



## Technical Note

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|------------|--|---------------------|-----------------|
| <b>To:</b> | Frank Cowell<br>Project Manager<br>JJ Rhatigan Limited<br>Anna House<br>214-218 High Road<br>Seven Sisters<br>London N15 4NP | <b>Date:</b>        | 14 May 2025     |
|            |  | <b>Turnkey ref:</b> | 0112-TN003i4    |
|            |  | <b>Author:</b>      | Kene Onwubuya   |
|            |  | <b>Reviewed:</b>    | Dave Rutherford |

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**Title:** CTC, Hayes – Blocks E and F Addendum Verification Report

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### 1 Introduction

JJ Rhatigan instructed Turnkey Regeneration Limited (Turnkey) to prepare an addendum Verification Report at their CTC Hayes site. This report is 'Issue 4', following further assessment of chemical data from imported topsoil used in Blocks E & F.

This addendum report is specific for Blocks E and F and provides an update to the site-wide Verification Report referenced below:

- Turnkey Verification Report (Final). Crown Trading Centre, Hayes. Ref: 0112-R002i3. Dated: March 2025

As part of the requirements set out in the Remediation Method Statement (RMS)<sup>1</sup>, verification of the clean cover to be placed as part of soft landscaping is required, underlain by a marker layer when at ground level. Landscaping is subject to the ground level and also at podium level in planters – the layouts, also showing block areas, is presented in Appendix A for these levels. The landscaping to the west of Block E will be fenced off (inaccessible to future residents as it will be part of the construction site) and handed over with another block; this slight variation to the block plan is shown in Appendix A (see third drawing).

For clarity, all works regarding contamination-related conditions are complete for these two blocks.

#### 1.1 Regulatory Context

The primary objective of this addendum Verification Report is to seek partial discharge of Planning Condition 36iii and iv (Ref: Hillingdon 73955/APP/2022/3516) for the CTC Hayes development as outlined below:

*(iii) Upon completion of the approved remedial works, this condition will not be discharged until a comprehensive verification report has been submitted to and approved by the LPA. The report shall include the details of the final remediation works and their verification to show that the works for each phase have been carried out in full and in accordance with the approved methodology.*

*(iv) No contaminated soils or other materials shall be imported to the site. All imported soils for landscaping purposes shall be clean and free of contamination.*

*Before any part of the development is occupied, all imported soils shall be independently tested for chemical contamination, and the results of this testing shall be submitted and approved in writing by the Local Planning Authority. All soils used for gardens and/or landscaping purposes shall be clean and free of contamination.*

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<sup>1</sup> Turnkey Remediation Statement (Final). Crown Trading Centre, Hayes. Ref: 0097-R002i3. Dated: May 2023

## REASON

*To ensure that risks from land contamination to the future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems and the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors in accordance with 'Hillingdon Local Plan: Part 2 (January 2020) Policies – DME1 11: Protection of Ground Water Resources and DME1 12: Development of Land Affected by Contamination'*

Planning Condition 36i was discharged in 2023 and it is understood that Turnkey's recent verification report discharged Planning Condition 36ii.

### 1.2 Objectives

The objectives of this addendum Verification Report are summarised below:

- Partial discharge of Planning Condition 36ii, iii & iv of planning permission 73955/APP/2022/3516 (wording updated via Non Material Amendment reference: 73955/APP/2025/604).
- ensure any identified potential pollutant linkages are broken or will be broken on completion of the works across sectional areas; and
- comply with all relevant planning conditions and ensure works are carried out in a suitable manner to discharge relevant planning conditions.

The report has been completed in accordance with Land Contamination: Risk Management (issued October 2020 and updated July 2023).

## 2 Topsoil and Soft Landscaping Verification

Topsoil to be utilised within Blocks E and F as a clean cover layer comprises is supplied from two sources:

- Boughton Loam Ltd. Telford Way. Kettering. Northamptonshire NN16 8UN
- Springfield Direct Ltd. Denham. Middlesex UB9 4DF

Supplier documentation is presented in Appendix A. JJ Rhatigan also supplied Turnkey with certification from the supplier confirming that the soils complied with the chemical thresholds set in the verification criteria and those set out in BS3882 Specification for Topsoil.

The imported topsoil is to be used within plant boxes and soft landscaping areas within Blocks E and F.

To refresh on the frequency of sampling, 1 sample per 100m<sup>3</sup> for the first 500m<sup>3</sup> and then every 500m<sup>3</sup> for further import, should the source be consistent.

### 2.1 Verification Testing of Imported Soil

The following sections are reported in the chronological order that topsoil was imported.

#### 2.1.1 Block F

Based on information provided by JJ Rhatigan, the volume of topsoil imported for use in Block F was 275m<sup>3</sup>. An initial 6 no. samples of the topsoil so far delivered to site were collected for testing (3 no. from each source, meaning there was flexibility on where each was used and represent adequate quota to also partially represent topsoil used in Block E). The contractor deemed these to be representative of the Block F topsoil, i.e. negating the need for further sampling/testing.

The samples were analysed for the suite of contaminants listed in the RMS including heavy metals, PAHs, speciated TPH, other organics and asbestos. This is with the exception of 1 no. sample (TS3-03) where a marginal exceedance of vanadium (84mg/kg vs screening criteria of 82mg/kg, which is 2.4%) was recorded. This is not considered a significant issue (see Section 2.2 for further justification). Asbestos was not identified in any of the samples analysed.

The analytical data was screened against the RMS verification criteria for imported material with no exceedances identified in majority of the samples. This is with the exception of 2 no. samples (TS2-01 and TS2-03) from the same source where very marginal exceedances of boron (3.1mg/kg vs screening criteria of 3.0mg/kg, which is 3.1%) was recorded. This is not considered to be a significant issue (see Section 2.2 for further justification). Asbestos was not identified in any of the samples analysed.

The verification screening exercise is reported in Appendix B with the laboratory certificates of analysis provided in Appendix C.

### 2.1.2 Block E

The maximum volume of topsoil imported for use in Block E is ~380m<sup>3</sup>, as confirmed by JJ Rhatigan. To build on what was sampled to represent Block F, a further 3 no. samples of the material were collected that the contractor deemed to be representative of the Block E topsoil material, thus negating the requirement for further sampling/testing. In addition, some imported sand was utilised in planters at podium level and therefore 1 no. representative sample (sample ref. SS01-01) of this material was collected for record purposes<sup>2</sup>.

The samples were analysed for the suite of contaminants listed in the RMS including heavy metals, polycyclic aromatic hydrocarbons (PAHs), speciated total petroleum hydrocarbons (TPH), other organics and asbestos.

The analytical data was screened against the RMS verification criteria for imported material with no exceedances identified in majority of the samples.

The verification screening exercise is reported in Appendix B with the laboratory certificates of analysis provided in Appendix C.

## 2.2 Justification for use of topsoil with marginal boron and vanadium exceedances

Following the marginal exceedances recorded for boron and vanadium (as indicated in Section 2.1), it is imperative to provide justification to show that these exceedances are not detrimental to human health – these points are outlined below.

### 2.2.1 Statistical analysis

It is possible to undertake statistical analysis under planning using the UCL95 approach in line with the CL:AIRE Statistical Guidance<sup>3</sup>, which is a conservative approach (e.g. when compared to Part 2A, which uses LCL95). This assessment was undertaken for the two contaminants (boron and vanadium), which recorded exceedances of the RMS verification criteria for imported material. The outputs from the calculations are outlined below:

- Boron – UCL95 = 2.82mg/kg versus screening criteria of 3.0mg/kg
- Vanadium – UCL95 = 54.88mg/kg versus screening criteria of 82mg/kg

From the above, the UCL95 values are below the RMS verification criteria. This means that the topsoil is suitable for its intended use without further action.

Additional information on the assessment is presented in Appendix B.

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<sup>2</sup> This material does not constitute part of the required thickness of topsoil in locations where it was used.

<sup>3</sup> CL:AIRE (2008); Guidance on Comparing Soil Contamination Data with a Critical Concentration

## 2.2.2 Derivation of cover layer and import verification criteria

Under typical circumstances, in order to identify potential contaminants of concern (CoC), soil analytical data is screened against Land Quality Management Suitable 4 Use Levels (S4UL)<sup>4,5</sup> generic assessment criteria (GAC) for public open space – residential<sup>6</sup> (POSresi) and residential - with homegrown produce (Resi hgp)<sup>7</sup> end use.

However, in order to be conservative and reduce the potential for increasing the contaminant load on the site (via importation of material with high concentrations), some of the RMS verification criteria were derived using historic concentrations recorded at the site, i.e. lower than the S4UL GAC. This rationale is presented in Appendix C2 of the Remediation Statement. The criteria for boron and vanadium were based on “twice site-wide average” of concentrations recorded on the site.

For completeness, the topsoil concentrations have now also been screened against the S4UL GACs for both POSresi and Resihgp, with no exceedances recorded (including for the two compounds under consideration).

In addition, the mean concentrations for each compound were also calculated with the resulting concentrations below all the screening criteria, including the RMS verification criteria and the S4UL for POSresi and Resihgp.

A breakdown of the comparison for boron and vanadium is outlined in Table 2.1 below with the full screening spreadsheet provided in Appendix B.

Table 2.1: Boron and vanadium comparison against various screening criteria

| Contaminant | Recorded Concentration (mg/kg) | UCL (mg/kg) | Mean Concentration (mg/kg) | Site Derived GAC (mg/kg) | S4UL GAC (POSresi) <sup>8</sup> mg/kg | S4UL GAC (Resihgp) <sup>8</sup> mg/kg |
|-------------|--------------------------------|-------------|----------------------------|--------------------------|---------------------------------------|---------------------------------------|
| Boron       | 3.1                            | 2.82        | 2.35                       | 3.0                      | 290                                   | 21,000                                |
| Vanadium    | 84                             | 54.88       | 39.20                      | 82                       | 410                                   | 2000                                  |

Based on the above evidence, we can conclude that the topsoil utilised in the development is suitable for intended use with no detriment to human health.

## 2.3 Verification of Thickness of Clean Cover

There is a requirement to confirm that 600mm thickness of clean cover (i.e. imported topsoil) was installed within soft landscaping areas in Blocks E and F, as indicated in the RMS. Where laid on site won soils, a marker layer (e.g. terram) should be laid prior to topsoil being laid.

The contractor has verified that the recommended 600mm thick topsoil was placed across the soft landscaping areas. Example photos are presented in Appendix D. The only exception to this is within the footprint of installed below ground utilities where a reduced thickness of topsoil has been installed (typically 300-450mm).

<sup>4</sup> LQM/CIEH S4ULs (2015) for Human Health Risk Assessment (Copyright Land Quality Management Limited reproduced with permission); publication number S4UL3759.

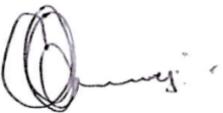
<sup>5</sup> Category 4 Screening Levels (C4SL) will sometimes be considered in screening contaminant concentrations but there are no C4SL values for a number of contaminants (including boron and vanadium) and therefore S4UL is generally utilised.

<sup>6</sup> This is the end use of the development based on conceptual site model submitted for Planning

<sup>7</sup> This is considered the most conservative S4UL GAC

<sup>8</sup> The screening criteria was developed with the following assumptions which have been changed from the CLEA default parameter set. Soil type is a sandy loam with an organic matter content of 1%. This is considered to be more conservative than the CLEA default of 6%.

Site photographs showing the topsoil and marker layer placement is presented in Appendix D.

|                        |  |
|------------------------|--|
| <b>Author:</b>         | <br>..... |
| <b>Kene Onwubuya</b>   |  |
| <b>Reviewer:</b>       | <br>..... |
| <b>Dave Rutherford</b> |  |

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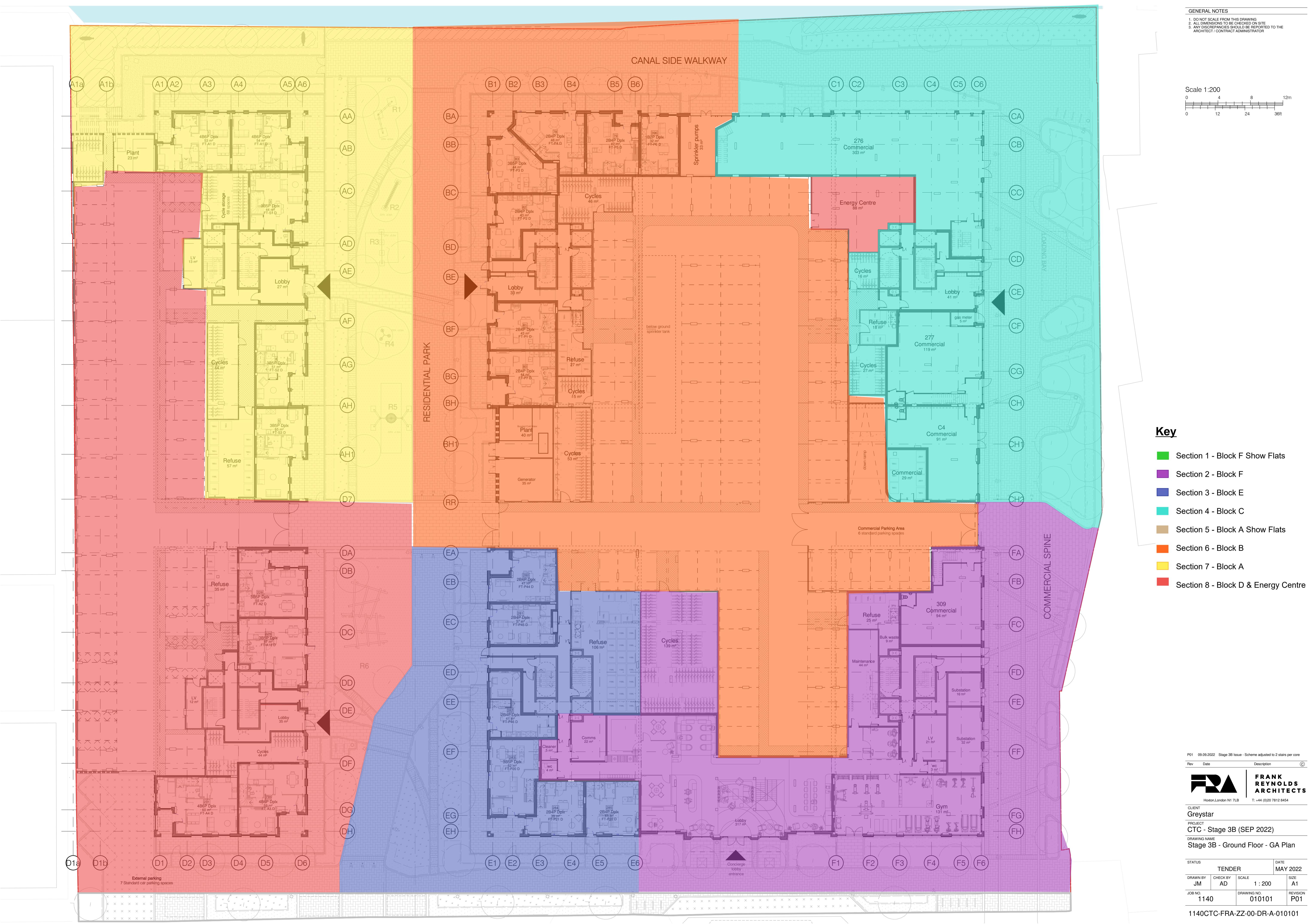
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## Appendix A – Supporting Documentation





