



**Soil Contamination Risk
Preliminary Site Investigation Report**

**Lot 3 DP 68573 of 101 Sabys Road and 6 Wroots Road,
Halswell, Christchurch**

March 2026



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QUALITY CONTROL AND CERTIFICATION SHEET

Client: Sabys 101 Ltd

Date of Issue: 04 March 2026

Revision 1: Amendment to the site boundary at the clients request.

Report written by:

Julia Hopkins, Graduate Environmental Scientist, BSc

Signed: 

Email: s [REDACTED]
9

Report reviewed and certified as a Suitably Qualified and Experienced Practitioner by:

Hollie Griffith, Director/Senior Environmental Scientist, BEMP, CEnvP
(9 years contaminated land experience)

Signed: 

Email: s [REDACTED]
Phone: s 9(2)(a) [REDACTED]



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1 Executive Summary

The subject of this investigation are rural and rural residential properties located at Lot 3 DP 68573 of 101 Sabys Road and 6 Wroots Road, Halswell, Christchurch, from herein referred to as the site. It is proposed to develop the site for residential use. This will include future change in land use, subdivision and disturbance/off-site disposal of soil. The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESC) require an assessment of the likelihood of soil contamination being present. It is also noted that Momentum Environmental Ltd is obligated to consider the requirements of Section 10(4) of the Health and Safety at Work (Asbestos) Regulations 2016. This report details the work undertaken to assess the risks.

This Preliminary Site Investigation (PSI) has identified several areas at risk of soil contamination within the site. The locations of these risk areas are shown on the plan in **Section 10.3**. These are confirmed or likely Hazardous Activities and Industries List (HAIL) activities and there may be a risk to human health from contaminated soils in these areas. It is recommended that a Detailed Site Investigation, in terms of the Ministry for the Environment's Contaminated Land Management Guidelines, be undertaken on the identified risk areas prior to development.

- Farmyard and pottery workshop risk area (101 Sabys Road) – Potential heavy metal, organochlorine pesticide (OCP), petroleum hydrocarbon and/or asbestos contamination around old sheds and buildings, pottery kilns, a potential former sheep dip, storage and burn areas.
- Waste disposal to land risk area (101 Sabys Road) - Potential heavy metal, petroleum hydrocarbon and/or asbestos contamination from storage and burning of waste.
- Residential risk area (6 Wroots Road) – Potential heavy metal, petroleum hydrocarbons and/or asbestos contamination around old buildings, storage and a potential burn area.
- Historical buildings risk areas (101 Sabys Road and 6 Wroots Road) – Potential heavy metal contamination at the location of former buildings.

The remainder of the site has been used for general pastoral purposes. This use is unlikely to have caused soil contamination that would pose a risk to human health or the environment. There is no evidence of an activity or industry described in the HAIL occurring on the pastoral parts of the site now or in the past.

In terms of planning status, the Preliminary Site Investigation has identified evidence of HAIL activities occurring on the site. Therefore, the NESC does apply to the site and resource consent is required to support the proposed development.

2 Objectives of the Investigation

This report has been prepared in general accordance with the Ministry for the Environment's "Contaminated Land Management Guidelines No 1: Reporting on Contaminated Sites in New Zealand, revised 2021". This report includes all requirements for a Preliminary Site Investigation report.

The objective of this report is to:

- Collect and assess information from multiple sources to understand previous and current land uses.
- To describe the site's physical and environmental features to understand potential pathways and receptors.
- To establish under the NESCS whether it is more likely than not that an activity or industry described in the Hazardous Activities and Industries List (HAIL) is being, or has been, undertaken on the site.
- To assess whether there is any risk to potential receptors that would warrant further investigation.

3 Scope of Work Undertaken

The scope of the work undertaken has included:

- Obtaining and review of Environment Canterbury (ECan) GIS data including the Listed Land Use Register (LLUR).
- Search of Land Information New Zealand (LINZ) orchard database.
- Review of relevant historical aerial photographs.
- Review of relevant historical certificate of titles (CTs).
- Review of Christchurch City Council (CCC) and Selwyn District Council (SDC) property files.
- Site inspection and XRF screening.
- Preparation of report in accordance with MfE guidelines.

4 Site Identification

The site is restricted to the southern half of 101 Sabys Road and 6 Wroots Road, Halswell, Christchurch. The site is legally described as Lot 3 DP 68573 and Part Lot 1 DP 1537 and has a total area of approximately 35.23ha.



Figure 1 – Location Plan

5 Proposed Site Use

It is proposed to develop the site for future residential use. This will include future change in land use, subdivision and disturbance/off-site disposal of soil.

6 Site Description

6.1 Environmental Setting

Table 1 – Environmental Setting

Topography	The site is generally flat land with some undulations along former stream channels.
Geology	The ECan GIS database describes the soils at the site as a combination of Waimakariri deep loam over sand, Waimakariri deep silt, Kaiapoi deep silt and Tai Tapu deep silt over sand. Nearby wells indicate soils are generally brown sandy topsoils underlain by blue/grey sandy gravel.
Soil Trace Elements	According to the ECan GIS database, natural concentrations of trace elements for the majority of the site are those of the 'Regional, Recent' soil group.
Groundwater	The site lies over the coastal confined gravel aquifer system. Groundwater levels recorded on onsite bore logs are 1.59-3.34m deep. The direction of groundwater flow is generally south-easterly.
Surface Water	The ECan GIS database shows Nottingham Stream and Halswell River run parallel along the boundaries of both 101 Sabys Road and 6 Wroots Road. Knights Stream runs through 101 Sabys Road and into the Halswell River.

6.2 Site Layout & Current Site Uses

The majority of the site is vacant farmland used for hay production and horse grazing. There is a former farmyard and a pottery house at 101 Sabys Road. A residential area containing a dwelling and multiple sheds is present in the eastern most corner of 6 Wroots Road.

6.3 Surrounding Land Uses

The surrounding land is a mixture of rural residential and residential land. Moffatts Flower Company is located approximately 90m east/north-east of the site.

6.4 Geotechnical Investigations

At the time of writing no geotechnical investigations were available to Momentum Environmental Ltd (MEL).

7 Historical Site Use Assessment

7.1 Previous Site Ownership and Use

Historical Certificate of Titles (CTs) were reviewed with the following relevant ownership information outlined below:

101 Sabys Road

18 January 1926	William Gardiner, Halswell farmer
14 February 1951	Charles Herbert Gardiner, a Halswell dairy farmer
27 April 1964	Ronald William Gardiner, a Halswell farmer
19 March 1997	Franco Farms Limited

6 Wroots Road

05 June 1877	Jennings Moffet, Halswell farmer
30 March 1885	Victor Harris, a Christchurch finance and commission agent
25 July 1891	Jennings Moffet, Halswell farmer
13 October 1891	Janice Jane Moffet, his wife and John William Overton, a Prebbleton esquire
20 April 1893	William Bridling, Christchurch sheep farmer
21 July 1900	John McDrury, a Halswell farmer
11 May 1928	Transmission to Russell Patrick O'Shaughnessy, Ellesmere farmer and Patrick McDrury, Ladbroke's farmer
25 November 1943	Leo Partick McDrury and Alphonsus Owen McDrury, Halswell farmers
17 October 1946	Allen James Thornley and Leo Patrick McDrury, Halswell farmers
15 December 1970	Ronald William Gardiner, Halswell Farmer
19 March 1997	Franco Farms Limited

Note that some of the older information was of poor quality and difficult to follow, therefore the accuracy of the spelling of names and dates is not guaranteed. Copies of the historical CTs are included in **Appendix A**.

7.2 District Council Records

101 Sabys Road is zoned Rural Urban Fringe in the Christchurch District Plan (CDP).

6 Wroots Road is currently zoned Inner Plains in the operative Selwyn District Plan (SDP) and General Rural in the proposed SDP.

The property files were provided by Christchurch City Council and Selwyn District Council and reviewed on the 12 January 2026. The property files contained the following relevant information:

101 Sabys Road

- A building consent to install a roof over existing horse boxes, dated 04 February 1997.

6 Wroots Road

- A building permit to erect a fattening house, dated 27 June 1969. Information included in the permit shows the fattening house is associated with a wet feed piggery and is located to the north of the dwelling.

7.3 Regional Council Records

The site is not listed on the Listed Land Use Register (LLUR) for activities and industries as per the 'Hazardous Activities and Industries List' (HAIL). An investigation was completed on part of 6 Wroots Road in the form of a DSI by Sephira Environmental Ltd in September 2023. This investigation has been reviewed and summarised in **Section 8** below.

Five properties within a 100m radius of the site are listed on the ECan LLUR for potentially contaminating activities. **Figure 2** below shows the listed areas in relation to the site. **Table 2** below outlines the details relating to the five listed properties. Several nearby investigations were also available. The investigations have been reviewed and show no significant risk of migration of contaminants to the site.



Figure 2 – ECan LLUR plan

Table 2 – Nearby properties listed on the LLUR

Site ID	Location	Category	HAIL Activities
SIT 3729	Moffat Flower Company (1 Candys Road)	'Not investigated'	A10 – persistent pesticide bulk storage or use and G5 – waste disposal to land. The LLUR notes a dangerous goods license for an aboveground storage tank (AST) for commercial heating.
SIT 164521	Soil disposal area (1 Candys Road)	Below guideline values – industrial/commercial	A10 – persistent pesticide bulk storage or use and G5 – waste disposal to land. A PSI/DSI was completed by Pattle Delamore Partners Ltd (PDP) in 2013. A review of the report indicates contaminant concentrations are below rural residential guideline values except for a stockpile of soil with elevated lead and/or arsenic levels associated with the flower growing operation. The stockpile was to be placed within the area of commercial use.
SIT 27098	587 Halswell Road	'Yet to be reviewed'	A10 – persistent pesticides bulk storage or use and A8 – livestock dip or spray race operations. The LLUR notes market garden plots were visible in the 2011 historical aerial photograph. An investigation by Sephira identified concentrations of lead and arsenic above the applicable guideline values in the vicinity of a historical sheep dip.

SIT 119243	1 Trices Road, Halswell	'Yet to be reviewed'	A10 – persistent pesticides bulk storage or use. The LLUR notes a glasshouse and horticultural activities were visible on aerial photographs from 1994 to present. A PSI and DSI were completed by ENGEO in 2022 and 2023. A review of the reports indicates soils tested below the human health criteria but above background levels.
SIT 263690	Former sheds (84 Sabys Road)	Below guideline values – residential	HAIL I – any other land. A PSI and DSI was completed by Sephira in 2020. A review of the report indicates historical sheds caused contamination above the residential guideline values. A Site Validation Report in 2021 concluded that a minor exceedance of the residential guideline values remained however this would likely be diluted during development earthworks.

A copy of the LLUR Statement in **Appendix B**.

The ECan GIS database shows one active bore on 101 Sabys Road used for dairy and domestic supply purposes. There are several active bores within a 100m radius of the site used for domestic supply, stock water and irrigation.

The ECan GIS database shows one active land use consent for the site to use the land for farming activities. There are several active resource consents for land within a 100m radius of the site to discharge human effluent, take and use groundwater and to take and discharge water during construction phases.

7.4 Land Information New Zealand Records

The Land Information New Zealand orchard layer does not show the site as having any listed orchards. However, there are two properties listed as having orchards in the surrounding area. The listed orchards are located approximately 170m north and 170m south of the site.

7.5 Review of Historical Aerial Photographs

A total of ten aerial photographs have been sourced from the ECan GIS database. Copies of the aerial photographs used are included in **Appendix C**.

