# **Appendix 8: Contamination Report**





# **Preliminary Environmental Site Inspection**

# 100 BIRCHS ROAD, PREBBLETON, CANTERBURY

# **SUBMITTED TO:**

CONIFER GROVE TRUSTEES LTD

C/- BASELINE PLANNING

PO BOX 100

LEESTON 7656

4 March 2013

## **DISTRIBUTION**

1 Copy – Conifer Grove Trustees Ltd c/- Baseline Planning

1 Copy – Geoscience Consulting (NZ) Ltd

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#### 1 INTRODUCTION

Geoscience Consulting (NZ) Ltd (Geoscience) was requested by Conifer Grove Trustees Ltd c/-Baseline Planning to undertake a preliminary environmental site inspection (PSI) at 100 Birchs Road, Prebbleton, Canterbury, (herein referred to as "the site").

Figure 1 indicates the location of the property. Geoscience understands that the 12.3 ha site is to be subdivided into 18 lots and requires a PSI to satisfy Selwyn District Council (SDC) requirements.

This PSI was undertaken in accordance with Ministry for the Environment (MfE) 2001, Guidelines for Reporting on Contaminated Sites<sup>1</sup>.

### 1.1 Objectives of the Assessment

The objective of this PSI was to assess the potential for contaminants to have been deposited at the site as a result of historic activities undertaken within or in the immediate vicinity of the property and report on the potential risk posed to future site users.

# 1.2 Approach

To satisfy the objectives, Geoscience undertook the following scope of work:

#### 1.2.1 Review of Site Information

A number of sources of information were contacted for information relating to the site regarding its past and present uses and to identify any other environmental issues which may be on record. This included contacting Canterbury Regional Council (CRC) to determine if there were any records on the Listed Land Use Register (LLUR) and reviewing records held by Selwyn District Council including the property file and dangerous goods file (if existing). A review of a number of historic and current aerial photographs was also undertaken using images from NZ Aerial Mapping and Google Earth.

# 1.2.2 Site Inspection

A brief site walkover was undertaken on 13<sup>th</sup> December 2012 by Hazel Atkins of Geoscience Consulting Ltd. Objective evidence was collected through discussions with the site owner, Ross and Anne Taylor, as well as observations of activities and conditions present at the site.

### 2 SITE DESCRIPTION

A summary of the site identification information is given in Table 1 below:

**Table 1: Summary of Site Description** 

Item Description		
Location: 132 Hamptons Road; 100 Birchs Road & 132-156 Birchs Road Prebbleton		
Legal Description: PT RS 3967; Lot 9 DP 301739; Lot 1 DP 22302		
Current Owner: Ross and Anne Taylor		
Current Site Use:	Residential and agricultural	
Proposed Site Use: Subdivision for residential end use		
Site Area:	12.3 ha	

Item	Description		
Building Construction:	3 Residential Buildings: Brick cladding; concrete slab; iron tiles. Located on north-western corner and along the eastern boundary. 4 Farm sheds/hay barns: Light iron. Located on eastern boundary		
Local Authority:	Selwyn District Council		
Zoning:	IP – Inner Plains		

# 2.1 Site Setting

A summary of the site's setting is given in Table 2 below:

Table 2: Site Setting

Item	Description			
Topography	The site is predominantly flat.			
Local Setting  The area to the north of the site is predominantly residential, with south, east and west being predominantly agricultural with sassociated residential dwellings.				
Surface Water Receptors	An un-named land drain runs along the western and southern boundary of the site.			
Geology <sup>2</sup>	Grey river alluvium.			
Hydrogeology <sup>3</sup> The site overlies an unconfined/semiconfined aquifer with ground flowing in a south-east direction. Boreholes at the site show ground level.				
Groundwater Abstractions	There are three groundwater abstractions located on the site: M35/5677: LW Craigie; 144 Birchs Road; domestic & stockwater; consented: CRC910023 M36/3820: J R Henderson; 100 Birchs Road; Not currently used. M36/0272: Mr & Mrs A K Taylor; 100 Birchs Road; domestic supply irrigation; consented: CRC030188.1 There are a number of groundwater abstractions located within 100 m of the site: M36/7579: Mr & Mrs Ellingford; 86 Birchs Road; domestic and stormwater M36/7645: Mr & Mrs Collings; 379 Trices Road; domestic supply. M36/0247: Mr & Mrs Cunningham; 2 Hamptons Road; domestic supply and water level observation. M36/3048: E J Smith; Trices Road; domestic and stockwater irrigation			
Discharge Consents	There is one discharge consent located on the site: CRC103220: Orion New Zealand Ltd; 116 Birchs Road; to discharge stormwater containing contaminants onto or into land in circumstances in which it may/will enter water. There is one discharge consent located within 100 m of the site: CRC094015: Messrs MJ & GJ & Mrs R J Crabbie; Trices Road; to discharge contaminants to land.			

