

## FINAL ANALYTICAL TEST REPORT

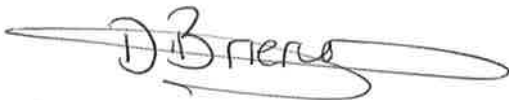
**Envirolab Job Number:** 22/08265  
**Issue Number:** 1

**Date:** 07 September, 2022

**Client:** Booth Ventures Ltd  
Harwood Quarry Landfill Site  
Brookfold Lane  
Harwood  
Bolton  
UK  
BL2 4LT

**Project Manager:** Louise Place  
**Project Name:** Titus Barn Bradley Fold  
**Project Ref:** N/A  
**Order No:** PO 22001244  
**Date Samples Received:** 23/08/22  
**Date Instructions Received:** 24/08/22  
**Date Analysis Completed:** 07/09/22

**Approved by:**



Danielle Brierley  
Deputy Client Services Supervisor

Envirolab Job Number: 22/08265

Client Project Name: Titus Barn Bradley Fold

Client Project Ref: N/A

| Lab Sample ID                                       | 22/08265/1 | 22/08265/2 | 22/08265/3 | 22/08265/4 |  |  |  | Units | Limit of Detection | Method ref  |
|-----------------------------------------------------|------------|------------|------------|------------|--|--|--|-------|--------------------|-------------|
| Client Sample No                                    |            |            |            |            |  |  |  |       |                    |             |
| Client Sample ID                                    | North      | South      | East       | West       |  |  |  |       |                    |             |
| Depth to Top                                        |            |            |            |            |  |  |  |       |                    |             |
| Depth To Bottom                                     |            |            |            |            |  |  |  |       |                    |             |
| Date Sampled                                        |            |            |            |            |  |  |  |       |                    |             |
| Sample Type                                         | Soil       | Soil       | Soil       | Soil       |  |  |  |       |                    |             |
| Sample Matrix Code                                  | 6AE        | 4ABE       | 4AE        | 4AE        |  |  |  |       |                    |             |
| % Moisture at <40C <sub>A</sub>                     | 18.3       | 16.7       | 20.5       | 20.0       |  |  |  | % w/w | 0.1                | A-T-044     |
| % Stones >10mm <sub>A</sub>                         | <0.1       | <0.1       | <0.1       | <0.1       |  |  |  | % w/w | 0.1                | A-T-044     |
| pH <sub>D</sub> <sup>M#</sup>                       | 6.11       | 5.77       | 6.01       | 5.84       |  |  |  | pH    | 0.01               | A-T-031s    |
| Chloride (water sol 2:1) <sub>D</sub> <sup>M#</sup> | <10        | <10        | <10        | <10        |  |  |  | mg/kg | 10                 | A-T-026s    |
| Sulphate (water sol 2:1) <sub>D</sub> <sup>M#</sup> | <0.01      | <0.01      | <0.01      | <0.01      |  |  |  | g/l   | 0.01               | A-T-026s    |
| Sulphate (acid soluble) <sub>D</sub> <sup>M#</sup>  | 1000       | 860        | 1100       | 1000       |  |  |  | mg/kg | 200                | A-T-028s    |
| Cyanide (total) <sub>A</sub> <sup>M#</sup>          | <1         | <1         | <1         | <1         |  |  |  | mg/kg | 1                  | A-T-042sTCN |
| Phenols - Total by HPLC <sub>A</sub>                | <0.2       | <0.2       | <0.2       | <0.2       |  |  |  | mg/kg | 0.2                | A-T-050s    |
| Sulphide <sub>A</sub>                               | 410        | 410        | 420        | 420        |  |  |  | mg/kg | 5                  | A-T-043-s   |
| Total Organic Carbon <sub>D</sub> <sup>M#</sup>     | 5.32       | 5.75       | 6.41       | 5.35       |  |  |  | % w/w | 0.03               | A-T-032s    |
| Arsenic <sub>D</sub> <sup>M#</sup>                  | 41         | 34         | 38         | 38         |  |  |  | mg/kg | 1                  | A-T-024s    |
| Boron (water soluble) <sub>D</sub>                  | <1.0       | <1.0       | <1.0       | <1.0       |  |  |  | mg/kg | 1                  | A-T-027s    |
| Cadmium <sub>D</sub> <sup>M#</sup>                  | 1.1        | 1.0        | 1.0        | 1.0        |  |  |  | mg/kg | 0.5                | A-T-024s    |
| Copper <sub>D</sub> <sup>M#</sup>                   | 77         | 69         | 67         | 67         |  |  |  | mg/kg | 1                  | A-T-024s    |
| Chromium <sub>D</sub> <sup>M#</sup>                 | 48         | 44         | 47         | 50         |  |  |  | mg/kg | 1                  | A-T-024s    |
| Lead <sub>D</sub> <sup>M#</sup>                     | 191        | 147        | 162        | 159        |  |  |  | mg/kg | 1                  | A-T-024s    |
| Mercury <sub>D</sub>                                | <0.17      | <0.17      | <0.17      | <0.17      |  |  |  | mg/kg | 0.17               | A-T-024s    |
| Nickel <sub>D</sub> <sup>M#</sup>                   | 21         | 19         | 19         | 23         |  |  |  | mg/kg | 1                  | A-T-024s    |
| Selenium <sub>D</sub> <sup>M#</sup>                 | 2          | 2          | 2          | 2          |  |  |  | mg/kg | 1                  | A-T-024s    |
| Zinc <sub>D</sub> <sup>M#</sup>                     | 129        | 111        | 128        | 129        |  |  |  | mg/kg | 5                  | A-T-024s    |

