Appendix F: PDP Preliminary Site Investigation

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20 August 2024

Greg Anderson Rā Tuatahi No 1. Limited C/- Northington Partners Limited PO Box 13804 **CHRISTCHURCH 8041**

Dear Greg

PRELIMINARY SITE INVESTIGATION - PROPOSED SOLAR FARM DEVELOPMENT, 80 STRUIE ROAD, HORORATA, SELWYN DISTRICT

1.0 Introduction

Pattle Delamore Partners Limited (PDP) has been engaged by Rā Tuatahi No 1. Limited (Rā Tuatahi) to undertake a Preliminary Site Investigation (PSI; site history review) and consider the applicability of the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soils to Protect Human Health) Regulations 2021 (referred to as the NESCS) in relation to the proposed change in land use and associated soil disturbance activities to create a solar farm development at 80 Struie Road, Hororata, Selwyn District (i.e., the site).

The objectives of this investigation were to:

- Identify through the review of available information any current and historical areas where potentially hazardous and land contaminating activities (as identified from the Ministry for the Environment (MfE) Hazardous Activities and Industries List (HAIL¹) (MfE, 2011)) have been undertaken within the site,
- Determine the key contaminants of concern associated with identified HAIL activities (if any); and
- Provide a report summarising the available site history information including the applicability of the NESCS with regard to the proposed change in land use and associated soil disturbance activities.

The investigation has comprised a review of available site history information including historical aerial photographs, Environment Canterbury (ECan) information and a site inspection. The PSI has been prepared in general accordance with the MfE Contaminated Land Management Guidelines No. 1: Reporting on Contaminated Sites in New Zealand (Revised 2021) (MfE, 2021) and has been certified by a Suitably Qualified and Experienced Practitioner (SQEP) as outlined by the NESCS. A certifying statement to this effect is attached.







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



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2.0 Site Details

The site details and description are summarised below in Table 1, while an aerial photograph showing the site layout is presented as Figure 1. Photographs of the site are also attached.

| Table 1: Site Identification | |
|------------------------------|--|
| Address | 80 Struie Road, Hororata, Selwyn District |
| Legal Descriptions | Lot 6 DP 66179 |
| Site Owners | Northington Partners Limited |
| Grid Reference | NZTM BX22: 1956-7864 |
| Land Area | Approximately 10.22 ha |
| Zoning | Outer Plains (Selwyn District Council) |
| Current Land Use | The site contains cleared paddocks previously used for forestry operations. |
| Proposed Future Land Use | Commercial/Industrial (i.e. solar farm) |
| Surrounding Land Use | The site is surrounded by rural residential properties, forestry and pastoral (sheep) land |

3.0 Proposed Change of Land Use

It is understood that resource consent for a change of land use is sought to construct a solar array with associated earthworks and landscaping over the site. It is understood that the proposed solar array will comprise approximately 12,012 single axis tracking solar modules capable of generating a Megawatt peak (MWp) of approximately 8.53 Megawatt (MW). The solar array would be considered a commercial/industrial land use activity for application of the NESCS regulations.

The proposed site layout, provided by Power Technology Limited, is attached.

4.0 Desktop Review of Site History

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

- : Historical aerial photographs;
- ECan Listed Land Use Register (LLUR); and
- : Site inspection.

4.1 Historical Aerial Photographs

Historical aerial photographs from between 1941 and 2023 have been reviewed for the site. These photographs have been sourced from Canterbury Map Partners administered by ECan and Google Earth Pro and are attached. Note that the review of the aerial photographs was carried out on the electronic versions, which provides a higher resolution compared with the printed versions attached.

A summary of the historical aerial photography is provided below:



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- Aerial photographs spanning between 1941 and 1985 show the site to be in pasture and/or cropping, as evidenced by different colour shades of the paddocks. Hedging, differentiating the paddocks, becomes more evident over the years. The surrounding land use to the site is for a similar purpose.
- Aerial photographs spanning between 1995 to 2018 show the site being utilised for forestry operations, as evidenced by the presence of rows of trees. The surrounding land is either used for cropping, sheep grazing or forestry operations.
- The aerial photograph from 2023 shows evidence of recently cleared trees. Photograph 2 (attached) shows a stockpile of cleared brush within the south-west corner of the site.

