soils LIMITED

Validation Report

at
Cinders Lane, Yapton, West Sussex BN18 0JJ

for
Crayfern Homes

Reference: 18115/MIR_R27
September 2021

ARUN DISTRICT COUNCIL Y/143/21/DOC

Control Document

Project
Cinders Lane, Yapton, West Sussex BN18 0JJ

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This is not a valid document for use in the design of the project unless it is titled Final in the document status box.

Current regulations and good practice were used in the preparation of this report. The recommendations given in this report must be reviewed by an appropriately qualified person at the time of preparation of the scheme design to ensure that any recommendations given remain valid in light of changes in regulation and practice, or additional information obtained regarding the site.

AGS Association of Geotechnical & Geoenvironmental Specialists

BGA CORPORATE MEMBER 2021 www.britishgeotech.org.uk

Commission

Soils Limited was commissioned by Crayfern Homes to undertake an RMS and subsequent validation and verification of agreed works on land at Cinders Lane, Yapton, West Sussex BN18 0JJ.

This document comprises and incorporates the results, discussion and conclusions to the development works and associated remediation strategies to date. The site development covers two phases (Cinders Lane and Cinders Lane Phase 2), but this single validation report will cover both areas as nothing of significance (or unexpected) was located during the Phase 2 development.

This Report must be read in conjunction with the following reports:

- Supplementary Investigation Report prepared by Soils Limited, referenced 17926/SIR_R27, dated November 2019
- Preliminary Investigation Report prepared by Soils Limited, referenced 18115/PIR_R26, dated February 2020
- Main Investigation Report prepared by Soils Limited, referenced 18115/MIR_27, dated February 2020
- Remediation Strategy Supplementary Investigation Report prepared by Soils Limited, referenced 17926/RSSIR_27, dated November 2020 (Phase 2)

Standards

The site works, soil descriptions and geotechnical testing was undertaken in accordance with the following standards:

- BS 10175:2011+A2:2017 - Investigation of potentially contaminated sites
- CIRIA Special Publication 106: Remedial Treatment for Contaminated Land, Volume VI, 1996
- Model Procedures for the Management of Land Contamination (CLR11)
- EA Land Contamination Risk Management (LCRM)

The chemical analyses were undertaken by Derwentside Environmental Testing Services (DETS) in accordance with their UKAS and MCERTS accredited test methods or their documented in-house testing procedures. This investigation does not comprise an environmental audit of the site or its environs. Trial hole is a generic term used to describe a method of direct investigation. The term trial pit, borehole or window sample borehole implies the specific technique used to produce a trial hole

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Section 1 Introduction

1.1 Objective of Investigation

Soils Limited was commissioned by Crayfern Homes to undertake an RMS and subsequent validation and verification of agreed remedial works on land at Cinders Lane, Yapton, West Sussex BN18 0JJ in compliance with the agreed RMS and the application of the Discovery Strategy to Locations 16 and 17 in Cinders Nursery where an unexpected Asbestos Hotspot was located and following agreements reached with the appropriate regulators in relation to compliance, validation and verification of the proposed works. The proposed two-phase development comprised the demolition of the existing structures and the construction of residential units including flats with associated gardens, access and areas of soft landscaping.

1.2 Location and Description

The site was located at Cinders Lane, Yapton, West Sussex BN18 0JJ and had an approximate O.S Land Ranger Grid Reference of SU 980 025. The site location plan is given in Figure 1. At time of writing Soils Limited understand that development works are now completed. An aerial photograph from March 2020 during development has been included in Figure 2. As built plans will be forwarded as required to the regulator on completion under planning and a copy of the Location Plan for the identified "Hotspot" (See Supplementary Investigation Report prepared by Soils Limited, referenced 17926/SIR_R27, dated November 2019) is included as Figure 3.

1.3 Remediation Approach

Remediation must be undertaken to break any contaminant linkage between the source of contamination and the receptors on the site. This can be achieved by a number of methods which may include; excavation and removal from site, encapsulation, barriers or the use of capping material.

As outlined in the various ground investigation reports prepared for the site by Soils Limited (Ref: Various 2019-2020) no generic RMS was required for either site as only one area across both sites was identified as containing potentially significant elevated levels of contaminants (as detailed in Table 4.1: 17926/SIR_R27, dated November 2019) at TP3 for PAH's and TPH at a depth of 0.20m below then ground levels in defined as the garden areas of proposed Plots 16 and 17.

