

**VALIDATION REPORT
HARBOUR VILLAGE PHASE 1B (PLOTS 122-124)
NORTHFLEET, KENT DA11 9AS
BELLWAY HOMES LIMITED
VR-17855CZ-25-69
FEBRUARY 2025**

IDOM



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BELLWAY HOMES LIMITED
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FEBRUARY 2025

Document Issue Record

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Prepared by		Approved by	
Ben Alexander		Lisa Horsley	
		CSci, FGS	
			

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SECTION 1 INTRODUCTION

- 1.1 Bellway Homes (Thames Gateway) Ltd (Bellway), has developed a parcel of land known as Phase 1B, as part of the Harbour Village development and wider development Area C. Phase 1B is 3.2 hectares and is located in the south of Area C. Drawings showing the locations of Area C and Phase 1B are presented in Appendix 1.
- 1.2 This validation report covers three additional units to Phase 1B, plots 122 to 124, the location of which is shown on Bellway's Materials Layout Plan, contained in Appendix 1 along with a development plan.
- 1.3 IDOM Merebrook (IDOM) have produced numerous reports for Phase 1B as part of the wider site. These reports have included the following:
 - i. Phase 1 Environmental Assessment (Desk Study): Areas A, C and G Northfleet Embankment (ref: DS-17855cz-20-250), dated 29 June 2020;
 - ii. Contaminated Land Assessment: Areas A, C and G Northfleet Embankment (ref: CLA-17855cz-20-246), dated 30 June 2020.
 - iii. Final Completion Report Harbour Village – Phase 1B (FCR-17855cz-24-166), dated May 2024.
- 1.4 A site-specific Geo-environmental Assessment GEA-17855cz-23-153 dated April 2023, was written for plots 122 – 124. The investigation encountered no contamination, and it was recommended that remediation for the development should follow that of the wider development area.
- 1.5 The Remedial Method Statement for the wider development area which covers Phase 1B (including plots 122-124) is RMS-17885CZ-20-243 (dated September 2020), this sets out the requirements to render the site suitable for use.
- 1.6 Earthworks to form the development platforms, the materials reuse and compaction requirements were set out in Earthworks and Materials Specification (ES-17855cz-19-271 Rev E, dated December 2020).
- 1.7 This report has been prepared for Bellway Homes (Thames Gateway) Ltd for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties making reference to the report should consult Bellway Homes (Thames Gateway) Ltd and IDOM as to the extent to which the findings may be appropriate for their use.

SECTION 2 EARTHWORKS

- 2.1 In order to achieve the development platform, earthworks were required which included the excavation, processing and placement of soils. The works were undertaken by NWM Properties Ltd and their Contractors KKB and JB Civils Ltd.
- 2.2 Within Phase 1B, earthworks comprised infilling (up to 2.5 metres) at the southernmost extent, with areas of cut to the north and east. Site won soils compliant with the requirements of the Earthworks and Materials Specification (ES-17855cz-19-271 Rev E, dated December 2020) were used in areas of infilling. The earthworks are detailed in the Final Completion Report for Phase 1B (FCR-17855cz-24-166, dated May 2024).

SECTION 3 REMEDIATION

- 3.1 The Remedial Method Statement (RMS-17885CZ-20-243) set out the remedial requirements for the wider Area C, these included:
- i.* The excavation and removal or treatment of hydrocarbon impacted soils during reduced level dig;
 - ii.* The inspection of reduced level dig surfaces and exposed surfaces after obstruction removal, for evidence of previously unknown mobile contamination;
 - iii.* Further ground gas monitoring and assessment; and
 - iv.* The provision of clean cover in areas of soft landscaping.

SECTION 4 GAS ASSESSMENT

- 4.1 A further, six rounds of gas monitoring were undertaken between 22 December 2021 to 22 March 2022 of Area C.
- 4.2 Levels of methane, carbon dioxide and oxygen were recorded in each standpipe, together with associated parameters including borehole flow and ambient air pressure. The updated gas risk assessment concluded that this phase of the development would be classified as 'Characteristic Situation 1'. The designation indicates a negligible gas risk and that gas protection measures would not be required.
- 4.3 Further to the above, it was concluded that no further remediation, other than the placement of clean fill in areas of soft landscaping would be required in Area C.

SECTION 5 FORMATION LEVEL INSPECTIONS

- 5.1 During the formation of development platforms, no hydrocarbon contamination (including free product) was identified in Phase 1B. The formation level was regularly inspected by an IDOM representative. No evidence of asbestos or other deleterious material was noted within Phase 1B or the associated haul routes. The material used for filling was reworked chalk and sand/gravel which was also encountered in areas of cut.
- 5.2 Photographs of the formation level across Phase 1B are contained in Appendix 4.
- 5.3 It is considered that the reworked natural soils present at the formation level across Phase 1B present a negligible risk to future residents. Therefore, the use of a geotextile maker layer was not considered necessary.
- 5.4 For plots 122 -124 specifically, no visual or olfactory contamination was encountered, made ground soils were tested and found to be below residential screening levels as reported in GEA-17855cz-23-153. Therefore, a geo-textile membrane was not considered necessary for plots 122-124.

SECTION 6 CLEAN COVER REQUIREMENTS

- 6.1 The IDOM Remediation Method Statement set out the following requirements for clean cover in areas of soft landscaping:
 - i.* Clean cover may be formed of either site-won or, more likely, imported materials according to the validation criteria set out in the remediation method statement.
 - ii.* Material imported for the formation of landscaped areas should be obtained from a validated source. The validation should incorporate an assessment of the provenance of the material and chemical analysis.
 - iii.* In addition to information provided by the topsoil/subsoil supplier, validation testing shall be carried out by IDOM as set out below.
 - iv.* Once placed, the depth of placed cover (600 mm) shall be inspected and verified by a pit excavated at a rate of one per 25 x 25 m in public open spaces or one per rear garden.
 - v.* Validation shall be carried out at a rate appropriate to the nature of the donor site. Where donor sites such as greenfield sites, supported by documentary evidence (desk study and site investigation) reports or alternatively from soil manufacturing / blending operations where supplier testing is available and where the input materials are low risk (e.g. where compost is mixed with natural materials such as quarry overburden), then a rate of 200 m³. For any other sources of imported soil, an increased testing frequency of 1 sample per

150 m³ would be appropriate together with suitable information on soil provenance.

- vi. Sampling can be carried out prior to placement or *in situ* in gardens. If the imported soil is tested prior to placement, then measures should be in place to prevent cross-contamination with other site materials (i.e. imported clean soils must be stockpiled on clean ground or a tarpaulin).

SECTION 7 CLEAN COVER SOURCES

7.1 Topsoil

- 7.1.1 Topsoil was imported from Freeland Horticulture Limited and was originally from Bat & Ball, Sevenoaks, Kent. Freeland manufacture soils using virgin sands and PAS100 certified compost and therefore sit within the “low risk” category of blended soils. Testing by Freeland Horticulture found no exceedances when screened against S4UL’s “residential with homegrown produce” land use scenario. The supplier’s testing certificate is appended to this report. The Topsoil source data is presented in Appendix 2.