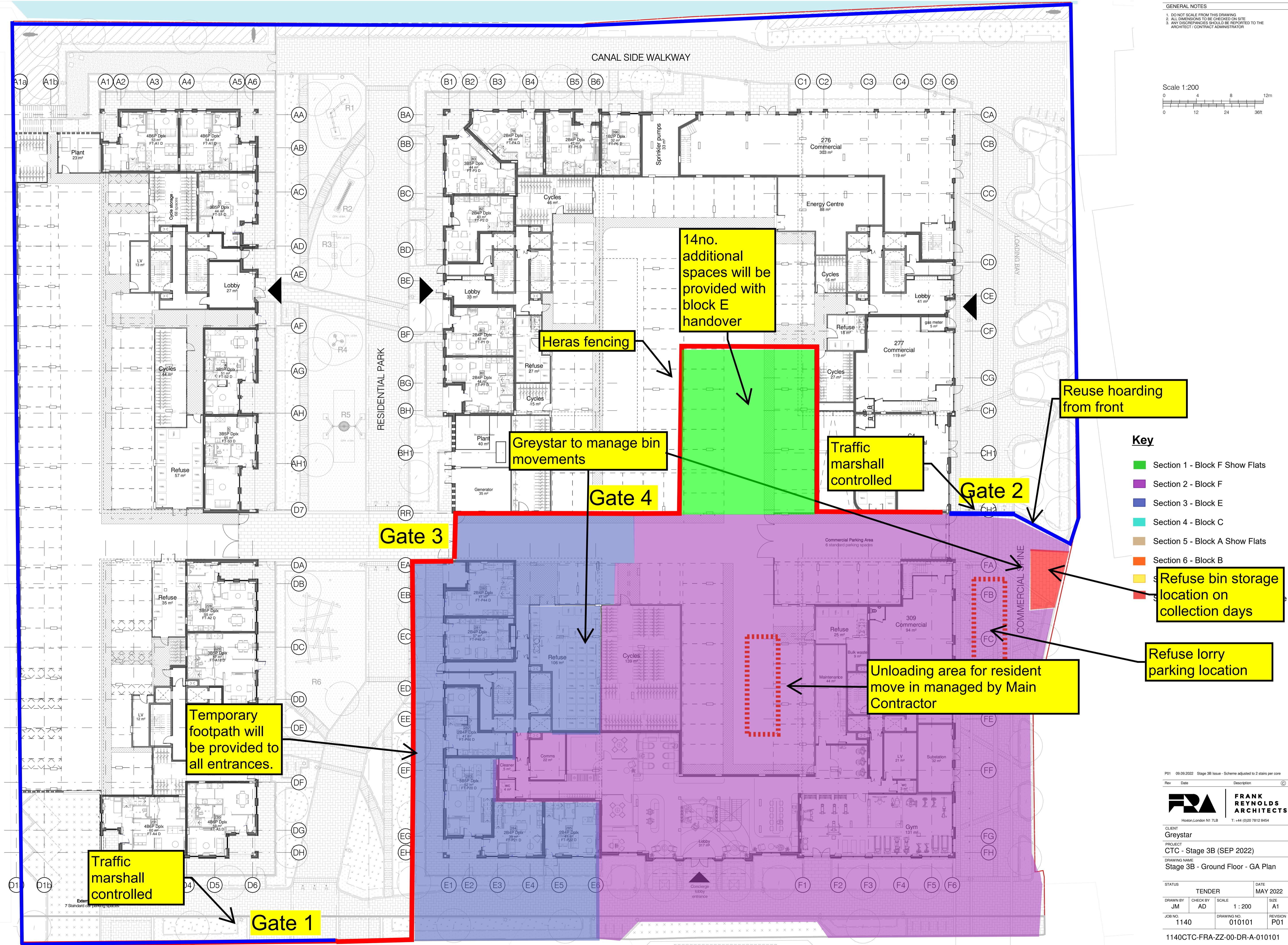
GENERAL NOTES  
 1. DO NOT SCALE FROM THIS DRAWING  
 2. ALL DIMENSIONS TO BE CHECKED ON SITE  
 3. ALL DIMENSIONS ARE IN METRES AND ARE REFERRED TO THE  
 ARCHITECT / CONTRACT ADMINISTRATOR

Scale 1:200  
 0 4 8 12 24 36ft 12m

### Key

- Section 1 - Block F Show Flats
- Section 2 - Block F
- Section 3 - Block E
- Section 4 - Block C
- Section 5 - Block A Show Flats
- Section 6 - Block B
- Section 7 - Block A
- Section 8 - Block D & Energy Centre

P01 09.09.2022 Stage 3B Issue - Scheme adjusted to 2 stairs per core  
 Rev Date Description  
 FRA Frank Reynolds Architects  
 Hoxton, London N1 7LB T: +44 (0)20 7812 8454  
 CLIENT Greystar  
 PROJECT CTC - Stage 3B (2022)  
 DRAWING NAME Stage 3B - First Floor  
 STATUS TENDER DATE MAY 2022  
 DRAWN BY JM CHECK BY AD SCALE 1:200 SIZE A1  
 JOB NO. 1140 DRAWING NO. 010103 REVISION P01  
 1140CTC-FRA-ZZ-01-DR-A-010103





## Amended Report

|                               |   |                            |             |
|-------------------------------|---|----------------------------|-------------|
| <b>Report No.:</b>            | 25-02435-2  |                            |             |
| <b>Initial Date of Issue:</b> | 10-Feb-2025   | <b>Date of Re-Issue:</b>   | 10-Feb-2025 |
| <b>Re-Issue Details:</b>      | This report has been revised and directly supersedes 25-02435-1 in its entirety |                            |             |
| <b>Client</b>                 | Springbridge Direct Ltd   |                            |             |
| <b>Client Address:</b>        | Oxford Road<br>Denham<br>Middlesex<br>UB9 4DF                                   |                            |             |
| <b>Contact(s):</b>            | Tom Hawkins   |                            |             |
| <b>Project</b>                | Springbridge Yard   |                            |             |
| <b>Quotation No.:</b>         | Q25-37158   | <b>Date Received:</b>      | 24-Jan-2025 |
| <b>Order No.:</b>             |   | <b>Date Instructed:</b>    | 24-Jan-2025 |
| <b>No. of Samples:</b>        | 2   |                            |             |
| <b>Turnaround (Wkdays):</b>   | 10  | <b>Results Due:</b>        | 06-Feb-2025 |
| <b>Date Approved:</b>         | 07-Feb-2025   | <b>Subcon Results Due:</b> | 06-Feb-2025 |

**Approved By:**

**Details:** David Smith, Technical Director

**For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report**

## Results - Soil

Project: Springbridge Yard

| Client: Springbridge Direct Ltd |           | Chemtest Job No.: 25-02435   |             |       |        |
|---------------------------------|-----------|------------------------------|-------------|-------|--------|
| Quotation No.: Q25-37158        |           | Chemtest Sample ID.: 1922378 |             |       |        |
| Order No.:                      |           | Client Sample Ref.:          | Topsoil     |       |        |
|                                 |           | Client Sample ID.:           | Top         |       |        |
|                                 |           | Sample Type:                 | SOIL        |       |        |
|                                 |           | Date Sampled:                | 22-Jan-2025 |       |        |
|                                 |           | Time Sampled:                | 11:26       |       |        |
|                                 |           | Asbestos Lab:                | DURHAM      |       |        |
| Determinand                     | HWOL Code | Accred.                      | SOP         | Units | LOD    |
| ACM Type                        |           | U                            | 2192        |       | N/A    |
| Asbestos Identification         |           | U                            | 2192        |       | N/A    |
| Moisture                        |           | N                            | 2030        | %     | 0.020  |
| Soil Colour                     |           | N                            | 2040        |       | N/A    |
| Other Material                  |           | N                            | 2040        |       | N/A    |
| Soil Texture                    |           | N                            | 2040        |       | N/A    |
| Boron (Hot Water Soluble)       |           | M                            | 2120        | mg/kg | 0.40   |
| Cyanide (Total)                 |           | M                            | 2300        | mg/kg | 0.50   |
| Arsenic                         |           | M                            | 2455        | mg/kg | 0.5    |
| Cadmium                         |           | M                            | 2455        | mg/kg | 0.10   |
| Chromium                        |           | M                            | 2455        | mg/kg | 0.5    |
| Copper                          |           | M                            | 2455        | mg/kg | 0.50   |
| Mercury                         |           | M                            | 2455        | mg/kg | 0.05   |
| Nickel                          |           | M                            | 2455        | mg/kg | 0.50   |
| Lead                            |           | M                            | 2455        | mg/kg | 0.50   |
| Selenium                        |           | M                            | 2455        | mg/kg | 0.25   |
| Zinc                            |           | M                            | 2455        | mg/kg | 0.50   |
| Chromium (Hexavalent)           |           | N                            | 2490        | mg/kg | 0.50   |
|                                 |           |                              |             |       | < 0.50 |

## Results - Soil

**Project: Springbridge Yard**

| <b>Client: Springbridge Direct Ltd</b> |                  | <b>Chemtest Job No.:</b>    |            |              | 25-02435    |
|--|------------------|-----------------------------|------------|--------------|-------------|
| Quotation No.: Q25-37158               |                  | <b>Chemtest Sample ID.:</b> |            |              | 1922378     |
| Order No.:                             |                  | <b>Client Sample Ref.:</b>  |            |              | Topsoil     |
|  |                  | <b>Client Sample ID.:</b>   |            |              | Top         |
|  |                  | <b>Sample Type:</b>         |            |              | SOIL        |
|  |                  | <b>Date Sampled:</b>        |            |              | 22-Jan-2025 |
|  |                  | <b>Time Sampled:</b>        |            |              | 11:26       |
|  |                  | <b>Asbestos Lab:</b>        |            |              | DURHAM      |
| <b>Determinand</b>                     | <b>HWOL Code</b> | <b>Accred.</b>              | <b>SOP</b> | <b>Units</b> | <b>LOD</b>  |
| Aliphatic VPH >C5-C6                   | HS_2D_AL         | U                           | 2780       | mg/kg        | 0.05 < 0.05 |
| Aliphatic VPH >C6-C7                   | HS_2D_AL         | U                           | 2780       | mg/kg        | 0.05 < 0.05 |
| Aliphatic VPH >C7-C8                   | HS_2D_AL         | U                           | 2780       | mg/kg        | 0.05 < 0.05 |
| Aliphatic VPH >C6-C8 (Sum)             | HS_2D_AL         | N                           | 2780       | mg/kg        | 0.10 < 0.10 |
| Aliphatic VPH >C8-C10                  | HS_2D_AL         | U                           | 2780       | mg/kg        | 0.05 < 0.05 |
| Total Aliphatic VPH >C5-C10            | HS_2D_AL         | U                           | 2780       | mg/kg        | 0.25 < 0.25 |
| Aliphatic EPH >C10-C12 MC              | EH_2D_AL_#1      | M                           | 2690       | mg/kg        | 2.00 < 2.0  |
| Aliphatic EPH >C12-C16 MC              | EH_2D_AL_#1      | M                           | 2690       | mg/kg        | 1.00 < 1.0  |
| Aliphatic EPH >C16-C21 MC              | EH_2D_AL_#1      | M                           | 2690       | mg/kg        | 2.00 3.5    |
| Aliphatic EPH >C21-C35 MC              | EH_2D_AL_#1      | M                           | 2690       | mg/kg        | 3.00 25     |
| Aliphatic EPH >C35-C40 MC              | EH_2D_AL_#1      | N                           | 2690       | mg/kg        | 10.00 17    |
| Total Aliphatic EPH >C10-C35 MC        | EH_2D_AL_#1      | M                           | 2690       | mg/kg        | 5.00 30     |
| Total Aliphatic EPH >C10-C40 MC        | EH_2D_AL_#1      | N                           | 2690       | mg/kg        | 10.00 47    |
| Aromatic VPH >C5-C7                    | HS_2D_AR         | U                           | 2780       | mg/kg        | 0.05 < 0.05 |
| Aromatic VPH >C7-C8                    | HS_2D_AR         | U                           | 2780       | mg/kg        | 0.05 < 0.05 |
| Aromatic VPH >C8-C10                   | HS_2D_AR         | U                           | 2780       | mg/kg        | 0.05 < 0.05 |
| Total Aromatic VPH >C5-C10             | HS_2D_AR         | U                           | 2780       | mg/kg        | 0.25 < 0.25 |
| Aromatic EPH >C10-C12 MC               | EH_2D_AR_#1      | U                           | 2690       | mg/kg        | 1.00 < 1.0  |

## Results - Soil

**Project: Springbridge Yard**

| <b>Client: Springbridge Direct Ltd</b> |                  | <b>Chemtest Job No.:</b>    |            |              | 25-02435    |        |
|--|------------------|-----------------------------|------------|--------------|-------------|--------|
| Quotation No.: Q25-37158               |                  | <b>Chemtest Sample ID.:</b> |            |              | 1922378     |        |
| Order No.:                             |                  | <b>Client Sample Ref.:</b>  |            |              | Topsoil     |        |
|  |                  | <b>Client Sample ID.:</b>   |            |              | Top         |        |
|  |                  | <b>Sample Type:</b>         |            |              | SOIL        |        |
|  |                  | <b>Date Sampled:</b>        |            |              | 22-Jan-2025 |        |
|  |                  | <b>Time Sampled:</b>        |            |              | 11:26       |        |
|  |                  | <b>Asbestos Lab:</b>        |            |              | DURHAM      |        |
| <b>Determinand</b>                     | <b>HWOL Code</b> | <b>Accred.</b>              | <b>SOP</b> | <b>Units</b> | <b>LOD</b>  |        |
| Aromatic EPH >C12-C16 MC               | EH_2D_AR_#1      | U                           | 2690       | mg/kg        | 1.00        | < 1.0  |
| Aromatic EPH >C16-C21 MC               | EH_2D_AR_#1      | U                           | 2690       | mg/kg        | 2.00        | 11     |
| Aromatic EPH >C21-C35 MC               | EH_2D_AR_#1      | U                           | 2690       | mg/kg        | 2.00        | 6.0    |
| Aromatic EPH >C35-C40 MC               | EH_2D_AR_#1      | N                           | 2690       | mg/kg        | 1.00        | 31     |
| Total Aromatic EPH >C10-C35 MC         | EH_2D_AR_#1      | U                           | 2690       | mg/kg        | 5.00        | 17     |
| Total Aromatic EPH >C10-C40 MC         | EH_2D_AR_#1      | N                           | 2690       | mg/kg        | 10.00       | 48     |
| Total VPH >C5-C10                      | HS_2D_Total      | U                           | 2780       | mg/kg        | 0.50        | < 0.50 |
| Total EPH >C10-C35 MC                  | EH_2D_Total_#1   | U                           | 2690       | mg/kg        | 10.00       | 47     |
| Total EPH >C10-C40 MC                  | EH_2D_Total_#1   | N                           | 2690       | mg/kg        | 10.00       | 95     |
| Benzene                                |                  | M                           | 2760       | µg/kg        | 1.0         | < 1.0  |
| Toluene                                |                  | M                           | 2760       | µg/kg        | 1.0         | < 1.0  |
| Ethylbenzene                           |                  | M                           | 2760       | µg/kg        | 1.0         | < 1.0  |
| m & p-Xylene                           |                  | M                           | 2760       | µg/kg        | 1.0         | < 1.0  |
| o-Xylene                               |                  | M                           | 2760       | µg/kg        | 1.0         | < 1.0  |
| Nitrogen (Total)                       |                  | SN                          | 2790       | %            | 0.10        | 0.23   |
| Naphthalene                            |                  | M                           | 2800       | mg/kg        | 0.10        | < 0.10 |
| Acenaphthylene                         |                  | N                           | 2800       | mg/kg        | 0.10        | < 0.10 |
| Acenaphthene                           |                  | M                           | 2800       | mg/kg        | 0.10        | < 0.10 |