# 3 SITE HISTORY

A number of sources were used to investigate the past uses of the site. The findings of these information searches have been summarised in this section.

**Table 3: Site History** 

Item	Description
Discussion with site owner	The site owner has been on the property since 2002. The horse trotting tracked was removed in 2002 and was constructed of 'crusher dust' (crusher dust is a by-product of the quarrying industry and is often used as cement aggregate). The site has been used for cattle grazing. He has no knowledge of there ever being any sheep dips or waste disposal. There are some small apple trees in the residential garden; these were planted by the previous owner.

**Table 4: Review of Selwyn District Council Property File** 

Date	Description			
1969	Building application to erect a dwelling			
1970	Building application for plumbing and drainage on the site			
1984	Application to build a shed			
1985	Application to install an inbuilt Kent log burner			
1990	Application to erect a family flat along with plumbing and drainage			
1996	2 resource consents for subdivision, one declined; application to continue with horse training at the site, application denied.			
1999	Application to erect a garage			
2012	Application for a solid fuel heater			

Table 5: Summary of Canterbury Regional Council Listed Land Use Register (CRC LLUR)

Period From	Period To	HAIL Activity (s)	LLUR Category
-	-	None	None Listed
Additional Information		No activities listed.	

Aerial photographs dating from 1942 to 2011 have been reviewed (refer to Figures 2 and 3). In summary the aerial photographs show:

**Table 6: Aerial Photographs** 

Date	Figure No.	Description
1942	The site is being used for both agricultural and residential land use site is predominantly agricultural land with buildings present in the western corner and lower eastern boundary. The buildings appear used for residential use but it is unclear. The surrounding land use predominantly agricultural with some associated residential dwelling	
1984	3	The central area of the site is being used a horse trotting track. The north-

Date	Figure No.	Description		
		western corner of the site has numerous buildings present with their usage unknown. Other buildings are now present along the eastern boundary with their use appearing to be a mix of agricultural and residential. The surrounding area is predominantly agricultural with a number of horse trotting tracks in the surrounding area.		
2011	Google Earth	The site is a mix of residential and agricultural. The horse trotting track is no longer present. The north-western corner of the site is now being used for residential purposes. The buildings on the eastern boundary of the site are being used for residential purposes. The building in the south-eastern corner of the site is being used as an electricity substation which was built between March 2010 and February 2011.		

## 4 CURRENT SITE CONDITIONS

A site inspection was undertaken on the 13<sup>th</sup> December 2012 by Hazel Atkins of Geoscience Consulting Ltd. The information gathered is summarised below:

**Table 7: Current Site Conditions** 

Site Condition	Comments		
Visible signs of contamination	No visible signs of contamination were noted on the site.		
Surface water appearance	No surface water located on the site.		
Current surrounding land use	The surrounding land use is a mix of agricultural and residential.		
Condition of buildings and roadways	The residential buildings and farm buildings are in good condition.		
Local sensitive environments	No local sensitive environments in the vicinity of the site.		
Visible signs of plant stress	Some bare patches of soil were observed but these were considered to be due to the cattle present on the site during the site inspection.		
Conditions at site boundary	Conditions were stable with no signs of erosion.		
Additional Observations (if any)	An electricity substation is present in the south-eastern corner of the site. It is unclear at present how this will fit into the subdivision plan. The barns observed onsite were used for storage of farm machinery.		

## 5 POTENTIAL HAIL LIST ACTIVITIES

Activities included on the Hazardous Activities and Industries List (HAIL)<sup>4</sup> trigger the requirement for a contaminated land investigation prior to development. The electricity substation is considered a HAIL activity; B4 – Power stations, substations or switchyards. The substation was built in 2010and unlikely to pose a risk from contaminated land to future residents and site workers.

# 6 CONCEPTUAL SITE MODEL

A contamination conceptual site model consists of three primary components to allow the potential for risk to be determined, these are:

Source of contamination;

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- · Pathway to allow the contamination to mobilise; and
- Sensitive receptors which may be impacted by the contamination.