As such a strategy was agreed with the regulators to include as pre development groundworks the removal of materials to 600mm below ground levels in the identified garden areas of Plots 16 and 17, removal from site of this material in accordance and compliance with current waste legislation and guidance and sustainable replacement with certified clean materials produced as "wastes" from other areas of the site and activities (including foundation excavations in "natural" soils) already confirmed as suitable and fit for purpose by the remainder of the available analysis in the above-noted

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investigations.

This methodology was selected and agreed with the regulator both on grounds of cost (minimising imported and "waste" materials and transport), sustainability, overall environmental benefit and compliance with contaminated land requirements as defined by the regulator and current guidance.

The replacement was undertaken as agreed in all areas of proposed gardens in Plots 16 and 17, as shown in Figure 3. This action has mitigated the identified risk from the "Hotspot" to the vulnerable human health receptor by removal of source and by definition the remaining ground cannot be defined as contaminated and risk is low to negligible by default.

Excavated materials from Plots 16 and 17 were emplaced directly into vehicles as part of groundworks operations. Waste transfer tickets of any material removed from site were retained as part of the site records and supplied to Soils Limited on completion. Dust prevention measures, such as damping down, were employed as appropriate.

1.4 Verification Plan

The verification and validation of the Plot 16 and 17 hotspot removal comprised various elements including appropriate training of site personnel ensured suitable knowledge and awareness of the task being undertaken with respect to contamination on the site. A watching brief was maintained by appropriately qualified site persons who have confirmed that no unexpected contamination additional to the hotspot were identified. On completion of the hotspot remediation a Verification Report (this document) was to be prepared in accordance with the requirements of 'Model Procedures for the Management of Land Contamination' (CLR11) as updated and superseded in October 2020 by EA Land Contamination Risk Management (LCRM).

1.5 Excavated Material

Tickets of the material removed from site was kept as part of the site records and supplied to Soils Limited at the completion of the development and are provided as evidence with this validation report.

1.6 Imported Material

No soil replacement material was imported from off-site during this project.

1.7 Limitations and Disclaimers

This Validation Report relates to the site located at Cinders Lane, Yapton, West Sussex BN18 0JJ 82 and was prepared for the sole benefit of Crayfern Homes (The "Client"). The report was prepared solely for the brief described in Section 1.1 of this report.

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The contents, recommendations and advice given in the report are subject to the Terms and Conditions outlined in all previous Quotations, investigations and reports related to this project and were accepted by the Client.

Soils Limited disclaims any responsibility to the Client and others in respect of any matters outside the scope of the above.

This report has been prepared by Soils Limited, with all reasonable skill, care and diligence within the terms of the Contract with the Client, incorporation of our General Conditions of Contract of Business and taking into account the resources devoted to us by agreement with the Client.

The report is personal and confidential to the Client and Soils Limited accept no responsibility of whatever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report wholly at its own risk.

The Client may not assign the benefit of the report or any part to any third party without the written consent of Soils Limited.

The ground is a product of continuing natural and artificial processes. As a result, the ground will exhibit a variety of characteristics that vary from place to place across a site, and also with time. Whilst a ground investigation will mitigate to a greater or lesser degree against the resulting risk from variation, the risks cannot be eliminated.

The investigation, interpretations, and recommendations given in this report were prepared for the sole benefit of the client in accordance with their brief. As such these do not necessarily address all aspects of ground behaviour at the site.

Current regulations and good practice were used in the preparation of this report. An appropriately qualified person must review the recommendations given in this report at the time of preparation of the scheme design to ensure that any recommendations given remain valid in light of changes in regulation and practice, or additional information obtained regarding the site.

Ownership of land brings with it onerous legal liabilities in respect of harm to the environment. “Contaminated Land” is defined in Section 57 of the Environment Act 1995 as:

“Land which is in such a condition by reason of substances in, on or under the land that significant harm is being caused or that there is a significant possibility of such harm being caused or that pollution of controlled waters is being, or is likely to be caused”.

The investigation, analysis or recommendations in respect of contamination are made solely in respect of the prevention of harm to vulnerable receptors, using where possible best practice at the date of preparation of the report. The investigation and report do not address, define or make recommendations in respect of environmental liabilities. A

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separate environmental audit and liaison with statutory authorities is required to address these issues.

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Section 2 Remedial Verification Soils

2.1 Proposed Works

As noted in Supplementary Investigation Report prepared by Soils Limited, referenced 17926/SIR_R27, dated November 2019, an isolated Hotspot of elevated levels of PAH and TPH had been identified in TP3 at a depth of 0.20m.

As compliance with NHBC guidance for provision of gardens was also required, a proposal for the removal of this area (defined as being the garden areas of Plots 16 and 17) to a depth of 600mm (i.e. in excess of the identified depth and in compliance with NHBC guidance) was proposed as the remedial option in this case, to be undertaken during development as part of groundworks.