## Results - Soil

**Project: Springbridge Yard**

| <b>Client: Springbridge Direct Ltd</b> |           | <b>Chemtest Job No.:</b>    |      |             | 25-02435 |
|--|-----------|-----------------------------|------|-------------|----------|
| Quotation No.: Q25-37158               |           | <b>Chemtest Sample ID.:</b> |      |             | 1922378  |
| Order No.:                             |           | Client Sample Ref.:         |      | Topsoil     |          |
|  |           | Client Sample ID.:          |      | Top         |          |
|  |           | Sample Type:                |      | SOIL        |          |
|  |           | Date Sampled:               |      | 22-Jan-2025 |          |
|  |           | Time Sampled:               |      | 11:26       |          |
|  |           | Asbestos Lab:               |      | DURHAM      |          |
| Determinand                            | HWOL Code | Accred.                     | SOP  | Units       | LOD      |
| Fluorene                               |           | M                           | 2800 | mg/kg       | 0.10     |
| Phenanthrene                           |           | M                           | 2800 | mg/kg       | 0.10     |
| Anthracene                             |           | M                           | 2800 | mg/kg       | 0.10     |
| Fluoranthene                           |           | M                           | 2800 | mg/kg       | 0.10     |
| Pyrene                                 |           | M                           | 2800 | mg/kg       | 0.10     |
| Benzo[a]anthracene                     |           | M                           | 2800 | mg/kg       | 0.10     |
| Chrysene                               |           | M                           | 2800 | mg/kg       | 0.10     |
| Benzo[b]fluoranthene                   |           | M                           | 2800 | mg/kg       | 0.10     |
| Benzo[k]fluoranthene                   |           | M                           | 2800 | mg/kg       | 0.10     |
| Benzo[a]pyrene                         |           | M                           | 2800 | mg/kg       | 0.10     |
| Indeno(1,2,3-c,d)Pyrene                |           | M                           | 2800 | mg/kg       | 0.10     |
| Dibenz(a,h)Anthracene                  |           | N                           | 2800 | mg/kg       | 0.10     |
| Benzo[g,h,i]perylene                   |           | M                           | 2800 | mg/kg       | 0.10     |
| Total Of 16 PAH's                      |           | N                           | 2800 | mg/kg       | 2.0      |
| Total Phenols                          |           | M                           | 2920 | mg/kg       | 0.10     |
|  |           |                             |      |             | < 0.10   |

# Results - Topsoil Report

BS3882:2015

Chemtest Job No.: 25-02435

Chemtest Sample ID.: 1922378

Client Sample Ref.: Topsoil

Sample Location:

**Client Sample ID.: Top**

Top Depth (m):

Bottom Depth (m):

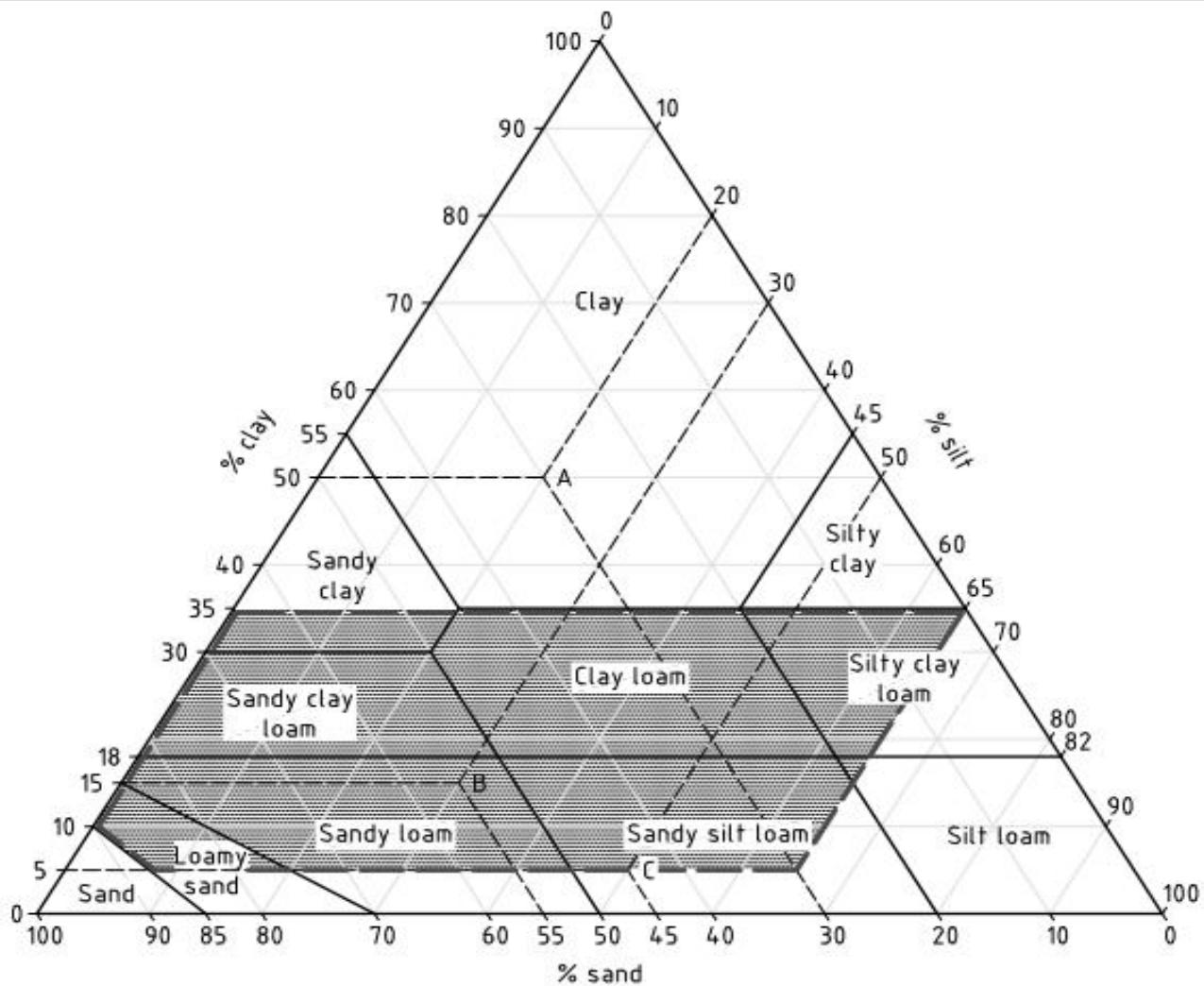
Date Sampled: 22-Jan-2025

Time Sampled:

| Parameter                                   | Units | Multipurpose Range |         |       | Result     | Compliant with Multipurpose Range? (Y/N) | Compliant with Specific Purpose Range? (Y/N) |       |       |
|---|-------|--------------------|---------|-------|------------|--|--|-------|-------|
| <b>Texture</b>                              |       |                    |         |       |            |  | Acid   | Low F | Calc. |
| Clay content (Sub Contracted)               | %     |                    |         |       | 6.0        |  |  |       |       |
| Silt content (Sub Contracted)               | %     |                    |         |       | 11.0       |  |  |       |       |
| Sand content (Sub Contracted)               | %     |                    |         |       | 84         |  |  |       |       |
| Soil texture class                          |       | See Attached Chart |         |       | Loamy Sand | YES                                      |  |       |       |
| <b>Mass Loss on Ignition</b>                |       |                    |         |       |            |  |  |       |       |
| Clay 5-20%                                  |       | 3.0-20             |         |       |            |  |  |       |       |
| Clay 20-35%                                 |       | 5.0-20             |         |       | 3.1        | YES                                      | YES  | YES   | YES   |
| <b>Stone Content</b>                        | % m/m |                    |         |       |            |  |  |       |       |
| >2mm (Sub Contracted)                       |       | 0-30               |         |       | 4.2        | YES                                      |  |       |       |
| >20mm (Sub Contracted)                      |       | 0-10               |         |       | 0.70       | YES                                      |  |       |       |
| >50mm (Sub Contracted)                      |       | 0                  |         |       | < 0.10     | YES                                      |  |       |       |
| Soil pH value                               |       | 5.5-8.5            |         |       | 8.2        | YES                                      | NO   | YES   | YES   |
| Carbonate (Calcareous only)                 | %     |                    |         |       | 1.2        |  |  |       | YES   |
| Electrical Conductivity                     | µS/cm | If >3300 do ESP    |         |       | 3200       | YES                                      |  |       |       |
| <b>Available Nutrient Content</b>           |       |                    |         |       |            |  |  |       |       |
| Nitrogen %                                  |       | >0.15              |         |       | 0.23       | YES                                      | YES  |       | YES   |
| Extractable phosphorus                      | mg/l  | 16-140             |         |       | 110        | YES                                      | YES  | NO    | YES   |
| Extractable potassium                       | mg/l  | 121-1500           |         |       | 1400       | YES                                      | YES  |       | YES   |
| Extractable magnesium                       | mg/l  | 51-600             |         |       | 220        | YES                                      | YES  |       | YES   |
| <b>Carbon : Nitrogen Ratio</b>              |       | <20:1              |         |       | 7.4/1      | YES                                      | YES  | YES   | YES   |
| <b>Exchangeable sodium</b>                  | %     | <15                |         |       | 4.2        |  |  |       |       |
| Available Calcium                           | mg/l  |                    |         |       | 1700       |  |  |       |       |
| Available Sodium                            | mg/l  |                    |         |       | 160        |  |  |       |       |
| <b>Phytotoxic Contaminants (by soil pH)</b> |       | < 6.0              | 6.0-7.0 | > 7.0 |            |  |  |       |       |
| Zinc (Nitric Acid extract)                  | mg/kg | <200               | <200    | <300  | 38         | YES                                      |  |       |       |
| Copper (Nitric Acid extract)                | mg/kg | <100               | <135    | <200  | 8.6        | YES                                      |  |       |       |
| Nickel (Nitric Acid extract)                | mg/kg | <60                | <75     | <110  | 5.4        | YES                                      |  |       |       |
| <b>Visible Contaminants</b>                 | % mm  |                    |         |       |            |  |  |       |       |
| >2mm  |       | <0.5               |         |       | 0.000      | YES                                      |  |       |       |
| .... of which plastics                      |       | <0.25              |         |       | 0.000      | YES                                      |  |       |       |
| .... man-made sharps                        |       | zero in 1kg        |         |       | 0.000      | YES                                      |  |       |       |

BS3882:2015

## Topsoil: Texture Classification Chart



**Key**



Area within which the texture of topsoil is required to fall

**NOTE** Examples of textural classification are as follows.

- Soil A with 30% sand, 20% silt and 50% clay is in the "clay" textural class.
- Soil B with 55% sand, 30% silt and 15% clay is in the "sandy loam" textural class.
- Soil C with 45% sand, 50% silt and 5% clay is in the "sandy silt loam" textural class.

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## Test Methods

| SOP  | Title  | Parameters included   | Method summary   | Water Accred. |
|------|--|---|--|---------------|
| 2010 | pH Value of Soils  | pH at 20°C  | pH Meter   |               |
| 2020 | Electrical Conductivity  | Electrical conductivity (EC) of aqueous extract or calcium sulphate solution for topsoil  | Measurement of the electrical resistance of a 2:1 water/soil extract.  |               |
| 2030 | Moisture and Stone Content of Soils(Requirement of MCERTS)         | Moisture content  | Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.   |               |
| 2040 | Soil Description(Requirement of MCERTS)                            | Soil description  | As received soil is described based upon BS5930  |               |
| 2115 | Total Nitrogen in Soils  | Nitrogen  | Determination by elemental analyser  |               |
| 2120 | Water Soluble Boron, Sulphate, Magnesium & Chromium                | Boron; Sulphate; Magnesium; Chromium  | Aqueous extraction / ICP-OES   |               |
| 2192 | Asbestos   | Asbestos  | Polarised light microscopy / Gravimetry  |               |
| 2260 | Carbonate  | Carbonate   | Titration  |               |
| 2300 | Cyanides & Thiocyanate in Soils                                    | Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate   | Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.   |               |
| 2400 | Cations  | Cations   | ICP-MS   |               |
| 2420 | Phosphate  | Phosphate   | Spectrophotometry - Discrete analyser  |               |
| 2450 | Acid Soluble Metals in Soils                                       | Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc  | Acid digestion followed by determination of metals in extract by ICP-MS.   |               |
| 2455 | Acid Soluble Metals in Soils                                       | Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc  | Acid digestion followed by determination of metals in extract by ICP-MS.   |               |
| 2490 | Hexavalent Chromium in Soils                                       | Chromium [VI]   | Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide. |               |
| 2620 | LOI 440  | LOI 440 Trommel Fines   | Determination of the proportion by mass that is lost from a soil by ignition at 440°C.   |               |
| 2690 | EPH A/A Split  | Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40  | Acetone/Heptane extraction / GCxGC FID detection   |               |
| 2760 | Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS      | Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule  | Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.                             |               |
| 2780 | VPH A/A Split  | Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8–C10 Aromatics: >C5–C7,>C7–C8,>C8–C10  | Water extraction / Headspace GCxGC FID detection   |               |
| 2790 | Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS          | Semi-volatile organic compounds(cf. USEPA Method 8270)  | Acetone/Hexane extraction / GC-MS  |               |
| 2800 | Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS | Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene* | Dichloromethane extraction / GC-MS   |               |
| 2920 | Phenols in Soils by HPLC   | Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and Trimethylphenols Note: chlorophenols are excluded.  | 60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.   |               |

## Report Information

### **Key**

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|     |   |
|-----|---|
| U   | UKAS accredited   |
| M   | MCERTS and UKAS accredited  |
| N   | Unaccredited  |
| S   | This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis     |
| SN  | This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis |
| T   | This analysis has been subcontracted to an unaccredited laboratory  |
| I/S | Insufficient Sample   |
| U/S | Unsuitable Sample   |
| N/E | not evaluated   |
| <   | "less than"   |
| >   | "greater than"  |
| SOP | Standard operating procedure  |
| LOD | Limit of detection  |

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at  $\leq 30^{\circ}\text{C}$  prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW\_ASB Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL  
DURHAM Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

### Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

### Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

### Water Sample Category Key for Accreditation

## Report Information

DW - Drinking Water  
GW - Ground Water  
LE - Land Leachate  
NA - Not Applicable  
PL - Prepared Leachate  
PW - Processed Water  
RE - Recreational Water  
SA - Saline Water  
SW - Surface Water  
TE - Treated Effluent  
TS - Treated Sewage  
UL - Unspecified Liquid

## Clean Up Codes

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NC - No Clean Up  
MC - Mathematical Clean Up  
FC - Florisil Clean Up

## HWOL Acronym System

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HS - Headspace analysis  
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent  
CU - Clean-up – e.g. by Florisil, silica gel  
1D - GC – Single coil gas chromatography  
Total - Aliphatics & Aromatics  
AL - Aliphatics only  
AR - Aromatic only  
2D - GC-GC – Double coil gas chromatography  
#1 - EH\_2D\_Total but with humics mathematically subtracted  
#2 - EH\_2D\_Total but with fatty acids mathematically subtracted  
+ - Operator to indicate cumulative e.g. EH+EH\_Total or EH\_CU+HS\_Total

If you require extended retention of samples, please email your requirements to:  
[customerservices@chemtest.com](mailto:customerservices@chemtest.com)



**TIM O'HARE ASSOCIATES**  
SOIL & LANDSCAPE CONSULTANCY

Mr Jason Lock  
Boughton Loam Ltd  
Telford Way Industrial Estate  
Telford Way  
Kettering  
Northamptonshire NN16 8UN

15<sup>th</sup> January 2025  
Our Ref: TOHA/25/1658/1/SS  
Your Ref: PO 9765

Dear Sirs

**Topsoil Analysis Report: Intensive Roof Garden Substrate**

We have completed the analysis of the soil sample recently submitted, referenced *IN1 Green Roof Substrate*, and have pleasure reporting our findings.

The purpose of the analysis was to determine the suitability of the material for use as an intensive lightweight substrate in a rooftop or podium garden environment.

This report presents the results of analysis for the sample submitted to our office, and it should be considered 'indicative' of the topsoil source. The report and results should therefore not be used by third parties as a means of verification or validation testing or waste designation purposes, especially after the topsoil has left the Boughton Loam Ltd site.

**SAMPLE EXAMINATION**

The sample was described as a dark brown (Munsell Colour 10YR 3/3), dry, friable to non-plastic, slightly calcareous SAND with a single grain structure. The sample was free of stone-sized material, with the exception of frequent lightweight expanded clay aggregates (leca) particles. The sample contained a moderate proportion of organic fines and occasional woody fragments. No unusual odours, deleterious materials, roots or rhizomes of pernicious weeds were observed.