Envirolab Job Number: 22/08265

Client Project Name: Titus Barn Bradley Fold

Client Project Ref: N/A

| Lab Sample ID                                                   | 22/08265/1 | 22/08265/2 | 22/08265/3 | 22/08265/4 |  |  |  | Units | Limit of Detection | Method ref |
|-----------------------------------------------------------------|------------|------------|------------|------------|--|--|--|-------|--------------------|------------|
| Client Sample No                                                |            |            |            |            |  |  |  |       |                    |            |
| Client Sample ID                                                | North      | South      | East       | West       |  |  |  |       |                    |            |
| Depth to Top                                                    |            |            |            |            |  |  |  |       |                    |            |
| Depth To Bottom                                                 |            |            |            |            |  |  |  |       |                    |            |
| Date Sampled                                                    |            |            |            |            |  |  |  |       |                    |            |
| Sample Type                                                     | Soil       | Soil       | Soil       | Soil       |  |  |  |       |                    |            |
| Sample Matrix Code                                              | 6AE        | 4ABE       | 4AE        | 4AE        |  |  |  |       |                    |            |
| Asbestos in Soil (inc. matrix) ^                                |            |            |            |            |  |  |  |       |                    |            |
| Asbestos in soil <sub>D</sub> #                                 | NAD        | NAD        | NAD        | NAD        |  |  |  |       |                    | A-T-045    |
| Asbestos Matrix (visual) <sub>D</sub>                           | -          | -          | -          | -          |  |  |  |       |                    | A-T-045    |
| Asbestos Matrix (microscope) <sub>D</sub>                       | -          | -          | -          | -          |  |  |  |       |                    | A-T-045    |
| Asbestos ACM - Suitable for Water Absorption Test? <sub>D</sub> | N/A        | N/A        | N/A        | N/A        |  |  |  |       |                    | A-T-045    |