- The earliest available aerial photograph is from **1941** and shows the majority of the site is vacant farmland. 101 Sabys Road has a dwelling and multiple farm buildings in the north-eastern corner. There are also two farm sheds on the southern end of 101 Sabys Road. There is a dwelling and farm buildings in the south-east corner of 6 Wroots Road with three other farm building across the Wroots Road portion of the site. The surrounding area is rural and rural residential land.
- The **1955** aerial photograph shows several new buildings have been constructed within the north-east corner of 101 Sabys Road and a farmyard is now present with stockyards. Storage of materials is occurring to the south of the farmyard. The buildings in the southern half of 101 Sabys Road have

been removed. The buildings in the paddock of 6 Wroots Road have been removed. There are no significant changes to the surrounding land.

- The **1965** aerial photograph shows the north-eastern corner of 101 Sabys Road has a large number of stored items around the area. The residential area on 6 Wroots Road also shows a large number of stored items. There are no significant changes to the surrounding area.
- The **1974** aerial photograph shows a concrete pad has been extended within the farmyard area and the stockyards have been removed. A building within the residential area of 6 Wroots Road has been removed and another one constructed. The area appears generally tidier with the storage items removed. A farm shed has also been constructed in the paddock. There are no other significant changes to the rest of the site or the surrounding area.
- The **1981/1984** aerial photograph shows no significant changes to the site. There is some discolouration in the paddocks within 101 Sabys Road however this appears to be natural and perhaps related to reduced grass growth as opposed to evidence of a HAIL activity occurring. Land to the north-east of the site is being developed for residential use. Land to the east is beginning to be used for horticultural activities with glasshouses present.
- The **1995** aerial photograph shows some smoke and discolouration on the ground in the middle of 101 Sabys Road. A bike track or similar has been constructed in the paddock of the 6 Wroots Road property. Horticultural activities to the east of the site have increased.
- The **2005** aerial photograph shows one shed has been removed and a new shed has been construction within the farmyard area at 101 Sabys Road. Stockyards are also present within the farmyard area. Some baleage is being stored in the middle of 101 Sabys Road. The bike track previously noted at 6 Wroots Road is no longer visible. There are no significant changes to the rest of the site or the surrounding area.
- The **2011** aerial photograph shows a large amount of stored materials around the dwelling and along the treeline in the north-east corner of 101 Sabys Road. The storage appears to be construction and demolition waste. Two silos are present within the farmyard area of 101 Sabys Road. Potential burn areas/waste disposal to land has occurred in the middle of 101 Sabys Road, adjacent to the baleage storage. Some of the paddocks within the 101 Sabys Road property are discoloured which is likely due to a burn-off or similar. There are no significant changes to the rest of the site or the surrounding land.
- The **2017/18** aerial photograph shows three silos, shipping containers and two potential burn areas present in the farmyard area on 101 Sabys Road. Significant soil disturbance has occurred in the middle of 101 Sabys Road. A shed is present with a large amount of stored material around the residential area on 6 Wroots Road. A large burn area or similar is present to the north of one of the sheds on 6 Wroots Road. There are no significant changes to the surrounding area.
- The latest aerial photograph is dated **2020**. It shows soil disturbance still occurring in the middle of 101 Sabys Road. Another shed has been constructed in the residential area on 6 Wroots Road. There are no significant changes to the rest of the site or the surrounding area.

8 Previous Investigations

Soil Sampling 6 Wroots Road, Halswell – Sephira Environmental Limited September 2023

Davie Lovell-Smith Limited (DLS) engaged Sephira Environmental Limited to undertake soil sampling across the paddocks at 6 Wroots Road to determine heavy metal concentrations in the soils. There were no plans to subdivide or develop the land at the time of the report.

Topsoil samples were collected from fourteen locations across the property. Five of the fourteen samples showed heavy metal concentrations exceeding expected background values for the area. The

rest of the results showed heavy metal concentrations below expected background values. All samples collected showed heavy metal concentrations below the residential soil contaminant standards.

A copy of this investigation can be provided on request.

9 Site Inspection

9.1 Site Inspection Summary

A site inspection with XRF screening was undertaken on 13 January 2026 to assess the likelihood of soil contamination on the site. Site Inspection Plans are included in **Appendix D**. A Table of XRF Results is included in **Appendix E**.

101 Sabys Road

The majority of this area is vacant farmland. The waste disposal area with evidence of previous burning and soil excavations, located in the middle of the paddocks was grassed over with no visible signs of disturbance or evidence of previous burning.

Within the farmyard area there are several sheds used for general farm storage, three grain silos on a concrete base, a shipping container and horse stables with an attached stockyard. Minor lubricant storage was occurring in a shed with a concrete base.

Concrete edging was present within the stockyards indicating the presence of a former livestock dip. XRF screening was undertaken in this location and identified levels of arsenic above the 'residential 10% produce' soil guideline value (SGV). The highest arsenic level recorded was 285mg/kg, compared to the 'residential 10% produce' SGV of 20mg/kg. This is generally consistent with the area containing a former livestock dip.

A burn area was also identified to the south of all the farmyard and contained timber, nails and ash. XRF screening showed very high arsenic levels above the 'residential 10% produce' SGV. The arsenic reading was 5902mg/kg.



Photo 4 and Photo 5 – Paddocks at 101 Sabys Road



Photo 6 – Soil excavation and waste disposal to land area



Photo 7 – Farm sheds



Photo 8 – Storage in farm sheds



Photo 9 – Farm sheds with hardstand surface



Photo 10 – Horse stables



Photo 11 – Stockyards



Photo 12 – Potential former sheep dip structure Photo 13 – Shipping container and grain silos



Photo 14 – Burn area

To the south-east of the farmyard is a former residential dwelling with painted weatherboard cladding currently used as a pottery workshop and retail store. An extension is present along the south-west wall of the pottery workshop with potential asbestos containing materials (PACM) and an attached corrugated iron clad shed. There is another detached shed with painted weatherboard cladding. Several pottery kilns are present to the north-west of the pottery house and within the corrugated iron shed. Storage of scrap material is present around the pottery workshop and within the surrounding treelines.



Photo 15 – Pottery workshop



Photo 16 – Shed



Photo 17 – House extension with PACM cladding

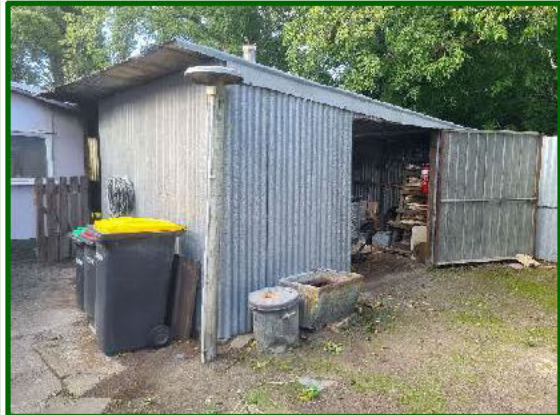


Photo 18 – Shed



Photo 19 – Pottery material stored in shed



Photo 20 – Pottery kilns



Photo 21 and photo 22 – Scrap material, southern side of pottery workshop



Photo 23 – Storage behind sheds

6 Wroots Road

The majority of this portion of the site is vacant farmland and at the time of the site inspection it was being cut for hay. The residential area in the south-west corner of the site was inaccessible during the site inspection however was visible from the roadside. 6 Wroots Road consisted of a painted weatherboard dwelling with several sheds and storage of scrap material.



Photo 24 and 25 – Farmland



Photo 26 – Dwelling



Photo 27 – Shed



Photo 28 – Shed and general storage



Photo 29 – Old structures



Photo 30 – Halswell River located to the east of the dwelling

9.2 XRF Quality Assurance Measures

The current NZ XRF use guidelines (Ministry for the Environment. 2024. *Field use of X-ray fluorescence spectroscopy for investigation of contaminated soils*. Wellington) guided the use of the XRF for this investigation.

The XRF used is an Olympus Vanta M-Series with a 50KV tube. The manufacturer's instructions were followed in the use of the device. All users were trained and licensed to operate the XRF.

Standard reference materials and a blank were tested prior and compared with expected results. Blank readings were taken throughout the day's testing as appropriate to ensure there was no contamination of the XRF window.

The device was used qualitatively at this site for screening purposes. The device detection limits for the contaminants of concern identified are all less than one third of the relevant SGV. The results from the XRF for arsenic, chromium, copper, lead, and zinc were analysed in detail but only reported if relevant to human health risk.

10 Risk Assessment

10.1 Potential HAIL Uses Identified

The Hazardous Activities and Industries List (HAIL) compiled by the Ministry for the Environment include the following categories (*in italics*) that could be associated with the historical uses of the site with a summary of the risk of these activities having been carried out on the site.

A – Chemical manufacture, application and bulk storage

8. Livestock dip or spray race operations

Historical aerials show a farmyard and stockyards present at 101 Sabys Road from as early as the 1950's. During the site inspection a potential concrete sheep dip structure was noted within the stockyards. XRF screening identified arsenic contamination in the soils which is consistent with the presence of a former livestock dip.

Contaminants of concern include heavy metals and organochlorine pesticides (OCP's).

10. Persistent pesticide bulk storage or use, including sport turfs, market gardens, orchards, glasshouses or spray sheds

For its known history, much of the site has been used for pastoral farming activities. The normal uses of fertilisers and pastoral weed controls associated with these uses are unlikely to have caused soil contamination that would pose a risk to human health. However, multiple farm buildings have been present at the site since at least the 1940's. The use and storage of persistent pesticides in and around the farm buildings cannot be discounted.

Contaminants of concern include heavy metals and OCPs.

E – Mineral extraction, refining and reprocessing, storage and use

1. Asbestos produces manufacture or disposal, including sites with buildings containing asbestos products known to be in a deteriorated condition.

The site has had buildings sited on it since at least 1941, with additions and removals over time. Due to the era of construction of some buildings, there may be a risk of asbestos containing material use. Any natural deterioration or intentional removal may have caused contamination of the surrounding soils.

Contaminants of concern include asbestos.

G – Cemeteries and waste recycling, treatment and disposal

5. Waste disposal to land (excluding where biosolids have been used as soil conditioners).

Potential waste disposal to land, burning and soil excavations have been undertaken in the middle of 101 Sabys Road since the early 1990's. These activities were not visible during the site inspection due to overgrown grass.

Contaminants of concern associated with burning and disposal of material is dependent on the type of material but could include heavy metals, asbestos and petroleum hydrocarbons.

H - Any land that has been subject to the migration of hazardous substances from adjacent land in sufficient quantity that it could be a risk to human health or the environment

Several properties within the surrounding area are listed on ECan's LLUR. Based on the available information on the LLUR it is considered highly unlikely that there would be any significant migration of contaminants to the site.

I - Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment

The site has had buildings sited on it since at least 1941. Based on the era of construction there is a risk of lead-based paint use on the buildings. Any natural deterioration or intentional removal may have caused contamination of the surrounding soils.

One burn area was identified during the site inspection at 101 Sabys Road. A potential burn area is also visible on recent aerial photographs at 6 Wroots Road. Storage of scrap and other items was observed within treeline and around the pottery workshop, farmyard and residential dwelling at 6 Wroots Road. Historical aerial photographs show extensive storage has occurred at the site over many years. Pottery kilns are also present in the pottery workshop area.

Contaminants of concern associated with pottery kilns, burn areas and storage of materials is dependent on the type of material burnt/stored but could include heavy metals, asbestos and petroleum hydrocarbons.

10.2 NESCS Regulation 6(3) Probability Assessment

In terms of the NESCS, Regulation 5(7) states that land is considered to be covered if an activity or industry described in the HAIL is being undertaken; has been undertaken; or is more likely than not to have been undertaken on it. Regulation 6 describes the methods for determining this. Method 6(3) is to rely on a Preliminary Site Investigation. The NESCS Users Guide indicates the test for 'more likely than not' is that there is more than a 50 percent likelihood of the HAIL having occurred. The table below states the likelihood of each HAIL identified:

Table 3 – NESCS Probability Assessment

HAIL Category	6(3)a - Is being undertaken	6(3)b – has been undertaken	6(3)c – likelihood of having been undertaken (if not confirmed)
A8 – livestock dip or spray race	-	-	More likely than not
A10 – persistent pesticide use/storage	-	-	Highly unlikely
E1 – asbestos containing material	-	-	More likely than not
G5 – waste disposal to land	-	-	More likely than not
H – migration of contaminants	-	-	Highly unlikely
I – any other	-	-	More likely than not

At the time of writing of this report, the NESCS does apply to the site and resource consent will likely be required to support the proposed development of the site.