Plate 1: IN1 Green Roof Substrate Sample

#### **ANALYTICAL SCHEDULE**

The sample was submitted to a UKAS and MCERTS accredited laboratory for a range of physical and chemical tests to confirm the composition and fertility of the soil, and the concentration of selected potential contaminants. The following parameters were determined:

- detailed particle size analysis (5 sands, silt, clay);
- stone content (2-20mm, 20-50mm, >50mm);
- saturated hydraulic conductivity;
- bulk density (as received, saturated @ field capacity);
- pH and electrical conductivity values;
- exchangeable sodium percentage;
- major plant nutrients (N, P, K, Mg);
- organic matter content;
- C:N ratio;
- heavy metals (As, B, Cd, Cr, Cu, Pb, Hg, Ni, Se, Zn);
- total cyanide and total (mono) phenols;
- speciated PAHs (US EPA16 suite);
- aromatic and aliphatic TPH (C5-C35 banding);
- benzene, toluene, ethylbenzene, xylene (BTEX).

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

## RESULTS OF ANALYSIS

### Particle Size Analysis and Stone Content

The less than 2mm fraction fell into the *sand* texture class, with a predominance of medium sand (0.25-0.50mm). This indicates a narrow overall particle size distribution, which is beneficial for roof garden environments as good porosity levels are usually maintained in a consolidated state and the risk of particle interpacking is minimised.

The 'stone' sized fraction (>2mm) of the sample was very low (by mass), and comprised entirely of lightweight expanded clay aggregate (leca) up to 20mm in diameter. The proportion of stone sized particles recorded would be considered acceptable for an intensive roof garden substrate.

### Saturated Hydraulic Conductivity and Bulk Density

The saturated hydraulic conductivity of the sample was high (143 mm/hour) and the soil would be described as 'free-draining'. This indicates that the substrate is sufficiently permeable and should demonstrate adequate drainage performance for use in rooftop or podium garden environments. Soils used in these environments need to have satisfactory drainage performance to avoid stagnation (and therefore excess weight) and to enable efficient conveyance of water into the drainage system. The soil is free-draining and may therefore benefit from additional irrigation input in dry periods, depending on the nature of the recipient scheme.

The sample displayed a bulk density at Field Capacity of 1.55 Mg/m<sup>3</sup>, which is reasonably low compared to that of standard topsoil. The suitability of the bulk density result should be confirmed by the project engineer for the recipient site.

### pH and Electrical Conductivity Values

The sample was strongly alkaline in reaction (pH 8.3). This pH value would be considered suitable for general landscape purposes providing species with a wide pH tolerance or those known to prefer alkaline soils are selected for planting, turfing and seeding.

The electrical conductivity (salinity) value (water extract) was moderately high; however, the exchangeable sodium percentage was low, indicating low sodium risk. The source of the elevated soluble salts in this instance is likely to be from soluble potassium (see comments below).

The electrical conductivity value by CaSO<sub>4</sub> extract (3833 µS/cm) exceeded our maximum recommended value (3300 µS/cm).

### Organic Matter and Fertility Status

The sample was adequate to well supplied with organic matter and major plant nutrients. The sample contained a high level of extractable potassium (2158 mg/l) that exceed our recommended value (1500 mg/l).

High potassium levels such as that found in this sample can also have an antagonistic effect on other soil nutrients, particularly magnesium. This can reduce nutrient uptake, leading to plant stress, particularly for establishing specimens.

### Potential Contaminants

With reference to BS3882:2015 - *Table 1*: Notes 3 and 4, there is a requirement to confirm levels of potential contaminants in relation to the topsoil's proposed end use. This includes human health, environmental protection and metals considered toxic to plants. In the absence of 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 (S4ULs) presented in *The LQM/CIEH S4ULs for Human Health Risk Assessment* (2015) and the DEFRA SP1010: *Development of Category 4 Screening Levels (C4SLs) for Assessment of Land Affected by Contamination – Policy Companion Document* (2014).

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

### Phytotoxic Contaminants

Of the phytotoxic (toxic to plants) contaminants determined (copper, nickel, zinc), none was found at levels that exceeded the maximum permissible levels specified in BS3882:2015 – *Table 1*.

## CONCLUSION

The purpose of the analysis was to determine the suitability of the material for use as an intensive lightweight substrate in a roof garden or podium landscape environment.

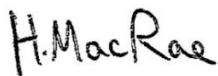
From the soil examination and subsequent laboratory analysis, the sample was described as a strongly alkaline, saline, slightly calcareous sand with a weakly developed structure and frequent 'leca' particles. The sample was found to be free draining. The sample was adequately well supplied with organic matter and major plant nutrients, with a high level of extractable potassium. Of the potential contaminants determined, none exceeded their respective guideline values.

Based on our findings, the substrate represented by this sample appears to be a little rich on account of its high potassium content and slightly elevated electrical conductivity. The source of the elevated potassium content could be associated with the proportion and/or the type of compost in the blend. Potassium is highly soluble, and the level is likely to fall when the material is wetted by rain or irrigation water. However, in this instance we recommend reviewing the quality and quantity of compost that has been used.

---

We hope this report meets with your approval and provides the necessary information. Please do not hesitate to contact the undersigned if we can be of further assistance.

Yours faithfully



**Harriet MacRae**  
BSc MSc  
Soil Scientist



**Aaron Cross**  
BSc MSc M/SoilSci  
Senior Soil Scientist

For & on behalf of Tim O'Hare Associates LLP



|                    |  |
|--------------------|--|
| <b>Client:</b>     | <b>Boughton Loam Ltd</b>               |
| <b>Project:</b>    | <b>Intensive Roof Garden Substrate</b> |
| <b>Job:</b>        | <b>Topsoil Analysis</b>                |
| <b>Date:</b>       | <b>15/01/2025</b>                      |
| <b>Job Ref No:</b> | <b>TOHA/25/1658/1/SS</b>               |

| Sample Reference                  |      | Accreditation |
|-----------------------------------|------|---------------|
| Clay (<0.002mm)                   | %    | UKAS          |
| Silt (0.002-0.063mm)              | %    | UKAS          |
| Very Fine Sand (0.05-0.15mm)      | %    | UKAS          |
| Fine Sand (0.15-0.25mm)           | %    | UKAS          |
| Medium Sand (0.25-0.50mm)         | %    | UKAS          |
| Coarse Sand (0.50-1.0mm)          | %    | UKAS          |
| Very Coarse Sand (1.0-2.0mm)      | %    | UKAS          |
| Total Sand (0.05-2.0mm)           | %    | UKAS          |
| Texture Class (UK Classification) | --   | UKAS          |
| Stones (2-20mm)                   | % DW | GLP           |
| Stones (20-50mm)                  | % DW | GLP           |
| Stones (>50mm)                    | % DW | GLP           |

|   |                   |      |
|---|-------------------|------|
| Saturated Hydraulic Conductivity (m)      | mm/hr             | A2LA |
| Bulk Density (as Received)                | Mg/m <sup>3</sup> | UKAS |
| Bulk Density (Saturated @ Field Capacity) | Mg/m <sup>3</sup> | UKAS |

|   |       |      |
|---|-------|------|
| pH Value (1:2.5 water extract)                          | units | UKAS |
| Electrical Conductivity (1:2.5 water extract)           | uS/cm | UKAS |
| Electrical Conductivity (1:2 CaSO <sub>4</sub> extract) | uS/cm | UKAS |
| Exchangeable Sodium Percentage                          | %     | UKAS |
| Organic Matter (LOI)                                    | %     | UKAS |
| Total Nitrogen (Dumas)                                  | %     | UKAS |
| C : N Ratio   | ratio | UKAS |
| Extractable Phosphorus                                  | mg/l  | UKAS |
| Extractable Potassium                                   | mg/l  | UKAS |
| Extractable Magnesium                                   | mg/l  | UKAS |

|                             |       |        |
|-----------------------------|-------|--------|
| Total Arsenic (As)          | mg/kg | MCERTS |
| Total Cadmium (Cd)          | mg/kg | MCERTS |
| Total Chromium (Cr)         | mg/kg | MCERTS |
| Hexavalent Chromium (Cr VI) | mg/kg | MCERTS |
| Total Copper (Cu)           | mg/kg | MCERTS |
| Total Lead (Pb)             | mg/kg | MCERTS |
| Total Mercury (Hg)          | mg/kg | MCERTS |
| Total Nickel (Ni)           | mg/kg | MCERTS |
| Total Selenium (Se)         | mg/kg | MCERTS |
| Total Zinc (Zn)             | mg/kg | MCERTS |
| Water Soluble Boron (B)     | mg/kg | MCERTS |
| Total Cyanide (CN)          | mg/kg | MCERTS |
| Total (mono) Phenols        | mg/kg | MCERTS |

|                          |       |        |
|--------------------------|-------|--------|
| Naphthalene              | mg/kg | MCERTS |
| Acenaphthylene           | mg/kg | MCERTS |
| Acenaphthene             | mg/kg | MCERTS |
| Fluorene                 | mg/kg | MCERTS |
| Phenanthrene             | mg/kg | MCERTS |
| Anthracene               | mg/kg | MCERTS |
| Fluoranthene             | mg/kg | MCERTS |
| Pyrene                   | mg/kg | MCERTS |
| Benz(a)anthracene        | mg/kg | MCERTS |
| Chrysene                 | mg/kg | MCERTS |
| Benzo(b)fluoranthene     | mg/kg | MCERTS |
| Benzo(k)fluoranthene     | mg/kg | MCERTS |
| Benzo(a)pyrene           | mg/kg | MCERTS |
| Indeno[1,2,3-cd]pyrene   | mg/kg | MCERTS |
| Dibenzo(a,h)anthracene   | mg/kg | MCERTS |
| Benzo(g,h,i)perylene     | mg/kg | MCERTS |
| Total PAHs (sum USEPA16) | mg/kg | MCERTS |

|                          |       |        |
|--------------------------|-------|--------|
| Aliphatic TPH >C5 - C6   | mg/kg | MCERTS |
| Aliphatic TPH >C6 - C8   | mg/kg | MCERTS |
| Aliphatic TPH >C8 - C10  | mg/kg | MCERTS |
| Aliphatic TPH >C10 - C12 | mg/kg | MCERTS |
| Aliphatic TPH >C12 - C16 | mg/kg | MCERTS |
| Aliphatic TPH >C16 - C21 | mg/kg | MCERTS |
| Aliphatic TPH >C21 - C35 | mg/kg | MCERTS |
| Aliphatic TPH (C5 - C35) | mg/kg | MCERTS |
| Aromatic TPH >C5 - C7    | mg/kg | MCERTS |
| Aromatic TPH >C7 - C8    | mg/kg | MCERTS |
| Aromatic TPH >C8 - C10   | mg/kg | MCERTS |
| Aromatic TPH >C10 - C12  | mg/kg | MCERTS |
| Aromatic TPH >C12 - C16  | mg/kg | MCERTS |
| Aromatic TPH >C16 - C21  | mg/kg | MCERTS |
| Aromatic TPH >C21 - C35  | mg/kg | MCERTS |
| Aromatic TPH (C5 - C35)  | mg/kg | MCERTS |

|                                    |       |        |
|------------------------------------|-------|--------|
| Benzene                            | mg/kg | MCERTS |
| Toluene                            | mg/kg | MCERTS |
| Ethylbenzene                       | mg/kg | MCERTS |
| p & m-xylene                       | mg/kg | MCERTS |
| o-xylene                           | mg/kg | MCERTS |
| MTBE (Methyl Tertiary Butyl Ether) | mg/kg | MCERTS |

|                             |
|-----------------------------|
| IN1 Green Roof<br>Substrate |
| 4                           |
| 7                           |
| 7                           |
| 20                          |
| 45                          |
| 15                          |
| 2                           |
| 89                          |
| S                           |
| 0                           |
| 0                           |
| 0                           |

|      |
|------|
| 143  |
| 1.29 |
| 1.55 |

|      |
|------|
| 8.3  |
| 1576 |
| 3833 |
| 3.2  |
| 5.4  |
| 0.20 |
| 16   |
| 93   |
| 2158 |
| 143  |

22  
< 0.2  
33  
< 1.8  
5  
7  
< 0.3  
12  
< 1.0  
38  
3.3  
< 1.0  
< 1.0

< 0.010  
< 0.010  
< 0.010  
< 1.0  
< 2.0  
< 8.0  
< 8.0  
< 10  
< 0.010  
< 0.010  
< 0.020  
< 1.0  
5  
11  
< 10  
16

|         |
|---------|
| < 0.005 |
| < 0.005 |
| < 0.005 |
| < 0.008 |
| < 0.005 |
| < 0.005 |

S = SAND

## Visual Examination

**Visual Examination**  
The sample was described as a dark brown (Munsell Colour 10YR 3/3), dry, friable to non-plastic, slightly calcareous SAND with a single grain structure. The sample was free of stone-sized material, with the exception of frequent lightweight expanded clay aggregates (leca) particles. The sample contained a moderate proportion of organic fines and occasional woody fragments. No unusual odours, deleterious materials, roots or rhizomes of pernicious weeds were observed.

H. MacRae

**Harriet MacRae**  
*BSc MSc*  
*Soil Scientist*

Results of analysis should be read in conjunction with the report they were issued with

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## Appendix B – Topsoil Verification Screening and Statistical Analysis

## Project / Site name: CTC Hayes

| Lab Sample Number                    |       |                         |                           |        |               | 484897        | 484898           | 484899        | 484900           | 484901        | 484902           | 514941        | 514942           | 514943        | 514944           |
|--------------------------------------|-------|-------------------------|---------------------------|--------|---------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|
| Sample Reference                     |       |                         |                           |        |               | TS1-01        | TS1-02           | TS1-03        | TS2-01           | TS2-02        | TS2-03           | TS3-01        | TS3-02           | TS3-03        | SS01-01          |
| Sample Number                        |       |                         |                           |        |               | None Supplied | None Supplied    |
| Water Matrix                         |       |                         |                           |        |               | N/A           | N/A              |
| Depth (m)                            |       |                         |                           |        |               | None Supplied | None Supplied    | None Supplied | None Supplied    | None Supplied | None Supplied    | 0.10-0.30     | 0.10-0.30        | 0.10-0.30     | 0.60-0.80        |
| Date Sampled                         |       |                         |                           |        |               | 18/03/2025    | 18/03/2025       | 18/03/2025    | 18/03/2025       | 18/03/2025    | 18/03/2025       | 13/04/2025    | 13/04/2025       | 13/04/2025    | 13/04/2025       |
| Time Taken                           |       |                         |                           |        |               | 1300          | 1300             | 1300          | 1315             | 1315          | 1315             | None Supplied | None Supplied    | None Supplied | None Supplied    |
| Analytical Parameter (Soil Analysis) | Units | Test Limit of detection | Test Accreditation Status | EC19.5 | Concentration | Stone Content | Moisture Content |
|                                      |       |                         |                           |        |               | mg/kg         | mg/kg            |

|                               |    |      |      |   |   |       |       |       |       |       |       |       |       |       |       |
|-------------------------------|----|------|------|---|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Stone Content                 | %  | 0.1  | NONE | - | - | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content              | %  | 0.01 | NONE | - | - | 15    | 15    | 14    | 11    | 11    | 12    | 4.2   | 1.1   | 5.8   | 2.5   |
| Total mass of sample received | kg | 0.1  | NONE | - | - | 0.7   | 0.7   | 0.7   | 0.7   | 0.7   | 0.7   | 0.6   | 0.6   | 0.5   | 0.7   |

|  |      |     |           |   |   |              |              |              |              |              |              |              |              |              |              |
|--|------|-----|-----------|---|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Asbestos                               |      |     |           |   |   |              |              |              |              |              |              |              |              |              |              |
| Asbestos in Soil Detected/Not Detected | Type | N/A | ISO 17025 | - | - | Not-detected |
| Asbestos Analyst ID                    | N/A  | N/A | N/A       | - | - | Non-detected |
| Analysis completed                     | N/A  | N/A | N/A       | - | - | 21/03/2025   | 21/03/2025   | 21/03/2025   | 21/03/2025   | 21/03/2025   | 21/03/2025   | 18/04/2025   | 18/04/2025   | 18/04/2025   | 18/04/2025   |

