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3866a-05 / JH

2nd June 2026

Robertson Construction North West Ltd
3 The Parks
Haydock
Newton le Willows
Merseyside
WA12 0JQ

# WHITEFIELD FIRE STATION – VALIDATION REPORT

## Introduction

This Validation Report has been prepared at the request of Robertson Construction North West Ltd. Instructions to proceed with this report were received in May 2026.

The 0.35 Ha site is located to the east of Bury New Road, Whitefield, at the approximate postcode M45 7SY. The National Ordnance Survey Grid Reference for the centre of the site is 380477E, 406478N.

This report follows, and should be read in conjunction with, the following reports:

- IGE Consulting Ltd., '*Phase 1 Geo-Environmental Investigation*' (Ref: 3866a-01A, Dated: February 2023);
- IGE Consulting Ltd., *'Phase 2 Geo-Environmental Investigation Report'* (Ref: 3866a-02B, Dated: February 2024); and
- Bradshaw Gas and Hope LLP., '*Remediation Statement*' (Ref: 1978/35).

A Landscape Proposals Plan is included in Appendix 1.

Although the risk assessments undertaken as part of the IGE Consulting Phase 2 report concluded that there was a very low risk to human health and controlled waters and from ground gas at the site, Bradshaw Gas and Hope produced a Remediation Statement primarily concerning the testing of any soils imported for use within areas of soft landscaping and a watching brief for any previously unencountered contamination.

## Suitability of Imported Topsoil

Imported topsoil was required for use within areas of soft landscaping on site which has been validated as detailed below to ensure its suitability for use (i.e., no glass or plastic is to be included and meets chemical testing acceptability criteria).

The topsoil for the clean cover system was purchased and imported from a topsoil supplier – Huperade Ltd. BS 3882 (2015) Specification for Topsoil testing was undertaken by the supplier at source which classified it as Multipurpose Grade and therefore suitable for import and use on site. The certificate of analysis is contained in Appendix 2.

The topsoil was visually assessed and found to contain no plastics, glass, metals, or other deleterious anthropogenic materials and appeared to be a suitable growing medium. Chemical testing at site was analysed by i2 analytical and assessed by IGE Consulting. 3 No. samples were taken and a wide range of contaminants were analysed and compared to GACs for a 'commercial' end use. No concentrations were present in exceedance of their respective GACs. Therefore, the topsoil was deemed suitable for use.

Chemical test results at site for the topsoil are included in Appendix 3.

**Suitability of Imported Clay**

As shown on the appended Landscape Proposals Plan, a surface water attenuation basin is to be constructed in the southern site section. A manufactured clay material was imported to appropriately line the basin / pond. The product technical data sheet for the material is included as Appendix 4 which states that the material is suitable for use as a geological barrier or capping layer.

As the material was imported, it was deemed necessary to undertake chemical testing to ensure that it was chemically suitable for use on site. Chemical testing at site was analysed by i2 analytical and assessed by IGE Consulting. 5 No. samples were taken and a wide range of contaminants were analysed and compared to GACs for a 'commercial' end use. No concentrations were present in exceedance of their respective GACs. Therefore, the material was deemed suitable for use.

Chemical test results at site for the subsoil are included in Appendix 3.

**Watching Brief**

As detailed within the Bradshaw Gas and Hope Remediation Statement, a watching brief was undertaken during enabling works on site. No evidence of previously unrecorded contamination was encountered during the enabling works.

**Conclusion**

On the basis of the information provided, it is confirmed that the remediation objectives have been met for the site. No further recommendations are made for the site.

If any additional information is needed, do not hesitate to ask.

Yours sincerely,

**James Harley** MSci SGPV FGS

**Senior Geo-Environmental Engineer**

Appendix 1 – Proposed Site Plan
Appendix 2 – BS 3882 (2015) Topsoil Testing at Source
Appendix 3 – Chemical Test Results at Site and Screening Tables
Appendix 4 – Imported Clay Liner Product Technical Data Sheet