10.3 Conceptual Site Model

The following conceptual site models indicate potentially complete exposure pathways for the identified risk areas at the site. The risk areas have been grouped together as follows; the farmyard and pottery workshop risk area, the residential risk area, the waste disposal to land risk area and the historical building risk areas. The risk areas are shown on the plan in **Figure 3** below.

It is recommended that a Detailed Site Investigation be undertaken on the identified risk areas prior to any development occurring. Beyond the identified risk areas there have been no HAIL activities identified and no further investigations required at this time.

**Figure 3 – Risk Area Plan**

Farmyard and Pottery Workshop Risk Area:**Table 4 – Farmyard and Pottery Workshop Risk Area Conceptual Site Model**

Source	Pathways		Receptor	Exposure Pathway Status
Potential contamination around old sheds and buildings, a potential former sheep dip, burn area and storage of items within the farmyard and pottery workshop risk area.	Human	Dermal contact, ingestion and inhalation through soil contact	Site users	Potentially complete
			Workers involved in soil disturbance at the site.	Potentially complete
	Ecological	Infiltration through soils to groundwater	Groundwater is assumed to be approximately 1.59-3.34m deep.	Likely incomplete
		Surface runoff to waterways	Surrounding streams/rivers.	Potentially complete

Waste Disposal to Land Risk Area:**Table 5 – Waste Disposal to Land Risk Area Conceptual Site Model**

Source	Pathways		Receptor	Exposure Pathway Status
Potential contamination from waste disposal to land, burning of materials.	Human	Dermal contact, ingestion and inhalation through soil contact	Site users	Potentially complete
			Workers involved in soil disturbance at the site	Potentially complete
	Ecological	Infiltration through soils to groundwater	Groundwater is assumed to be approximately 1.59-3.34m deep.	Likely incomplete
		Surface runoff to waterways	Surrounding streams/rivers.	Potentially complete

Residential Risk Area:**Table 6 – Residential Risk Area Conceptual Site Model**

Source	Pathways		Receptor	Exposure Pathway Status
Potential contamination around old buildings, storage of items and a potential burn area.	Human	Dermal contact, ingestion and inhalation through soil contact	Site users	Potentially complete
			Workers involved in soil disturbance at the site	Potentially complete
	Ecological	Infiltration through soils to groundwater	Groundwater is assumed to be approximately 1.59-3.34m deep.	Likely incomplete
		Surface runoff to waterways	Surrounding streams/rivers.	Potentially complete

Historical Building Risk Areas:**Table 7 – Historical Building Risk Areas Conceptual Site Model**

Source	Pathways	Receptor	Exposure Pathway Status
Potential heavy contamination from the use of lead-based paint products on historical buildings.	Human	Dermal contact, ingestion and inhalation through soil contact	Site users
		Workers involved in soil disturbance at the site	Potentially complete
	Ecological	Infiltration through soils to groundwater	Groundwater is assumed to be approximately 1.59-3.34m deep.
		Surface runoff to waterways	Potentially complete

11 Conclusion

This investigation has identified several areas at risk of soil contamination within the site:

- Farmyard and pottery workshop risk area – Potential heavy metal, OCP, petroleum hydrocarbon and/or asbestos contamination around old sheds and buildings, pottery kilns, a potential former sheep dip, storage and burn areas.
- Waste disposal to land risk area - Potential heavy metals, petroleum hydrocarbon and/or asbestos contamination from storage and burning of waste.
- Residential risk area – Potential heavy metal, petroleum hydrocarbons and/or asbestos contamination around old building, storage of items and a potential burn area.
- Historic building risk areas – Potential heavy metal contamination at the location of former buildings.

The locations of these risk areas are shown on the plan in **Figure 3** above. These are confirmed or likely HAIL activities and there may be a risk to human health from contaminated soils in these areas. It is recommended that a Detailed Site Investigation be undertaken across all risk areas prior to development of the site.

The remainder of the site has been used for general pastoral use. This use is unlikely to have caused soil contamination that would pose a risk to human health or the environment. There is no evidence of an activity or industry described in the HAIL occurring on the pastoral parts of the site now or in the past and no further investigations are required.

12 Limitations

Momentum Environmental Limited has performed services for this project in accordance with current professional standards for environmental site assessments, and in terms of the client's financial and technical brief for the work. Any reliance on this report by other parties shall be at such party's own risk. It does not purport to completely describe all the site characteristics and properties. Where data is supplied by the client or any third party, it has been assumed that the information is correct, unless otherwise stated. Momentum Environmental Limited accepts no responsibility for errors or omissions in the information provided. Should further information become available regarding the conditions at the site, Momentum Environmental Limited reserves the right to review the report in the context of the additional information.

Opinions and judgments expressed in this report are based on an understanding and interpretation of regulatory standards at the time of writing and should not be construed as legal opinions. As regulatory standards are constantly changing, conclusions and recommendations considered to be acceptable at the time of writing, may in the future become subject to different regulatory standards which cause them to become unacceptable. This may require further assessment and/or remediation of the site to be suitable for the existing or proposed land use activities. There is no investigation that is thorough enough to preclude the presence of materials at the site that presently or in the future may be considered hazardous.

No part of this report may be reproduced, distributed, publicly displayed, or made into a derivative work without the permission of Momentum Environmental Ltd, other than the distribution in its entirety for the purposes it is intended.

Appendix A – Historical Certificate of Titles

References
Prior C/T. 190/130

Transfer No.
N/C. Order No. 770902



CANCELLED

Land and Deeds 69

No. 9A/9

REGISTER

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT

This Certificate dated the 16th day of July one thousand nine hundred and sixty-nine under the seal of the District Land Registrar of the Land Registration District of Canterbury

WITNESSETH that LEO PATRICK McDRURY and ALLAN JAMES THORNLEY both of Halswell, Farmers as tenants in common in equal shares are _____

is seised of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial underwritten or endorsed hereon) in the land hereinafter described, delineated with bold black lines on the plan hereon, be the several admeasurements a little more or less, that is to say: All that parcel of land containing 39 acres, 2 roods, 30.6 perches or thereabouts situated in Block II of the Halswell Survey District being part of Lot 1 on Deposited Plan 1537 part of Rural Section 116 _____



Assistant Land Registrar

Mortgage 216415 to (now) Owen Lyndon Davies and Harry John Davies - 25.11.1943 at 12.10 p.m. (As varied five times subsequently).

H. Davies
A.L.R.

This title replaces the original Register copy of C.T. 9A/9 which has been destroyed - 9.9.1970.

H. Davies
A.L.R.

Transfer 817856 to Ronald William Gardiner of Halswell Farmer - 15/12/1970 at 12.10 p.m.

R. Gardiner
A.L.R.

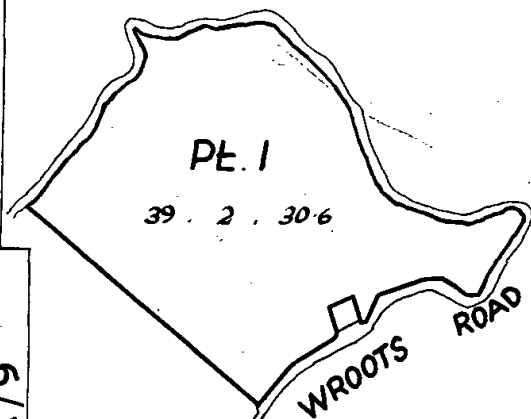
Mortgage 817857 to Leo Patrick McDrury and Allan James Thornley in shares 15/12/1970 at 12.10 p.m.

L. McDrury & A. Thornley
A.L.R.

Amalgamation Correspondence 794043/1

PLAN No. 54698 LODGED 26/5/89
AND DEPOSITED 23/8/1989

OVER...



METRIC AREA - 16.0624 ha

See DP. 1537 for Dimensions

Dimensions in Links

No. 9A/9

kd 66

No. 823155/1 Compliance Certificate pursuant
to Section 306(1)(f)(i) Local Government Act
1974 - 23.8.1989 at 11.47am.

A.L.R.

Transfer 823155/2 of Lot 1 DP 54698 to
Reginald John Garters and Dianna Bridget
Garters - 23.8.1989 at 11.47am

A.L.R.

OCT 823155/3-/4 - Cancelled and CsT 32B/667
23.8.1989 issued for Lot 1 DP 54698
and CT 32B/668 issued for
the balance herein.

A.L.R.

CANCELLED DUPLICATE DESTROYED



NEW ZEALAND.

CANCELLED

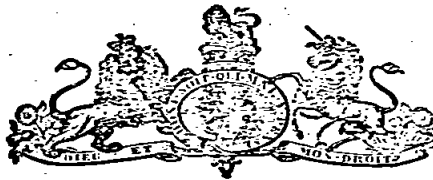
(CERTIFICATE OF TITLE.

Register Book.

Vol. XXIV Folio. 298

CANCELLED

App 2738



Jennings Moffet of the Halswell Farmer is now seized of an Estate in fee simple subject nevertheless to such encumbrances lands and interests as are notified by Memorials underwritten or indorsed hereon in that piece of land situated in the district of Christchurch containing Fifty acres or thereabouts bounded as appears in the plan hereon and therein coloured green which said piece of land is the Rural Section marked 116 delineated in the Public Map of the said District deposited in the office of the Chief Surveyor - originally granted the second day of June 1851 under the Seal of the Canterbury Association and hands of two of its attorneys to John Parsons Esq.

In Witness whereof I have hereunto signed my name and affixed my seal this 5th day of June one thousand eight hundred and seventy seven.

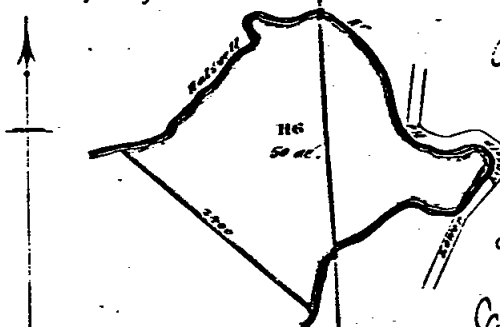
Signed in the presence of
the 5th day of June 1877



William A. D.L.R.
District Land Registrar
of the District of Canterbury

Memorial to the Registrar of Land dated 30th March 1885 to
the Registrar of Christchurch in relation to Section 116 Rural Section

Grant of 15583 made 2nd December 1885 at 10.00 am in presence of Jennings
Moffet of Halswell Farmer



Mortgage 23795 produced in
April 1888 at 10.00 am in presence of
Jennings Moffet & Francis James Garrick
to Francis James Garrick Esq.

Mortgage 26054 produced 3 October 1889 at 2.15 pm
Jennings Moffet & Francis James Garrick
to Francis James Garrick Esq.