|                    |       |   |        |   |   |     |     |      |       |       |       |       |       |       |       |
|--------------------|-------|---|--------|---|---|-----|-----|------|-------|-------|-------|-------|-------|-------|-------|
| General Inorganics |       |   |        |   |   |     |     |      |       |       |       |       |       |       |       |
| Total Cyanide      | mg/kg | 1 | MCERTS | - | - | N/A | N/A | <MDL | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Complex Cyanide    | mg/kg | 1 | MCERTS | - | - | N/A | N/A | <MDL | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Free Cyanide       | mg/kg | 1 | MCERTS | - | - | N/A | N/A | <MDL | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

|                            |       |   |        |   |      |     |     |      |       |       |       |       |       |       |       |
|----------------------------|-------|---|--------|---|------|-----|-----|------|-------|-------|-------|-------|-------|-------|-------|
| Total Phenols              |       |   |        |   |      |     |     |      |       |       |       |       |       |       |       |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | - | <1.0 | 760 | 750 | <MDL | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

|                       |       |      |           |   |       |       |      |      |        |        |        |        |        |        |        |
|-----------------------|-------|------|-----------|---|-------|-------|------|------|--------|--------|--------|--------|--------|--------|--------|
| Speciated PAHs        |       |      |           |   |       |       |      |      |        |        |        |        |        |        |        |
| Naphthalene           | mg/kg | 0.05 | MCERTS    | - | <0.05 | 4900  | 2.3  | 2.3  | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene        | mg/kg | 0.05 | MCERTS    | - | <0.05 | 15000 | 170  | 170  | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthene          | mg/kg | 0.05 | MCERTS    | - | 0.09  | 15000 | 210  | 210  | 0.05   | 0.16   | 0.07   | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluorene              | mg/kg | 0.05 | MCERTS    | - | 0.15  | 9900  | 170  | 170  | < 0.05 | 0.15   | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Phenanthrene          | mg/kg | 0.05 | MCERTS    | - | 0.63  | 3100  | 95   | 15   | 0.32   | 1.2    | 0.38   | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Anthracene            | mg/kg | 0.05 | MCERTS    | - | 0.15  | 74000 | 2400 | 4    | 0.07   | 0.29   | 0.09   | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluoranthene          | mg/kg | 0.05 | MCERTS    | - | 0.49  | 3100  | 280  | 26   | 0.66   | 1.7    | 0.7    | 0.08   | 0.07   | 0.14   | < 0.05 |
| Pyrene                | mg/kg | 0.05 | MCERTS    | - | 0.42  | 7400  | 620  | 21   | 0.59   | 1.4    | 0.61   | 0.07   | 0.07   | 0.13   | < 0.05 |
| Benz(a)anthracene     | mg/kg | 0.05 | MCERTS    | - | 0.31  | 29    | 7.2  | 9    | 0.28   | 0.62   | 0.26   | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Chrysene              | mg/kg | 0.05 | MCERTS    | - | 0.268 | 57    | 15   | 15   | 0.3    | 0.62   | 0.27   | 0.06   | < 0.05 | 0.09   | < 0.05 |
| Benz(b)fluoranthene   | mg/kg | 0.05 | ISO 17025 | - | 0.38  | 7.1   | 2.6  | 7.1  | 0.42   | 0.82   | 0.38   | 0.11   | < 0.05 | 0.17   | < 0.05 |
| Benz(k)fluoranthene   | mg/kg | 0.05 | ISO 17025 | - | 0.19  | 190   | 77   | 77   | 0.15   | 0.28   | 0.13   | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benz(a)pyrene         | mg/kg | 0.05 | MCERTS    | - | 0.41  | 5.70  | 2.2  | 5.7  | 0.34   | 0.62   | 0.28   | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Indeno[1,2,3-c]pyrene | mg/kg | 0.05 | MCERTS    | - | 0.175 | 82    | 27   | 27   | 0.18   | 0.3    | 0.15   | < 0.05 | < 0.05 | 0.07   | < 0.05 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS    | - | <0.05 | 0.57  | 0.24 | 0.57 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benz(g,h)perylene     | mg/kg | 0.05 | MCERTS    | - | 0.19  | 640   | 3.0  | 320  | 0.2    | 0.33   | 0.16   | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

|                             |       |     |           |   |      |   |   |     |      |      |      |        |        |        |        |
|-----------------------------|-------|-----|-----------|---|------|---|---|-----|------|------|------|--------|--------|--------|--------|
| Total PAH                   |       |     |           |   |      |   |   |     |      |      |      |        |        |        |        |
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | - | 5.20 | - | - | 114 | 3.58 | 8.52 | 3.49 | < 0.80 | < 0.80 | < 0.80 | < 0.80 |

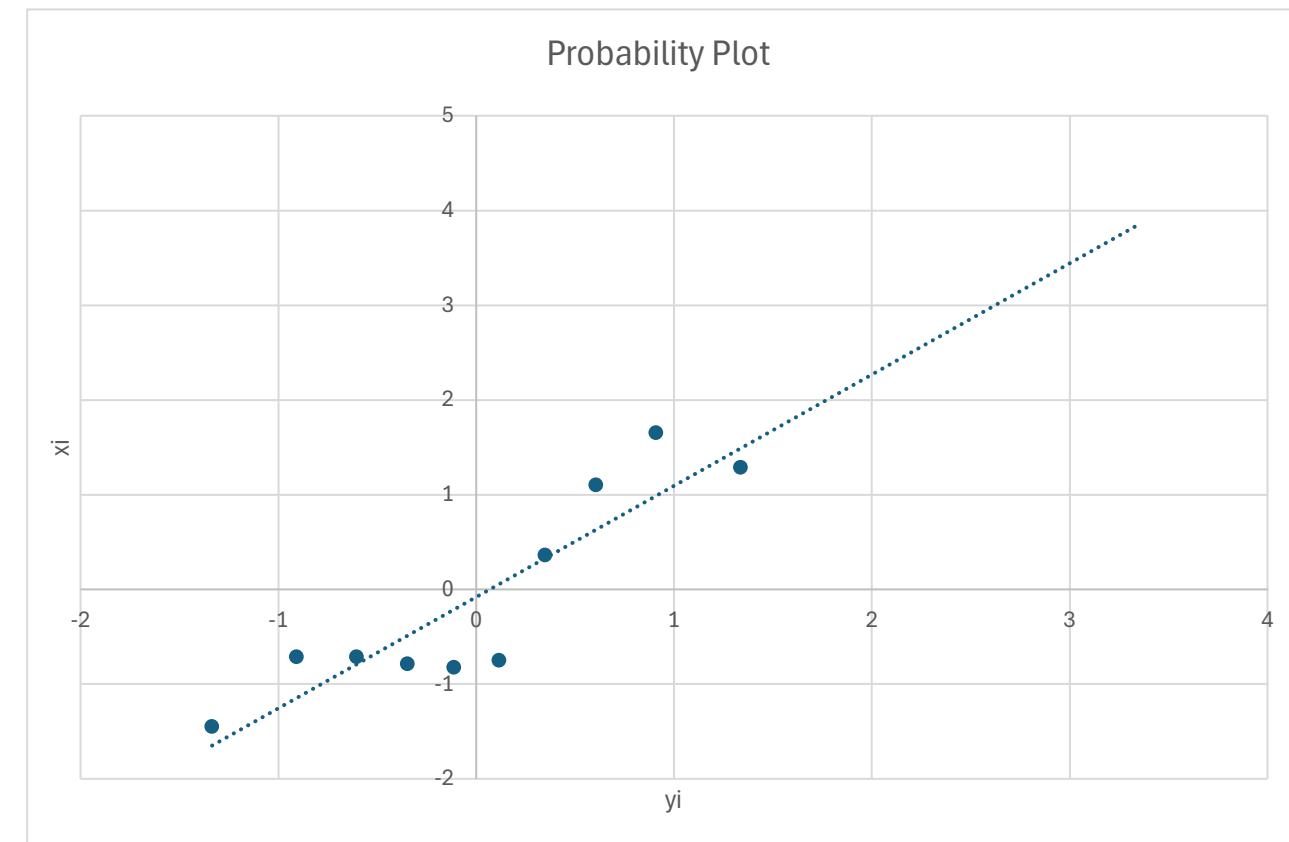
|                                   |       |     |        |   |       |       |      |     |       |       |       |       |       |       |       |
|-----------------------------------|-------|-----|--------|---|-------|-------|------|-----|-------|-------|-------|-------|-------|-------|-------|
| Heavy Metals / Metalloids         |       |     |        |   |       |       |      |     |       |       |       |       |       |       |       |
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | - | 12.44 | 79    | 37   | 37  | 7.9   | 7.9   | 8.8   | 6.6   | 7.6   | 6.6   | 13    |
| Boron (water soluble)             | mg/kg | 0.2 | MCERTS | - | 2.35  | 21000 | 290  | 3   | 2     | 2.8   | 2.9   | 3.1   | 2.7   | 3.1   | 2.4   |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | - | 0.30  | 120   | 11   | 11  | 0.3   | 0.4   | < 0.2 | < 0.2 | 0.2   | < 0.2 | < 0.2 |
| Chromium (hexavalent)             | mg/kg | 1.8 | MCERTS | - | <1.8  | 7.70  | 5    | 6   | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 |
| Chromium (III)                    | mg/kg | 1   | MCERTS | - | 17.00 | 1500  | 810  | 43  | 14    | 12    | 13    | 11    | 13    | 15    | 23    |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | - | 17.00 | 1500  | 810  | 43  | 14    | 13    | 14    | 11    | 11    | 14    | 21    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | - | 18.82 | 1200  | 2400 | 153 | 25    | 26    | 27    | 28    | 19    | 22    | 13    |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | - | 22.64 | 630   | 208  | 630 | 60    | 41    | 38    | 19    | 14    | 16    | 8.3   |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | - | <0.3  | 120   | 40   | 2.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | - | 11.33 | 230   | 180  | 61  | 9.5   | 9.5   | 8.6   | 10    | 8.9   | 10    | 13    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | - | <1.0  | 1100  | 250  | 250 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Sodium (aqua regia extractable)   | mg/kg | 1   | MCERTS | - | 54.88 | 39.20 | 2000 | 410 | 82    | 22    | 20    | 18    | 17    | 19    | 49    |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | - | 54.8  | 8100  | 3700 | 328 | 75    | 76    | 72    | 68    | 47    | 51    | 30    |

|  |       |      |        |   |       |       |      |      |        |        |        |        |        |        |        |
|--|-------|------|--------|---|-------|-------|------|------|--------|--------|--------|--------|--------|--------|--------|
| PtHCWG - Aromatic >EC5 - EC7_H<10_AK   | mg/kg | 0.01 | MCERTS | - | <0.01 | 56000 | 70   | 70   | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| PtHCWG - Aromatic >EC5 - EC7_H<10_AK   | mg/kg | 0.02 | MCERTS | - | <0.02 | 5000  | 34   | 34   | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| PtHCWG - Aromatic >EC10 - EC12_H<10_AK | mg/kg | 1    | MCERTS | - | 1.5   | 5000  | 74   | 74   | < 1.0  | 1.5    | < 1.0  | < 1.0  | < 1.0  | < 1.0  | < 1.0  |
| PtHCWG - Aromatic >EC12 - EC14_H<10_AK | mg/kg | 2    | MCERTS | - | 6.2   | 5100  | 140  | 20   | < 2.0  | 6.2    | < 2.0  | < 2.0  | < 2.0  | < 2.0  | < 2.0  |
| PtHCWG - Aromatic >EC16 - EC21_H<10_AK | mg/kg | 10   | MCERTS | - | <10   | 3800  | 260  | 500  | < 10   | < 10   | < 10   | < 10   | < 10   | < 10   | < 10   |
| PtHCWG - Aromatic >EC21 - EC25_H<10_AK | mg/kg | 10   | MCERTS | - | 32.67 | 3800  | 1100 | 1000 | 34     | 36     | 28     | < 10   | < 10   | < 10   | < 10   |
| PtHCWG - Aromatic >EC25 - EC44_H<10_AK | mg/kg | 8.4  | MCERTS | - | 42.33 | 3800  | 1100 | 1000 | 61     | 37     | 29     |        |        |        |        |

# VANADIUM UCL95

|                  |          |
|------------------|----------|
| Average          | 39.2     |
| SD               | 27.05057 |
| Sample size      | 10       |
| Confidence Coff  | 1.96     |
| Margin of error  | 16.76612 |
| Upper Bound      | 55.96612 |
| Lower Bound      | 22.43388 |
| Max              | 84       |
| Min              | 17       |
| Range            | 67       |
| Square root of N | 3.162278 |

| $X_i$ | $Y_i = X_i - \text{Mean}/S$ | $Q_i$    | $Z_i$    |
|-------|-----------------------------|----------|----------|
| 22    | -1.445440895                | 0.090909 | -1.33518 |
| 20    | -0.709781718                | 0.181818 | -0.90846 |
| 20    | -0.709781718                | 0.272727 | -0.60459 |
| 18    | -0.783717314                | 0.363636 | -0.34876 |
| 17    | -0.820685112                | 0.454545 | -0.11419 |
| 19    | -0.746749516                | 0.545455 | 0.114185 |
| 49    | 0.362284419                 | 0.636364 | 0.348756 |
| 69    | 1.101640375                 | 0.727273 | 0.604585 |
| 84    | 1.656157342                 | 0.818182 | 0.908458 |
| 74    | 1.286479364                 | 0.909091 | 1.335178 |



$$UCL_{0.95} = \bar{x} + \left( t_{(n-1, 0.95)} \times \frac{s}{\sqrt{n}} \right)$$

t-test

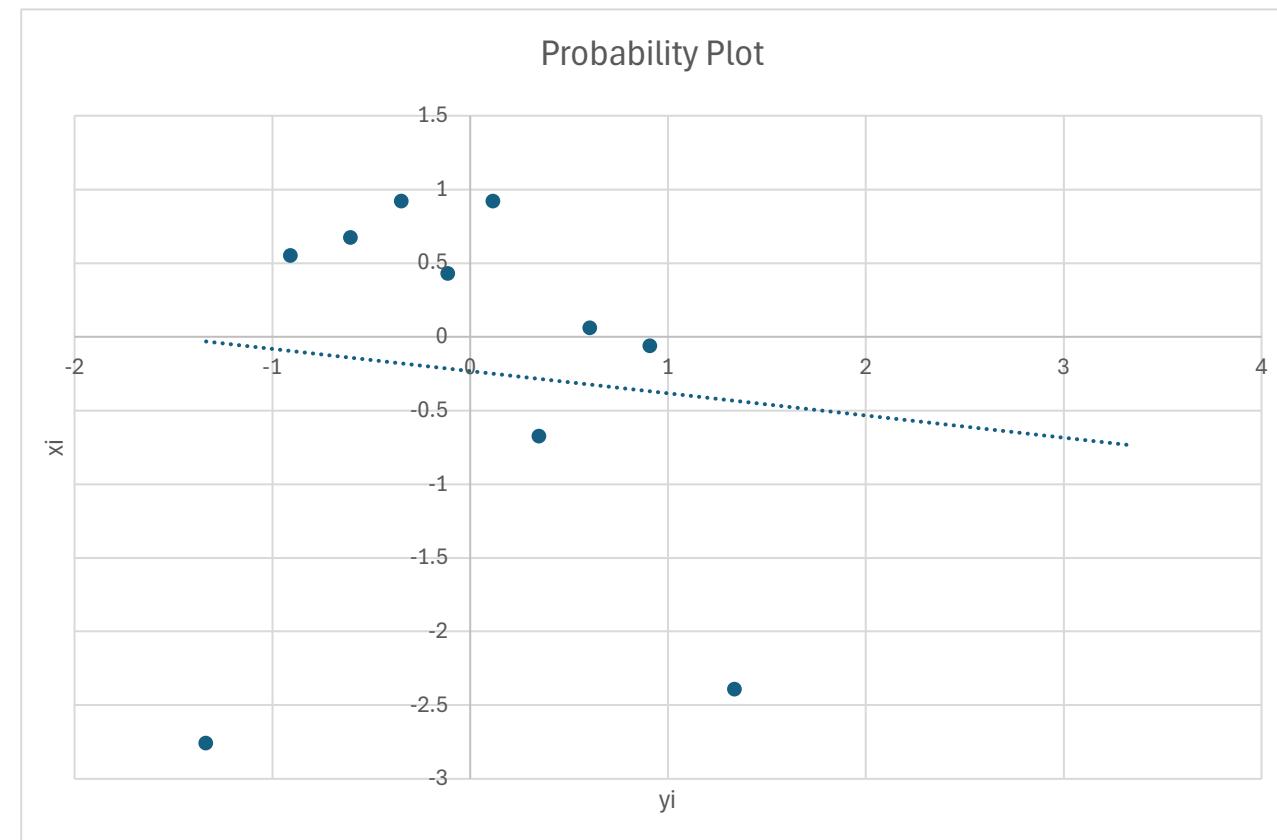
54.87974

$t_{(n-1, 0.95)} = 1.833$  from one-sample t-test theorem (CLAIRES)