Envirolab Job Number: 22/08265

Client Project Name: Titus Barn Bradley Fold

Client Project Ref: N/A

| Lab Sample ID                                      | 22/08265/1                                          | 22/08265/2                                                            | 22/08265/3                                                            | 22/08265/4                                                            |  |  |  | Units | Limit of Detection | Method ref |
|----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------|--|--|--|-------|--------------------|------------|
| Client Sample No                                   |                                                     |                                                                       |                                                                       |                                                                       |  |  |  |       |                    |            |
| Client Sample ID                                   | North                                               | South                                                                 | East                                                                  | West                                                                  |  |  |  |       |                    |            |
| Depth to Top                                       |                                                     |                                                                       |                                                                       |                                                                       |  |  |  |       |                    |            |
| Depth To Bottom                                    |                                                     |                                                                       |                                                                       |                                                                       |  |  |  |       |                    |            |
| Date Sampled                                       |                                                     |                                                                       |                                                                       |                                                                       |  |  |  |       |                    |            |
| Sample Type                                        | Soil                                                | Soil                                                                  | Soil                                                                  | Soil                                                                  |  |  |  |       |                    |            |
| Sample Matrix Code                                 | 6AE                                                 | 4ABE                                                                  | 4AE                                                                   | 4AE                                                                   |  |  |  |       |                    |            |
| PAH-16MS                                           |                                                     |                                                                       |                                                                       |                                                                       |  |  |  |       |                    |            |
| Acenaphthene <sub>A</sub> <sup>M#</sup>            | 0.07                                                | 0.06                                                                  | 0.06                                                                  | 0.08                                                                  |  |  |  | mg/kg | 0.01               | A-T-019s   |
| Acenaphthylene <sub>A</sub> <sup>M#</sup>          | <0.01                                               | <0.01                                                                 | <0.01                                                                 | <0.01                                                                 |  |  |  | mg/kg | 0.01               | A-T-019s   |
| Anthracene <sub>A</sub> <sup>M#</sup>              | 0.13                                                | 0.10                                                                  | 0.11                                                                  | 0.19                                                                  |  |  |  | mg/kg | 0.02               | A-T-019s   |
| Benzo(a)anthracene <sub>A</sub> <sup>M#</sup>      | 0.42                                                | 0.40                                                                  | 0.39                                                                  | 0.45                                                                  |  |  |  | mg/kg | 0.04               | A-T-019s   |
| Benzo(a)pyrene <sub>A</sub> <sup>M#</sup>          | 0.40                                                | 0.41                                                                  | 0.39                                                                  | 0.41                                                                  |  |  |  | mg/kg | 0.04               | A-T-019s   |
| Benzo(b)fluoranthene <sub>A</sub> <sup>M#</sup>    | 0.39                                                | 0.40                                                                  | 0.38                                                                  | 0.40                                                                  |  |  |  | mg/kg | 0.05               | A-T-019s   |
| Benzo(ghi)perylene <sub>A</sub> <sup>M#</sup>      | 0.26                                                | 0.26                                                                  | 0.25                                                                  | 0.25                                                                  |  |  |  | mg/kg | 0.05               | A-T-019s   |
| Benzo(k)fluoranthene <sub>A</sub> <sup>M#</sup>    | 0.13                                                | 0.13                                                                  | 0.13                                                                  | 0.15                                                                  |  |  |  | mg/kg | 0.07               | A-T-019s   |
| Chrysene <sub>A</sub> <sup>M#</sup>                | 0.53                                                | 0.49                                                                  | 0.49                                                                  | 0.55                                                                  |  |  |  | mg/kg | 0.06               | A-T-019s   |
| Dibenzo(ah)anthracene <sub>A</sub> <sup>M#</sup>   | 0.06                                                | 0.06                                                                  | 0.05                                                                  | 0.06                                                                  |  |  |  | mg/kg | 0.04               | A-T-019s   |
| Fluoranthene <sub>A</sub> <sup>M#</sup>            | 1.03                                                | 0.91                                                                  | 0.97                                                                  | 1.13                                                                  |  |  |  | mg/kg | 0.08               | A-T-019s   |
| Fluorene <sub>A</sub> <sup>M#</sup>                | 0.05                                                | 0.04                                                                  | 0.04                                                                  | 0.06                                                                  |  |  |  | mg/kg | 0.01               | A-T-019s   |
| Indeno(123-cd)pyrene <sub>A</sub> <sup>M#</sup>    | 0.29                                                | 0.31                                                                  | 0.29                                                                  | 0.29                                                                  |  |  |  | mg/kg | 0.03               | A-T-019s   |
| Naphthalene <sub>A</sub> <sup>M#</sup>             | <0.03                                               | <0.03                                                                 | <0.03                                                                 | <0.03                                                                 |  |  |  | mg/kg | 0.03               | A-T-019s   |
| Phenanthrene <sub>A</sub> <sup>M#</sup>            | 0.67                                                | 0.49                                                                  | 0.48                                                                  | 0.70                                                                  |  |  |  | mg/kg | 0.03               | A-T-019s   |
| Pyrene <sub>A</sub> <sup>M#</sup>                  | 0.91                                                | 0.80                                                                  | 0.86                                                                  | 0.98                                                                  |  |  |  | mg/kg | 0.07               | A-T-019s   |
| Total PAH-16MS <sub>A</sub> <sup>M#</sup>          | 5.34                                                | 4.86                                                                  | 4.89                                                                  | 5.70                                                                  |  |  |  | mg/kg | 0.01               | A-T-019s   |
|                                                    |                                                     |                                                                       |                                                                       |                                                                       |  |  |  |       |                    |            |
| TPH Banded 2 with ID + GC Trace                    |                                                     |                                                                       |                                                                       |                                                                       |  |  |  |       |                    |            |
| >C6-C10 <sub>A</sub> <sup>M#</sup>                 | <5                                                  | <5                                                                    | <5                                                                    | <5                                                                    |  |  |  | mg/kg | 5                  | A-T-007s   |
| >C10-C25 <sub>A</sub> <sup>M#</sup>                | 234                                                 | 28                                                                    | 23                                                                    | 29                                                                    |  |  |  | mg/kg | 5                  | A-T-007s   |
| >C25-C40 <sub>A</sub> <sup>M#</sup>                | 39                                                  | 38                                                                    | 40                                                                    | 45                                                                    |  |  |  | mg/kg | 5                  | A-T-007s   |
| TPH FID Chromatogram <sub>A</sub>                  | Appended                                            | Appended                                                              | Appended                                                              | Appended                                                              |  |  |  |       |                    | A-T-007s   |
| TPH ID Interpretation <sub>A</sub>                 | C12-C40 hydrocarbon<br>s with<br>unknown<br>profile | C12-C40 hydrocarbon<br>s with some<br>PAHs and<br>humic<br>substances | C16-C40 hydrocarbon<br>s with some<br>PAHs and<br>humic<br>substances | C16-C40 hydrocarbon<br>s with some<br>PAHs and<br>humic<br>substances |  |  |  |       |                    | A-T-007s   |
| Total TPH Banded 2 with ID + GC Trace <sub>A</sub> | 273                                                 | 66                                                                    | 63                                                                    | 74                                                                    |  |  |  | mg/kg | 5                  | A-T-007s   |