Mortgage 27793 produced 8 January 1891
at 10.00 am in presence of Jennings
Moffet & Francis James Garrick
and Abigail Moffet

Mortgage 27844 produced 21 January 1891 at 10.00 am
Jennings Moffet & Francis James Garrick
to Peter Harris

over

24 200

24 223

Transfer 33770 produced 20 March 1891 at 2.40 pm. Jennings Moffet to Victor Harris of Christchurch Finance and Commission Agents
William H L R

Transmission 19115 Probate of the will of Francis James Garrick who died 7 June 1890 granted to Elizabeth Maria Garrick and William Fuller Coppleshaw and Edward Henry Garrick produced 20 May 1891 at 2 pm of Mortgages 23495 and 26057
William H L R

Transfer 33116 produced 25 July 1891 at 12.25 pm Victor Harris to Jennings Moffet of Fair Lake Farm
William H L R

Mortgage 25592 produced 25 July 1891 at 12.25 pm Jennings Moffet to William Edward James Harrison Longman
William H L R

Mortgage 2669 produced 7 August 1891 at 2 pm Jennings **DISCH. 13.1.1898** to East and Coan
William H L R

Transfer 54860 produced 13 October 1891 at 10.30 am. Jennings Moffet to Jessie Lane Moffet his wife and John William Crofton of Christchurch Esquire
William H L R

Transfer 54860 produced 13 October 1891 at 10.30 am. Jessie Lane Moffet to William Crofton to **DISCH. 13.1.1898**
William H L R

Transfer 537429 produced 20 April 1893 at 2.30 pm Jessie Lane Moffet and John William Crofton to William Birdling of Christchurch Sheppherd
William H L R

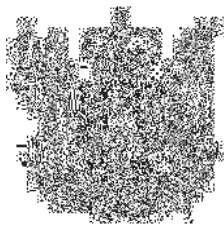
Transfer 51754 produced 21 July 1900 at 11.20 am William Birdling to John the Dairy of lot 1 plan 1537
William H L R

Part Cancelled

Transfer 51755 produced 21 July 1900 at 11.20 am William Birdling to William Welch of lot 2 plan 1537
William H L R

CANCELLED

223 22



**RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Historical Search Copy**




R.W. Muir
Registrar-General
of Land

Constituted as a Record of Title pursuant to Sections 7 and 12 of the Land Transfer Act 2017 - 12 November 2018

Identifier **CB32B/668**

Land Registration District **Canterbury**

Date Issued 23 August 1989

Prior References

CB9A/9

Estate Fee Simple

Area 14.4344 hectares more or less

Legal Description Part Lot 1 Deposited Plan 1537

Original Registered Owners

Franco Farms Limited

Interests

8540969.1 Mortgage to Westpac New Zealand Limited - 3.8.2010 at 2:47 pm

9207281.1 Discharge of Mortgage 8540969.1 - 17.10.2012 at 3:54 pm

9207281.2 Mortgage to Bank of New Zealand - 17.10.2012 at 3:54 pm

11759481.4 Discharge of Mortgage 9207281.2 - 28.5.2020 at 8:50 am

References

Prior C/T 9A/9

Transfer No.

N/C. Order No.823155/4

Land and Deeds 69



REGISTER

No. 32B / 668

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT

This Certificate dated the 23rd day of August one thousand nine hundred and eighty nine under the seal of the District Land Registrar of the Land Registration District of CANTERBURY

WITNESSETH that RONALD WILLIAM GARDINER of Halswell, Farmer ---

is seised of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial underwritten or endorsed hereon) in the land hereinafter described, delineated with bold black lines on the plan hereon. be the several admeasurements a little more or less, that is to say: All that parcel of land containing 14.4344 hectares or thereabouts being part Lot 1 Deposited Plan 1537 ---



ASSISTANT LAND REGISTRAR

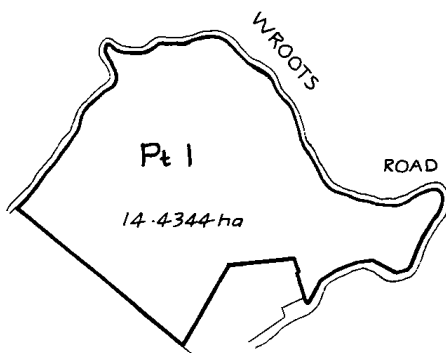
CAVEAT A258595/1877 FRANCO FARMS LIMITED -
16.9.1996 at 10.50am

for A.L.R.

Transfer A287813/2 to Franco Farms
Limited at Christchurch - 19.3.1997
at 10.35am

for A.L.R.

Paparu County



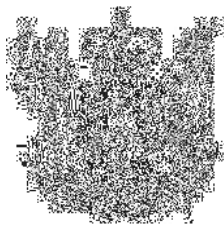
For Dimensions see D.P.'s 1537 & 54698
Measurements are Metric

No. 32B/668

CERTIFICATE OF TITLE No. /

85689H-50,000/5/88MK





RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Historical Search Copy




R.W. Muir
Registrar-General
of Land

Constituted as a Record of Title pursuant to Sections 7 and 12 of the Land Transfer Act 2017 - 12 November 2018

Identifier **CB40A/430**
Land Registration District **Canterbury**
Date Issued 12 December 1996

Prior References
CB373/24

Estate Fee Simple
Area 34.4180 hectares more or less
Legal Description Lot 2-3 Deposited Plan 58573
Original Registered Owners
Franco Farms Limited

Interests

Subject to Section 241 Resource Management Act 1991

Subject to Section 8 Coal Mines Amendment Act 1950 (affects part formerly in CT CB539/73)

181033.1 Easement Certificate specifying the following easement

Type	Servient Tenement	Easement Area	Dominant Tenement	Statutory Restriction
Drain water	Lot 14 Deposited Plan 40663 - CT CB18B/1113	Part	Part formerly in CT CB373/24 - herein	

The easement specified in Easement Certificate 181033.1 is subject to (now) Section 243(a) Resource Management Act 1991

A273736.4 Esplanade Strip Instrument pursuant to Section 232 Resource Management Act 1991 - 12.12.1996 at 9:02 am (affects Lot 3 DP 68573)

5093922.1 Departmental Dealing correcting the legal description from Lots 2 - 3 DP 58573 to Lots 2 -3 DP 68573. - 11.10.2001 at 1:50 pm

7831663.1 Departmental Dealing correcting the plan image linked to the title from DP 58573 to DP 68573 - 28.5.2008 at 9:01 am

8540969.1 Mortgage to Westpac New Zealand Limited - 3.8.2010 at 2:47 pm

9207281.1 Discharge of Mortgage 8540969.1 - 17.10.2012 at 3:54 pm

9207281.2 Mortgage to Bank of New Zealand - 17.10.2012 at 3:54 pm

11759481.4 Discharge of Mortgage 9207281.2 - 28.5.2020 at 8:50 am

LTO 69

References:

Prior C/T 373/24

Document No. A273736/3



REGISTER

No. 40A/430

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT

This Certificate dated the 12th day of December one thousand nine hundred and ninety-six under the seal of the District Land Registrar of the Land Registration District of CANTERBURY

WITNESSETH that RONALD WILLIAM GARDINER of Halswell, Farmer ---

is seized of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial underwritten or endorsed hereon) in the land hereinafter described, delineated with bold black lines on the plan hereon, be the several admeasurements a little more or less, that is to say: All that parcel of land containing 34.4180 hectares or thereabouts being Lots 2 and 3 Deposited Plan 68573 ---

DISTRICT LAND REGISTRAR



ASSISTANT LAND REGISTRAR
CANTERBURY N.Z.

Subject To:

Section 241 Resource Management Act
1991

The reservations imposed by Section 8
of the Coal Mines Amendment Act 1950
(affects part formerly in CT 539/73)

CAVEAT A258595/1 - FRANCO FARMS
LIMITED - 16.01.1996 AT 9.51AM

Appurtenant to part formerly in CT
373/24:

Right to drain water over part Lot
14 DP 40663 (18B/1113) as specified
in Easement Certificate 181033/1

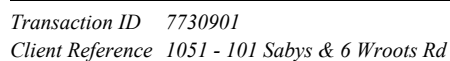
The easement specified in Easement
Certificate 181033/1 is subject to
(now) Section 243(a) Resource
Management Act 1991

No. A273736/4 Instrument for
Esplanade Strip - 12.12.1996 at
9.02am (affects Lot 3 DP 68573)

Transfer A287813/2 to Franco Farms
Limited at Christchurch - 19.3.1997
at 10.35am

for A.L.R.

No. 40A/430



Vol. 24, folio 298
Transfer No. 51754



Register-book,

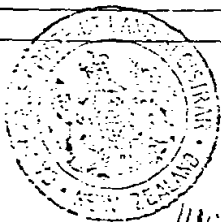
Vol. 190, folio 130

190/130

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT.

Certificate, dated the Twenty first day of July, one thousand ^{eight} hundred and ninety —, under
and seal of the District Land Registrar of the Land Registration District of Canterbury — Witnesseth that
Mr. Henry of Halswell Farmer

of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial underwritten
hereon; subject also to any existing right of the Crown to take and lay off roads under the provisions of any Act of the General Assembly
of New Zealand) in the land hereinafter described, as the same is delineated by the plan hereon, bordered green, be the several admeasurements
more or less, that is to say: All that parcel of land containing Twenty acres or thereabouts situated
Block II of the Halswell Survey District being Lot 1 on a plan deposited
in the Land Registry Office at No. 1537 page of plan Section 116.



H. Smith
District Land Registrar

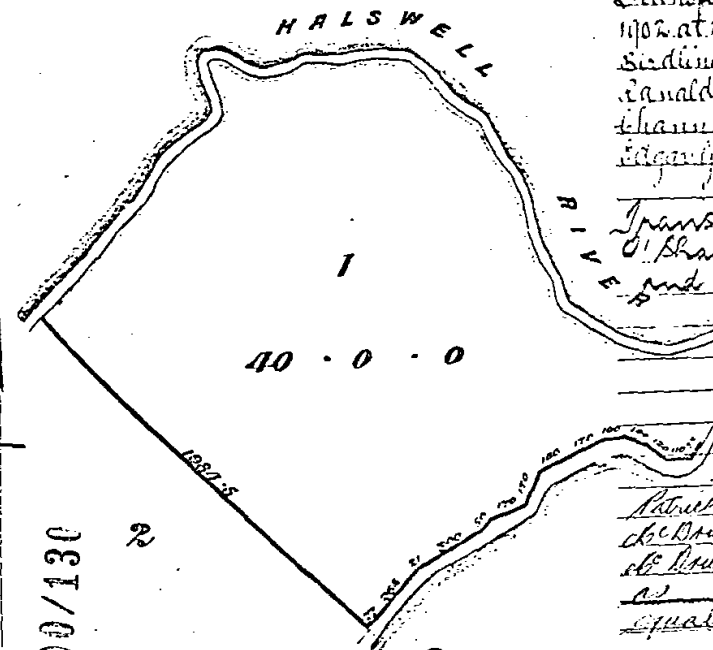
Mortgage 14499 produced 21st July 1901
at 11.30 am John Edgar, Captain Birdling
and Arthur John Edgar, Esq. Esopfarmers
Edgar's Tree Avenue, 1901, at 12.45 pm (1901 24/74)

Transmission No. 4491 to Henry Edgar, Esq. Esopfarmers
and Arthur John Edgar, Esq. Esopfarmers
Edgar's Tree Avenue, 1901, at 12.45 pm (1901 24/74)

Transfer of Mortgage being produced by James
1902 at 2.25 pm Henry Edgar and Arthur John
Siding to Arthur Edgar, James Edgar and
Donald Macintosh Macdonald and to Edgar
James and John and the said Arthur
Edgar, James and John

Transmission 20169 to Russell Patrick
O'Shaughnessy of Ellesmere farmer
and Patrick McHenry of Ellesmere
farmer as co-purchasers entered
11 May 1903 at 12.10 pm

Transfer 203830 produced 25
November 1903 at 11.15 am Russell
Patrick O'Shaughnessy and
Patrick O'Shaughnessy to Theo Patrick
de Bussy and Alphonse Owen
de Bussy both of Halswell farmers
as the said James Edgar, James
Edgar, James and John



METRIC AREA C

Scale: 5 Chains to an Inch

DP 26696

Image Quality due
to Condition
of Original

190/130

190/130

Mortgage 216415 produced 25 November 1963
at 11:46 am. ~~Re: Patrick McQuerry~~
and Alphonsus Owen McQuerry to Owen
Lyndon Davies Harry Hanks Davies
and Allan Henderson *ALR*

Transmit 292779 produced 17 October 1966 at
11:54 am Alphonsus Owen McQuerry of his
interest to Allen James Thonley of Holwell
Garrett *ALR*

Mortgage 22699 produced 17 October 1966 at 11:58 am
Allen James Thonley of his interest to Alphonsus
Owen McQuerry *ALR*

Variation of the terms of Mortgage 216415
Produced 2 October 1963 at 11:55 am
ALR

Variation of the terms of Mortgage 216415 produced
at 11:54 am *ALR*

473958 Transmission of Mortgage 216415 to
the above named Owen Lyndon Davies and Harry
Hanks Davies Entered 1/2/1958 at 2:40 pm
ALR

Variation of the terms of Mortgage 216415 produced
on 26th May 1964 at 2:40 pm
Cancellation of Mortgage 216415 - 22/5/1964
at 11:16 am *ALR*

Variation of Mortgage 216415 - 22.6.1969
at 11:20 am *ALR*

Pursuant to Section 35(3) of the Land
Amendment Act 1961 Lot 2 Plan 26696
vests to now in Her Majesty the Queen
on road 16.7.1969 *ALR*

Plan 26696 Deposited 16.7.1969
NCO.772922 { Cancelled and re-issued C&T. 9A/8
16.7.1969 { issued for Lot 1 S.P. 26696 and
9A/9 issued for balance of same
ALR

Cancelled
Duplicate destroyed

CERTIFICATE OF TITLE,

Vol. . folio

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373/24

373/24

335267 transfer of share particulars to
Charles Herbert Gardiner was described
prepared 14 February 1961 at 12:11
for A.L.R.
The above transfer on the title has been entered the 27th day
1 November 1963.