# BORON UCL95

|                  |          |
|------------------|----------|
| Average          | 2.35     |
| SD               | 0.815475 |
| Sample size      | 10       |
| Confidence Coff  | 1.96     |
| Margin of error  | 0.505437 |
| Upper Bound      | 2.855437 |
| Lower Bound      | 1.844563 |
| Max              | 3.1      |
| Min              | 0.4      |
| Range            | 2.7      |
| Square root of N | 3.162278 |

| $X_i$ | $Y_i = X_i - \text{Mean}/S$ | $Q_i$    | $Z_i$    |
|-------|-----------------------------|----------|----------|
| 2     | -2.759127028                | 0.090909 | -1.33518 |
| 2.8   | 0.551825406                 | 0.181818 | -0.90846 |
| 2.9   | 0.674453273                 | 0.272727 | -0.60459 |
| 3.1   | 0.919709009                 | 0.363636 | -0.34876 |
| 2.7   | 0.429197538                 | 0.454545 | -0.11419 |
| 3.1   | 0.919709009                 | 0.545455 | 0.114185 |
| 1.8   | -0.674453273                | 0.636364 | 0.348756 |
| 2.4   | 0.061313934                 | 0.727273 | 0.604585 |
| 2.3   | -0.061313934                | 0.818182 | 0.908458 |
| 0.4   | -2.391243424                | 0.909091 | 1.335178 |



$$UCL_{0.95} = \bar{x} + \left( t_{(n-1, 0.95)} \times \frac{s}{\sqrt{n}} \right)$$

t-test

2.822687

$t_{(n-1, 0.95)} = 1.833$  from one-sample t-test theorem (CLAIRES)



## Appendix C – Laboratory Certificates



Turnkey Regeneration Ltd  
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Horsham  
West Sussex  
RH123XH

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**f:** 01923 237404  
**e:** reception@i2analytical.com

## Analytical Report Number : 25-019276

|                             |      |  |            |
|-----------------------------|------|--|------------|
| <b>Project / Site name:</b> | CTC  | <b>Samples received on:</b>                            | 15/04/2025 |
| <b>Your job number:</b>     | 0112 | <b>Samples instructed on/<br/>Analysis started on:</b> | 15/04/2025 |
| <b>Your order number:</b>   | 0112 | <b>Analysis completed by:</b>                          | 23/04/2025 |
| <b>Report Issue Number:</b> | 1    | <b>Report issued on:</b>                               | 23/04/2025 |
| <b>Samples Analysed:</b>    |      | <b>4 soil samples</b>                                  |            |

**Signed:**

Rafał Szczepańczyk  
Technical Reviewer  
**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  
air - once the analysis is complete

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

Retention period for records and reports is minimum 6 years from the date of issue of the final report.

Some records may be kept for longer according to other legal/best practice requirements.

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.



4041

**Analytical Report Number: 25-019276****Project / Site name: CTC****Your Order No: 0112**

|   |               |                                    |                                      |               |
|---|---------------|------------------------------------|--------------------------------------|---------------|
| Lab Sample Number                               | 514941        | 514942                             | 514943                               | 514944        |
| Sample Reference                                | TS3-01        | TS3-02                             | TS3-03                               | SS01-01       |
| Sample Number                                   | None Supplied | None Supplied                      | None Supplied                        | None Supplied |
| Water Matrix                                    | N/A           | N/A                                | N/A                                  | N/A           |
| Depth (m)                                       | 0.10-0.30     | 0.10-0.30                          | 0.10-0.30                            | 0.60-0.80     |
| Date Sampled                                    | 13/04/2025    | 13/04/2025                         | 13/04/2025                           | 13/04/2025    |
| Time Taken                                      | None Supplied | None Supplied                      | None Supplied                        | None Supplied |
| <b>Analytical Parameter<br/>(Soil Analysis)</b> | <b>Units</b>  | <b>Test Limit of<br/>detection</b> | <b>Test Accreditation<br/>Status</b> |               |

|                               |    |      |      |       |       |       |       |
|-------------------------------|----|------|------|-------|-------|-------|-------|
| Stone Content                 | %  | 0.1  | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content              | %  | 0.01 | NONE | 4.2   | 1.1   | 5.8   | 2.5   |
| Total mass of sample received | kg | 0.1  | NONE | 0.6   | 0.6   | 0.5   | 0.7   |

**Asbestos**

|  |      |     |           |              |              |              |              |
|--|------|-----|-----------|--------------|--------------|--------------|--------------|
| Asbestos in Soil Detected/Not Detected | Type | N/A | ISO 17025 | Not-detected | Not-detected | Not-detected | Not-detected |
| Asbestos Analyst ID                    | N/A  | N/A | N/A       | SCA          | SCA          | SCA          | SCA          |
| Analysis completed                     | N/A  | N/A | N/A       | 18/04/2025   | 18/04/2025   | 18/04/2025   | 18/04/2025   |

**General Inorganics**

|                 |       |   |        |       |       |       |       |
|-----------------|-------|---|--------|-------|-------|-------|-------|
| Total Cyanide   | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Complex Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Free Cyanide    | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

**Total Phenols**

|                            |       |   |        |       |       |       |       |
|----------------------------|-------|---|--------|-------|-------|-------|-------|
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
|----------------------------|-------|---|--------|-------|-------|-------|-------|

**Speciated PAHs**

|                        |       |      |           |        |        |        |        |
|------------------------|-------|------|-----------|--------|--------|--------|--------|
| Naphthalene            | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthene           | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluorene               | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Phenanthrene           | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Anthracene             | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluoranthene           | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | 0.1    | < 0.05 |
| Pyrene                 | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | 0.08   | < 0.05 |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Chrysene               | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | ISO 17025 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | ISO 17025 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS    | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(ghi)perylene     | mg/kg | 0.05 | MCERTS    | < 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 |
|-----------------------------|-------|-----|-----------|--------|--------|--------|--------|



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Analytical Report Number: 25-019276

Project / Site name: CTC

Your Order No: 0112

|   |       |                            |                              |               |               |
|---|-------|----------------------------|------------------------------|---------------|---------------|
| Lab Sample Number                       |       | 514941                     | 514942                       | 514943        | 514944        |
| Sample Reference                        |       | TS3-01                     | TS3-02                       | TS3-03        | SS01-01       |
| Sample Number                           |       | None Supplied              | None Supplied                | None Supplied | None Supplied |
| Water Matrix                            |       | N/A                        | N/A                          | N/A           | N/A           |
| Depth (m)                               |       | 0.10-0.30                  | 0.10-0.30                    | 0.10-0.30     | 0.60-0.80     |
| Date Sampled                            |       | 13/04/2025                 | 13/04/2025                   | 13/04/2025    | 13/04/2025    |
| Time Taken                              |       | None Supplied              | None Supplied                | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Test Limit of<br>detection | Test Accreditation<br>Status |               |               |

**Heavy Metals / Metalloids**

|                                   |       |     |        |       |       |       |       |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 13    | 20    | 28    | 18    |
| Boron (water soluble)             | mg/kg | 0.2 | MCERTS | 1.8   | 2.4   | 2.3   | 0.4   |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (hexavalent)             | mg/kg | 1.8 | MCERTS | < 1.8 | < 1.8 | < 1.8 | < 1.8 |
| Chromium (III)                    | mg/kg | 1   | NONE   | 15    | 23    | 29    | 21    |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 16    | 24    | 30    | 21    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 13    | 10    | 12    | 7.2   |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 8.3   | 11    | 14    | 5.1   |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 10    | 13    | 19    | 15    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1   | MCERTS | 49    | 69    | 84    | 74    |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 30    | 40    | 61    | 28    |

**Petroleum Hydrocarbons**

|   |       |      |        |         |         |         |         |
|---|-------|------|--------|---------|---------|---------|---------|
| TPHCWG - Aliphatic >EC5 - EC6_H5_ID_AL        | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 | < 0.010 | < 0.010 |
| TPHCWG - Aliphatic >EC6 - EC8_H5_ID_AL        | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 | < 0.010 | < 0.010 |
| TPHCWG - Aliphatic >EC8 - EC10_H5_ID_AL       | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 | < 0.010 | < 0.010 |
| TPHCWG - Aliphatic >EC10 - EC12_EH CU_1D_AL   | mg/kg | 1    | MCERTS | < 1.0   | < 1.0   | < 1.0   | < 1.0   |
| TPHCWG - Aliphatic >EC12 - EC16_EH CU_1D_AL   | mg/kg | 2    | MCERTS | < 2.0   | < 2.0   | < 2.0   | < 2.0   |
| TPHCWG - Aliphatic >EC16 - EC21_EH CU_1D_AL   | mg/kg | 8    | MCERTS | < 8.0   | < 8.0   | < 8.0   | < 8.0   |
| TPHCWG - Aliphatic >EC21 - EC35_EH CU_1D_AL   | mg/kg | 8    | MCERTS | < 8.0   | < 8.0   | < 8.0   | < 8.0   |
| TPHCWG - Aliphatic >EC35 - EC44_EH CU_1D_AL   | mg/kg | 8.4  | NONE   | < 8.4   | < 8.4   | < 8.4   | < 8.4   |
| TPHCWG - Aliphatic >EC5 - EC35_EH CU+HS_1D_AL | mg/kg | 10   | NONE   | < 10    | < 10    | < 10    | < 10    |
| TPHCWG - Aliphatic >EC5 - EC44_EH CU+HS_1D_AL | mg/kg | 10   | NONE   | < 10    | < 10    | < 10    | < 10    |

|  |       |      |        |         |         |         |         |
|--|-------|------|--------|---------|---------|---------|---------|
| TPHCWG - Aromatic >EC5 - EC7_H5_ID_AR        | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 | < 0.010 | < 0.010 |
| TPHCWG - Aromatic >EC7 - EC8_H5_ID_AR        | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 | < 0.010 | < 0.010 |
| TPHCWG - Aromatic >EC8 - EC10_H5_ID_AR       | mg/kg | 0.02 | MCERTS | < 0.020 | < 0.020 | < 0.020 | < 0.020 |
| TPHCWG - Aromatic >EC10 - EC12_EH CU_1D_AR   | mg/kg | 1    | MCERTS | < 1.0   | < 1.0   | < 1.0   | < 1.0   |
| TPHCWG - Aromatic >EC12 - EC16_EH CU_1D_AR   | mg/kg | 2    | MCERTS | < 2.0   | < 2.0   | < 2.0   | < 2.0   |
| TPHCWG - Aromatic >EC16 - EC21_EH CU_1D_AR   | mg/kg | 10   | MCERTS | < 10    | < 10    | < 10    | < 10    |
| TPHCWG - Aromatic >EC21 - EC35_EH CU_1D_AR   | mg/kg | 10   | MCERTS | < 10    | < 10    | < 10    | < 10    |
| TPHCWG - Aromatic >EC35 - EC44_EH CU_1D_AR   | mg/kg | 8.4  | NONE   | < 8.4   | < 8.4   | < 8.4   | < 8.4   |
| TPHCWG - Aromatic >EC5 - EC35_EH CU+HS_1D_AR | mg/kg | 10   | NONE   | < 10    | < 10    | < 10    | < 10    |
| TPHCWG - Aromatic >EC5 - EC44_EH CU+HS_1D_AR | mg/kg | 10   | NONE   | < 10    | < 10    | < 10    | < 10    |

|   |       |    |      |      |      |      |      |
|---|-------|----|------|------|------|------|------|
| TPH Total >EC6 - EC40_EH CU+HS_1D_TOTAL | mg/kg | 10 | NONE | < 10 | < 10 | < 10 | < 10 |
|---|-------|----|------|------|------|------|------|

|   |       |    |           |       |       |       |       |
|---|-------|----|-----------|-------|-------|-------|-------|
| Petroleum Range Organics (EC6 - EC10)_HS_1D_TOTAL | mg/kg | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH (EC10 - EC40)_EH CU_1D_TOTAL                  | mg/kg | 10 | MCERTS    | < 10  | < 10  | < 10  | < 10  |

**VOCs**

|                                    |       |   |        |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 5 | MCERTS | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Benzene                            | µg/kg | 5 | MCERTS | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Toluene                            | µg/kg | 5 | MCERTS | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Ethylbenzene                       | µg/kg | 5 | MCERTS | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| p & m-Xylene                       | µg/kg | 8 | MCERTS | < 8.0 | < 8.0 | < 8.0 | < 8.0 |
| o-Xylene                           | µg/kg | 5 | MCERTS | < 5.0 | < 5.0 | < 5.0 | < 5.0 |



**Analytical Report Number: 25-019276**

**Project / Site name: CTC**

**Your Order No: 0112**

|   |               |                            |                              |               |
|---|---------------|----------------------------|------------------------------|---------------|
| Lab Sample Number                       | 514941        | 514942                     | 514943                       | 514944        |
| Sample Reference                        | TS3-01        | TS3-02                     | TS3-03                       | SS01-01       |
| Sample Number                           | None Supplied | None Supplied              | None Supplied                | None Supplied |
| Water Matrix                            | N/A           | N/A                        | N/A                          | N/A           |
| Depth (m)                               | 0.10-0.30     | 0.10-0.30                  | 0.10-0.30                    | 0.60-0.80     |
| Date Sampled                            | 13/04/2025    | 13/04/2025                 | 13/04/2025                   | 13/04/2025    |
| Time Taken                              | None Supplied | None Supplied              | None Supplied                | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units         | Test Limit of<br>detection | Test Accreditation<br>Status |               |

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



**Analytical Report Number : 25-019276**

**Project / Site name: CTC**

\* 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 *                           |
|-------------------|------------------|---------------|-----------|--|
| 514941            | TS3-01           | None Supplied | 0.10-0.30 | Brown loam and sand with gravel and vegetation |
| 514942            | TS3-02           | None Supplied | 0.10-0.30 | Brown loam and sand with gravel and vegetation |
| 514943            | TS3-03           | None Supplied | 0.10-0.30 | Brown loam and sand with gravel and vegetation |
| 514944            | SS01-01          | None Supplied | 0.60-0.80 | Brown sand with gravel                         |



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**Analytical Report Number : 25-019276****Project / Site name: CTC****Water matrix abbreviations:****Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)****Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| <b>Analytical Test Name</b>   | <b>Analytical Method Description</b>   | <b>Analytical Method Reference</b>   | <b>Method number</b> | <b>Wet / Dry Analysis</b> | <b>Accreditation Status</b> |
|---|--|--|----------------------|---------------------------|-----------------------------|
| 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                   |
| 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                      |
| Boron, water soluble, in soil   | Determination of water soluble boron in soil by hot water extract followed by ICP-OES  | In-house method based on Second Site Properties version 3  | L038B                | D                         | MCERTS                      |
| Speciated 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-PL        | D/W                       | MCERTS                      |
| Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil                     | Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS   | In-house method  | L076B/L088-PL        | D/W                       | MCERTS                      |
| Complex Cyanide in soil   | Determination of complex cyanide by calculation  | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L080-PL              | W                         | MCERTS                      |
| Chromium III in soil  | In-house method by calculation from total Cr and Cr VI   | In-house method by calculation   | L080-PL/L130B        | 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-PL              | W                         | MCERTS                      |
| Free cyanide in soil  | Determination of free cyanide by distillation followed by colorimetry  | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L080-PL              | 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-PL              | W                         | MCERTS                      |
| Total cyanide in soil   | Determination of total cyanide by distillation followed by colorimetry   | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L080-PL              | W                         | MCERTS                      |



Analytical Report Number : 25-019276

Project / Site name: CTC

**Water matrix abbreviations:**

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

| Analytical Test Name                             | Analytical Method Description                                     | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|--|---|-----------------------------|---------------|--------------------|----------------------|
| Total petroleum hydrocarbons by HS-GC-MS in soil | Determination of total petroleum hydrocarbons in soil by HS-GC-MS | In-house method             | L129-PL       | W                  | ISO 17025            |
| Soil Descriptions                                | Textural classification   | In-house method             | L019B         | W                  | NONE                 |

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 30oC.