7.2 Subsoil

- 7.2.1 Subsoil was sourced from a greenfield site at Sutton Road, Langley, Maidstone. The material was brought to site under a direct transfer Materials Management Plan written by others.
- 7.2.2 To comply with the requirements of the *Definition of Waste: Development Industry Code of Practice* (DoWCoP), only clean natural occurring soils can be imported under a direct transfer MMP. DoWCoP also states that imported soils must not increase the environmental risk at the receptor site.

SECTION 8 CLEAN COVER VALIDATION

- 8.1 IDOM attended site on 2nd February 2024 to validate Plots 122 to 124. Hand pits were excavated in the centre of each rear garden which proved a minimum of 150 mm of topsoil over a minimum of 450 mm of subsoil substantially free from deleterious materials. Photographic evidence of the clean cover at each plot are contained in Appendix 5.
- 8.2 Samples of topsoil and subsoil were submitted to a UKAS/MCERTS accredited laboratory for analysis of a broad spectrum of contaminants. The compliant results are summarised in the table below. Analytical certificates are contained in Appendix 3.
- 8.3 Chrysotile asbestos fibres were encountered in a sample of topsoil from Plot 122 on 2 October 2023. The soils were removed and replaced. IDOM returned to site to sample the soils (both topsoil and subsoil were sampled at higher frequencies required by the RMS) at Plot 122 on 2 February 2024 when the results were compliant.

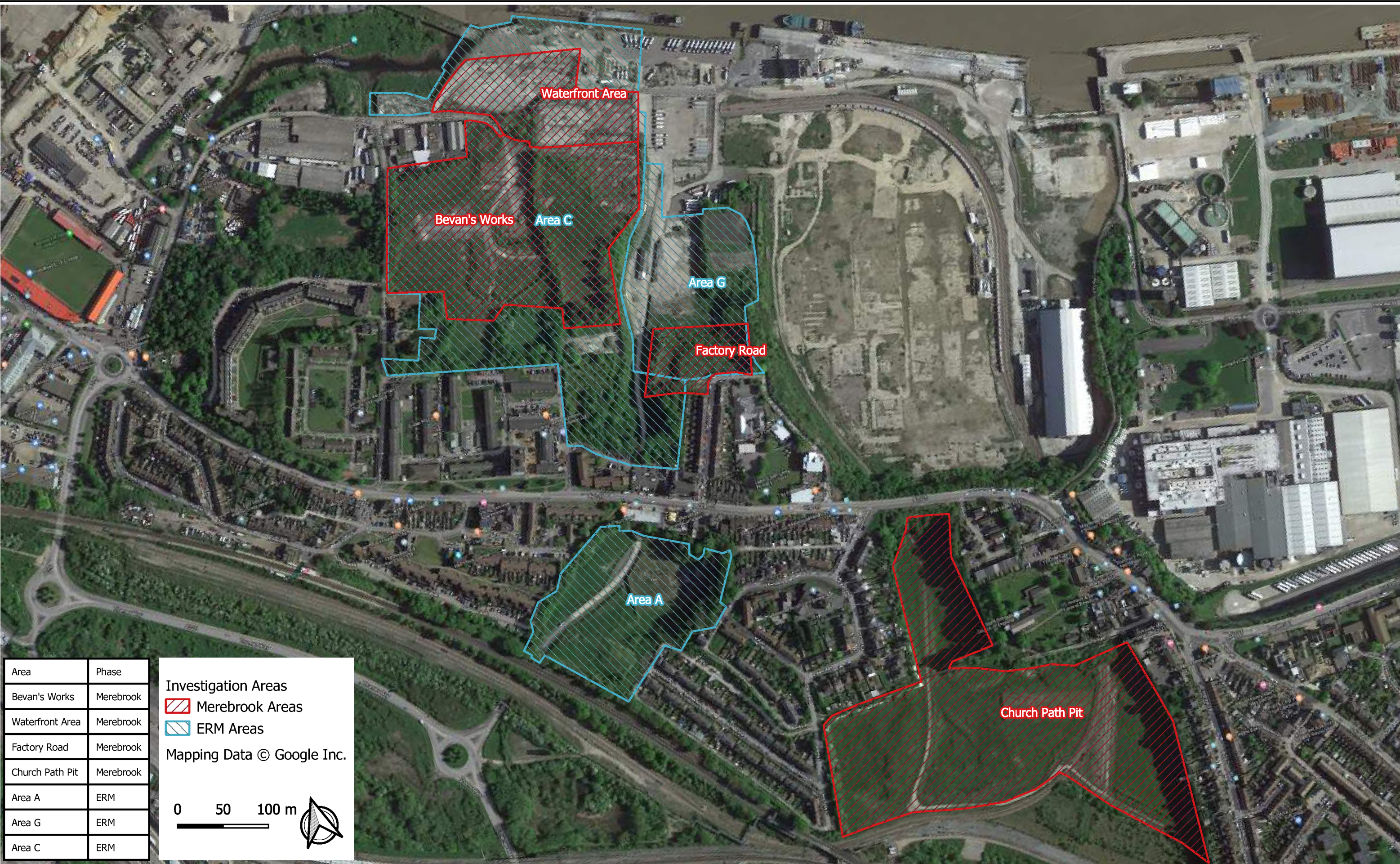
Table 2: Clean cover validation summary

PLOT NUMBERS	TYPE	DATE	CLEAN COVER THICKNESS (MM)	SAMPLES (TS & SS)	ANALYTICAL CERTIFICATE
Plots 122 to 124	Houses	2/02/2024	600+	Plots 122 to 124	24-002937 (PASS)

SECTION 9 CONCLUSIONS

- 9.1 The clean cover in Plots 122 to 124 was found to be of a suitable chemical quality and had been placed to an appropriate thickness. The topsoil and subsoil were inspected in each plot and found to be free of any evidence of gross contamination and compliant with the specification.
- 9.2 During inspections of the formation level, no evidence of hydrocarbon contamination, asbestos, or other deleterious material was noted within Plots 122 to 124. It was also noted that clean cover thicknesses were in excess of 600 mm which reduces the chance of clean capping material mixing with the underlying fill material by natural and anthropogenic processes in a domestic setting.

APPENDIX 1 ▪ Drawings



Area	Phase
Bevan's Works	Merebrook
Waterfront Area	Merebrook
Factory Road	Merebrook
Church Path Pit	Merebrook
Area A	ERM
Area G	ERM
Area C	ERM

Investigation Areas

Merebrook Areas

ERM Areas

Mapping Data © Google Inc.