Transfer 623466 to Ronald William
Gardiner of Hahawell Farmer 27/4/1963
at 2:39 pm.

Mortgage 623467 to Charles Herbert
Gardiner 27/4/1963 at 2:40 pm.
A.L.R.

Mortgage 623468 to Charles Herbert
Gardiner 27/4/1963 at 2:41 pm.
A.L.R.

Variation of mortgage 623468 to 8/19/11
at 12:20 pm.

THIS REPRODUCTION (ON A REDUCED SCALE)
CERTIFIED TO BE A TRUE COPY OF THE
ORIGINAL REGISTER FOR THE PURPOSES OF
SECTION 215A LAND TRANSFER ACT 1952.
A.L.R.

Transmission 95844/1 of Mortgage
623467 to Keith Charles Gardiner
and Ronald William Gardiner as
Executors - 1.9.1976 at 9.51 a.m.

A.L.R.

Transmission 95844/1 of Mortgage
623468 to Keith Charles Gardiner
and Ronald William Gardiner as
Executors - 1.9.1976 at 9.51 a.m.

A.L.R.

Memorandum of Easement on DP
40663 to be complied with

No 181033/1 Easement Certificate specifying
intended easement on DP 40663.

Nature	Servient Tenement	Dominant Tenement
Right to drain water	14 (18B/1113)	Pt RS 407 herein

- 15.6.1978 at 9.34 am.
The above easement when created will be
Subject to Section 37(1)(a) Counties
Amendment Act 1961.
for A.L.R.

Amalgamation Correspondence

A 70368/1

PLAN No. 68573 LODGED 7/2/1996
AND DEPOSITED 12/12/96

CAVEAT A258595/1 BY FRANCO FARMS LIMITED
16.9.1996 at 9.51am

for A.L.R.

No. A273736/1 Certificate pursuant to
Section 224(c) Resource Management Act 1991

OCT A273736/2,3 - Cst 40A/429,430 issued
for Lot 1 and Lots 2,3
DP 68573 respectively

both on 12.12.1996 at 9.02am

A.L.R.

CANCELLED DUPLICATE DESTROYED

373/24



Appendix B – LLUR Statement



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.

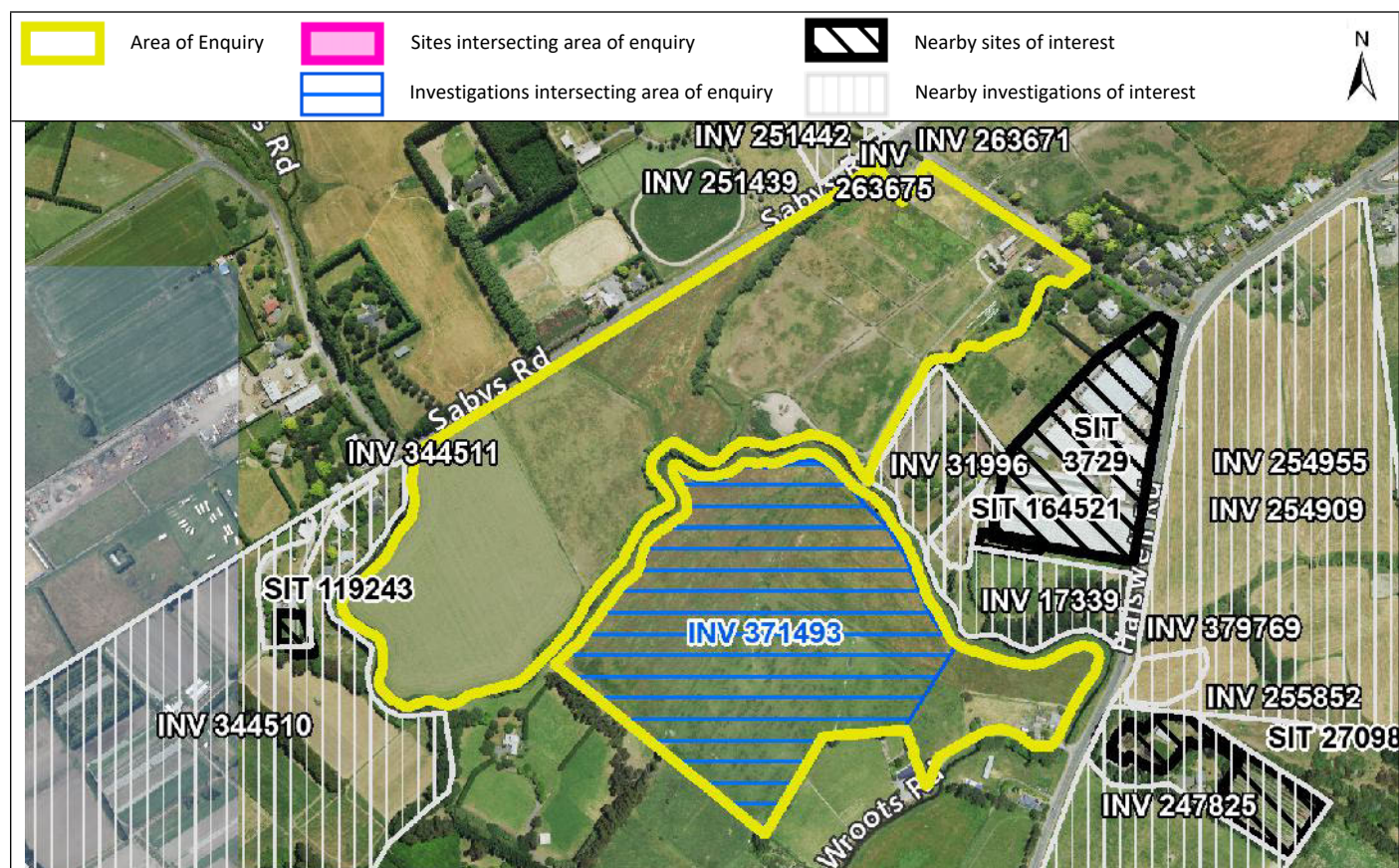
Yours sincerely

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 ENQ449357

Date generated: 27 February 2026
Land parcels: Lot 3 DP 68573
Part Lot 1 DP 1537



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.

Sites at a glance

Sites within enquiry area

Site number	Name	Location	HAIL activity(s)	Category
-------------	------	----------	------------------	----------

Please note that the above table represents a summary of sites and HAILs intersecting the area of enquiry only.

Nearby sites

Site number	Name	Location	HAIL activity(s)	Category
3729	Moffat Flower Company	1 Candy's Road, Halswell	A10 - Persistent pesticide bulk storage or use; G5 - Waste disposal to land;	Not Investigated
27098	587 Halswell Road	587 Halswell Road, Halswell, Christchurch	A10 - Persistent pesticide bulk storage or use; A8 - Livestock dip or spray race operations;	Yet to be reviewed
119243	1 Trices Rd, Halswell	1 Trices Rd, Halswell	A10 - Persistent pesticide bulk storage or use;	Yet to be reviewed
164521	Soil disposal area	1 Candys Road, Halswell	A10 - Persistent pesticide bulk storage or use; G5 - Waste disposal to land;	Below guideline values - Industrial/Commercial
263690	Former Sheds	84 Sabys Road, Halswell	I - Any other land;	Below guideline values -

				Residential
--	--	--	--	-------------

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

More detail about the sites

Site 3729: Moffat Flower Company (Within 100m of enquiry area.)

Category: Not Investigated
Definition: Verified HAIL has not been investigated.

Location: 1 Candy's Road, Halswell
Legal description(s): Lot 2 DP 28105

HAIL activity(s):	Period from	Period to	HAIL activity
	?	Current	Persistent pesticide bulk storage or use including sports turfs, market gardens, orchards, glass houses or spray sheds
	2014	2014	Waste disposal to land (excluding where biosolids have been used as soil conditioners)

Notes:

5 Aug 2009 Dangerous goods licence for AST for commercial heating, tank database. CCC webmap notes 540L tank. Location marked from CCC webmap.



Investigations:

There are no investigations associated with this site.

Site 27098: 587 Halswell Road (Within 100m of enquiry area.)

Category: Yet to be reviewed
Definition: Investigation reports have been received for this site, but we have not yet reviewed them.

Location: 587 Halswell Road, Halswell, Christchurch
Legal description(s): Part RS 5786

HAIL activity(s):	Period from	Period to	HAIL activity
	Pre-2011	2011	Persistent pesticide bulk storage or use including sports turfs, market gardens, orchards, glass houses or spray sheds
	1974	Present	Livestock dip or spray race operations

Notes:

17 Oct 2013 Area defined from: 2011 ECan Aerial Photograph
Note: Market garden plots were noted in aerial photographs reviewed.

30 Jul 2020 The detailed site investigation by Sephira Environmental identified concentrations of lead and arsenic above guideline criteria in the vicinity of a historic sheep dip.



Investigations:

INV 255852 Detailed Site Investigation - 587 Halswell Road, Kennedys Bush
Sephira Environmental Ltd - Detailed Site Investigation
15 Jan 2019

Summary of investigation(s):

Environment Canterbury has received a Detailed Site Investigation report that includes all or part of the property you have selected.

A DSI seeks to identify the type, extent and level of contamination (if any) in an area. Soil, soil-gas or water samples will have been collected and analysed.

This investigation has not been summarised.

INV 247825 **Preliminary Site Investigation - 587 Halswell Road, Halswell, Christchurch**
Sephira Environmental Ltd - Preliminary Site Investigation
1 Sep 2019

Summary of investigation(s):

Environment Canterbury has received a Preliminary Site Investigation report that includes all or part of the property you have selected.

A Preliminary Site Investigation seeks to identify potential sources of contamination resulting from current and historical land uses.

The preliminary site investigation may not have found any potential sources of contamination on the property you have enquired about. Where potential sources of contamination have been identified, a site identification number (e.g. SIT 1234) and land uses from the Hazardous Activities and Industries List (HAIL) will be shown on your statement.

This investigation has not been summarised.

Site 119243: 1 Trices Rd, Halswell (Within 100m of enquiry area.)

Category: Yet to be reviewed
Definition: Investigation reports have been received for this site, but we have not yet reviewed them.