**APPENDIX 1**

LANDSCAPE PROPOSALS PLAN

## WHITEFIELD FIRE STATION PLANTING SCHEDULE

### TREES

| No's | Species | Common name | Girth (cms) | Height (cms) | Form/Pot size |
|---|---|---|---|---|---|
| 2 | *Prunus avium* | **Wild cherry** | 12-14 | 350-425 | RB |
| 3 | *Betula pendula* | **Birch** | 12-14 | 350-425 | RB |
| 1 | *Quercus robur* | **English oak** | 12-14 | 350-425 | RB |
| 5 | *Tilia cordata* | **Lime** | 12-14 | 350-425 | RB |

### SHRUB PLANTING

| No's | Species | Common name | Height (cms) | Form/Pot size | Notes |
|---|---|---|---|---|---|
| 99 | *Euonymus japonica 'Emerald n' Gold'* | **Spindle** | 20/30 | 2L | Pit plant into 400mm depth of good quality topsoil |
| 67 | *Hypericum x moserianum 'Tricolor'* | **St John's Wort** | 20-30 | 2L | |
| 50 | *Lonicera pileata* | **Box honeysuckle** | 30-40 | 3L | |
| 30 | *Prunus laurocerasus 'Zabeliana'* | **Cherry laurel Zabeliana** | 30-40 | 3L | |
| 63 | *Santolina incana* | **Cotton lavender** | 30-40 | 3L | |
| 24 | *Skimmia japonica 'Rubella'* | **Japanese skimmia** | 30-40 | 3L | |
| 50 | *Spiraea 'Goldflame'* | **Japanese spiraea** | 30-40 | 3L | |

### NATIVE SPECIES PLANTING (142m2)

| No's | Species | %age mix | Common name | Height (cms) | Form/Pot size | Notes |
|---|---|---|---|---|---|---|
| 7 | *Acer campestre* | 5 | **Field maple** | 60-80 | B 1+1 | Pit plant into 400mm depth of good quality topsoil with staked shelters at 1no per m2 |
| 15 | *Corylus avellana* | 10 | **Hazel** | 60-80 | B 1+1 | |
| 85 | *Crataegus monogyna* | 60 | **Hawthorn** | 60-80 | B 1+1 | |
| 15 | *Hedera helix* | 10 | **Ivy** | 60-80 | 2L | |
| 7 | *Ilex aquifolium* | 5 | **Holly** | 60-80 | 3L | |
| 7 | *Rosa canina* | 5 | **Dog rose** | 40-60 | 2L | |
| 7 | *Sambucus nigra* | 5 | **Elder** | 60-80 | B 1+1 | |

### HEDGE PLANTING

| No's | Species | Common name | Height (cms) | Form/Pot size | Notes |
|---|---|---|---|---|---|
| 450 | *Fagus sylvatica* | **Beech** | 60-80 | B 1+1 | Plant at 5no. per linear metre in a double staggered row |

## KEY

- TREE TO BE RETAINED
- TREE TO BE REMOVED
- PROPOSED TREE
- PROPOSED SHRUB PLANTING (288m2)
- PROPOSED NATIVE SCRUB SPECIES PLANTING (140m2)
- PROPOSED HEDGE PLANTING (90lm)
- PROPOSED MEADOW MIX GRASSED AREAS (670m2) for reinstating existing and new grassed areas. EG1 General Purpose Meadow Grass Mixture - supplied by Emorsgate Seeds
- PROPOSED SEED MIX FOR SEASONALLY WET SOILS (325m2) EM8 Meadow Mixtures for Wetlands - supplied by Emorsgate Seeds
- PROPOSED WILDFLOWER MIX (116m2) EM1F Basic General Purpose Wildflowers supplied by Emorsgate Seeds
- LOCATION OF WALL MOUNTED BAT BOX
- WORKS WITHIN THE PUBLIC HIGHWAY
- AREA OF GROUND TO BE HAND DUG
- TEMPORARY TREE PROTECTION BARRIER - 1.8m high Heras fencing secured into ground.