050100 m

IDOM

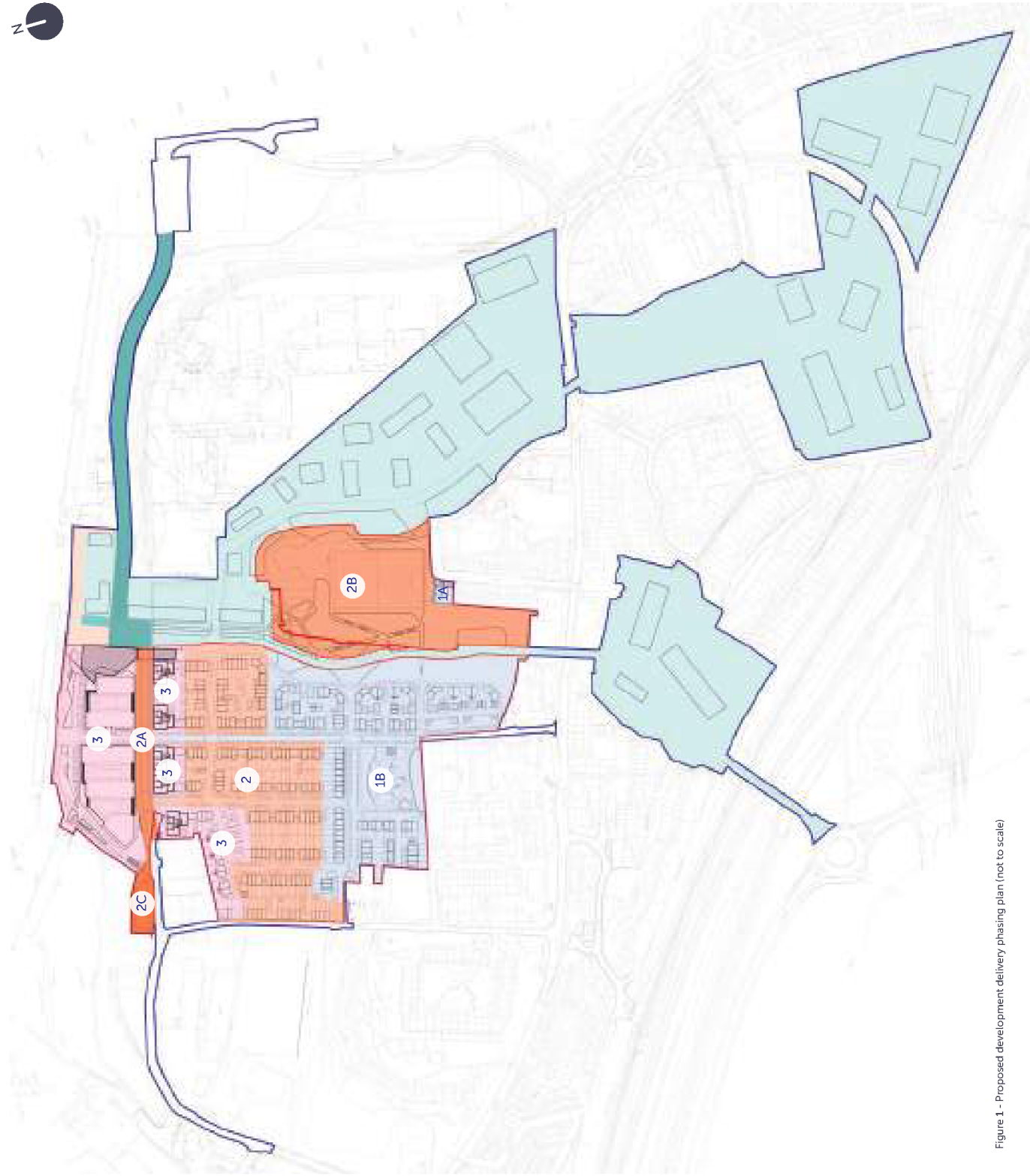
1 Leonard Place, Westerham Road, Keston, Kent. BR2 6HQ
t: +44(0)1689 889 980 e: info@idom.com

Bellway Homes (Thames Gateway) Ltd.

Northfleet Embankment

Investigation Area Location Plan

		DATE	REV
			1
Job No.	Drawing No.	Drawn	Chd
17855cz	1		
Scale	Date	Revision	
Map Scaled	01/03/2019	1	
Drawn	Checked	Frame Dimensions	Approved
SAM	SAM	(A3) 297x420 mm	SAM



Boundary Key

Approved Site Wide Boundary of Permission EDC/16/0004

Land within Bellway's Ownership

Release of Protected Strip*

*The land hatched black is owned by Bellway, but is subject to a covenant (imposed prior to grant of the outline consent) that it cannot be used for residential use.

Protected Strip

Gatehouse Area

This land currently comprises part of the access to the Employment Land.

Stopping-up Land

The stopping up land is currently highway, but an application to stop up such land is in progress. The transfer to Bellway included such land subject to the highway rights.

*Best estimate based on the approved **Mixed Use Planning Application Boundary**. Ref: LAR00-052 Rev S (David Lock Associates, 2015, PDF)

Building Programme Key

Residential Phase 1A – Factory Road

Residential Phase 1B – The Hive

Residential Phase 2 – College Road and Central

Residential Phase 2A – Bus Road West

Residential Phase 2B – Playing pitch/ Bevens Park

Residential Phase 2C – Robin Creek SUD

Residential Phase 3 – The Riverside

Riverside Park East

Employment land

MU2*

*Riverside Food and Drink Uses comprising up to 500 sq. m of public house or Food and Drink Uses (A3/A4) as per description of development on outline planning permission (ref: EDC/16/0004)

Figure 1 - Proposed development delivery phasing plan (not to scale)

Note - No Dimensions are to be scaled from this drawing.
All written dimensions to be checked by the contractor and
any discrepancies notified immediately to BDG Design



Phase 1B Boundary

Material Strategy Key

Facing materials:

- Red Brick - Forterra Woodside Mixture
Brick Mortar: Natural/Buf coloured mortar from CPI, ref: M3PN000
- Buff Brick - Ibstock Arundel Yellow Multi
Brick Mortar: Natural/Buf coloured mortar from CPI, ref: M3PN000
- Grey Brick - Bespoke Karma White Grey Handmade
Brick Mortar: Off-White/Light Grey coloured mortar from CPI, ref: M3WL91
- Black Weatherboard - Etex Eternit Cedral Lap (Colour: Black C50)
with Grey Brick - Bespoke Karma White Grey Handmade
(Brick Mortar: Off-White/Light Grey coloured mortar from CPI, ref: M3WL91)
- Black Weatherboard - Etex Eternit Cedral Lap (Colour: Black C50)
with Buff Brick - Ibstock Arundel Yellow Multi
(Brick Mortar: Natural/Buf coloured mortar from CPI, ref: M3PN000)
- Grey Brick - Bespoke White Grey Handmade (to ground floor) and
Tile Hanging - Redland Concrete Plain Tile (Bullnose) Rustic Red
(to first floor)
- Grey Brick - Bespoke Karma White Grey (to Ground Floor) and
Red Brick - Forterra Woodside Mixture (to First Floor)

Roof materials:

- Redland Concrete Plain Tile
Colour: Rustic Red
- Marley Eternit Fibre Cement Slate - Rivendale
Colour: Blue/Black

Projecting / Recessed Feature Brick

- 15mm Recessed Brick Panel
(See detail ref: HV1B-ARCH_1111- 1112)
- 15mm Recessed Brick Banding across apartments
(See detail ref: HV1B-ARCH_1113)
- 20mm Single Projecting Brick Banding across front and/or side
of house type, (See detail ref: HV1B-ARCH_1126)
- 20mm Alternating Projecting Brick Course
(See detail ref: HV1B-ARCH_1127 to 1132)

PLEASE NOTE:-
All house type front entrance doors to be RAL 7035 Light Grey.
All garage doors to be RAL 7035 Light Grey.
All house type windows and French doors to be white.
All house type canopies to be Stormking Flat Clearlight door canopy (glazed) - Colour to be RAL 7016 Anthracite Grey.
All rainwater goods to be black UPVC.
Apartment windows and doors: UPVC, RAL 7016 Anthracite Grey.
Apartment louvres, metalwork & entrance canopies: Aluminium PPC to RAL 7016 Anthracite Grey.
Apartment balconies/balustrading: 10x4mm vertical railings, aluminium PPC to RAL Anthracite Grey.
Apartment parapets & copings: Aluminium PPC trims to RAL 7017 Anthracite Grey.