**Table 8: Conceptual Site Model** 

Source	Pathway	Receptor
Electricity substation	Surface/groundwater Direct Contact Ingestion/Inhalation	Future residents/site workers
Risk of Contamination	Low – the electricity substation was built in 2010 and we consider that there is low risk of contamination to neighbouring sites.	

#### 7 CONCLUSIONS

The information collected and the historic aerial photographs indicate a residential and agricultural grazing past. There is no reported evidence which indicates the presence of sheep dips, large scale pesticide application or waste disposal operations at the site. The central section of the site previously was used as a horse trotting track. The surface of the track was covered in crusher dust which is the waste by-product of the quarrying industry.

An electricity substation was built in the south-east corner of the site in 2010.

The information reviewed indicated that the surrounding land use is a mixture of residential and agricultural land use.

The CRC LLUR found no specific listed land uses on the site. The Selwyn District Council property file has no records indicating that any potentially contaminative activity has occurred on the property.

During the site inspection, no potential sources of contamination, other than the electricity substation, were observed.

Therefore, based on the information gathered, we conclude that the potential for soil and water contamination at the site, in its existing state, is low and the site is suitable for the intended residential land use.

#### 8 RECOMMENDATIONS

No further environmental work is required at 100 Birchs road, Prebbleton.

# 9 REFERENCES

- 1 MfE 2011: Contaminated Land Management Guidelines No.1 : Reporting on Contaminated Sites in New Zealand;
- Forsyth, P.J.; Barrell, D.J.A; Jongens, R. 2008: Sheet 16 Geology of the Christchurch Area 1:250,000. Institute of Geological and Nuclear Sciences, Lower Hutt.
- 3 ECan 2012: Environment Canterbury on-line GIS Database. <a href="http://ecan.govt.nz/services/online-services/gis-mapping/Pages/enter-gis.aspx">http://ecan.govt.nz/services/online-services/gis-mapping/Pages/enter-gis.aspx</a>
- 4 MfE Oct 2011: Ministry for the Environment Hazardous Activities and Industries List.

#### 10 LIMITATIONS

- i. We have prepared this report in accordance with the brief as provided. This report has been prepared for the use of our client, Conifer Grove Trustees Ltd, their professional advisers and the relevant Territorial Authorities in relation to the specified project brief described in this report. No liability is accepted for the use of any part of the report for any other purpose or by any other person or entity.
- ii. The recommendations in this report are based on the ground conditions indicated from published sources, site inspections and subsurface investigations described in this report based on accepted normal methods of site investigations. Only a limited amount of information has been collected to meet the specific financial and technical requirements of the Client's brief and this report does not purport to completely describe all the site characteristics and properties. The nature and continuity of the ground between test locations has been inferred using experience and judgement and it must be appreciated that actual conditions could vary from the assumed model.
- iii. Subsurface conditions relevant to construction works should be assessed by contractors who can make their own interpretation of the factual data provided. They should perform any additional tests as necessary for their own purposes.
- iv. This Limitation should be read in conjunction with the IPENZ/ACENZ Standard Terms of Engagement.
- v. This report is not to be reproduced either wholly or in part without our prior written permission.

We trust that this information meets your current requirements. Please do not hesitate to contact the undersigned on 03 328 9012 if you require any further information.