## REPORT NOTES

### General

This report shall not be reproduced, except in full, without written approval from Envirolab.

The results reported herein relate only to the material supplied to the laboratory.

The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

### Soil chemical analysis:

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

### TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

### Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

### Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

### Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

### Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

### Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

Subscript "A" indicates analysis performed on the sample as received.

Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Subscript "A" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.

EPH CWG results have humics mathematically subtracted through instrument calculation

TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

### EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these

humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

## Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR  
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** Booth Ventures Ltd, Harwood Quarry Landfill Site, Brookfold Lane, Harwood,  
Bolton, UK, BL2 4LT

**Project:** Titus Barn Bradley Fold

**Clients Project No:** N/A

**Project No:** 22/08265

**Date Received:** 24/08/2022 (am)

**Cool Box Temperatures (°C):** 20.6

| Lab Sample ID          | 22/08265/1 | 22/08265/2 | 22/08265/3 | 22/08265/4 |
|------------------------|------------|------------|------------|------------|
| Client Sample No       |            |            |            |            |
| Client Sample ID/Depth | North      | South      | East       | West       |
| Date Sampled           |            |            |            |            |
| Deviation Code         |            |            |            |            |
| D (no glass)           | ✓          | ✓          | ✓          | ✓          |
| E (no date)            | ✓          | ✓          | ✓          | ✓          |

### Key

D (no glass) Glass container not provided for extractable organics analysis  
E (no date) No sampling date provided (all results affected if not provided)

*If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.*

## Envirolab Analysis Dates

| Lab Sample ID          | 22/08265/1 | 22/08265/2 | 22/08265/3 | 22/08265/4 |
|------------------------|------------|------------|------------|------------|
| Client Sample No       |            |            |            |            |
| Client Sample ID/Depth | North      | South      | East       | West       |
| Date Sampled           |            |            |            |            |
| A-T-007s               | 26/08/2022 | 26/08/2022 | 26/08/2022 | 26/08/2022 |
| A-T-019s               | 30/08/2022 | 30/08/2022 | 30/08/2022 | 30/08/2022 |
| A-T-024s               | 05/09/2022 | 05/09/2022 | 05/09/2022 | 05/09/2022 |
| A-T-026s               | 02/09/2022 | 02/09/2022 | 02/09/2022 | 02/09/2022 |
| A-T-027s               | 02/09/2022 | 02/09/2022 | 02/09/2022 | 02/09/2022 |
| A-T-028s               | 03/09/2022 | 03/09/2022 | 03/09/2022 | 03/09/2022 |
| A-T-031s               | 07/09/2022 | 07/09/2022 | 07/09/2022 | 07/09/2022 |
| A-T-032s               | 01/09/2022 | 01/09/2022 | 01/09/2022 | 01/09/2022 |
| A-T-042sTCN            | 25/08/2022 | 25/08/2022 | 25/08/2022 | 25/08/2022 |
| A-T-043-s              | 25/08/2022 | 25/08/2022 | 25/08/2022 | 25/08/2022 |
| A-T-044                | 01/09/2022 | 01/09/2022 | 01/09/2022 | 01/09/2022 |
| A-T-045                | 26/08/2022 | 26/08/2022 | 26/08/2022 | 26/08/2022 |
| A-T-050s               | 26/08/2022 | 26/08/2022 | 26/08/2022 | 26/08/2022 |

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

**End of Report**