Architect



BDG DESIGN PROJECT REF - 20.029

Bellway

Bellway Homes Limited (Thames Gateway)

Bellway House
Anchor Boulevard
Crossways Business Park
Dartford, Kent
DA2 6QH

Site

HARBOUR VILLAGE PHASE 1b
EBBSFLEET, KENT

Title

MATERIALS LAYOUT

Date APRIL '21 Drawn MJU
Scale 1:500 @ A1 Checked SPE

Drawing No. HV1B_ARCH_809 Rev. C4

DO NOT SCALE THIS DRAWING

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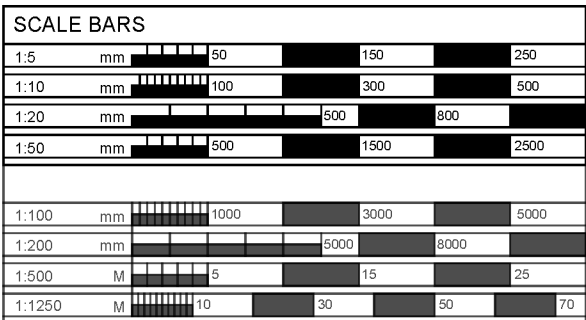
PLOT NUMBERS

HOUSE TYPE LEGEND:

ref:

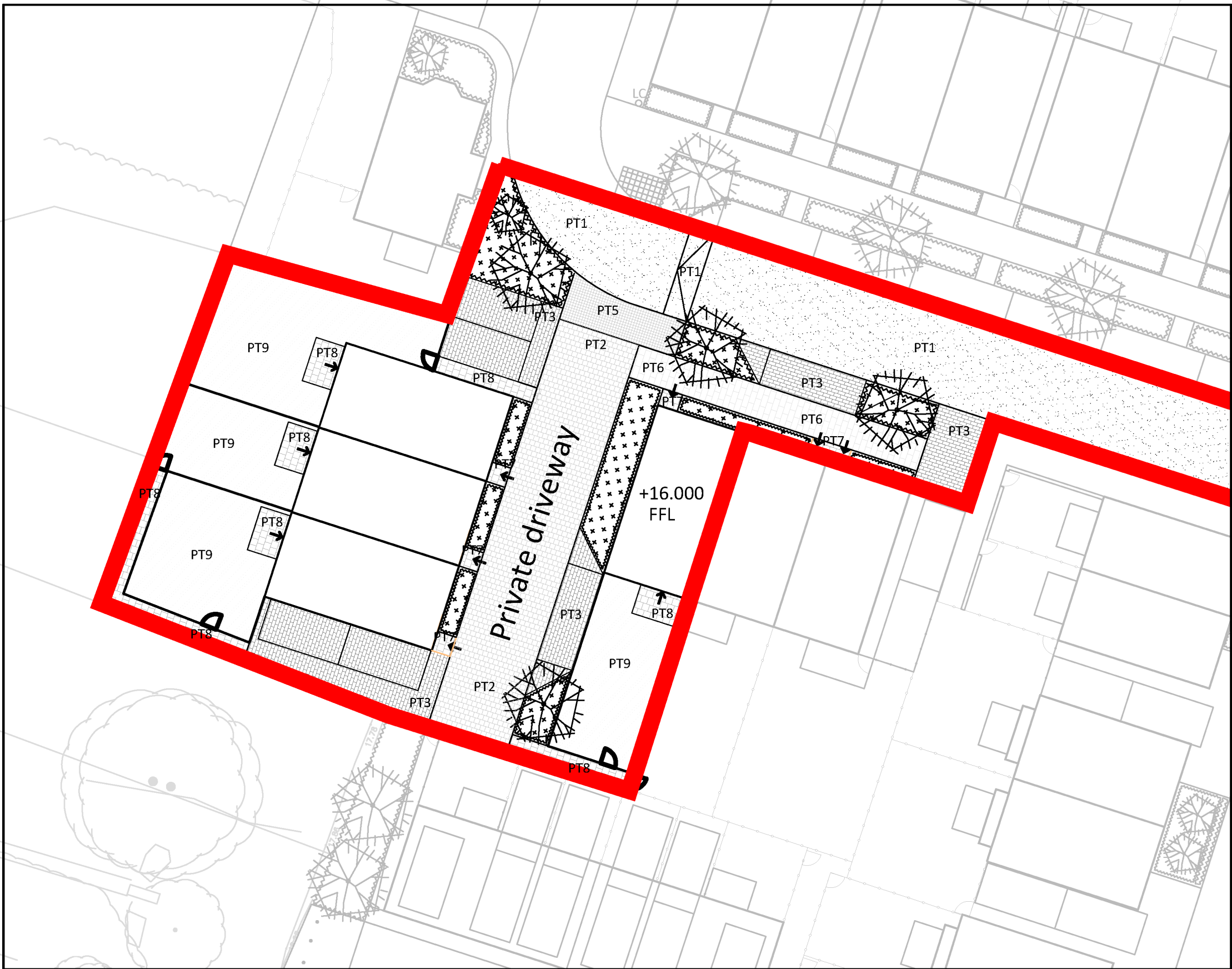
- HT 01 - MARKET SALE PRIVATE
- HT 02 - MARKET SALE PRIVATE
- HT 03 - MARKET SALE PRIVATE
- HT 04 - MARKET SALE PRIVATE
- HT 05 - MARKET SALE PRIVATE
- HT 06 - MARKET SALE PRIVATE
- HT 07 - MARKET SALE PRIVATE
- HT 08 - MARKET SALE PRIVATE
- HT 09 - MARKET SALE PRIVATE
- HT 10 - MARKET SALE PRIVATE
- HT 11 - MARKET SALE PRIVATE
- HT 12 - MARKET SALE PRIVATE
- HT 13 - MARKET SALE PRIVATE
- HT 14 - SHARED OWNERSHIP
- HT 15 - MARKET SALE PRIVATE
- HT 16 - MARKET SALE PRIVATE
- HT 17 - SHARED OWNERSHIP
- HT 18 - SHARED OWNERSHIP
- HT 19 - SHARED OWNERSHIP

- BLOCK A1 - AFFORDABLE RENT
- BLOCK A2 - AFFORDABLE RENT



C4	16/02/23	FH	BLOCK A1/A2 PARKING UPDATED TO LATEST PLANNING AMENDMENTS - 2 PARKING BAYS REMOVED. NEW PARKING BAY ADDED TO LEFT OF BLOCK A1 AND TWO SPACES ADDED BETWEEN BLOCK A1 & A2.
C3	23/11/22	FH	MATERIALS LEGEND UPDATED.
C2	11/07/22	FH	HOUSE TYPE LEGEND ADDED.
C1	13/06/22	FH	BRICK MATERIALS UPDATED. PROJECTING/RECESSED BRICK FEATURE NOTES ADDED.
T3	27/04/22	FH	MATERIALS KEY UPDATED TO INCLUDE REVISED GREY BRICK
T2	18/03/22	FH	PLOTS 122, 123 & 124 ADDED.
T1	02/07/21	FH	TENDER ISSUE.
P1	17/05/21	SPE	FIRST ISSUE.
Rev	Date	By	Description