For and on behalf of Geoscience Consulting (NZ) Ltd,

**Hazel Atkins** 

Engineering/Environmental Geologist

**Dave Robotham** 

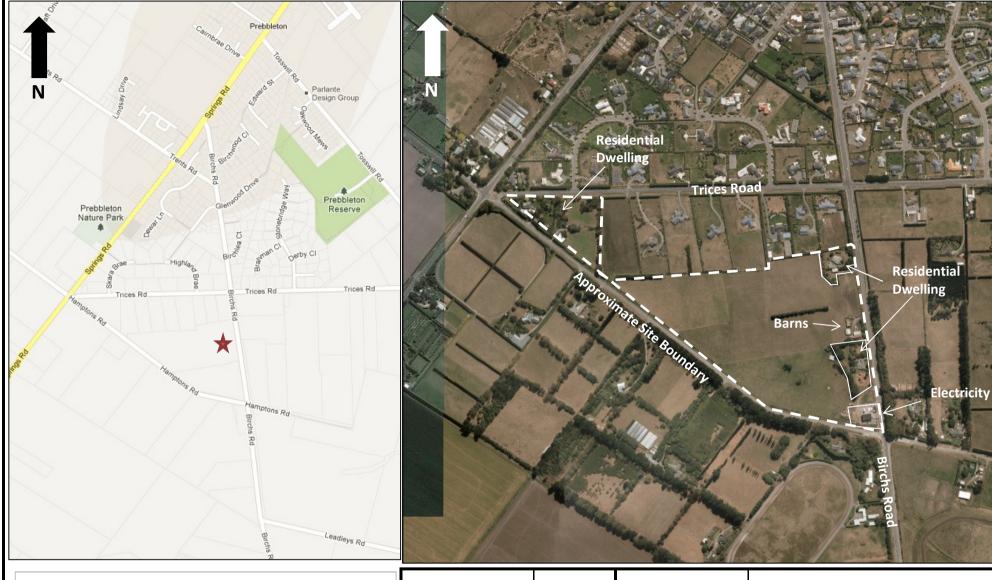
Senior Environmental Consultant

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# **FIGURES**

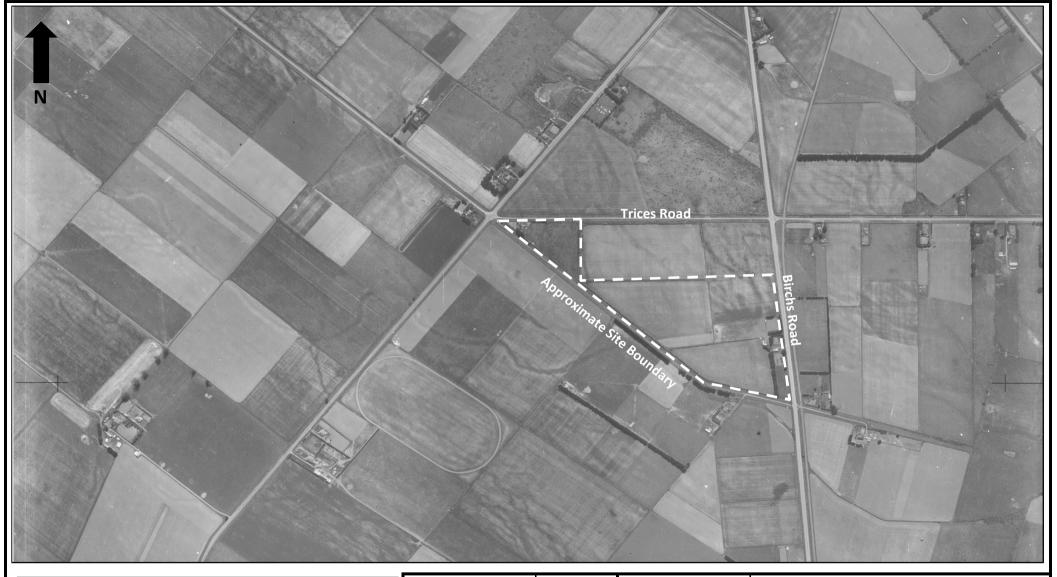




Note: Location map sourced from Google



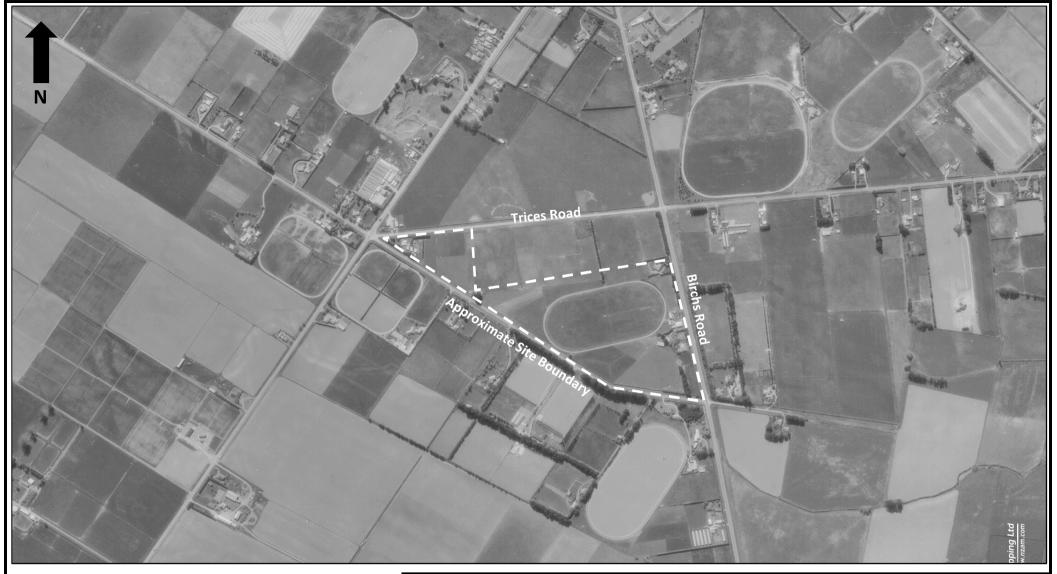
Date	Dec-12	Client	Conifer Grove Trustees Ltd c/- Baseline Planning		
Drawn by	НА	Project	100 Birchs Road, Prebbleton		
Approved by	DR	Description	Site Location Plan		
Scale	NTS	Figure Number	1	Project Number	9875