Location: 1 Trices Rd, Halswell
Legal description(s): Lot 1 DP 47349

HAIL activity(s):	Period from	Period to	HAIL activity
	1994	Present	Persistent pesticide bulk storage or use including sports turfs, market gardens, orchards, glass houses or spray sheds

Notes:

5 Nov 2014 This record was created as part of the Selwyn District Council 2015 HAIL identification project.
5 Nov 2014 Glasshouse
5 Nov 2014 Area defined from 1994 to present aerial photographs. Horticultural activities (persistent pesticides) were noted in aerial photographs reviewed.

 Investigations:

INV 344510 **Preliminary Site Investigation -1 Trices Road, Halswell, Christchurch**
ENGEO - Preliminary Site Investigation
2 Mar 2022

Summary of investigation(s):

Environment Canterbury has received a Preliminary Site Investigation report that includes all or part of the property you have selected.

A Preliminary Site Investigation seeks to identify potential sources of contamination resulting from current and historical land uses.

The preliminary site investigation may not have found any potential sources of contamination on the property you have enquired about. Where potential sources of contamination have been identified, a site identification number (e.g. SIT 1234) and land uses from the Hazardous Activities and Industries List (HAIL) will be shown on your statement.

This investigation has not been summarised.

INV 344511 **Detailed Site Investigation - 1 Trices Road, Halswell**
ENGEO - Detailed Site Investigation
12 Jan 2023

Summary of investigation(s):

Environment Canterbury has received a Detailed Site Investigation report that includes all or part of the property you have selected.

A DSI seeks to identify the type, extent and level of contamination (if any) in an area. Soil, soil-gas or water samples will have been collected and analysed.

This investigation has not been summarised.

Site 164521: Soil disposal area (Within 100m of enquiry area.)

Category: Below guideline values - Industrial/Commercial

Definition: Investigation results demonstrate that hazardous substances present at the site, but below applicable guidelines. - Industrial/Commercial

Location: 1 Candys Road, Halswell

Legal description(s): Lot 1 DP 470653

HAIL activity(s):	Period from	Period to	HAIL activity
	?	Current	Persistent pesticide bulk storage or use including sports turfs, market gardens, orchards, glass houses or spray sheds
	2014	2014	Waste disposal to land (excluding where biosolids have been used as soil conditioners)

Notes:



Investigations:

There are no investigations associated with this site.

Site 263690: Former Sheds (Within 100m of enquiry area.)

Category: Below guideline values - Residential

Definition: Investigation results demonstrate that hazardous substances present at the site, but below applicable guidelines. - Residential

Location: 84 Sabys Road, Halswell

Legal description(s): Lot 132 DP 606215, Lot 132 DP 606215, Lot 133 DP 606215, Lot 133 DP 606215, Lot 204 DP 606215, Lot 204 DP 606215, Lot 401 DP 576673

HAIL activity(s):	Period from	Period to	HAIL activity
	Unknown	1955	Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment

Notes:



Investigations:

INV 263671

Preliminary Site Investigation 84 Sabys Road Halswell, Christchurch

Sephira Environmental Ltd - Preliminary Site Investigation

1 Mar 2020

Summary of investigation(s):

Site history: According to historic aerial imagery, 84 Sabys Road, Halswell (the site) was undeveloped and in pasture during the 1940s. Multiple sheds could be seen on the western boundary and one in the middle portion of the property. By 1975, the shed in the middle portion of the property has been demolished and a new shed erected in the west. Various sheds were demolished and replaced in the south west end of the property over time until the 1990s where five sheds remained. These sheds remain to present day. The southwestern portion of the property is included in Environment Canterbury's Listed Land Use Register for the potential release of lead and/or asbestos during the demolition of the sheds.

INV263671 - Preliminary Site Investigation, 84 Sabys Road, Halswell - Sephira Environmental Limited

Investigation objective: Sephira Environmental completed a Preliminary Site Investigation to support a proposal of a residential subdivision. The investigation included a review of district and regional council records, historical aerial imagery, an interview with the owner and a site walkover. The five sheds in the southwestern end of the property were inspected during the site walkover. They are used as hay-barns and at least one barn was in a

very poor condition. Corrugated metal sheets were rusted and had evidence of paint flaking. Concrete pieces were seen scattered on the ground. There were no visible signs of oil stains, asbestos cladding or demolition debris other than spare metal sheeting and wooden framing. The area of a former building in the middle portion of the property visible in 1940-1944 aerial imagery was inspected. No evidence of demolition debris was visible. An area in the north east historically used to load trucks between 1990 to 2004 was inspected but no evidence of contamination was found.

Conclusion: The site is categorised "partially investigated".

Justification: The PSI has identified areas where the demolition of buildings may have discharged lead paint and/or asbestos to land. Further investigation would determine whether the demolition activity in the southwest and middle portions of the property impacted soil.

INV 263675 Detailed Site Investigation 23 Quaifes Road and 84 Sabys Road, Halswell
Sephira Environmental Ltd - Detailed Site Investigation
1 Apr 2020

Summary of investigation(s):

Site history: 23 Quaifes Road and 84 Sabys Road, Halswell (the site) had been previously investigated by Sephira Environmental limited. 23 Quaifes Road has had a preliminary and detailed site investigation (INV263674) carried out, which identified lead and arsenic contamination. 84 Sabys Road had a preliminary site investigation (INV263671) carried out, which identified the potential of lead and asbestos contamination as a result of the demolition of historic buildings.

INV263675 - Detailed Site Investigation, 23 Quaifes Road and 84 Sabys Road, Halswell - Sephira Environmental Limited, 2020.

Investigation objective: The investigation was undertaken in preparation for the subdivision of the site. The site was investigated and contaminants assessed against the Ministry for Environment (MfE) Soil Contaminant Standards (SCS) for protection of human health in a residential 10% produce land use scenario.

Three areas at 23 Quaifes Road were sampled to delineate contaminants identified in the previous round of sampling. Areas of interest include the footprint of a former dwelling (Area 1), a small area in front of the packing shed (Area 2) and in front of the current tool shed adjacent to a historic building concrete pad and a nearby pile of treated timber (Area 3). 20 surface soil samples were collected across Area 1 as well as two samples at 0.15 - 0.3 and 0.3 - 0.45 m below ground level (bgl) where known lead contamination was discovered from previous investigation INV263674 from sample S17. Soil samples were analysed for lead, two samples were also analysed for arsenic. In Area 2, four surface soil samples were collected and two sub-surface samples (0.15 - 0.3 m bgl and 0.3 - 0.45 m bgl) to delineate lead contamination from sample S9 discovered during previous investigation INV263674. 31 surface soil samples were collected from Area 3 and all analysed for arsenic, chromium, copper and lead apart from S98 and S99 at the treated timber pile which were analysed for arsenic only.

At 84 Sabys Road, 13 surface soil samples (0.15 – 0.3 m bgl) and two sub-surface samples (0.3 – 0.45 m bgl) were collected targeting historic and existing haybarns in the south west end of the property (Areas 4 & 5) and a small shed on the southern boundary in the middle of the property (Area 6). Results were compared to regional background criteria and Ministry for Environment (MfE) Soil Contaminant Standards (SCS) for protection of human health in a residential 10% produce land use scenario.

Results: At 23 Quaifes Road, delineation sampling around S17 found lead exceeding residential SCS to an approximate area of 211 square meters. In Area 2, lead contamination above residential SCS was delineated around S9 to 7 square meters. In Area 3, arsenic and/or lead was detected above residential SCS in 15 of the 31 soil samples.

At 84 Sabys Road, two soil samples collected in Area 4 found lead exceeding residential SCS. The lateral extent of contamination was estimated to be 78 square meters. In Area 5, one soil sample exceeded residential SCS and further investigation was recommended by Sephira to delineate its extent. No lead was detected in Area 6.

Conclusion: SN263693 is categorised Contaminated - Residential

SN263690 is categorised Contaminated - Residential

Justification: The results of soil sampling delineated areas of lead and arsenic exceeding residential SCS. Sephira recommended remediation of the site in order to render it suitable for residential land use.

INV 307983 Site Validation Report, 23 Quaifes Road and 84 Sabys Road, Halswell
Sephira Environmental Ltd - Site Validation Report
11 Nov 2021

Summary of investigation(s):

Site history: 23 Quaifes Road and 84 Sabys Road, Halswell (the site) was subject to Preliminary and Detailed Site investigations (PSI/DSI) which have been audited separately (INV263674, INV263671 and INV263675).

INV307983 - Site Validation Report, 23 Quaifes Road and 84 Sabys Road, Halswell (Sephira Environmental Ltd, 2021).

Investigation objective: Sephira Environmental were engaged to undertake a site validation report (SVR) following remedial works at the site. The remedial works targeted areas of arsenic and lead contamination identified in previous PSI/DSIs above residential and recreational soil contaminant

standards (SCS). At 23 Quaifes Road, there were two areas of lead contamination and one area of lead and arsenic contamination above residential soil contamination standards (SCS). Parts of these areas also exceeded recreational SCS. At 84 Sabys Road, there were two areas of lead contamination above residential SCS and one area exceeding recreational SCS. In September 2021, remedial works began, targeting the soils with lead and/or arsenic exceeding recreational SCS. This soil was taken off site for disposal at Kate Valley Landfill. The entire area of lead contamination closest to the riverbank at 84 Sabys Road was excavated and taken to Kate Valley Landfill. Validation soil samples were collected. V-1 to V14 were collected from remediation areas at 23 Sabys Road and V-15 to V-21 were collected from the remediation area at 84 Sabys Road. Additional remediation was required at 23 Quaifes Road when validation soil samples found contaminants above Burwood landfill waste acceptance criteria. The remaining remediation areas (with soil exceeding residential SCS but below recreational SCS) were excavated and the soil was taken to Burwood landfill. 17 Validation soil samples were collected from the remediation area at 23 Quaifes Road and 4 validation soil samples were collected from the second remediation area at 84 Sabys Road.

Results: Soil sample V-7 exceeded the residential SCS for arsenic (20 mg/kg) with a result of 20.8 mg/kg. No further remediation was undertaken in this area as Sephira Environmental explained that during civil earthworks for the new development, the arsenic will be mixed with other soil. All other final validation soil samples were below residential SCS.

Conclusion: The site has been categorised "Below guideline values – Residential"

Justification: There was a single minor exceedance of residential SCS for arsenic. However, there was extensive delineation of contaminated areas during the DSI, and it is likely that the minor exceedance would be mixed with other soil and diluted during development earthworks. With the information at hand, the site is considered suitable for residential land use.



Nearby investigations of interest

INV 17339 **Preliminary and Detailed Site Investigation -1 Candys Road, Halswell, - Moffatt's Flower Company Limited**
Pattle Delamore Partners Ltd - Detailed Site Investigation
10 Oct 2013

Summary of investigation(s):

Site history: A review of historical imagery and available information identified that the property was used for farming/grazing activities up until the 1980s. In the 1980s, commercial flower growing activities began to occur on the site with glasshouses and associated infrastructure being progressively developed from this period. Currently, the site is used commercial flower growing activities and a residence.

INV17339 - Preliminary and Detailed Site Investigation - 1 Candys Road, Halswell, Moffatt's Flower Company Limited (PDP, 2013)

Investigation objective: Preliminary and detailed investigation undertaken to identify if past and recent land uses have caused contamination of the site, and to assess the potential human health risk to inform the proposed subdivision of the site.

A targeted soil sampling strategy was used. 15 surface soil samples were collected from the proposed Lot 2 (containing the residence) around the paddocks, the stockpile and grassed area surrounding the residence. All samples were analysed for a suite of heavy metals and organochlorine pesticides (OCPs). Samples from around the stockpile (SS08-SS11) were analysed for organonitrogen and organophosphorous pesticides (ONOP).