The historical aerial photographs demonstrate no obvious land contaminating activities at the site or bordering properties.

4.2 Review of Environment Canterbury Document

An online search was made via ECan for information from their Listed Land Use Register (LLUR) on 24 July 2024. The Register is used to hold information about sites that have used, stored or disposed of hazardous substances, based on activities detailed on the HAIL (MfE, 2011). It should be noted that the LLUR is not complete and new sites are regularly being added as ECan receives information and conduct their own investigations into current and historical land uses.

The LLUR identified that ECan does not currently have information about HAIL activities at the site. In summary, the site is not listed on the LLUR (attached).

5.0 Site Inspection

An inspection of the site was carried out by a PDP Geologist on 30 November 2023 in tandem with a geotechnical test pitting operation. Photographs taken during the site inspection are attached.

A summary of the site inspection is provided below:

- The site mainly comprised of level grassed areas with stockpiled brush and trees. Outside the site sheep were grazing to the north, cleared paddocks were located to the west, and commercial tree operations were present to the east. Rows of vegetation stockpiles were present to the south in a linear order from tree clearing activities.
- No obvious evidence was observed during the visit to indicate HAIL activities were occurring or likely to have occurred at the site.

6.0 Summary of Site History

The available historical information shows the site has predominantly comprised of open paddocks used for general cropping and forestry operations, including the surrounding properties from the 1940s to present. Additionally, a review of the LLUR identified that ECan does not currently have information about any identified HAIL activities at the site.

Based on this information, it is unlikely that any land contamination activities have occurred within the site from past and present land use activities.



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It was noted that possible cropping activities occurred within parts of the site up until between approximately 1985 and 1995. It is important to note that cropping activities do not necessarily constitute a HAIL activity (e.g. HAIL reference $A10^2$). Furthermore, previous soil sampling investigations undertaken by PDP on similar land use has invariably recorded soil contaminant concentrations at or around local background concentrations.

7.0 Consideration of the NESCS

The NESCS seeks to control activities on contaminated land so as to protect human health. The regulations apply to land, which is described as having, has had or is more likely than not to have had an activity or industry described in the HAIL undertaken on it. As identified in Section 6.0 of this letter, there have been no obvious identified HAIL activities occurring at the site. Therefore, under regulation 5(7), the NESCS is **not applicable** for the proposed change in land use to a commercial/industrial setting and associated soil disturbance activities for the site.

8.0 Conclusions

PDP has reviewed the available information for the proposed change in land use and associated soil disturbance activities for a solar farm development located at 80 Struie Road, Hororata, Selwyn District including; historical aerial photographs, the ECan Listed Land Use Register and a site walkover. Through the process of this review and site inspection, there has been no information to suggest that any HAIL activity has occurred at the site (past or present). Therefore, the NESCS does not apply to the site with regard to the proposed change in land use to a commercial/industrial solar farm development including the associated soil disturbance activities.

9.0 References

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

Ministry for the Environment, 2021. Contaminated land management guidelines No 1: Reporting on contaminated sites in New Zealand (Revised 2021).

Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2021.

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² HAIL reference A10 - Persistent pesticide bulk storage or use, including sport turfs, market gardens, orchards, glass houses or spray sheds.



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10.0 Limitations

This letter has been prepared by Pattle Delamore Partners Limited (PDP) on the basis of information provided by Rā Tuatahi No 1. Limited and others (not directly contracted by PDP for the work), including Environment Canterbury. PDP has not independently verified the provided information and has relied upon it being accurate and sufficient for use by PDP in preparing the letter. PDP accepts no responsibility for errors or omissions in, or the currency or sufficiency of, the provided information.

This letter has been prepared by PDP on the specific instructions of Rā Tuatahi No 1. Limited for the limited purposes described in the letter. PDP accepts no liability if the letter is used for a different purpose or if it is used or relied on by any other person. Any such use or reliance will be solely at their own risk.

Owing to the limited nature of this assessment (as described in Section 1.0), there may be soil and/or groundwater contamination conditions at the site that have not been identified and which have not been considered in this letter. The associated risk may be able to be reduced by undertaking further research or subsoil investigation.