**LANDSCAPE SPECIFICATION NOTES FOR PREPARATION AND PLANTING**

(Generally to BS 4428:1989 – General Landscape Operations; excluding hardworks)

**Generally**

1. Materials and workmanship shall generally be in accordance with the following documents:
2. *BS 3836-1:1992 Nursery Stock. Specification for Trees and Shrubs*
3. *BS 4428:1989 Code of Practice for General Landscape Operations*
4. Trees and other vegetation to be retained shall be protected in accordance with the provisions of *BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations*
5. *BS3882: 2015 Topsoil*

**Groundworks**

1. Groundworks for proposed planting shall be in accordance with BS 4428:1989, Areas for proposed tree planting shall be cleared of unsuitable materials, debris, concrete and the like to a depth of 900mm below ground level within a 2.0m radius of each tree. A minimum depth 600mm imported topsoil shall be supplied for planting of trees (depths made up by tree planting compost (See Tree section). Areas for shrub and groundcover planting shall have clearance of unsuitable material to a depth of 600mm. A minimum of 400mm imported topsoil over 200mm depth of clean subsoil shall be supplied for planting of shrubs and groundcover. The formation levels to all planted areas shall be ripped and broken up as necessary to a depth of 200mm to achieve suitable drainage.
2. A 50mm layer of approved non-peat based planting compost shall be applied over the whole surface of shrub planting areas and cultivated into the soil.
3. All levels shall be brought up to an even grade to approved cambers, 25mm below adjacent kerb lines. The soil shall be firm with the top 25mm cultivated to a fine tilth. ENMAG or similar approved granular fertiliser shall be worked into the soil at a rate of 70 grams/m$^2$ to all areas to received planting.
4. All topsoil shall be stone picked, removing stones with a dimension in any direction of 25mm or over and re-graded to marry into adjacent levels prior to planting.

**Shrubs**

5. All areas to receive shrubs shall be clear of all debris, concrete and like and the base of these areas shall be broken out to a minimum depth of 450 mm to relieve any compaction and so aid water drainage.
6. All areas to receive shrubs shall be topsoiled to a minimum depth of 350 mm. if no topsoil currently exists. Topsoil shall be 25mm below the level of adjacent kerbs. All topsoil shall be cultivated, stone picked and graded to marry into adjacent levels prior to planting.
7. All shrubs shall be to the specified size, bushy and in good health free from disease.
8. Shrubs shall be planted into topsoil with a granular slow-release fertiliser spread over the surface at the manufacturer's recommended rates.
9. All amenity or ornamental shrub beds shall receive a 50 mm layer of ornamental bark mulch.
10. Areas of broad-leaved weeds shall be cleared by either hand pulling or spot treatment using a selective broadleaf herbicide.

**Trees**

11. All trees shall be to the specified size and comply with BS 3036. All shall be well branched with a straight stem and leader shoot and be free from pegs, and bark damage.
12. Trees shall be planted in a pit 1200 dia. x 750mm deep and backfilled after planting with imported topsoil incorporating 2 x 80L bags of Fison's Tree Planting and mulching compost.
13. All trees shall be double high staked to good horticultural practice using 75mm peeled and pointed larch stakes and rubberised tree ties with spacer.

**Whips and Transplants (for native species)**

14. All whips and transplants shall be supplied and installed with 75mm diameter x 600mm high green tree shelters to transplants, supplied with 25 x 25mm timber softwood stake for fixing into the ground. Do not apply to feathered stock.
15. All conifers and holly species shall be supplied & installed with 250mm diameter fine mesh guard with 1 no. 25 x 25mm timber softwood stakes for fixing into the ground.
16. All stock shall be notch planted with the exception of feathered stock and holly species which shall be pit planted.

**Turf (if utilised)**

17. All areas to receive turf shall be clear of all debris, concrete and like and the base of these areas shall be broken out to relieve any compaction and so aid water drainage.
18. All areas to receive turf shall be topsoiled to a depth of 150mm. All topsoil shall be cultivated to a fine tilth, stone picked and graded to receive turf.
19. All turf shall be laid 25mm above the height of adjacent kerbs.
20. All turf shall be good quality meadow grass laid in rows laid with half lapped joints, well butted up and bonded. The turfed areas shall be top dressed to a depth of 6mm with an approved top dressing material well brushed in to completely fill all joints.
21. When amenity grass mix is 100mm high it shall be lightly tipped by approximately 25mm with an approved mower.
22. Any areas which fail to germinate shall be re-cultivated and re-seeded, within one month of the original seeding.