Results: Analysis of soils revealed that 13 of the 15 samples had heavy metal concentrations below the NES soil contaminant standards for rural-residential/lifestyle block (25% produce). Sample 8 and 10 (from the stockpile area) exceeded soil contaminant standards for arsenic (25 and 29mg/kg), and sample 10 also exceeded standards for lead (191mg/kg). The analysis revealed that many of the samples exceeded Environment Canterbury background concentrations of heavy metals in 'Recent' soils including arsenic, cadmium, chromium, copper, lead and zinc. Concentrations of OCPs were detectable in samples but below the soil contaminant standards for rural-residential/lifestyle block (25% produce). Concentrations of ONOPs were compared to the USEPA Regional Screening Levels as New Zealand does not have standards, and concentrations were below these levels. The contamination on this site appears to be localised around the stockpiled material.

Conclusions: Below guideline values – residential (Lot 2 DP 470653)

Justification for proposed category: The soil sampling regime was appropriate in the detailed investigation. Following the detailed investigation and identification of localised contamination, the soil validation undertaken on site was appropriate to determine that the contaminants have been removed. The soil investigation was confined to Lot 2 DP 470653 and did not cover the commercial flower operation, therefore, Lot 1 DP 470653 has not been investigated and cannot be categorised.

INV 31996 **Validation Sampling Report - 1 Candys Road, Halswell**
Pattle Delamore Partners Ltd - Detailed Site Investigation
3 Mar 2014

Summary of investigation(s):

Site history: A review of historical imagery and available information identified that the property was used for farming/grazing activities up until the 1980s. In the 1980s, commercial flower growing activities began to occur on the site with glasshouses and associated infrastructure being progressively developed from this period. Currently, the site is used commercial flower growing activities and a residence.

INV31996 - Validation Sampling Report - 1 Candys Road, Halswell (PDP, 2014)

Investigation objective: Investigation to provide soil validation following the removal of contaminated soil (identified in a previous investigation) from the site to ensure compliance with the relevant soil contaminant standards for the protection of human health.

Results: Six soil samples (VS1 – VS6) were analysed for arsenic and lead following an initial site scrape where 50mm was removed over the investigation area and placed in Lot 1 DP 470653; the adjacent lot associated with the subdivision proposal. Analysis revealed sample VS1 exceeded the soil standard for lead and VS3 exceeded soil standards for arsenic. Subsequently, areas of 10m x 10m were marked out around these two locations and excavated to depths between 0.2 and 0.5m. A second soil validation was undertaken; six samples (VS7 – VS12) were taken from the base and from the surface immediately adjacent to the excavation locations. Laboratory analysis subsequently revealed concentrations below the soil contaminant standards for rural-residential (25% produce) land use.

Conclusions: Below guideline values – residential (Lot 2 DP 470653)

Justification for proposed category: The soil sampling regime was appropriate in the detailed investigation. Following the detailed investigation and identification of localised contamination, the soil validation undertaken on site was appropriate to determine that the contaminants have been removed. The soil investigation was confined to Lot 2 DP 470653 and did not cover the commercial flower operation, therefore, Lot 1 DP 470653 has not been investigated and cannot be categorised.

INV 251439 **Preliminary Site Investigation, Creamery Ponds, 86 Sabys, Halswell, Christchurch**
Sephira Environmental Ltd - Preliminary Site Investigation
1 Oct 2019

INV 251442 **Limited Detailed Site Investigation - Creamery Ponds, 86 Sabys Road, Halswell**
Sephira Environmental Ltd - Detailed Site Investigation
27 Nov 2019

Summary of investigation(s):

Site history: Historical aerial photographs indicate 86 Sabys Road, Halswell (the site) appeared to be made up of undeveloped paddocks from 1941 until 2000. Within that time, from approximately 1955 until 1974, a shed and small fenced area/corral were present on site within the area of investigation. This area of investigation is represented as INV251442 on the Listed Land Use Register (LLUR). In addition, a horse track appeared to overlap the site from 1994 to 2000. Sometime post-2000 the site underwent excavation works to be converted into a wetland reserve. The excavated soil appeared to have remained on-site as mounds. The site has remained unchanged until present (2020).

INV251439 - Preliminary Site Investigation, Creamery Ponds, 86 Sabys, Halswell, Christchurch - Sephira Environmental 2019.

Investigation objective: Sephira Environmental were engaged to produce a preliminary site investigation (PSI) of the site. This was in response to the proposal to develop a stormwater system on site. The purpose of this investigation was to assess if land use activities on the Ministry for the Environment (MfE) Hazardous Industries Activities List (HAIL) had occurred at the property. If so, this may potentially cause a risk to human health and the environment should the stormwater developments proceed.

The PSI included review of the LLUR, historical aerial photographs, Christchurch City Council property files, as well as a site inspection and interview with the current land owner.

Results: A historic shed with an adjacent corral was noted to have existed on site. The consultant indicated the historic shed may have discharged contamination to land in the form of lead paint and/or asbestos containing building materials. The consultant also suspected the fenced area next to the shed may have been a sheep dip, which may have discharged contamination to land in relation to bulk storage, use or disposal of persistent pesticides. They recommended soil sampling be undertaken to investigate the potential effects of leaching.

INV251442 - Limited Detailed Site Investigation - Creamery Ponds, 86 Sabys Road, Halswell - Sephira Environmental 2019.

Investigation objective: Sephira Environmental were engaged to undertake soil sampling at the site. This was to determine if the potential identified HAIL may have contaminated the surrounding soil of the area of development.

Four test pits were excavated in the footprint of the historic corral and shed. At each test pit one sample was collected from the original topsoil layer (between 0 to 850 millimeters below ground level) and submitted for laboratory analysis for heavy metals, organochlorine pesticides (OCPs), and asbestos by total matrix. These results were compared with recreational and commercial/industrial soil contaminant standards (SCS). Additionally, a composite sample consisting of equal amounts of material from each test pit was submitted for laboratory analysis for heavy metals and OCPs by a Synthetic Precipitation Leachate Procedure (SPLP). This sample was compared with the New Zealand Drinking Water Standard (NZDWS) and fresh water guidelines for the protection of 90% of species.

Results: All of the samples complied with recreational and commercial/industrial SCS for heavy metals, OCPs and asbestos. All results were also at or below the expected background concentrations for the area. Asbestos containing materials (ACM) were not observed during sampling in the test pits. The results from the SPLP were below the NZDWS for heavy metals and OCPs. The SPLP results for copper and total DDT (OCPs) exceeded the fresh water guideline value for 90% of species.

Conclusion for INV251442: The investigation has been categorised as 'Below guideline values - Recreational'.

Justification: All of the soil samples complied with recreational SCS for heavy metals, OCPs and asbestos. The SPLP results for copper and total DDT (OCPs) exceeded the fresh water guideline value for 90% of species. However, it is considered unlikely to affect the quality of the nearby stream since copper was found in soil to be below the expected background level for the site.

INV 254909 **Soil Contamination Risk Site Validation Report 511 Halswell Road, Halswell, Christchurch**
Malloch Environmental Ltd - Site Validation Report
1 Apr 2020

INV 254955 **Soil Contamination Risk PSI/DSI/RAP – 511 Halswell Road, Christchurch**
Malloch Environmental Ltd - Detailed Site Investigation
9 Oct 2019

Summary of investigation(s):

Site history: According to historical aerial imagery, 511 Halswell Road, Christchurch (the site) was in pasture since 1941. A dwelling is shown in the 1961 aerial image and a burn pile was noted in 2011 imagery, south of the curtilage area.

INV254955 - Soil Contamination Risk Preliminary Site Investigation Report, Detailed Investigation Report & Remediation Action Plan 511 Halswell Road, Halswell, Christchurch - Malloch Environmental Ltd, 2019

Investigation objective: Malloch Environmental Ltd (MEL) investigated the site in preparation for a subdivision. Four soil samples were taken at 50 mm below ground level (bgl) on the site, with sample locations based on the consultant's judgement. One sample was taken at a historic shed, one at each end of a sheep drafting yard, and one inside a farm shed. Samples were tested for a suite of seven heavy metals (arsenic, cadmium, chromium, copper, lead, nickel and zinc). MEL stated that soil in the Halswell area may have high arsenic concentrations. Therefore, 82 samples were taken in a grid formation at 50 mm and 250 mm bgl across the site and tested for arsenic. The analytical results were compared to regional background criteria and Ministry of Environment (MfE) Soil Contaminant Standards (SCS) for residential land use 10% produce.

Results: Arsenic exceeded SCS for residential land use (10% produce) at soil sample location SS13. 16 delineation soil samples were collected at eight sampling locations at 50 and 250 mm bgl surrounding SS13. Four of the eight locations exceeded background levels. One sample was taken at 500 mm bgl at SS13 and did not exceed guideline values. At the sheep drafting yard, one sample exceeded the SCS guideline for residential land use (10% produce) for arsenic. Cadmium, copper and zinc exceeded background levels at two sampling locations. A soil sample taken inside a farm shed found cadmium and copper exceeded background levels and zinc exceeded ecological protection levels. However, the investigation stated there were no nearby ecological receptors at risk. There was a burn pile on the site, which was inaccessible so the consultant was unable to sample it. However, it was assumed to be contaminated with heavy metals and polycyclic aromatic hydrocarbons (PAH), and to require remediation.

INV254909 - Soil Contamination Risk Site Validation Report 511 Halswell Road, Halswell, Christchurch - Malloch Environmental Ltd, 2020

Investigation objective: MEL conducted remediation works at the site during February and March 2020 in three locations: the sheep drafting yard (SN255832), the burn pile (SN254912), and the arsenic contaminated paddock area (SN255831) near sample SS13. At the sheep drafting yard, soil was excavated to 200-300 mm bgl. Initial XRF testing found no exceedances of soil guideline values. Two validation soil samples were collected. One from the wall, and one from the base of the excavated soil.

At the burn pile, waste material was removed as well as the top 100 mm of soil within its visible extent. Broken asbestos was discovered during excavation. XRF testing identified arsenic was still present above SCS for residential land use 10% produce. XRF testing delineated an area for additional excavation to 200 mm bgl. Two composite samples were collected to test for asbestos. The first composite consisted of two sub-samples from the base of excavation. The second consisted of sub-samples taken from the walls of excavation. XRF testing found no exceedances of soil guideline values. Five validation soil samples, collected from the base and walls of the excavation. were tested for seven heavy metals.

At the arsenic contaminated paddock area, the soil was excavated to 200-400 mm bgl. XRF testing found arsenic was 32 mg/kg at SS13 where soil was darker and red in colour. An additional 100 mm depth excavation was carried out to remove discoloured soil. XRF testing found the area to be successfully remediated. Six validation soil samples were taken around SS13 for arsenic analysis.

Results: There were no exceedances of soil guideline values at the sheep drafting yard. At the burn pile, no asbestos was detected in composite samples, but arsenic and chromium were above background levels at one sampling location. One out of the six validation soil samples at SS13 was slightly above background levels for regional, gley soils.

Conclusion for SN255832 - Below guideline values - Residential

Conclusion for SN254912 - Partially investigated

Conclusion for SN255831 - Below guideline values - Residential

Justification: Soil validation sampling confirmed that the contaminated soil was removed and disposed of to an appropriate offsite facility at the sheep drafting yard and arsenic contaminated paddock. Therefore the site is considered to be suitable for residential land use. PAHs were listed as contaminants of concern at the burn pile (SN254912) in the MEL investigations. However, they were not analysed.

INV 371493 **Soil Sampling – 6 Wroots Road, Kennedys Bush**
Sephira Environmental Ltd - Detailed Site Investigation

29 Sep 2023

Summary of investigation(s):

Purpose: The investigation was prepared for information purposes only and the site was not proposed to be subdivided or developed. The site was not on the Listed Land Use Register (LLUR).

Site History: 6 Wroots Road, Kennedys Bush, Canterbury (The Site) was mostly paddocks with some structures and a dwelling visible to the east in the 1940-1944 historical aerial imagery. In the 1955-1959 aerial imagery, the structures in the paddocks had been removed and sheep were visible. In the latest aerial imagery, there were no significant changes to the site.