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Yours faithfully

PATTLE DELAMORE PARTNERS LIMITED

Prepared by

Iolly For

Environmental Scientist

Reviewed and Approved by

uy Knoyle

Technical Director Contaminated Land



PRELIMINARY SITE INVESTIGATION — PROPOSED SOLAR FARM DEVELOPMENT, 80 STRUIE ROAD, HORORATA, SELWYN DISTRICT

Certifying Statements

I, Guy Knoyle, of Pattle Delamore Partners Limited certify that:

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

The findings of the site history review conclude that there has been no information to suggest that any HAIL activity has occurred at the site (past or present) and therefore the NESCS regulations do not apply to the site with regard to the proposed change in land use to a commercial/industrial solar farm development including the associated soil disturbance activities.

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

This certification applies to the date of this report.

Signed

Technical Director - Contaminated Land



PRELIMINARY SITE INVESTIGATION — PROPOSED SOLAR FARM DEVELOPMENT, 80 STRUIE ROAD, HORORATA, SELWYN DISTRICT

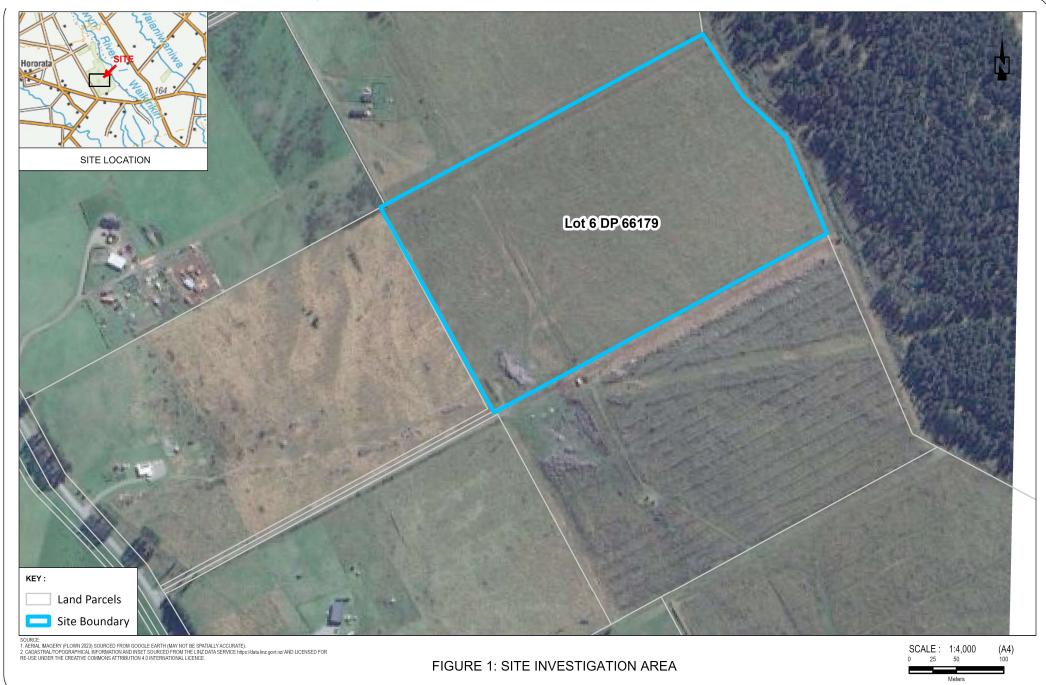
Guy Knoyle - Project Director

Guy is an environmental scientist with over 28 years of experience in undertaking environmental and contaminated land assessments. He has a BSc (Joint Honours) in Environmental Science and Zoology, and a MSc in Applied Hydrobiology, both from the University of Wales, College of Cardiff. Guy currently project manages contaminated land assessments and monitoring programmes for a diverse range of sites including commercial/industrial and largescale residential developments, former market gardens, horticultural and timber treatment sites, pesticide storage depots, landfills, the petroleum industry, former gas works sites and illicit methamphetamine laboratories, with experience attained over several hundred sites.

Guy's experience has involved a wide range of environmental issues, across a broad range of media including soil, sediment, surface water, groundwater, and ground gas; and for a wide range of contaminants including heavy metals, petroleum hydrocarbons, and asbestos.

Guy's knowledge has also allowed him to present technical evidence on behalf of various clients, as part of a multi-disciplinary team, at District Court, High Court and Environment Court mediation and at numerous joint territorial and regional authority hearings.

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





Photograph 1: View across site, looking south-west.