Note: Aerial Photograph sourced from NZ Aerial Mapping



Date	Dec-12	Client	Conifer Grove Trustees Ltd c/- Baseline Planning		
Drawn by	НА	Project	100 Birchs Road, Prebbleton		leton
Approved by	DR	Description	1942 Aerial Photograph		
Scale	NTS	Figure Number	2	Project Number	9875



Note: Aerial Photograph sourced from NZ Aerial Mapping



Date	Dec-12	Client	Conifer Grove Trustees Ltd c/- Baseline Planning		
Drawn by	НА	Project	100 Birchs Road, Prebbleton		
Approved by	DR	Description	1984 Aerial Photograph		
Scale	NTS	Figure Number	3	Project Number	9875



# **APPENDIX 1**

**CRC LLUR Statement** 



# Statement from the Listed Land Use Register



58 Kilmore Street, PO Box 345, Christchurch

Fax: 03 365 3194

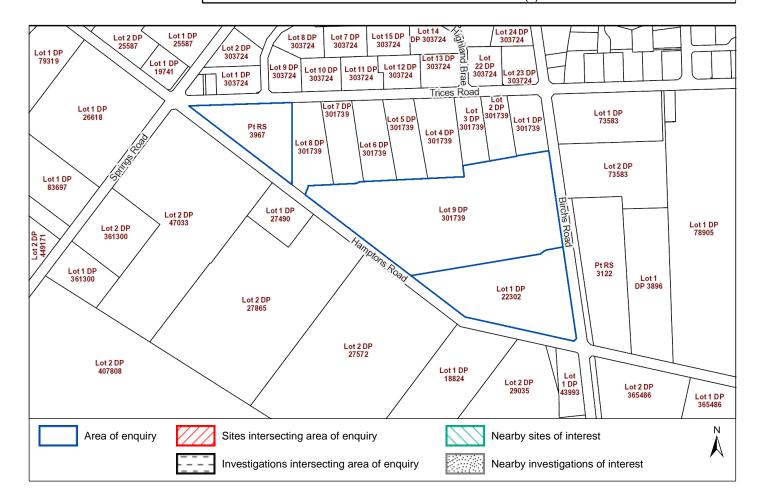
Email: ecinfo@ecan.govt.nz

General enquiries: 03 365 3828 Customer services: 03 353 9007 or: 0800 EC INFO (0800 324 636) Website: www.ecan.govt.nz

Date:

**Land Parcels:** 

5 December 2012	
• Pt RS 3967	Valuation No(s): 2355235700
• Lot 1 DP 22302	Valuation No(s): 2355235500
• Lot 9 DP 301739	Valuation No(s): 2355235600



### Summary of sites:

There are no sites associated with the area of enquiry.

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

For further information from Environment Canterbury, contact the Contaminated Sites Officer and refer to enquiry number 14204.

#### Disclaimer:

The enclosed information is derived from Environment Canterbury's Listed Land Use Register and is made available to you under the Local Government Official Information and Meetings Act 1987 and Environment Canterbury's Contaminated Land Information Management Strategy (ECan 2009).

This information reflects Environment Canterbury's current understanding of this site, which is based only on the information thus far obtained by it and held on record concerning this site. It is released only as a copy of those records and is not intended to provide a full, complete or totally accurate assessment of the site. As a result, Environment Canterbury is not in a position to warrant that the information is complete or without error and accepts no liability for any inaccuracy in, or omission from, this information.

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



# **APPENDIX 2**

Site Photographs



Photo 1: Site looking South



Photo 2: Site looking South



Photo 3: Area of grass damaged by cattle



Photo 4: Site looking East



Photo 5: Residential area



Photo 6: Electricity Substation



Date taken	Dec-12	Client	Conifer Grove Trustees Ltd c/- Baseline Planning		
Taken by	НА	Project	100 Birchs Road, Prebbleton		
Approved by	DR	Description	Site Photographs		
Scale	N/A	Photo No.	1 to 6	Project Number	9875