PRINT IN COLOUR



LD-PLN-141 - Detailed General Arrangement

Notes
Do not scale from this drawing.
All dimensions are drawn in millimetres.
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Key
Site Boundary

Soft Landscape
Proposed Tree Planting
2m Min clear stem - refer to soft landscape plans
Proposed perennial and shrub planting to communal amenity spaces - refer to soft landscape plans

Hard Landscape
PT1 - Asphalt surface
Colour: Black - To Engineers Specification
PT2 - Concrete Block Paving to Type 4 Roads
Size: 240x160mm & 160x160mm
Colour: Pennant Grey, Bond: Random stagger (1/3 lap)
PT3 - Concrete Block Paving to Type 3 & 4 Street Parking & Driveways
Size: 160x120mm, Colour: Charcoal
Bond: Stretcher (1/2 lap)
PT4 - Concrete Block Paving to Raised Tables
Size: 200x100mm
Colour: Twilight (60%), Morning Light (40%)
Bond: Stretcher (1/2 lap)
PT5 - Concrete Block Paving to Ramps & Thresholds
Size: 160x160x160mm
Colour: Charcoal
Bond: Stack Bond
PT6 - Concrete Paving to Type 3 & 4 Footpaths
Size: 600x300mm
Colour: Textured Natural
Bond: Stretcher (1/2 lap)
PT7 - Concrete Paving to Housing Paths
Size: 450x450mm
Colour: French Grey
Bond: Stretcher (1/2 lap)
PT8 - Concrete Paver to Patio & Private Footpaths
Size: 450x450mm
Colour: Linen
Bond: Stack Bond
PT9 - Private Gardens

Rev	Date	Description	AWW	ALO
01	07.07.22	For Coordination		

0 5 10m

LUC

LUC London
250 Waterloo Road, London SE1 8RD
+44 (0)20 7383 5784
london@landuse.co.uk
www.landuse.co.uk

Project

Harbour Village at Ebbsfleet Garden City
Phase 1C Section 96a Application

Client

Bellway Homes Ltd (Thames Gateway)

Scale @A1

1:250

Status

FOR COORDINATION

Drawing Title

Additional 3 Dwellings
General Arrangement

Job Nr

10986

Drawing Nr

LD-PLN-140

Issue

P01

APPENDIX 2 ▪ Topsoil Source Data



Freeland Horticulture Ltd
Rosedale Nursery
College Road
Hextable
Kent BR8 7LT

Attention: Philippa Lambourne

Our Ref: SLC-1151-SA

19 April 2023

Dear Philippa

Topsoil Analysis Report: Bat & Ball, Sevenoaks Topsoil – April 2023

We have completed the analysis of the topsoil sample recently taken from the above site and it has been forwarded to an approved laboratory for analysis and have the pleasure of reporting our findings. The purpose of the analysis was to determine the suitability of the topsoil for general landscaping purposes and its compliance with the current British Standard for topsoil (BS3882).

SOIL SAMPLING & EXAMINATION

At the time of our sampling visit the topsoil was stored in a stockpile. A series of 10 hand augered trial holes were constructed across the stockpile for the purpose of soil examination and sample collection. As the soil examination confirmed a consistent topsoil composition, the ten samples were combined together to form one composite sample for analysis purposes. The soil was described as dark brown, slightly moist and friable with a well-developed, fine to medium granular structure. The soil contained a low fraction of small stones and no deleterious materials (eg. building waste materials, glass, roots or rhizomes of pernicious weeds) or unusual odours (eg. hydrocarbons) were recorded.

LABORATORY ANALYSIS

The topsoil sample was submitted to a UKAS and MCERTS accredited laboratory for routine physical and chemical parameters to confirm the composition and fertility of the soil. The following parameters were determined:

- ✦ pH & electrical conductivity values;
- ✦ major plant nutrients (N, P, K, Mg) & organic matter content;
- ✦ particle size distribution and stone content;
- ✦ heavy metals & potentially toxic elements (As, Cd, Cr, Cu, Pb, Hg, Ni, Se, Zn, B);
- ✦ sulphate, sulphur, sulphide;
- ✦ total cyanide and total (mono) phenols;
- ✦ speciated PAHs (US EPA16)
- ✦ banded aromatic and aliphatic petroleum hydrocarbons (C₆-C₃₅).
- ✦ Asbestos

The results are presented on the attached Certificate of Analysis and an interpretation of the results is given below.

Phone: 01322 619161;

Freeland horticulture Ltd, Registered in England: Rosedale Nursery, College Road, Hextable, Kent BR8 7LT
Company Registration No: 04015968

COMMENTS***pH & Electrical Conductivity (salinity) Values***

The sample was alkaline in nature (pH 8.5) with a pH value that would be considered suitable for general landscaping purposes.

The electrical conductivity (salinity) value using the soil/water extract was 1032µS/cm indicating that soluble salts are not present at levels that would be harmful to plants.

The electrical conductivity values by CaSO₄ extract (BS3882 requirement) fell below the maximum specified value (3300µS/cm) given in BS3882:2015.

Organic Matter & Nutrient Status

The sample was rich in organic matter and all major plant nutrients. No further additions of compost or fertiliser are required, or indeed recommended, for at least the first growing season.

The C:N ratio of the sample was acceptable for general landscape purposes

Particle Size Distribution & Stone Content

The sample contained 82% sand and fell into the sandy loam texture class. This particle size distribution is considered suitable for a broad range of landscape applications, including tree and shrub planting, turfing and seeding.

The sample was Virtually free from stones of 50 mm and upwards in diameter and only contained a slight fraction of smaller stones (2.3%). As such, stones will not restrict the use of the soil for landscaping purposes.

Potential Contaminants

We are not aware of any specified contaminant levels set for the proposed end-use of this topsoil. This includes human health, environmental protection and metals considered toxic to plants. In the absence of any site-specific assessment criteria, the concentrations that affect human health have been compared with the 'residential with homegrown produce' land use in the Suitable For Use Levels presented in 'The LQM/CIEH S4UIs' for Human Health Risk Assessment (2015) and DEFRA SP1010: 'Development of Category 4 Screening Levels' for Assessment of Land Affected by Contamination – Policy Companion Document (2014).

Of the potential contaminants determined, none was found at levels that would exceed their respective guideline values.

CONCLUSION

The purpose of the analysis was to determine the suitability of the topsoil for general landscaping purposes. From the soil examination and laboratory analysis, the soil is described as an alkaline, non-saline, sandy loam. The organic matter and nutrient levels are acceptable, and no significant contamination was found with respect to the parameters determined. This soil would adhere to the current BS3882 specification for 'multipurpose grade'.

To conclude, based on our findings, the topsoil would be considered well-suited to general landscaping purposes provided the physical condition of the soil is maintained.

We hope this report meets with your approval and provides the necessary information. Please do not hesitate to contact the undersigned if you have any queries or comments.

George Longmuir MSc Soil Sci. M.I Soil Sci.