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.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution



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## Analytical Report Number : 25-013442

|                             |      |  |            |
|-----------------------------|------|--|------------|
| <b>Project / Site name:</b> | CTC  | <b>Samples received on:</b>                            | 18/03/2025 |
| <b>Your job number:</b>     | 0112 | <b>Samples instructed on/<br/>Analysis started on:</b> | 18/03/2025 |
| <b>Your order number:</b>   | 0112 | <b>Analysis completed by:</b>                          | 24/03/2025 |
| <b>Report Issue Number:</b> | 1    | <b>Report issued on:</b>                               | 24/03/2025 |
| <b>Samples Analysed:</b>    |      |  |            |

Signed:

Joanna Wawrzeczk  
Senior 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  
air - once the analysis is complete

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

Retention period for records and reports is minimum 6 years from the date of issue of the final report.

Some records may be kept for longer according to other legal/best practice requirements.

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.



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Analytical Report Number: 25-013442

Project / Site name: CTC

Your Order No: 0112

|   |               |                            |                              |               |               |
|---|---------------|----------------------------|------------------------------|---------------|---------------|
| Lab Sample Number                       | 484897        | 484898                     | 484899                       | 484900        | 484901        |
| Sample Reference                        | TS1-01        | TS1-02                     | TS1-03                       | TS2-01        | TS2-02        |
| Sample Number                           | None Supplied | None Supplied              | None Supplied                | None Supplied | None Supplied |
| Water Matrix                            | N/A           | N/A                        | N/A                          | N/A           | N/A           |
| Depth (m)                               | None Supplied | None Supplied              | None Supplied                | None Supplied | None Supplied |
| Date Sampled                            | 18/03/2025    | 18/03/2025                 | 18/03/2025                   | 18/03/2025    | 18/03/2025    |
| Time Taken                              | 1300          | 1300                       | 1300                         | 1315          | 1315          |
| Analytical Parameter<br>(Soil Analysis) | Units         | Test Limit of<br>detection | Test Accreditation<br>Status |               |               |

|                               |    |      |      |       |       |       |       |       |
|-------------------------------|----|------|------|-------|-------|-------|-------|-------|
| Stone Content                 | %  | 0.1  | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content              | %  | 0.01 | NONE | 15    | 15    | 14    | 11    | 11    |
| Total mass of sample received | kg | 0.1  | NONE | 0.7   | 0.7   | 0.7   | 0.7   | 0.7   |

**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       | MJN          | MJN          | MJN          | MJN          | MJN          |
| Analysis completed                     | N/A  | N/A | N/A       | 21/03/2025   | 21/03/2025   | 21/03/2025   | 21/03/2025   | 21/03/2025   |

**General Inorganics**

|                 |       |   |        |       |       |       |       |       |
|-----------------|-------|---|--------|-------|-------|-------|-------|-------|
| Total Cyanide   | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Complex Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Free Cyanide    | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

**Total Phenols**

|                            |       |   |        |       |       |       |       |       |
|----------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
|----------------------------|-------|---|--------|-------|-------|-------|-------|-------|

**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   | 0.16   | 0.07   | < 0.05 | < 0.05 |
| Fluorene               | mg/kg | 0.05 | MCERTS    | < 0.05 | 0.15   | < 0.05 | < 0.05 | < 0.05 |
| Phenanthrene           | mg/kg | 0.05 | MCERTS    | 0.32   | 1.2    | 0.38   | < 0.05 | < 0.05 |
| Anthracene             | mg/kg | 0.05 | MCERTS    | 0.07   | 0.29   | 0.09   | < 0.05 | < 0.05 |
| Fluoranthene           | mg/kg | 0.05 | MCERTS    | 0.66   | 1.7    | 0.7    | 0.08   | 0.07   |
| Pyrene                 | mg/kg | 0.05 | MCERTS    | 0.59   | 1.4    | 0.61   | 0.07   | 0.07   |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS    | 0.28   | 0.62   | 0.26   | < 0.05 | < 0.05 |
| Chrysene               | mg/kg | 0.05 | MCERTS    | 0.3    | 0.62   | 0.27   | 0.06   | < 0.05 |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | ISO 17025 | 0.42   | 0.82   | 0.38   | 0.11   | < 0.05 |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | ISO 17025 | 0.15   | 0.28   | 0.13   | < 0.05 | < 0.05 |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS    | 0.34   | 0.62   | 0.28   | < 0.05 | < 0.05 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS    | 0.18   | 0.3    | 0.15   | < 0.05 | < 0.05 |
| Dibenz(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    | 0.2    | 0.33   | 0.16   | < 0.05 | < 0.05 |

**Total PAH**

|                             |       |     |           |      |      |      |        |        |
|-----------------------------|-------|-----|-----------|------|------|------|--------|--------|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | 3.58 | 8.52 | 3.49 | < 0.80 | < 0.80 |
|-----------------------------|-------|-----|-----------|------|------|------|--------|--------|



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Analytical Report Number: 25-013442

Project / Site name: CTC

Your Order No: 0112

| Lab Sample Number                               | 484897        | 484898                             | 484899                               | 484900        | 484901        |
|---|---------------|------------------------------------|--------------------------------------|---------------|---------------|
| Sample Reference                                | TS1-01        | TS1-02                             | TS1-03                               | TS2-01        | TS2-02        |
| Sample Number                                   | None Supplied | None Supplied                      | None Supplied                        | None Supplied | None Supplied |
| Water Matrix                                    | N/A           | N/A                                | N/A                                  | N/A           | N/A           |
| Depth (m)                                       | None Supplied | None Supplied                      | None Supplied                        | None Supplied | None Supplied |
| Date Sampled                                    | 18/03/2025    | 18/03/2025                         | 18/03/2025                           | 18/03/2025    | 18/03/2025    |
| Time Taken                                      | 1300          | 1300                               | 1300                                 | 1315          | 1315          |
| <b>Analytical Parameter<br/>(Soil Analysis)</b> | <b>Units</b>  | <b>Test Limit of<br/>detection</b> | <b>Test Accreditation<br/>Status</b> |               |               |

**Heavy Metals / Metalloids**

|                                   |       |     |        |       |       |       |       |       |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 7.9   | 7.9   | 8.8   | 6.6   | 7.6   |
| Boron (water soluble)             | mg/kg | 0.2 | MCERTS | 2     | 2.8   | 2.9   | 3.1   | 2.7   |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | 0.3   | 0.3   | 0.4   | < 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   | 14    | 12    | 13    | 12    | 11    |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 14    | 13    | 14    | 13    | 11    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 25    | 25    | 27    | 28    | 19    |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 60    | 41    | 38    | 19    | 14    |
| 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 | 9.5   | 9.3   | 8.6   | 10    | 8.9   |
| 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 | 22    | 20    | 20    | 18    | 17    |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 75    | 76    | 72    | 68    | 47    |

**Petroleum Hydrocarbons**

|   |       |      |        |         |         |         |         |         |
|---|-------|------|--------|---------|---------|---------|---------|---------|
| TPHCWG - Aliphatic >EC5 - EC6_H5_1D_AL        | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 | < 0.010 | < 0.010 | < 0.010 |
| TPHCWG - Aliphatic >EC6 - EC8_H5_1D_AL        | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 | < 0.010 | < 0.010 | < 0.010 |
| TPHCWG - Aliphatic >EC8 - EC10_H5_1D_AL       | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 | < 0.010 | < 0.010 | < 0.010 |
| TPHCWG - Aliphatic >EC10 - EC12_EH CU_1D_AL   | mg/kg | 1    | MCERTS | < 1.0   | < 1.0   | < 1.0   | < 1.0   | < 1.0   |
| TPHCWG - Aliphatic >EC12 - EC16_EH CU_1D_AL   | mg/kg | 2    | MCERTS | 3       | 4.6     | < 2.0   | < 2.0   | < 2.0   |
| TPHCWG - Aliphatic >EC16 - EC21_EH CU_1D_AL   | mg/kg | 8    | MCERTS | < 8.0   | < 8.0   | < 8.0   | < 8.0   | < 8.0   |
| TPHCWG - Aliphatic >EC21 - EC35_EH CU_1D_AL   | mg/kg | 8    | MCERTS | 38      | 29      | 28      | < 8.0   | < 8.0   |
| TPHCWG - Aliphatic >EC35 - EC44_EH CU_1D_AL   | mg/kg | 8.4  | NONE   | 11      | 8.7     | < 8.4   | < 8.4   | < 8.4   |
| TPHCWG - Aliphatic >EC5 - EC35_EH CU+HS_1D_AL | mg/kg | 10   | NONE   | 41      | 34      | 28      | < 10    | < 10    |
| TPHCWG - Aliphatic >EC5 - EC44_EH CU+HS_1D_AL | mg/kg | 10   | NONE   | 51      | 42      | 28      | < 10    | < 10    |

|  |       |      |        |         |         |         |         |         |
|--|-------|------|--------|---------|---------|---------|---------|---------|
| TPHCWG - Aromatic >EC5 - EC7_H5_1D_AR        | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 | < 0.010 | < 0.010 | < 0.010 |
| TPHCWG - Aromatic >EC7 - EC8_H5_1D_AR        | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 | < 0.010 | < 0.010 | < 0.010 |
| TPHCWG - Aromatic >EC8 - EC10_H5_1D_AR       | mg/kg | 0.02 | MCERTS | < 0.020 | < 0.020 | < 0.020 | < 0.020 | < 0.020 |
| TPHCWG - Aromatic >EC10 - EC12_EH CU_1D_AR   | mg/kg | 1    | MCERTS | < 1.0   | 1.5     | < 1.0   | < 1.0   | < 1.0   |
| TPHCWG - Aromatic >EC12 - EC16_EH CU_1D_AR   | mg/kg | 2    | MCERTS | < 2.0   | 6.2     | < 2.0   | < 2.0   | < 2.0   |
| TPHCWG - Aromatic >EC16 - EC21_EH CU_1D_AR   | mg/kg | 10   | MCERTS | < 10    | < 10    | < 10    | < 10    | < 10    |
| TPHCWG - Aromatic >EC21 - EC35_EH CU_1D_AR   | mg/kg | 10   | MCERTS | 34      | 36      | 28      | < 10    | < 10    |
| TPHCWG - Aromatic >EC35 - EC44_EH CU_1D_AR   | mg/kg | 8.4  | NONE   | 61      | 37      | 29      | < 8.4   | < 8.4   |
| TPHCWG - Aromatic >EC5 - EC35_EH CU+HS_1D_AR | mg/kg | 10   | NONE   | 34      | 43      | 28      | < 10    | < 10    |
| TPHCWG - Aromatic >EC5 - EC44_EH CU+HS_1D_AR | mg/kg | 10   | NONE   | 94      | 80      | 57      | < 10    | < 10    |

|   |       |    |      |     |     |    |      |      |
|---|-------|----|------|-----|-----|----|------|------|
| TPH Total >EC6 - EC40_EH CU+HS_1D_TOTAL | mg/kg | 10 | NONE | 120 | 110 | 84 | < 10 | < 10 |
|---|-------|----|------|-----|-----|----|------|------|

|   |       |    |           |       |       |       |       |       |
|---|-------|----|-----------|-------|-------|-------|-------|-------|
| Petroleum Range Organics (EC6 - EC10)_HS_1D_TOTAL | mg/kg | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH (EC10 - EC40)_EH CU_1D_TOTAL                  | mg/kg | 10 | MCERTS    | 120   | 110   | 84    | < 10  | < 10  |



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**Analytical Report Number: 25-013442****Project / Site name: CTC****Your Order No: 0112**

|   |               |                            |                              |               |               |
|---|---------------|----------------------------|------------------------------|---------------|---------------|
| Lab Sample Number                       | 484897        | 484898                     | 484899                       | 484900        | 484901        |
| Sample Reference                        | TS1-01        | TS1-02                     | TS1-03                       | TS2-01        | TS2-02        |
| Sample Number                           | None Supplied | None Supplied              | None Supplied                | None Supplied | None Supplied |
| Water Matrix                            | N/A           | N/A                        | N/A                          | N/A           | N/A           |
| Depth (m)                               | None Supplied | None Supplied              | None Supplied                | None Supplied | None Supplied |
| Date Sampled                            | 18/03/2025    | 18/03/2025                 | 18/03/2025                   | 18/03/2025    | 18/03/2025    |
| Time Taken                              | 1300          | 1300                       | 1300                         | 1315          | 1315          |
| Analytical Parameter<br>(Soil Analysis) | Units         | Test Limit of<br>detection | Test Accreditation<br>Status |               |               |

**VOCs**

|                                    |       |   |        |       |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 5 | MCERTS | < 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 | 8 | MCERTS | < 8.0 | < 8.0 | < 8.0 | < 8.0 | < 8.0 |
| 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



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**Analytical Report Number: 25-013442****Project / Site name: CTC****Your Order No: 0112**

|   |               |                         |                           |
|---|---------------|-------------------------|---------------------------|
| Lab Sample Number                               | 484902        |                         |                           |
| Sample Reference                                | TS2-03        |                         |                           |
| Sample Number                                   | None Supplied |                         |                           |
| Water Matrix                                    | N/A           |                         |                           |
| Depth (m)                                       | None Supplied |                         |                           |
| Date Sampled                                    | 18/03/2025    |                         |                           |
| Time Taken                                      | 1315          |                         |                           |
| <b>Analytical Parameter<br/>(Soil Analysis)</b> | Units         | Test Limit of detection | Test Accreditation Status |

|                               |    |      |      |       |
|-------------------------------|----|------|------|-------|
| Stone Content                 | %  | 0.1  | NONE | < 0.1 |
| Moisture Content              | %  | 0.01 | NONE | 12    |
| Total mass of sample received | kg | 0.1  | NONE | 0.7   |

**Asbestos**

|  |      |     |           |              |
|--|------|-----|-----------|--------------|
| Asbestos in Soil Detected/Not Detected | Type | N/A | ISO 17025 | Not-detected |
| Asbestos Analyst ID                    | N/A  | N/A | N/A       | MJN          |
| Analysis completed                     | N/A  | N/A | N/A       | 21/03/2025   |

**General Inorganics**

|                 |       |   |        |       |
|-----------------|-------|---|--------|-------|
| Total Cyanide   | mg/kg | 1 | MCERTS | < 1.0 |
| Complex Cyanide | mg/kg | 1 | MCERTS | < 1.0 |
| Free Cyanide    | mg/kg | 1 | MCERTS | < 1.0 |

**Total Phenols**

|                            |       |   |        |       |
|----------------------------|-------|---|--------|-------|
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 |
|----------------------------|-------|---|--------|-------|

**Speciated PAHs**

|                        |       |      |           |        |
|------------------------|-------|------|-----------|--------|
| Naphthalene            | mg/kg | 0.05 | MCERTS    | < 0.05 |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS    | < 0.05 |
| Acenaphthene           | mg/kg | 0.05 | MCERTS    | < 0.05 |
| Fluorene               | mg/kg | 0.05 | MCERTS    | < 0.05 |
| Phenanthrene           | mg/kg | 0.05 | MCERTS    | < 0.05 |
| Anthracene             | mg/kg | 0.05 | MCERTS    | < 0.05 |
| Fluoranthene           | mg/kg | 0.05 | MCERTS    | 0.14   |
| Pyrene                 | mg/kg | 0.05 | MCERTS    | 0.13   |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS    | 0.08   |
| Chrysene               | mg/kg | 0.05 | MCERTS    | 0.09   |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | ISO 17025 | 0.17   |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | ISO 17025 | < 0.05 |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS    | < 0.05 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS    | 0.07   |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS    | < 0.05 |
| Benzo(ghi)perylene     | mg/kg | 0.05 | MCERTS    | 0.07   |