**Seeding preparation**

23. All areas to receive seeding shall be clear of construction debris and the like to depth of 300mm.
24. All areas to receive seeding shall be free of weeds and broad-leaved species. Annual weeds shall be controlled by mechanical means or the use of contact herbicide. Perennial weeds e.g., docks, thistle, nettles and couch grass shall be controlled with a translocated Glyphosate based herbicide. Use of herbicide in close proximity to a water course requires the permission of the Environment Agency via Form AqHerb01.
25. All areas to receive seed shall be cultivated and brought to a medium tilth by raking and harrowing within the top 25mm. All debris, including stones of 25mm or over, brought to the surface shall be removed off site.
26. No fertiliser shall be applied to the soil.

**Seed sowing**

27. The specified seed mix shall be sown at the supplier's recommended rate (generally 5grams/m$^2$. The quantities of seed shall be divided in half, mixed with dry (or sifted topsoil or sawdust) and sown evenly broadcast in transverse directions and the seed shall be raked or harrowed in. The seed shall not be drilled. Sowing shall be carried out during calm weather in optimum months (March-May and August to October). All sowing is at the contractor's own risk and any areas where germination fails shall be re-seeded at the contractor's own expense.
28. After sowing the seed shall be lightly harrowed or hand raked into the immediate surface and lightly rolled.

**Maintenance**

29. Any areas which fail to germinate shall be re-cultivated and re-seeded, within one month of the original seeding.
30. Areas of broad-leaved weeds shall be cleared by either hand pulling or spot treatment using a selective broadleaf herbicide.
31. Cut twice a year in early spring and late autumn to a height of approximately 50-100mm to allow for flowering and wildflowers to set seed.

| REVISIONS | | |
|---|---|---|
| C1 | CONSTRUCTION ISSUE | 08.03.25 |

Project: Whitefield Fire Station
Title: Landscape Proposals Plan
Client: Bradshaw Gass and Hope
Date: March 2025
Scale: 1:200@A1
Drawn: LAC
Checked: DS
Drawing No.: WFS-APP-XX-XX-DR-L-0001
Stage: Stage 5
Status: Construction
Revision: C1

appletons

Landscape Institute Registered practice

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17 Chorley Old Road, Bolton BL1 3AD. Tel: 01204 393006.
Web:www.appletons.uk.com Email: info@appletons.uk.com

# Whitefield Fire Station, Bury New Road, Unsworth

## Landscape Proposals Plan

**APPENDIX 2**

BS 3882 (2015) TOPSOIL TESTING AT SOURCE

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

# Amended Report

| | | | |
|---|---|---|---|
| **Report No.:** | 25-12994-2 | | |
| **Initial Date of Issue:** | 14-May-2025 | **Date of Re-Issue:** | 14-May-2025 |
| **Re-Issue Details:** | This report has been revised and directly supersedes 25-12994-1 in its entirety | | |
| ***Client*** | *Huperade Ltd* | | |
| ***Client Address:*** | *Bridge House Farm*<br>*Brooks Drive*<br>*Timperley*<br>*Cheshire*<br>*WA15 7DQ* | | |
| ***Contact(s):*** | *Lesley Cox* | | |
| ***Project*** | *Soil Testing* | | |
| ***Quotation No.:*** | *Q24-36014* | **Date Received:** | 17-Apr-2025 |
| **Order No.:** | | **Date Instructed:** | 17-Apr-2025 |
| ***No. of Samples:*** | *2* | | |
| **Turnaround (Wkdays):** | 17 | **Results Due:** | 14-May-2025 |
| **Date Approved:** | 14-May-2025 | **Subcon Results Due:** | 14-May-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: Soil Testing***

