information regarding any LLUR sites within a radius specified in the statement of this land.

Please note that if a property is not currently entered 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 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; other information relevant to potential contamination may be held in other files (for example consent and enforcement files).

If your enquiry relates to a farm property, please note that many current and past activities undertaken on farms may not be listed on the LLUR. Activities such as the storage, formulation and disposal of pesticides, offal pits, foot rot troughs, animal dips and underground or above ground fuel tanks have the potential to cause contamination.

Please contact and Environment Canterbury Contaminated Sites Officer if you wish to discuss the contents of the LLUR statement, or if you require additional information. For any other information regarding this land please contact Environment Canterbury Customer Services.

Yours sincerely

Contaminated Sites Team

Property Statement from the Listed Land Use Register

Visit www.ecan.govt.nz/HAIL for more information about land uses.



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

Date:	02 March 2016	
Land Parcels:	Lot 1 DP 56120	Valuation No(s): 2420011003
	Lot 2 DP 56120	Valuation No(s): 2420011002
	Lot 1 DP 391851	Valuation No(s): 2420011004
	Lot 2 DP 391851	Valuation No(s): 2420011002



The information presented in this map is specific to the area within a 100m radius of property you have selected. Information on properties outside the search radius may not be shown on this map, even if the property is visible.

Summary of sites:

Site ID	Site Name	Location	HAIL Activity(s)	Category
2787	Darfield Clay Target Club	Corner Creyke Road & Telegraph Road, Darfield	C2 - Gun clubs or rifle ranges;	Unverified HAIL
120023	1878 Telegraph Road, Darfield	1878 Telegraph Road, Darfield	A10 - Persistent pesticide bulk storage or use;	HAIL ID Project UNVERIFIED

Please note that the above table represents a summary of sites and HAILS intersecting the area of enquiry within a 100m buffer.

Information held about the sites on the Listed Land Use Register

Site 2787: Darfield Clay Target Club (Within 100m of enquiry area.)**Site Address:** Corner Creyke Road & Telegraph Road, Darfield**Legal Description(s):** Lot 1 DP 62232, RES 1511**Site Category:** Unverified HAIL**Definition:** The relevant land-use / HAIL history has not been confirmed.

Land Uses (from HAIL):	Period From	Period To	HAIL land use
	1982	present	Gun clubs or rifle ranges, including clay target clubs that use lead munitions outdoors

Notes:

Investigations:

1 Jun 1997 **INV 548: Initial Investigation into Lead Contamination at Clay Target Clubs and Wetlands in Canterbury**
(Preliminary Site Investigation)
ECan

Summary of investigation(s):

A preliminary investigation into the environmental impacts of lead shot use at clay target clubs and wetland shooting areas was carried out in the Canterbury region.

Thirteen active and three inactive clay target clubs were identified in the report. A history of shooting and the level of use was compiled for each site.

1 Feb 1998 **INV 549: Report on Lead (Pb) Concentrations in Soils at Thirteen Canterbury Clay Target Club Sites**
(Detailed Site Investigation)
Unknown

Summary of investigation(s):

Thirteen clay target clubs were sampled. At each site the most frequently used trap was identified and a soil pit was dug at a perpendicular distance of 120m from the trap in the firing direction. At a few sites, as a result of restricted access, the soil pit was dug at a closer distance to the trap.

At the Darfield Clay Target Club the sampling pit was dug 120 m from the trap.

Soils were sampled from the pit at the following depth increments: 0-5 cm, 5-10cm, 10-20cm, 20-30cm and 30-50cm.

The total lead concentrations recorded in these samples were:

0-5cm: 2872 mg/kg (total lead in soil: 177 mg/kg, lead shot: 2695 mg/kg)
5-10cm: 10715 mg/kg (total lead in soil: 2009 mg/kg, lead shot: 8706 mg/kg)
10-20cm: 1978 mg/kg (total lead in soil: 178 mg/kg, lead shot: 1800 mg/kg)
20-30cm: 33 mg/kg (total lead in soil: 33 mg/kg, lead shot: 0 mg/kg)
30-50cm: 24 mg/kg (total lead in soil: 24 mg/kg, lead shot: 0 mg/kg)

Some of these results exceed the NEPM residential acceptance value (300mg/kg) and the Canadian agricultural acceptance value (70mg/kg) for lead.

Site 120023: 1878 Telegraph Road, Darfield (Intersects enquiry area.)**Site Address:** 1878 Telegraph Road, Darfield**Legal Description(s):** Lot 1 DP 56120**Site Category:** HAIL ID Project UNVERIFIED**Definition:** Environment Canterbury has identified the potential for this site to have accommodated a HAIL activity. However, this information has not been verified as correct.

Land Uses (from HAIL):	Period From	Period To	HAIL land use
	1998	Present	Persistent pesticide bulk storage or use including sports turfs, market

		gardens, orchards, glass houses or spray sheds
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Notes:

7 Dec 2015	This record was created as part of the Selwyn District Council 2015 HAIL identification project.
7 Dec 2015	Area defined from 1998 to Present aerial photographs. Horticultural activities (persistent pesticides) were noted in aerial photographs reviewed.

Investigations:

There are no investigations associated with this site.