Client	Freeland Horticulture Ltd
Job Name	Topsoil Analysis
Site	Ball & Ball, Sevenoaks
Month/Year	April 23
Our Ref	1151-SA
Date	19 April 2023

Composite sample

pH Value & Salinity

pH value (1:2.5 soil/water ext)	units	8.5
Electrical Conductivity (1:2.5 soil/water ext)	µS/cm	1032
Electrical Conductivity (1:2.5 soil/CaSO ₄ ext)	µS/cm	2793

Organic Matter & Nutrient Status

Organic Matter (LOI)	%	9.2
Organic Carbon (Derived)	%	5.3
Total Nitrogen	%	0.335
Carbon:Nitrogen Ratio	:1	16.0
Available Phosphorus	mg/l	51.8
Available Potassium	mg/l	1300
Available Magnesium	mg/l	182

Particle Size Analysis & Stones

Clay (<0.002mm)	%	9
Silt (0.063-0.002mm)	%	9
Sand (2.0-0.063mm)	%	81
Texture Class	UK Class	Silt loam

Stones 2-20mm	% by DW	2.3
Stones 20-50mm	% by DW	0.0
Stones >50mm	% by DW	0.0

Potential Contaminants

Total Arsenic (As)	mg/kg	12.8
Total Cadmium (Cd)	mg/kg	0.11
Total Chromium (Cr)	mg/kg	27.2
Hexavalent Chromium (Cr ^{VI})	mg/kg	0.2
Total Copper (Cu)	mg/kg	18.6
Total Lead (Pb)	mg/kg	34.6
Total Mercury (Hg)	mg/kg	<0.2
Total Nickel (Ni)	mg/kg	24.9
Total Selenium (Se)	mg/kg	0.18
Total Zinc (Zn)	mg/kg	64.4
Total Beryllium (Be)	mg/kg	<1
Total Barium (Ba)	mg/kg	28.5
Total Vanadium (V)	mg/kg	39.0
Hot Water Soluble Boron (B)	mg/kg	2.3
Total Cyanide (CN ⁻)	mg/kg	<1
Elemental Sulphur (S)	mg/kg	<5
Easily Liberated Sulphide (S ²⁻)	mg/kg	<1
Water Soluble Sulphate (SO ₄ ²⁻)	mg/l	100
Total Phenols Index	mg/kg	<1
Asbestos Screen	-	N.D.

Client	Freeland Horticulture Ltd
Job Name	Topsoil Analysis
Site	Bat & Ball, Sevenoaks
Month/Year	April 23
Our Ref	1151-SA
Date	19 April 2023

Polyaromatic Hydrocarbons

Naphthalene	mg/kg	<0.05
Acenaphthylene	mg/kg	<0.05
Acenaphthene	mg/kg	<0.05
Fluorene	mg/kg	<0.05
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.05
Fluoranthene	mg/kg	0.1
Pyrene	mg/kg	<0.1
Benzo[a]anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo[b]fluoranthene	mg/kg	<0.1
Benzo[k]fluoranthene	mg/kg	<0.1
Benzo[a]pyrene	mg/kg	<0.1
Indeno[1,2,3-cd]pyrene	mg/kg	<0.1
Dibenzo[a,h]anthracene	mg/kg	<0.1
Benzo[g,h,i]perylene	mg/kg	<0.1
Total PAHs sum US EPA 16	mg/kg	<1

Banded Petroleum Hydrocarbons

Aliphatic TPH >C ₅ -C ₈	mg/kg	<0.05
Aliphatic TPH >C ₉ -C ₉	mg/kg	<0.05
Aliphatic TPH >C ₉ -C ₁₀	mg/kg	<0.05
Aliphatic TPH >C ₁₀ -C ₁₂	mg/kg	<10
Aliphatic TPH >C ₁₂ -C ₁₆	mg/kg	<10
Aliphatic TPH >C ₁₆ -C ₂₁	mg/kg	<10
Aliphatic TPH >C ₂₁ -C ₃₅	mg/kg	34.0
Aliphatic TPH >C ₃₅ -C ₄₄	mg/kg	<12

Aromatic TPH >C ₉ -C ₇	mg/kg	<0.05
Aromatic TPH >C ₇ -C ₉	mg/kg	<0.05
Aromatic TPH >C ₉ -C ₁₀	mg/kg	<0.05
Aromatic TPH >C ₁₀ -C ₁₂	mg/kg	<10
Aromatic TPH >C ₁₂ -C ₁₆	mg/kg	<10
Aromatic TPH >C ₁₆ -C ₂₁	mg/kg	<10
Aromatic TPH >C ₂₁ -C ₃₅	mg/kg	34.0
Aromatic TPH >C ₃₅ -C ₄₄	mg/kg	<12

Total Petroleum Hydrocarbons (C ₇ -C ₄₄)	mg/kg	68.0
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BTEX

Benzene	mg/kg	<0.02
Toluene	mg/kg	<0.2
Ethyl Benzene	mg/kg	<0.04
m- & p-Xylene	mg/kg	<0.2
o-Xylene	mg/kg	<0.1

Chain of Custody requires a Freeland Horticulture Delivery Ticket-01322 619161

APPENDIX 3 ▪ Clean Cover Laboratory Analytical Certificates



Merebrook
1 St Anns Street
Manchester
M2 7LR

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
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e: reception@i2analytical.com

e: ttempt@idom.com

Analytical Report Number : 24-002937

Project / Site name:	Northfleet	Samples received on:	09/02/2024
Your job number:	17855CZ	Samples instructed on/ Analysis started on:	13/02/2024
Your order number:	24-2-FDO-LABS	Analysis completed by:	20/02/2024
Report Issue Number:	1	Report issued on:	20/02/2024
Samples Analysed:	12 soil samples		

Signed:

Joanna Schwagrak
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 24-002937
Project / Site name: Northfleet
Your Order No: 24-2-FDO-LABS

Lab Sample Number				116657	116658	116659	116660	116661
Sample Reference				Plot 122-test 1	Plot 122-test 1	Plot 122-test 2	Plot 122-test 2	Plot 123-test 1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.50	0.10	0.50	0.10
Date Sampled				02/02/2024	02/02/2024	02/02/2024	02/02/2024	02/02/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	12	13	11	14
Total mass of sample received	kg	0.1	NONE	0.5	0.4	0.5	0.6	0.5

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	PDO	PDO	PDO	PDO	PDO

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.2	8.1	8.3	7.8	8.5
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	100	49	99	24	100
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.05033	0.02423	0.04924	0.01173	0.05177
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	50.3	24.2	49.2	11.7	51.8
Organic Matter (automated)	%	0.1	MCERTS	4.2	0.3	3.6	0.1	3.3
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2.4	0.2	2.1	< 0.1	1.9

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.06	< 0.05	0.07	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.13	< 0.05	0.18	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.11	< 0.05	0.16	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.06	< 0.05	0.07	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.08	< 0.05	0.09	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.14	< 0.05	0.09	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.1	< 0.05	0.07	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenzo(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
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Analytical Report Number: 24-002937
Project / Site name: Northfleet
Your Order No: 24-2-FDO-LABS