This material was to be replaced using site won materials already known to be suitable and fit for purpose from the investigations undertaken previously with the provision that all such materials transfers should be subject to the application of the emplaced discovery strategy and oversight by competent persons. Such actions would also minimise waste disposal costs, remove requirements for importation of additional soil materials, improve sustainability, increase overall environmental benefit and be compliant with current waste and remediation guidance.

2.1.1 Sampling

As replacement materials were to be procured on-site for which extensive data was already present (see Supplementary Investigation Report prepared by Soils Limited, referenced 17926/SIR_R27, dated November 2019), no additional sampling or validation analysis was considered necessary in this case as the characteristics of the material were well known, understood, suitable and fit for purpose. As no material as replacement soils were imported onto site, no analysis of such was required.

2.1.2 Exportation Records

Tickets relating to the specifics of the remediation exercise have been provided by the Client as proof of compliance with current waste disposal guidance and legislation and are enclosed as Appendix A.

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Section 3 Discovery Strategy

3.1 General

A Discovery Strategy was emplaced during the works and to Soils Limited's knowledge has not been activated in any circumstance on either phase. Confirmation to this effect has been provided in writing by the Client / Developer as required by current guidance in the case of non-activation and is enclosed in Appendix B.

3.1.1 Competence and Compliance

All persons identified with the application of the Discovery Strategy appear to have been competent and informed as to their roles and responsibilities.

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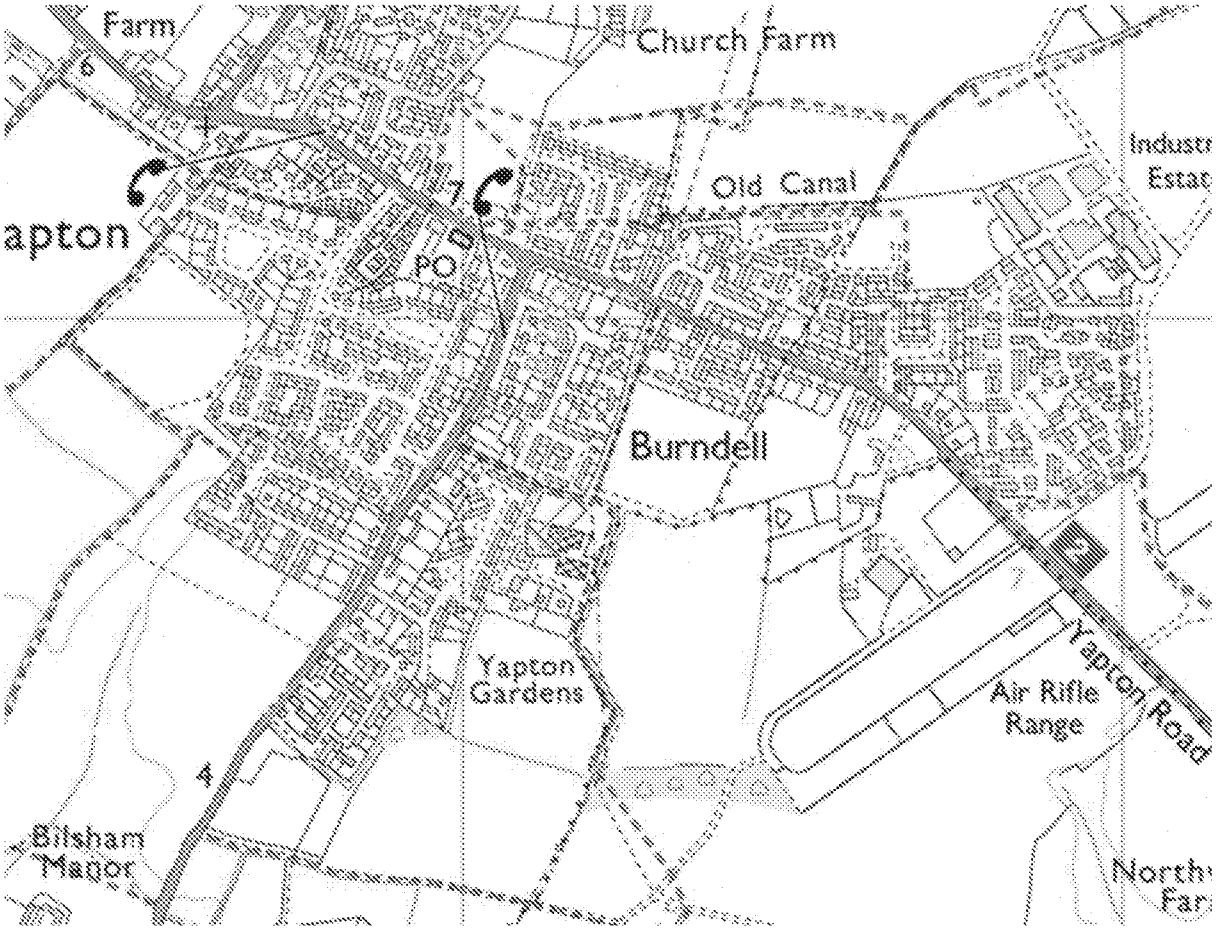