Photograph 2: View of vegetation stockpile, looking south.



Photograph 3: View across site, looking south-east.



Photograph 4: View across northern bordering property, sheep grazing.



Photograph 5: View of eastern bordering property, tree farm.

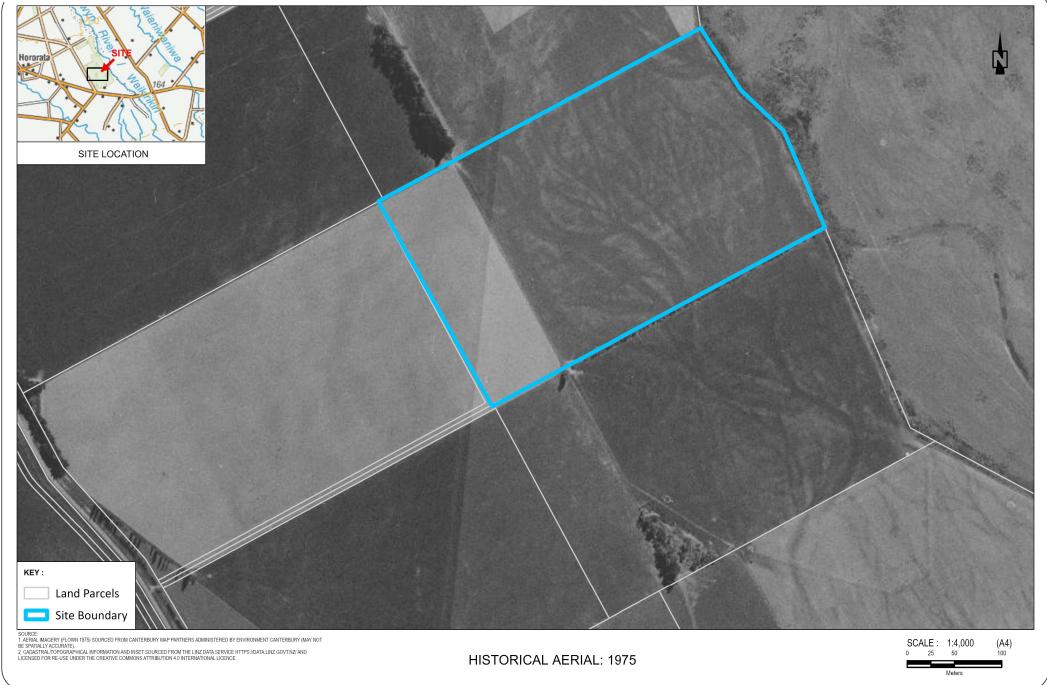


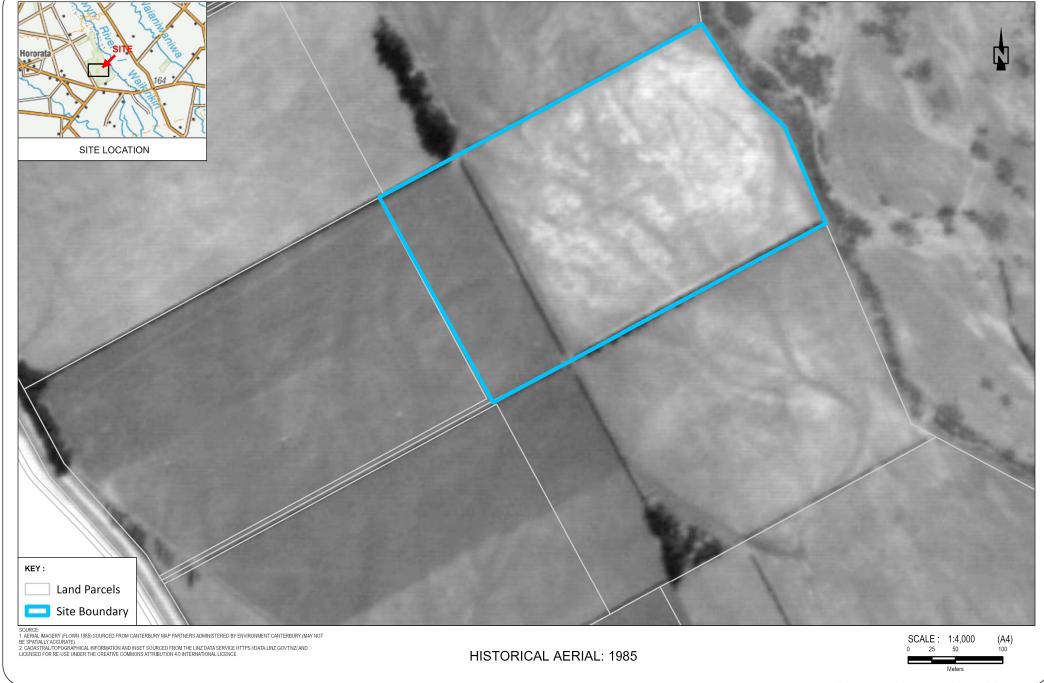
Photograph 6: Typical soils encountered within geological test pits.