Lab Sample Number	116657	116658	116659	116660	116661
Sample Reference	Plot 122-test 1	Plot 122-test 1	Plot 122-test 2	Plot 122-test 2	Plot 123-test 1
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.10	0.50	0.10	0.50	0.10
Date Sampled	02/02/2024	02/02/2024	02/02/2024	02/02/2024	02/02/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	20	16	20	17
Barium (aqua regia extractable)	mg/kg	1	MCERTS	44	25	42	23	35
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	30	37	38	37	40
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	30	37	38	37	40
Copper (aqua regia extractable)	mg/kg	1	MCERTS	16	4.7	16	3.6	10
Lead (aqua regia extractable)	mg/kg	1	MCERTS	23	5.8	18	4.9	15
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	19	21	21	21	22
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	52	67	61	67	64
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	58	26	52	25	47

Petroleum Hydrocarbons

TPHCWG - Aliphatic > C5 - C6 HS_ID_AL	mg/kg	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aliphatic > C6 - C8 HS_ID_AL	mg/kg	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aliphatic > C8 - C10 HS_ID_AL	mg/kg	0.05	NONE	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
TPHCWG - Aliphatic > C10 - C12 EH_CU_ID_AL_#1_#2	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic > C12 - C16 EH_CU_ID_AL_#1_#2	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aliphatic > C16 - C21 EH_CU_ID_AL_#1_#2	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic > C21 - C35 EH_CU_ID_AL_#1_#2	mg/kg	8	MCERTS	11	< 8.0	14	< 8.0	17
TPHCWG - Aliphatic > C35 - C40 EH_CU_ID_AL_#1_#2	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPHCWG - Aliphatic > C5 - C35 EH_CU+HS_ID_AL_#1_#2	mg/kg	10	NONE	11	< 10	14	< 10	17
TPHCWG - Aliphatic > C5 - C40 EH_CU+HS_ID_AL_#1_#2	mg/kg	10	NONE	11	< 10	14	< 10	17

TPHCWG - Aromatic > EC5 - EC7 HS_ID_AR	mg/kg	0.01	NONE	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic > EC7 - EC8 HS_ID_AR	mg/kg	0.01	NONE	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic > EC8 - EC10 HS_ID_AR	mg/kg	0.05	NONE	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
TPHCWG - Aromatic > EC10 - EC12 EH_CU_ID_AR_#1_#2	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic > EC12 - EC16 EH_CU_ID_AR_#1_#2	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aromatic > EC16 - EC21 EH_CU_ID_AR_#1_#2	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPHCWG - Aromatic > EC21 - EC35 EH_CU_ID_AR_#1_#2	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	10
TPHCWG - Aromatic > EC35 - EC40 EH_CU_ID_AR_#1_#2	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPHCWG - Aromatic > EC5 - EC35 EH_CU+HS_ID_AR_#1_#2	mg/kg	10	NONE	< 10	< 10	< 10	< 10	10
TPHCWG - Aromatic > EC5 - EC40 EH_CU+HS_ID_AR_#1_#2	mg/kg	10	NONE	< 10	< 10	< 10	< 10	10

TPH Total > C5 - C40 EH_CU+HS_ID_TOTAL_#1_#2	mg/kg	10	NONE	11	< 10	14	< 10	27
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VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-002937
Project / Site name: Northfleet
Your Order No: 24-2-FDO-LABS

Lab Sample Number	116662	116663	116664	116665	116666
Sample Reference	Plot 123-test 1	Plot 123-test 2	Plot 123-test 2	Plot 124-test 1	Plot 124-test 1
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.10	0.50	0.10	0.50
Date Sampled	02/02/2024	02/02/2024	02/02/2024	02/02/2024	02/02/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	11	13	12	13	11
Total mass of sample received	kg	0.1	NONE	0.6	0.5	0.6	0.5	0.6

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	PDO	PDO	PDO	PDO	PDO

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.4	8.2	8.2	8.3	8.1
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	130	87	100	95	150
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0635	0.0433	0.05095	0.04731	0.07305
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	63.5	43.3	51	47.3	73.1
Organic Matter (automated)	%	0.1	MCERTS	0.6	3.6	0.6	3.7	0.4
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.3	2.1	0.4	2.2	0.2

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.31	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.22	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	0.06	< 0.05	4.1	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.8	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.16	< 0.05	5.8	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	0.14	< 0.05	4.7	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	2.3	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	1.9	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	2.7	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	0.79	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	2.2	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	1.1	< 0.05
Dibenzo(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.27	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	1.3	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	< 0.80	< 0.80	28.4	< 0.80
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Analytical Report Number: 24-002937
Project / Site name: Northfleet
Your Order No: 24-2-FDO-LABS

Lab Sample Number				116662	116663	116664	116665	116666
Sample Reference				Plot 123-test 1	Plot 123-test 2	Plot 123-test 2	Plot 124-test 1	Plot 124-test 1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.10	0.50	0.10	0.50
Date Sampled				02/02/2024	02/02/2024	02/02/2024	02/02/2024	02/02/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	15	20	16	22
Barium (aqua regia extractable)	mg/kg	1	MCERTS	29	38	29	42	31
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	32	32	38	35	39
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	32	32	38	35	39
Copper (aqua regia extractable)	mg/kg	1	MCERTS	4.8	13	4.7	13	11
Lead (aqua regia extractable)	mg/kg	1	MCERTS	8.3	18	7.9	19	7.5
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	19	20	22	20	22
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	60	56	69	60	72
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	27	47	31	51	29

Petroleum Hydrocarbons

TPHCWG - Aliphatic > C5 - C6 HS_ID_AL	mg/kg	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aliphatic > C6 - C8 HS_ID_AL	mg/kg	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aliphatic > C8 - C10 HS_ID_AL	mg/kg	0.05	NONE	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
TPHCWG - Aliphatic > C10 - C12 EH_CU_ID_AL_#1_#2	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic > C12 - C16 EH_CU_ID_AL_#1_#2	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aliphatic > C16 - C21 EH_CU_ID_AL_#1_#2	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic > C21 - C35 EH_CU_ID_AL_#1_#2	mg/kg	8	MCERTS	< 8.0	16	< 8.0	16	< 8.0
TPHCWG - Aliphatic > C35 - C40 EH_CU_ID_AL_#1_#2	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPHCWG - Aliphatic > C5 - C35 EH_CU+HS_ID_AL_#1_#2	mg/kg	10	NONE	< 10	16	< 10	16	< 10
TPHCWG - Aliphatic > C5 - C40 EH_CU+HS_ID_AL_#1_#2	mg/kg	10	NONE	< 10	16	< 10	16	< 10

TPHCWG - Aromatic > EC5 - EC7 HS_ID_AR	mg/kg	0.01	NONE	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic > EC7 - EC8 HS_ID_AR	mg/kg	0.01	NONE	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic > EC8 - EC10 HS_ID_AR	mg/kg	0.05	NONE	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
TPHCWG - Aromatic > EC10 - EC12 EH_CU_ID_AR_#1_#2	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic > EC12 - EC16 EH_CU_ID_AR_#1_#2	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	4.1	< 2.0
TPHCWG - Aromatic > EC16 - EC21 EH_CU_ID_AR_#1_#2	mg/kg	10	MCERTS	< 10	< 10	< 10	22	< 10
TPHCWG - Aromatic > EC21 - EC35 EH_CU_ID_AR_#1_#2	mg/kg	10	MCERTS	< 10	< 10	< 10	46	< 10
TPHCWG - Aromatic > EC35 - EC40 EH_CU_ID_AR_#1_#2	mg/kg	10	NONE	< 10	< 10	< 10	10	< 10
TPHCWG - Aromatic > EC5 - EC35 EH_CU+HS_ID_AR_#1_#2	mg/kg	10	NONE	< 10	< 10	< 10	72	< 10
TPHCWG - Aromatic > EC5 - EC40 EH_CU+HS_ID_AR_#1_#2	mg/kg	10	NONE	< 10	< 10	< 10	82	< 10