Figure 1 – Site Location Map

Job Number 18115	Project Cinders Lane, Yapton, West Sussex BN18 0JJ
Client Crayfern Homes	Date September 2021

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Figure 2 – Aerial Photograph

Project
Cinders Lane, Yapton, West Sussex
BN18 0JJ

Client
Crayfern Homes

Date
September 2021

Photograph Date:
4th April 2020

Job Number
18115

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Figure 3 – Remediation Plan

Project
Cinders Lane, Yapton, West Sussex
BN18 0JJ

Client
Crayfern Homes

Date
September 2021

Job Number
18115

Plot 16 and 17 Garden areas

N

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Appendix A Waste Disposal Tickets

Appendix A.1 Waste Disposal Tickets Plots 16 and 17 Groundworks Remediation

CONVEYANCE/WASTE TRANSFER NOTE

inert Recycling (UK) Limited

Highbridge Estates
Highbridge Road, Highbridge
Eastleigh, Hampshire SO50 6HS
[redacted]

Waste Carrier
Reg. No. CBDU130099

Loaded at VAPTON	Date 18/8/21	Owner of Vehicle INERT
Customer B C T		Reg'd No. of Vehicle HX 16 FWE
Site Address CINDERS RD		Driver GARY H.
EWC Code/Description 17 05 04		SIC CODE
Name and Address of Disposal Site BOXGROVE		Inert Spoil 17 05 04 ✓
		Hardcore 17 01 02
		Concrete 17 01 01
Signed by Disposal Site Operator		Builders Waste 17 09 04
		Other

By Weight	Tonnes		By Volume		Outside Haulier Waste Carriers Reg No.
Gross Weight			1 x LOAD m³		Daywork
Tare Weight			Short Wheelbase Surcharge		Time Start
Nett Weight			Yes	No	Time Finish
					Total Hours Less Breaks
					Trav. Time
					Hours

I confirm that I have fulfilled my duty in respect of waste transfer as required by regulation 12 of the Waste (Engl[redacted]

Customer Signa[redacted]

Print Name [redacted]

Certified that the abov[redacted] being conveyed in this [redacted] conveyed in pursuance of sale of material or an agreement for the sale thereof made by the cubic metre or tonne.

Signed for
Inert Recycling [redacted]

Customers or[redacted] responsibility.

If this ticket records a waste transfer it must be kept for two years.

363353

Minimum Hire 8 Hours

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CONVEYANCE/WASTE TRANSFER NOTE

inert Recycling (UK) Limited

Highbridge Estates
Highbridge Road, Highbridge
Eastleigh, Hampshire SO50 6HS
[redacted]

Waste Carrier
Reg. No. CBDU130099

Loaded at YATON	Date 18/8/21	Owner of Vehicle INERT
Customer B C T		Reg'd No. of Vehicle HX16 FLVE
Site Address CINDERS RD		Driver GARY RD
EWC Code/Description 17 05 04		SIC CODE
Name and Address of Disposal Site BOXGROVE		Inert Spoil 17 05 04 ✓
		Hardcore 17 01 02
		Concrete 17 01 01
Signed by Disposal Site Operator		Builders Waste 17 09 04
		Other

By Weight	Tonnes		By Volume		Outside Haulier Waste Carriers Reg No.	
Gross Weight			1 x LOAD m³		Daywork	
Tare Weight			Short Wheelbase Surcharge		Time Start	
Nett Weight			Yes	No	Time Finish	
					Total Hours less Breaks	
					Lav. Time	
					Hours	

I certifiy that I have fi[redacted]
12 of the Waste (Engl[redacted]

Customer Signat[redacted]

Print Name [redacted]

Certified that the abov[redacted]
being conveyed in this vehicle described, which sand or ballast is being
conveyed in pursuance of sale of material or an agreement for the sale thereof
made by the cubic metre or to[redacted]

Signed for
Inert Recycling (UK) Ltd. [redacted]

Customers ordering vehicles o[redacted]
responsibility.