| | | | | | | |
|---|---|---|---|---|---|---|
| **Client: Huperade Ltd** | | | | **Chemtest Job No.:** | | 25-12994 |
| *Quotation No.: Q24-36014* | | | | **Chemtest Sample ID.:** | | 1962157 |
| | | | | *Client Sample ID.:* | | *Sample B* |
| | | | | *Sample Type:* | | *SOIL* |
| | | | | *Date Sampled:* | | *14-Apr-2025* |
| | | | | Asbestos Lab: | | DURHAM |
| **Determinand** | **HWOL Code** | **Accred.** | **SOP** | **Units** | **LOD** | |
| ACM Type | | N | 2192 | | N/A | - |
| Asbestos Identification | | U | 2192 | | N/A | No Asbestos Detected |
| Moisture | | N | 2030 | % | 0.020 | 18 |
| Stones and Removed Materials | | N | 2030 | % | 0.020 | < 0.020 |
| Soil Colour | | N | 2040 | | N/A | Brown |
| Other Material | | N | 2040 | | N/A | Stones and Roots |
| Soil Texture | | N | 2040 | | N/A | Loam |
| pH at 20C | | M | 2010 | | 4.0 | 7.5 |
| Boron (Hot Water Soluble) | | M | 2120 | mg/kg | 0.40 | < 0.40 |
| Sulphate (2:1 Water Soluble) as SO4 | | M | 2120 | g/l | 0.010 | 0.018 |
| Cyanide (Free) | | M | 2300 | mg/kg | 0.50 | < 0.50 |
| Cyanide (Total) | | M | 2300 | mg/kg | 0.50 | < 0.50 |
| Thiocyanate | | M | 2300 | mg/kg | 5.0 | < 5.0 |
| Sulphide (Easily Liberatable) | | N | 2325 | mg/kg | 0.50 | 3.0 |
| Sulphate (Total) | | U | 2430 | % | 0.010 | 0.15 |
| Arsenic | | M | 2455 | mg/kg | 0.5 | 6.4 |
| Cadmium | | M | 2455 | mg/kg | 0.10 | 0.16 |
| Chromium | | M | 2455 | mg/kg | 0.5 | 11 |
| Copper | | M | 2455 | mg/kg | 0.50 | 25 |
| Mercury | | M | 2455 | mg/kg | 0.05 | 0.16 |
| Nickel | | M | 2455 | mg/kg | 0.50 | 9.8 |
| Lead | | M | 2455 | mg/kg | 0.50 | 50 |
| Selenium | | M | 2455 | mg/kg | 0.25 | 0.28 |
| Zinc | | M | 2455 | mg/kg | 0.50 | 49 |
| Chromium (Hexavalent) | | N | 2490 | mg/kg | 0.50 | < 0.50 |
| Organic Matter | | M | 2625 | % | 0.40 | 6.9 |
| 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 |
| Fluorene | | M | 2800 | mg/kg | 0.10 | < 0.10 |
| Phenanthrene | | M | 2800 | mg/kg | 0.10 | 0.57 |
| Anthracene | | M | 2800 | mg/kg | 0.10 | 0.15 |
| Fluoranthene | | M | 2800 | mg/kg | 0.10 | 1.3 |
| Pyrene | | M | 2800 | mg/kg | 0.10 | 1.4 |
| Benzo[a]anthracene | | M | 2800 | mg/kg | 0.10 | 0.72 |
| Chrysene | | M | 2800 | mg/kg | 0.10 | 0.81 |
| Benzo[b]fluoranthene | | M | 2800 | mg/kg | 0.10 | 1.2 |
| Benzo[k]fluoranthene | | M | 2800 | mg/kg | 0.10 | 0.42 |

# Results - Soil

***Project: Soil Testing***

| | | | | | | |
|---|---|---|---|---|---|---|
| **Client: Huperade Ltd** | | | | **Chemtest Job No.:** | | 25-12994 |
| *Quotation No.: Q24-36014* | | | | **Chemtest Sample ID.:** | | 1962157 |
| | | | | *Client Sample ID.:* | | *Sample B* |
| | | | | *Sample Type:* | | *SOIL* |
| | | | | *Date Sampled:* | | *14-Apr-2025* |
| | | | | Asbestos Lab: | | DURHAM |
| **Determinand** | **HWOL Code** | **Accred.** | **SOP** | **Units** | **LOD** | |
| Benzo[a]pyrene | | M | 2800 | mg/kg | 0.10 | 0.80 |
| Indeno(1,2,3-c,d)Pyrene | | M | 2800 | mg/kg | 0.10 | 0.67 |
| Dibenz(a,h)Anthracene | | N | 2800 | mg/kg | 0.10 | < 0.10 |
| Benzo[g,h,i]perylene | | M | 2800 | mg/kg | 0.10 | 0.63 |
| Total Of 16 PAH's | | N | 2800 | mg/kg | 2.0 | 8.7 |
| Total Phenols | | M | 2920 | mg/kg | 0.10 | 0.12 |