TPH Total > C5 - C40 EH_CU+HS_ID_TOTAL_#1_#2	mg/kg	10	NONE	< 10	16	< 10	98	< 10
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VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-002937

Project / Site name: Northfleet

Your Order No: 24-2-FDO-LABS

Lab Sample Number	116667	116668
Sample Reference	Plot 124-test 2	Plot 124-test 2
Sample Number	None Supplied	None Supplied
Depth (m)	0.10	0.50
Date Sampled	02/02/2024	02/02/2024
Time Taken	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection
		Accreditation Status

Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	13	11
Total mass of sample received	kg	0.1	NONE	0.5	0.6

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	PDO	PDO

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.1	8.1
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	90	32
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.04482	0.0161
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	44.8	16.1
Organic Matter (automated)	%	0.1	MCERTS	4	0.5
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2.3	0.3

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.07	0.08
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.14	0.23
Pyrene	mg/kg	0.05	MCERTS	0.13	0.23
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.05	0.09
Chrysene	mg/kg	0.05	MCERTS	0.07	0.08
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.08	0.12
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.11
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Dibenzo(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	0.94
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Analytical Report Number: 24-002937
Project / Site name: Northfleet
Your Order No: 24-2-FDO-LABS

Lab Sample Number	116667	116668
Sample Reference	Plot 124-test 2	Plot 124-test 2
Sample Number	None Supplied	None Supplied
Depth (m)	0.10	0.50
Date Sampled	02/02/2024	02/02/2024
Time Taken	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection
		Accreditation Status

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	18
Barium (aqua regia extractable)	mg/kg	1	MCERTS	46	28
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	34	30
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	34	30
Copper (aqua regia extractable)	mg/kg	1	MCERTS	16	8.6
Lead (aqua regia extractable)	mg/kg	1	MCERTS	25	6.2
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	35	19
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	59	59
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	52	27

Petroleum Hydrocarbons

TPHCWG - Aliphatic > C5 - C6 HS_ID_AL	mg/kg	0.02	NONE	< 0.020	< 0.020
TPHCWG - Aliphatic > C6 - C8 HS_ID_AL	mg/kg	0.02	NONE	< 0.020	< 0.020
TPHCWG - Aliphatic > C8 - C10 HS_ID_AL	mg/kg	0.05	NONE	< 0.050	< 0.050
TPHCWG - Aliphatic > C10 - C12 EH_CU_ID_AL_#1_#2	mg/kg	1	MCERTS	< 1.0	< 1.0
TPHCWG - Aliphatic > C12 - C16 EH_CU_ID_AL_#1_#2	mg/kg	2	MCERTS	< 2.0	< 2.0
TPHCWG - Aliphatic > C16 - C21 EH_CU_ID_AL_#1_#2	mg/kg	8	MCERTS	< 8.0	< 8.0
TPHCWG - Aliphatic > C21 - C35 EH_CU_ID_AL_#1_#2	mg/kg	8	MCERTS	10	< 8.0
TPHCWG - Aliphatic > C35 - C40 EH_CU_ID_AL_#1_#2	mg/kg	10	NONE	< 10	< 10
TPHCWG - Aliphatic > C5 - C35 EH_CU+HS_ID_AL_#1_#2	mg/kg	10	NONE	< 10	< 10
TPHCWG - Aliphatic > C5 - C40 EH_CU+HS_ID_AL_#1_#2	mg/kg	10	NONE	< 10	< 10

TPHCWG - Aromatic > EC5 - EC7 HS_ID_AR	mg/kg	0.01	NONE	< 0.010	< 0.010
TPHCWG - Aromatic > EC7 - EC8 HS_ID_AR	mg/kg	0.01	NONE	< 0.010	< 0.010
TPHCWG - Aromatic > EC8 - EC10 HS_ID_AR	mg/kg	0.05	NONE	< 0.050	< 0.050
TPHCWG - Aromatic > EC10 - EC12 EH_CU_ID_AR_#1_#2	mg/kg	1	MCERTS	< 1.0	< 1.0
TPHCWG - Aromatic > EC12 - EC16 EH_CU_ID_AR_#1_#2	mg/kg	2	MCERTS	< 2.0	< 2.0
TPHCWG - Aromatic > EC16 - EC21 EH_CU_ID_AR_#1_#2	mg/kg	10	MCERTS	< 10	< 10
TPHCWG - Aromatic > EC21 - EC35 EH_CU_ID_AR_#1_#2	mg/kg	10	MCERTS	< 10	< 10
TPHCWG - Aromatic > EC35 - EC40 EH_CU_ID_AR_#1_#2	mg/kg	10	NONE	< 10	< 10
TPHCWG - Aromatic > EC5 - EC35 EH_CU+HS_ID_AR_#1_#2	mg/kg	10	NONE	< 10	< 10
TPHCWG - Aromatic > EC5 - EC40 EH_CU+HS_ID_AR_#1_#2	mg/kg	10	NONE	< 10	< 10

TPH Total > C5 - C40 EH_CU+HS_ID_TOTAL_#1_#2	mg/kg	10	NONE	< 10	< 10
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VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 24-002937

Project / Site name: Northfleet

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
116657	Plot 122-test 1	None Supplied	0.1	Brown loam and clay with gravel and vegetation
116658	Plot 122-test 1	None Supplied	0.5	Brown loam and clay with gravel
116659	Plot 122-test 2	None Supplied	0.1	Brown loam with gravel and vegetation
116660	Plot 122-test 2	None Supplied	0.5	Brown loam and clay
116661	Plot 123-test 1	None Supplied	0.1	Brown loam with gravel and vegetation
116662	Plot 123-test 1	None Supplied	0.5	Brown loam and clay
116663	Plot 123-test 2	None Supplied	0.1	Brown loam with gravel and vegetation
116664	Plot 123-test 2	None Supplied	0.5	Brown loam and clay with gravel
116665	Plot 124-test 1	None Supplied	0.1	Brown loam with gravel and vegetation
116666	Plot 124-test 1	None Supplied	0.5	Brown loam and clay with gravel
116667	Plot 124-test 2	None Supplied	0.1	Brown loam with gravel and vegetation
116668	Plot 124-test 2	None Supplied	0.5	Brown loam and clay with gravel

Analytical Report Number : 24-002937

Project / Site name: Northfleet

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088	D/W	MCERTS
Chromium III in soil	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080	W	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099	D	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

APPENDIX 4 ▪ Photographs: Formation Level



Plate 1: Phase 1B – formation level



Plate 2: Phase 1B – formation level



Plate 3: Phase 1B – formation level



Plate 4: Phase 1B – formation level

APPENDIX 5 ▪ Photographs: Clean Cover Validation



Plate 1: Plot 122 general view



Plate 2: Plot 122 clean cover thickness



Plate 3: Plot 123 general view



Plate 4: Plot 123 clean cover thickness



Plate 5: Plot 124 general view



Plate 6: Plot 124 clean cover thickness

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