If this ticket records a waste tr[redacted]

363352

Minimum Hire 8 Hours

ARUN DISTRICT COUNCIL Y/143/21/DOC

CONVEYANCE/WASTE TRANSFER NOTE

inert Recycling (UK) Limited

Highbridge Estates
Highbridge Road, Highbridge
Eastleigh, Hampshire SO50 6HS
[redacted]

Waste Carrier
Reg. No. CBDU130099

Loaded at YAPTON	Date 18/8/21	Owner of Vehicle INERT
Customer B C T		Reg'd No. of Vehicle HX 16 FWE
Site Address CINDERS RD		Driver GARY W.
EWC Code/Description 17 05 04		SIC CODE
Name and Address of Disposal Site Boxgrove		Inert Spoil 17 05 04 ✓
		Hardcore 17 01 02
		Concrete 17 01 01
Signed by Disposal Site Operator		Builders Waste 17 09 04
		Other

By Weight	Tonnes		By Volume	
Gross Weight			1 x LOAD m^3	
Tare Weight			Short Wheelbase Surcharge	
Nett Weight			Yes	No

Outside Haulier Waste Carriers Reg No.

Daywork	
Time Start	
Time Finish	
Total Hours Breaks	
Time	
rs	

I confirm that I have fulfil[redacted]
12 of the Waste (England

Customer Signature [redacted]

Print Name [redacted]

Certified that the above pa[redacted]
being conveyed in this ve[redacted]
conveyed in pursuance of sale of material or an agreement for the sale thereof
made by the cubic metre or tonne.

Signed for
Inert Recycling (UK) Ltd. [redacted]

Customers ordering vehicles off [redacted]
responsibility.

If this ticket records a waste transfer it must be kept for two years.

363351

Minimum Hire 8 Hours

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CONVEYANCE/WASTE TRANSFER NOTE

inert Recycling (UK) Limited

Highbridge Estates
Highbridge Road, Highbridge
Eastleigh, Hampshire SO50 6HS
[redacted]

Waste Carrier
Reg. No. CBDU130099

Loaded at YAPTON	Date 18/8/21	Owner of Vehicle INERT
Customer B.C.T.		Reg'd No. of Vehicle HX16 FWE
Site Address CINDERS LA		Driver GARY W.
EWC Code/Description 17 05 04		SIC CODE
Name and Address of Disposal Site Boxgrove		Inert Spoil 17 05 04 ✓
		Hardcore 17 01 02
		Concrete 17 01 01
Signed by Disposal Site Operator		Builders Waste 17 09 04
		Other

By Weight	Tonnes	By Volume	Outside Haulier Waste Carriers Reg No.
Gross Weight		1 x LOAD m^3	Daywork
Tare Weight		Short Wheelbase Surcharge	Time Start
Nett Weight			Time Finish
			Total Hours less Breaks
			Trav. Time
			Hours

I confirm that I hav[redacted]
12 of the Waste (E[redacted]

Customer Sig[redacted]

Print Name [redacted]

Certified that the above particulars are true and relate to the sand or ballast being conveyed in this vehicle described, which sand or ballast is being conveyed in pursuance of sale of material or an agreement for the sale thereof made by the cubic metre [redacted]

Signed for
Inert Recycling (UK) Ltd. [redacted]

Customers ordering vehic[redacted]
responsibility.

If this ticket records a waste transfer it must be kept for two years.

362899

Minimum Hire 8 Hours

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Appendix B Information Provided by the Client

Appendix B.1 Discovery Strategy Signed Confirmation of non-application

Y/5/17/OUT – Land at Cinders Nusery
Cinders Lane, Yapton

Date: 17.08.2021

Crayfern

CONTRACTORS STATEMENT IN REFERENCE TO COMPLIANCE WITH THE DISCOVERY STRATEGY

PLOTS 1-51 - CONDITION 22

Contractor

Crayfern Homes Ltd can confirm that during the construction of plots 1-51 at the above site, no unexpected materials, groundwater and materials of concern were encountered during the work other than the known area in the area of plots 16-17. The manner in which this was dealt with is detailed in Soils Ltd's report.

[redacted]

Signed ..... [redacted] .....

John Curry ([redacted]

Groundworker

BCT Services (South) Ltd can confirm that during the construction of plots 1-51 at the above site, no unexpected materials, groundwater and materials of concern were encountered during the work other than the known area in the area of plots 16-17. The manner in which this was dealt with is detailed in Soils Ltd's report. [redacted]

Soils Limited
Geotechnical & Environmental Consultants

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Cross Road, Tadworth
Surrey KT20 5SR

[redacted]