INV371493 - Soil Sampling – 6 Wroots Road, Kennedys Bush (Sephira Environmental Ltd, 2023)

Investigation Objective: Sephira Environmental Limited were engaged to undertake soil sampling in open areas of the site for information purposes only, there were no plans to subdivide or develop the property. There were two soil types identified within the site; Mottled-weathered Fluvial Recent Soils, and Typic Recent Gley Soils. A total of 14 soil samples (0-0.45 m depth) were collected across the site (7 for each soil type) and analysed for a suite of trace elements (arsenic, beryllium, boron, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, and zinc).

Results: The analytical results were compared with the regulatory background levels and the MfE Soil Contaminant Standards (SCS) for protection of human health in a residential 10% produce land use scenario. Trace element concentrations in the samples collected from the Mottled-weathered Fluvial Recent Soils were below the regulatory background levels (regional recent). Trace element concentrations in the samples collected from the Typic Recent Gley Soils were slightly above the regulatory background levels (regional gley). There were no identified potential HAIL activities in the areas sampled. There were no exceedances of the residential SCS.

Conclusion: INV373070 on the Listed Land Use Register was categorised as 'Below guideline values – Residential'

Justification: With the information at hand the property was considered suitable for residential land use. The investigation has been classified as 'Below guideline values – Residential', and no sites or activities have been recorded against the site on the LLUR. Soil at the site might not be suitable for disposal at cleanfill facilities (consult the cleanfill site operator for details).

INV 379769

Soil Characterisation - Letter Report

EnviroCo - Detailed Site Investigation

18 Apr 2024

Summary of investigation(s):

Environment Canterbury has received a Detailed Site Investigation report that includes all or part of the property you have selected.

A DSI seeks to identify the type, extent and level of contamination (if any) in an area. Soil, soil-gas or water samples will have been collected and analysed.

This investigation has not been summarised.

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.

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.

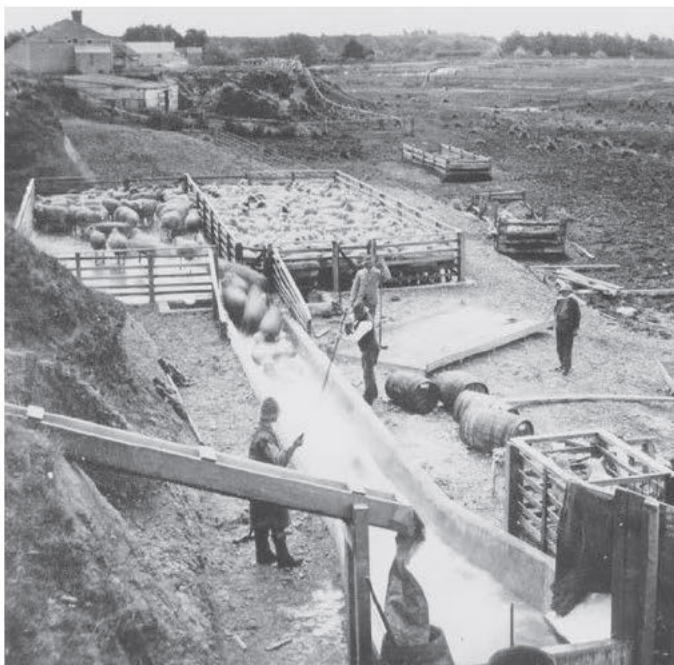
We may also use the information to prioritise sites for further investigation, remediation and management, to aid with planning, and to help assess resource consent applications. These are some of our other responsibilities under the RMA.

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)

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

Appendix C – Historical Aerial Photographs









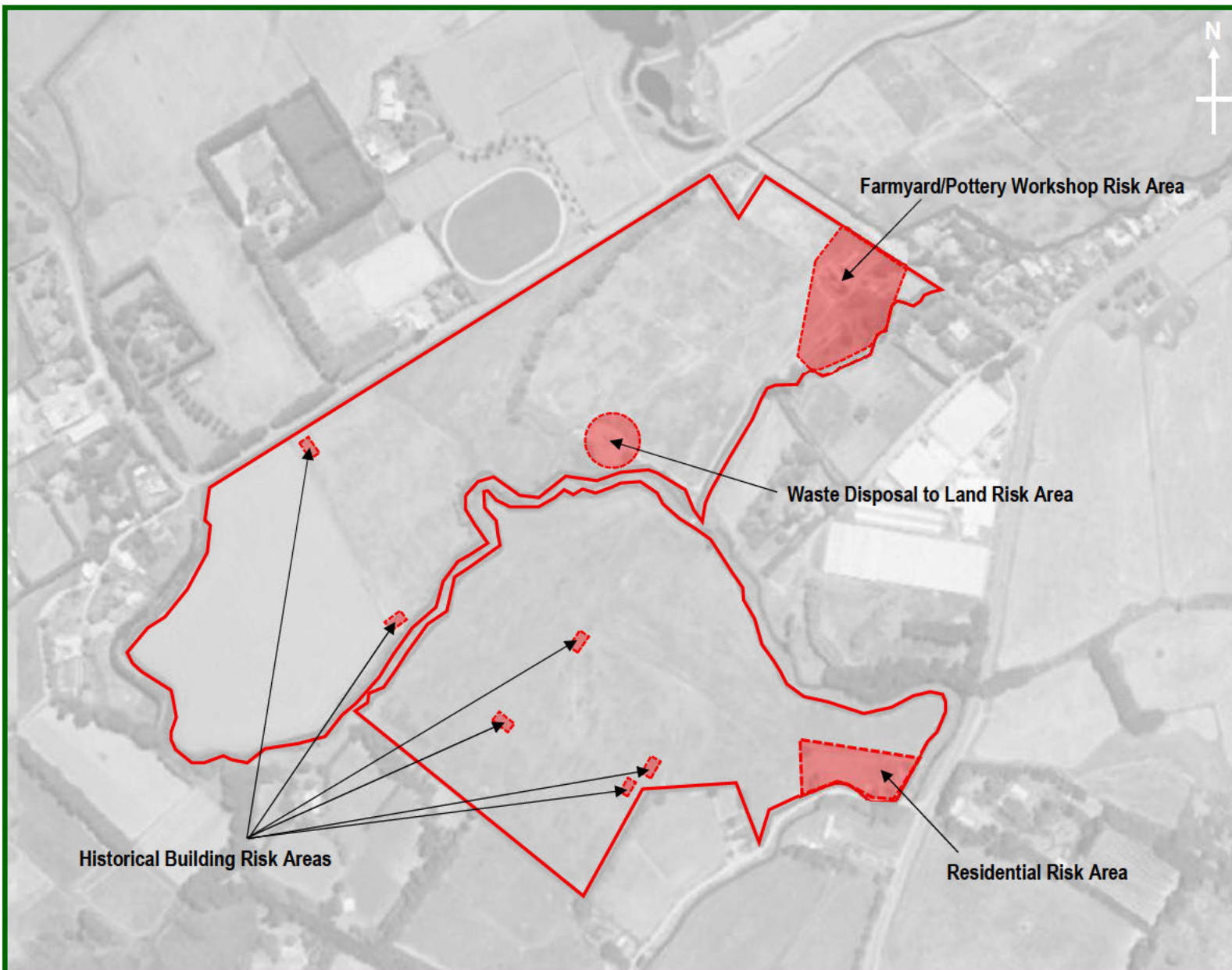








Appendix D – Site Inspection Plans



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LEGEND

- Potential source of contamination
- Description of structures/areas not considered to pose a risk
- Approx. extent of risk areas

Graphic scale is approximate only



Date: 20 January 2026

Drawing No: 1050/3

Site Inspection Plan

101 Sabys Road and 6 Wroots Road, Halswell, Christchurch

Notes:

- 1 This plan has been prepared for soil contamination risk assessment purposes only. No liability is accepted if the plan is used for any other purposes.
- 2 Any measurements taken from this plan which are not dimensioned on the electronic copy are at the risk of the user.
- 3 Soil sample locations are approximate only

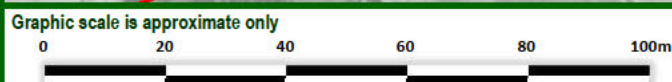


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LEGEND

- text Potential source of contamination
- text Description of structures/areas not considered to pose a risk
- Approx. extent of risk areas
- Historical building ranging from pre-1940's to late 1990's



Date: 15 January 2026

Drawing No: 1050/1

Site Inspection Plan – Farmyard/Pottery Workshop Risk Area 101 Sabys Road, Halswell, Canterbury

- Notes:**
- 1 This plan has been prepared for soil contamination risk assessment purposes only. No liability is accepted if the plan is used for any other purposes.
 - 2 Any measurements taken from this plan which are not dimensioned on the electronic copy are at the risk of the user.
 - 3 Soil sample locations are approximate only

Approx. extent of
site shown on plan



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LEGEND

-  Potential source of contamination
-  Description of structures/areas not considered to pose a risk
-  Approx. extent of risk areas

Residential Area

The residential area was not accessible during the site inspection however, a roadside inspection indicated a painted weatherboard dwelling with several other sheds, and general waste deposited around the area. Historical building also pose a risk in this area, as well as a potential burn area.

Historical buildings visible
in aerials 1940's-1950's.

Graphic scale is approximate only



Date: 20 January 2026

Drawing No: 1050/2

Site Inspection Plan 6 Wroots Road, Halswell, Canterbury

Notes:

- 1 This plan has been prepared for soil contamination risk assessment purposes only. No liability is accepted if the plan is used for any other purposes.
- 2 Any measurements taken from this plan which are not dimensioned on the electronic copy are at the risk of the user.
- 3 Soil sample locations are approximate only

Appendix E – Table of XRF Results

Table of XRF Results - 101 Sabys Road and 6 Wroots Road, Halswell, Christchurch

Date of testing: 13 January 2026

Units: ppm



XRF Test Location	XRF Reading No	Date	Time	Test Duration (secs)	Total Recoverable Arsenic		Total Recoverable Lead		Total Recoverable Zinc	
					Result	Error	Result	Error	Result	Error
Sheep dip area (101 Sabys Road)	4	13/01/2026	9:38:53 AM	30	20	1	18	1	158	3
Sheep dip area (101 Sabys Road)	5	13/01/2026	9:39:30 AM	31.56056	17	1	17	1	149	3
Sheep dip area (101 Sabys Road)	6	13/01/2026	9:40:12 AM	28.7413	28	1	16	1	180	2
Sheep dip area (101 Sabys Road)	7	13/01/2026	9:40:50 AM	30	23	1	13	1	157	3
Sheep dip area (101 Sabys Road)	8	13/01/2026	9:41:41 AM	26.0443	9	1	13	1	128	2
Sheep dip area (101 Sabys Road)	9	13/01/2026	9:42:44 AM	27.9512	32	1	17	1	252	3
Sheep dip area (101 Sabys Road)	10	13/01/2026	9:43:19 AM	30	285	2	15	1	190	3
Sheep dip area (101 Sabys Road)	11	13/01/2026	9:43:56 AM	14.7329	9	1	25	2	104	4
Burn area (101 Sabys Road)	12	13/01/2026	9:45:28 AM	22.4477	5902	30	88	2	1757	14
QA/QC Tests										
Calibration	1	13/01/2026	9:34:45 AM	40	445	5	490	5	85	3
Calibration	2	13/01/2026	9:35:46 AM	40	107	2	12	1	115	3
Blank	3	13/01/2026	9:36:47 AM	40	<LOD	3	<LOD	4	<LOD	6
Blank	13	13/01/2026	9:47:10 AM	40	<LOD	3	<LOD	4	<LOD	6
Soil Guideline Values	Residential 10% Produce				20	-	210	-	7,400	-
	Commercial/Industrial Outdoor Worker				70	-	3,300	-	400,000	-
	Ecological Guideline Values				210	-	660	-	1,230	-
	Background (Regional, Recent)				12.58	-	40.96	-	93.94	-

Result exceeds 'Residential 10% Produce' SGV

Result exceeds Ecological Guideline Value