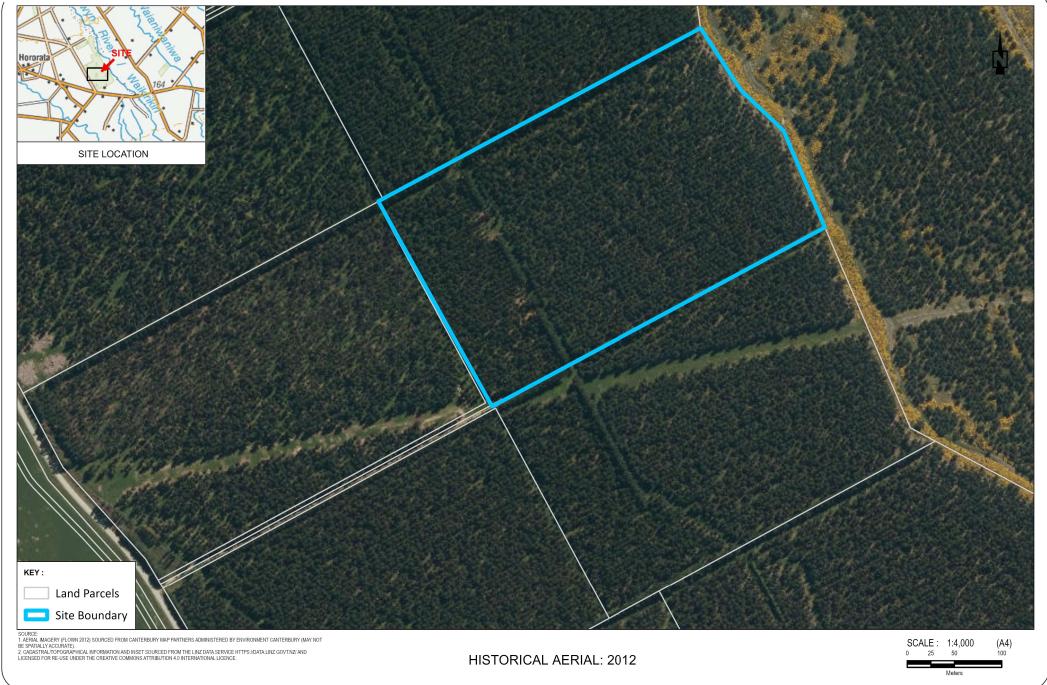


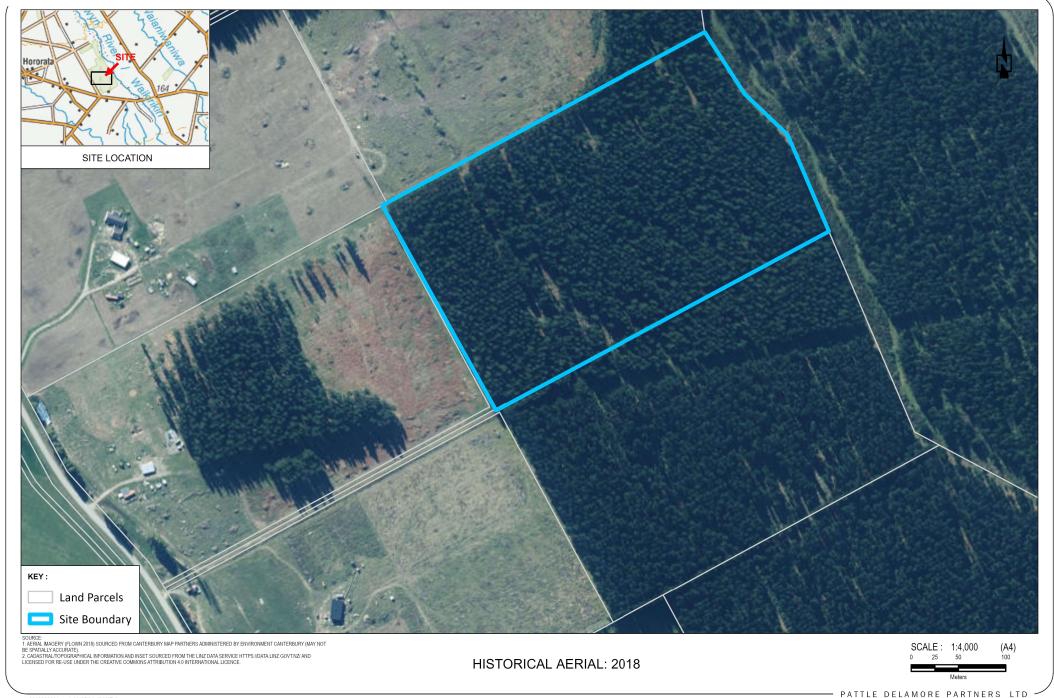
















Customer Services
P. 03 353 9007 or 0800 324 636

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

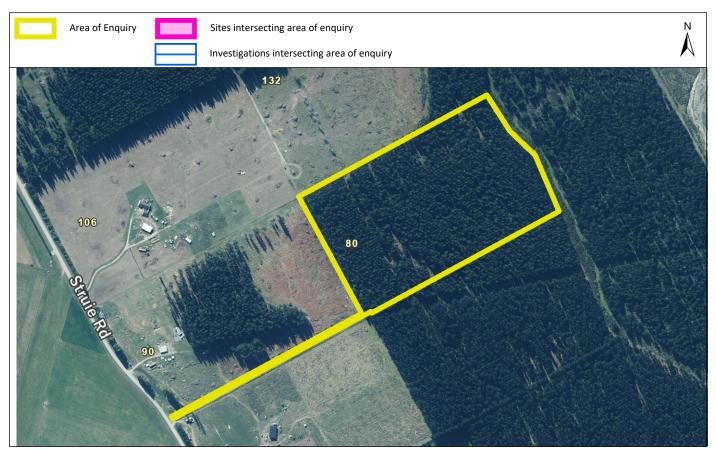
Contaminated Sites Team

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 ENQ385205

Date generated: 23 July 2024 Land parcels: Lot 6 DP 66179



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

Sites at a glance



Sites within enquiry area

There are no sites associated with the area of enquiry.

More detail about the sites

There are no sites associated with the area of enquiry.

Disclaimer

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

The information contained in this report reflects the current records held by Environment Canterbury regarding the activities undertaken on the site, its possible contamination and based on that information, the categorisation of the site. Environment Canterbury has not verified the

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

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