Information held about other investigations on the Listed Land Use Register

1 Aug 2012	INV 13355: Preliminary Site Investigation, Darfield Development, Creyke Road, Darfield, Canterbury (Preliminary Site Investigation) Golder Associates
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Summary of investigation(s):

Investigation objective: An assessment of the site history was undertaken to assess the residential property. The site consists of a dwelling and extensive gardens. A new dwelling is to be placed on the site, and there is the potential that the site may be subdivided in future.

The site history was assessed using historical certificates of title and aerial photographs, LINZ records of orchards, regional and district council records, and soil contamination investigations for nearby properties. The review appears to have been undertaken generally in accordance with best practise. The report identifies that the site appears to have been pastoral until the house and associated buildings were constructed in the 1970s. It is noted that a sheepdip was located on land adjacent to the north-west.

The report identifies that it appears unlikely that a sheep dip or persistent pesticide application has been undertaken at the site. Burning rubbish and migration from the sheep dip on the adjacent property were considered to be potential sources of contamination.

A targeted investigation was undertaken in a low point in the north-western corner of the site, near the water race, where it was thought most likely that contamination would be present if there had been migration from the sheep dip on the neighbouring site. In addition, the investigation was targeted to a number of burn piles on the eastern part of the site. Soil sampling was primarily undertaken using an X-ray fluorescence spectrometer (XRF). XRF analysis was undertaken at three locations in the north-western corner at 50-100mm and 300mm depths in each location. XRF analysis was also undertaken at 5 locations in the eastern part of the site where burning had been undertaken. The XRF analysis was undertaken for arsenic, chromium, copper, lead, mercury, nickel and zinc. Laboratory analysis was undertaken for arsenic only from five samples; and for a suite of seven metals (arsenic, cadmium, chromium, copper, nickel and zinc) and polycyclic aromatic hydrocarbons (PAHs) in one sample collected from the burn pile near the proposed house location.

Results: The soil sampling results indicated that arsenic was elevated above background levels in the north-western corner of the site, suggesting that there has been some migration from the nearby sheep dip site; however, no samples exceeded the soil contaminant standards for residential land-use with 10% produce consumption or rural-residential land-use. The XRF sampling results did not indicate elevated concentrations of contaminants in soil in the burned areas, which could have arisen from burning of treated timber or other materials. A sample from only one of the burn piles was analysed for PAHs; however, the sample result was below the laboratory limit of detection.

Conclusions: The report concludes that the majority of the site does not contain contamination, but that the north-western corner of the site has been subject to migration of arsenic from the neighbouring site. It is agreed that the risk of contamination from the burn piles is relatively low, and the investigation has provided sufficient information to indicate that the burn pile areas should not be considered a HAIL activity.

For further information from Environment Canterbury, contact Customer Services and refer to enquiry number ENQ123727.

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 and Environment Canterbury's Contaminated Land Information Management Strategy (ECan 2009).*

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.

Listed Land Use Register

What you need to know



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.



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.



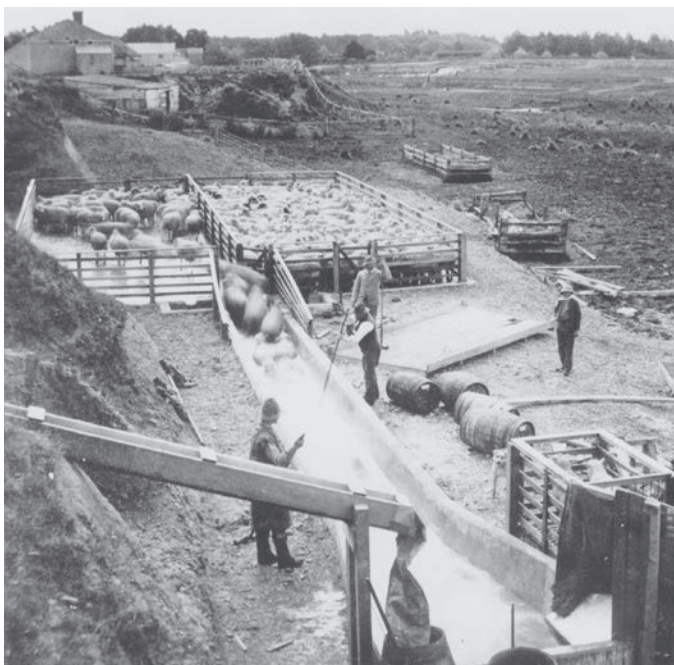
I think my site category is incorrect – how can I change it?

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.

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.)

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)

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

JUDITH PASCOE - PRELIMINARY SITE INVESTIGATION – 193 AND 223 CREYKE ROAD, AND
1878 TELEGRAPH ROAD, DARFIELD

Appendix E: Environment Canterbury Resource Consent Information



SOURCE:
1. AERIAL PHOTOGRAPH SOURCED FROM CANTERBURY
MAP PARTNERS ADMINISTERED BY ENVIRONMENT
CANTERBURY.
2. CADASTRAL INFORMATION DERIVED FROM LINZ DATA.

RESOURCE CONSENTS WITHIN A 500 M RADIUS OF THE SITE

KEY :

- RESOURCE CONSENT
- SITE BOUNDARY

SCALE : 1:10,000 (A4)
0 25 50 100 150 200 250
Meters

Resource Consents Located Within a 500 m Radius of the Site Boundary (Sourced from ECan's Online GIS; accessed 10 March 2016)

[illegible]

[illegible]