**Total PAH**

|                             |       |     |           |        |
|-----------------------------|-------|-----|-----------|--------|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | < 0.80 |
|-----------------------------|-------|-----|-----------|--------|



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**Analytical Report Number: 25-013442****Project / Site name: CTC****Your Order No: 0112**

|   |               |                         |                           |
|---|---------------|-------------------------|---------------------------|
| Lab Sample Number                               | 484902        |                         |                           |
| Sample Reference                                | TS2-03        |                         |                           |
| Sample Number                                   | None Supplied |                         |                           |
| Water Matrix                                    | N/A           |                         |                           |
| Depth (m)                                       | None Supplied |                         |                           |
| Date Sampled                                    | 18/03/2025    |                         |                           |
| Time Taken                                      | 1315          |                         |                           |
| <b>Analytical Parameter<br/>(Soil Analysis)</b> | Units         | Test Limit of detection | Test Accreditation Status |

**Heavy Metals / Metalloids**

|                                   |       |     |        |       |
|-----------------------------------|-------|-----|--------|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 6.6   |
| Boron (water soluble)             | mg/kg | 0.2 | MCERTS | 3.1   |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | 0.2   |
| Chromium (hexavalent)             | mg/kg | 1.8 | MCERTS | < 1.8 |
| Chromium (III)                    | mg/kg | 1   | NONE   | 13    |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 14    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 22    |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 16    |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | < 0.3 |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 10    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1   | MCERTS | 19    |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 51    |

**Petroleum Hydrocarbons**

|   |       |      |        |         |
|---|-------|------|--------|---------|
| TPHCWG - Aliphatic >EC5 - EC6_HS_1D_AL        | mg/kg | 0.01 | MCERTS | < 0.010 |
| TPHCWG - Aliphatic >EC6 - EC8_HS_1D_AL        | mg/kg | 0.01 | MCERTS | < 0.010 |
| TPHCWG - Aliphatic >EC8 - EC10_HS_1D_AL       | mg/kg | 0.01 | MCERTS | < 0.010 |
| TPHCWG - Aliphatic >EC10 - EC12_EH_CU_1D_AL   | mg/kg | 1    | MCERTS | < 1.0   |
| TPHCWG - Aliphatic >EC12 - EC16_EH_CU_1D_AL   | mg/kg | 2    | MCERTS | < 2.0   |
| TPHCWG - Aliphatic >EC16 - EC21_EH_CU_1D_AL   | mg/kg | 8    | MCERTS | < 8.0   |
| TPHCWG - Aliphatic >EC21 - EC35_EH_CU_1D_AL   | mg/kg | 8    | MCERTS | < 8.0   |
| TPHCWG - Aliphatic >EC35 - EC44_EH_CU_1D_AL   | mg/kg | 8.4  | NONE   | < 8.4   |
| TPHCWG - Aliphatic >ECS - EC35_EH_CU+HS_1D_AL | mg/kg | 10   | NONE   | < 10    |
| TPHCWG - Aliphatic >ECS - EC44_EH_CU+HS_1D_AL | mg/kg | 10   | NONE   | < 10    |

|  |       |      |        |         |
|--|-------|------|--------|---------|
| TPHCWG - Aromatic >EC5 - EC7_HS_1D_AR        | mg/kg | 0.01 | MCERTS | < 0.010 |
| TPHCWG - Aromatic >EC7 - EC8_HS_1D_AR        | mg/kg | 0.01 | MCERTS | < 0.010 |
| TPHCWG - Aromatic >EC8 - EC10_HS_1D_AR       | mg/kg | 0.02 | MCERTS | < 0.020 |
| TPHCWG - Aromatic >EC10 - EC12_EH_CU_1D_AR   | mg/kg | 1    | MCERTS | < 1.0   |
| TPHCWG - Aromatic >EC12 - EC16_EH_CU_1D_AR   | mg/kg | 2    | MCERTS | < 2.0   |
| TPHCWG - Aromatic >EC16 - EC21_EH_CU_1D_AR   | mg/kg | 10   | MCERTS | < 10    |
| TPHCWG - Aromatic >EC21 - EC35_EH_CU_1D_AR   | mg/kg | 10   | MCERTS | < 10    |
| TPHCWG - Aromatic >EC35 - EC44_EH_CU_1D_AR   | mg/kg | 8.4  | NONE   | < 8.4   |
| TPHCWG - Aromatic >EC5 - EC35_EH_CU+HS_1D_AR | mg/kg | 10   | NONE   | < 10    |
| TPHCWG - Aromatic >EC5 - EC44_EH_CU+HS_1D_AR | mg/kg | 10   | NONE   | < 10    |

|   |       |    |      |      |
|---|-------|----|------|------|
| TPH Total >EC6 - EC40_EH_CU+HS_1D_TOTAL | mg/kg | 10 | NONE | < 10 |
|---|-------|----|------|------|

|   |       |    |           |       |
|---|-------|----|-----------|-------|
| Petroleum Range Organics (EC6 - EC10)_HS_1D_TOTAL | mg/kg | 1  | ISO 17025 | < 1.0 |
| TPH (EC10 - EC40)_EH_CU_1D_TOTAL                  | mg/kg | 10 | MCERTS    | < 10  |



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**Analytical Report Number: 25-013442****Project / Site name: CTC****Your Order No: 0112**

|   |               |                            |                              |
|---|---------------|----------------------------|------------------------------|
| Lab Sample Number                               | 484902        |                            |                              |
| Sample Reference                                | TS2-03        |                            |                              |
| Sample Number                                   | None Supplied |                            |                              |
| Water Matrix                                    | N/A           |                            |                              |
| Depth (m)                                       | None Supplied |                            |                              |
| Date Sampled                                    | 18/03/2025    |                            |                              |
| Time Taken                                      | 1315          |                            |                              |
| <b>Analytical Parameter<br/>(Soil Analysis)</b> | Units         | Test Limit of<br>detection | Test Accreditation<br>Status |

**VOCs**

|                                    |       |   |        |       |
|------------------------------------|-------|---|--------|-------|
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 5 | MCERTS | < 5.0 |
| Benzene                            | µg/kg | 5 | MCERTS | < 5.0 |
| Toluene                            | µg/kg | 5 | MCERTS | < 5.0 |
| Ethylbenzene                       | µg/kg | 5 | MCERTS | < 5.0 |
| p & m-Xylene                       | µg/kg | 8 | MCERTS | < 8.0 |
| o-Xylene                           | µg/kg | 5 | MCERTS | < 5.0 |

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



**Analytical Report Number : 25-013442**

**Project / Site name: CTC**

\* 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 *                           |
|-------------------|------------------|---------------|---------------|--|
| 484897            | TS1-01           | None Supplied | None Supplied | Brown loam and sand with gravel and vegetation |
| 484898            | TS1-02           | None Supplied | None Supplied | Brown loam and sand with gravel and vegetation |
| 484899            | TS1-03           | None Supplied | None Supplied | Brown loam and sand with gravel and vegetation |
| 484900            | TS2-01           | None Supplied | None Supplied | Brown sand with gravel                         |
| 484901            | TS2-02           | None Supplied | None Supplied | Brown sand with gravel                         |
| 484902            | TS2-03           | None Supplied | None Supplied | Brown sand with gravel                         |



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**Analytical Report Number : 25-013442****Project / Site name: CTC****Water matrix abbreviations:****Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)****Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| <b>Analytical Test Name</b>   | <b>Analytical Method Description</b>   | <b>Analytical Method Reference</b>   | <b>Method number</b> | <b>Wet / Dry Analysis</b> | <b>Accreditation Status</b> |
|---|--|--|----------------------|---------------------------|-----------------------------|
| 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                   |
| 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                      |
| Boron, water soluble, in soil   | Determination of water soluble boron in soil by hot water extract followed by ICP-OES  | In-house method based on Second Site Properties version 3  | L038B                | D                         | MCERTS                      |
| Speciated 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-PL        | D/W                       | MCERTS                      |
| Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil                     | Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS   | In-house method  | L076B/L088-PL        | D/W                       | MCERTS                      |
| Complex Cyanide in soil   | Determination of complex cyanide by calculation  | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L080-PL              | W                         | MCERTS                      |
| Chromium III in soil  | In-house method by calculation from total Cr and Cr VI   | In-house method by calculation   | L080-PL/L130B        | 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-PL              | W                         | MCERTS                      |
| Free cyanide in soil  | Determination of free cyanide by distillation followed by colorimetry  | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L080-PL              | 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-PL              | W                         | MCERTS                      |
| Total cyanide in soil   | Determination of total cyanide by distillation followed by colorimetry   | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L080-PL              | W                         | MCERTS                      |



Analytical Report Number : 25-013442

Project / Site name: CTC

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

| Analytical Test Name                             | Analytical Method Description                                     | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|--|---|-----------------------------|---------------|--------------------|----------------------|
| Total petroleum hydrocarbons by HS-GC-MS in soil | Determination of total petroleum hydrocarbons in soil by HS-GC-MS | In-house method             | L129-PL       | W                  | ISO 17025            |

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 30oC.

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.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution



## Appendix D – Site Photographs

## APPENDIX D – Site Photographs



Representative photo showing bulk bags with imported topsoil prior to placement

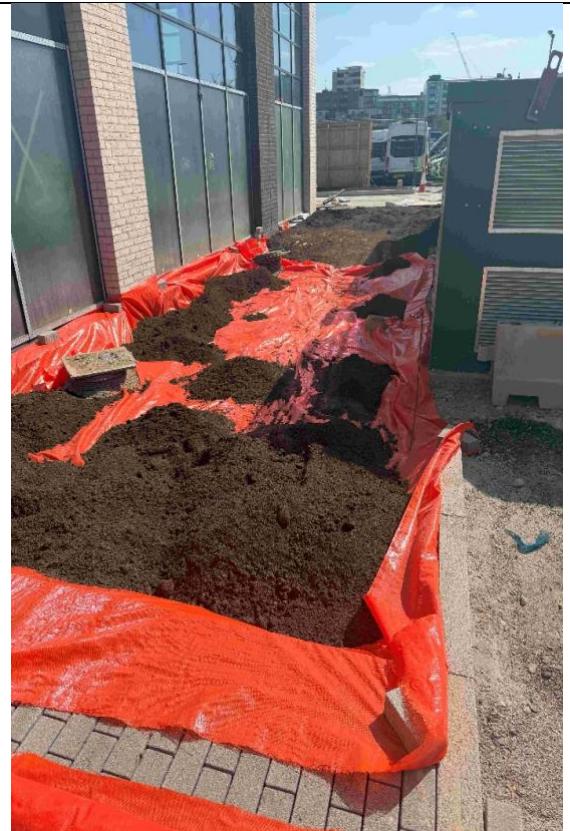


Soil texture of imported topsoil (TS2 and TS3)



Soil texture of imported topsoil (TS1)

## APPENDIX D – Site Photographs



Representative photos showing marker layer and topsoil within area of installed utilities in Block F



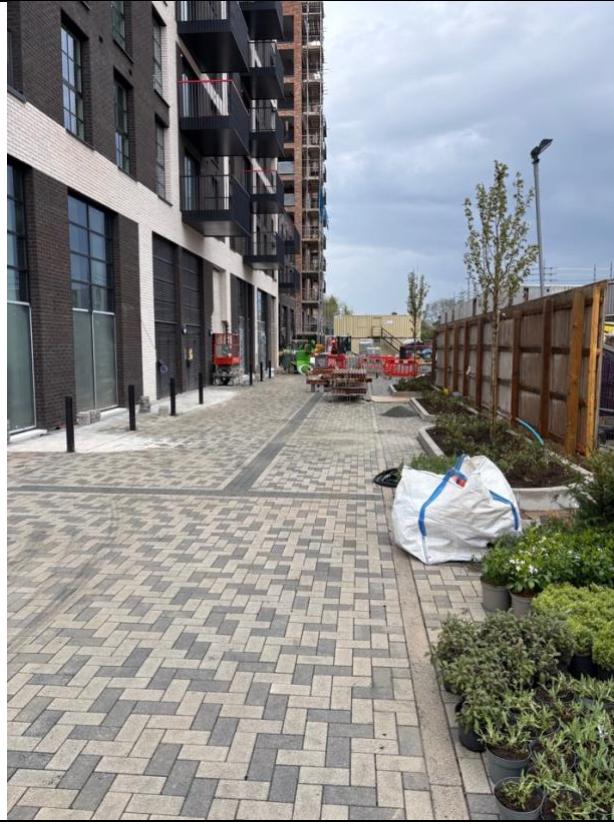
Representative photo showing marker layer and topsoil within asset protection in Block F

## APPENDIX D – Site Photographs



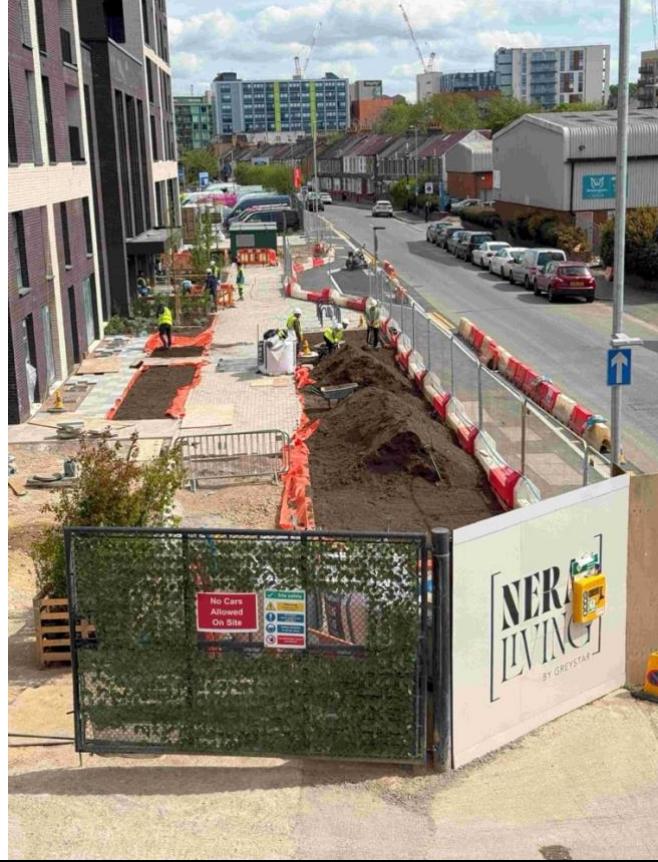
**Reduced thickness example within asset protection in Block F**

**600mm thickness example within Block F (Ground Level)**



**Examples of completed landscaped areas (with planting) in Block F (east side)**

## APPENDIX D – Site Photographs

|   |   |
|---|---|
|  A wide-angle photograph showing the construction of soft landscaping in Blocks E and F. The site is a mix of dirt, gravel, and some paved areas. Construction equipment and materials are visible. In the foreground, there's a fence with a sign that reads 'No Cars On Site' and 'NERV LIVING BY GREYSTAK'. In the background, there are modern apartment buildings and a street with parked cars. |  A close-up photograph of a dark, moist soil sample taken at ground level in Block E. A yellow tape measure is placed vertically next to the soil, showing a length of 600mm. The soil appears to be a mix of dark earth and some organic material.                                |
|  A photograph showing the landscaping work in Block F at the podium level. A black rectangular planter box is filled with soil and contains a black drain cover. An orange and black garden trowel is resting on top of the planter. In the background, there's a brick wall and some construction materials.  |  A close-up photograph of a soil sample taken within the podium area of Block F prior to topsoil placement. A yellow tape measure is placed vertically next to the soil, showing a length of 600mm. The soil is a lighter, more granular material compared to the one in Block E. |
| <b>Landscaping in Block F (Podium Level)</b>  | <b>Thickness example (600mm) within podium prior to topsoil placement in Block F</b>  |

## APPENDIX D – Site Photographs

|  |   |
|--|---|
|    |    |
| <p>Thickness after topsoil placement in Block F Podium</p>                           | <p>Representative photo showing bulk bag with imported sand prior to placement<br/><i>(laid under the 600mm of topsoil at podium level)</i></p> |
|  |   |
| <p><b>Topsoil Example (Block E Podium)</b></p>                                       |   |



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