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.

¹The 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.

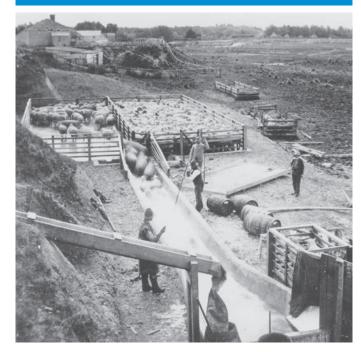
We may also use the information to prioritise sites for further investigation, remediation and management, to aid with planning, and to help assess resource consent applications. These are some of our other responsibilities under the RMA.

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)



Everything is connected

Promoting quality of life through balanced resource management.

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:







Rā Tuatahi NO.1 - SOLAR POWER SCHEME SITE PLAN

SCALE: NTS

FOR CONSENT AND TENDER NOT FOR CONSTRUCTION



PROJECT:

Rā Tuatahi No.1 10MWac

JOB No. TT_RT-NO1

DRAWING TITLE: SITE ARRANGEMENT



DRAWING No. TT_RT-NO1-SGA

NOTE: Pending Engineers Approval.

Copyright Power Technology.

The use of, and reliance upon, the information in this document requires the written consent of Power Technology as the authors.

All dimensions are to be verified on site prior to commencing works.

PRELIMINARY - NOT FOR CONSTRUCTION