# Test Methods

| SOP | Title | Parameters included | Method summary | Water Accred. |
|---|---|---|---|---|
| 2010 | pH Value of Soils | pH at 20°C | pH Meter | |
| 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 | |
| 2120 | Water Soluble Boron, Sulphate, Magnesium & Chromium | Boron; Sulphate; Magnesium; Chromium | Aqueous extraction / ICP-OES | |
| 2192 | Asbestos | Asbestos | Polarised light microscopy / Gravimetry | |
| 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. | |
| 2325 | Sulphide in Soils | Sulphide | Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine. | |
| 2430 | Total Sulphate in soils | Total Sulphate | Acid digestion followed by determination of sulphate in extract by ICP-OES. | |
| 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. | |
| 2625 | Total Organic Carbon in Soils | Total organic Carbon (TOC) | Determined by high temperature combustion under oxygen, using an Eltra elemental analyser. | |
| 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 TrimethylphenolsNote: chlorophenols are excluded. | 60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection. | |

## Report Information

| Key | |
|---|---|
| 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 |

*Text example* All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

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 ≤ 30°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

**As a result of any of the below deviations applying, the test results may be unreliable**

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 - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

### 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.

# Report Information

## Water Sample Category Key for Accreditation

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

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

## HWOL Acronym System

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

## Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

# Results - Topsoil Report

**BS3882:2015**

**Chemtest Job No.: 25-12994**
**Chemtest Sample ID.: 1962156**
*Client Sample Ref.:*
*Client Reference:*
***Client Sample ID.: Sample A***
*Top Depth (m):*
*Bottom Depth (m):*
*Date Sampled: 14-Apr-2025*
*Time Sampled:*

| Parameter | Units | Multipurpose Range | | | Result | Compliant with Multipurpose Range? (Y/N) | Compliant with Specific Purpose Range? (Y/N) | | |
|---|---|---|---|---|---|---|---|---|---|
| **Texture** | | | | | | | Acid | Low F | Calc. |
| Clay content (Sub Contracted) | % | | | | 12 | | | | |
| Silt content (Sub Contracted) | % | | | | 25 | | | | |
| Sand content (Sub Contracted) | % | | | | 63 | | | | |
| Soil texture class | | See Attached Chart | | | Sandy Loam | YES | | | |
| **Mass Loss on Ignition** | | | | | | | | | |
| Clay 5-20% | | 3.0-20 | | | 5.5 | YES | YES | YES | YES |
| Clay 20-35% | | 5.0-20 | | | | | | | |
| **Stone Content** | % m/m | | | | | | | | |
| >2mm (Sub Contracted) | | 0-30 | | | 10 | YES | | | |
| >20mm (Sub Contracted) | | 0-10 | | | 0.000 | YES | | | |
| >50mm (Sub Contracted) | | 0 | | | 0.000 | YES | | | |
| Soil pH value | | 5.5-8.5 | | | 7.7 | YES | NO | YES | YES |
| Carbonate (Calcareous only) | % | | | | < 0.10 | | | | NO |
| Electrical Conductivity | µS/cm | If >3300 do ESP | | | 5100 | NO | | | |
| **Available Nutrient Content** | | | | | | | | | |
| Nitrogen % | | >0.15 | | | 0.20 | YES | YES | | YES |
| Extractable phosphorus | mg/l | 16-140 | | | 39 | YES | YES | NO | YES |
| Extractable potassium | mg/l | 121-1500 | | | 170 | YES | YES | | YES |
| Extractable magnesium | mg/l | 51-600 | | | 120 | YES | YES | | YES |
| **Carbon : Nitrogen Ratio** | | <20:1 | | | 16.2/1 | YES | YES | YES | YES |
| **Exchangeable sodium** | % | <15 | | | 46 | | | | |
| Available Calcium | mg/l | | | | 2800 | | | | |
| Available Sodium | mg/l | | | | 2900 | | | | |
| **Phytotoxic Contaminants (by soil pH)** | | < 6.0 | 6.0-7.0 | > 7.0 | | | | | |
| Zinc (Nitric Acid extract) | mg/kg | <200 | <200 | <300 | 140 | YES | | | |
| Copper (Nitric Acid extract) | mg/kg | <100 | <135 | <200 | 67 | YES | | | |
| Nickel (Nitric Acid extract) | mg/kg | <60 | <75 | <110 | 20 | YES | | | |
| **Visible Contaminants** | % mm | | | | | | | | |
| >2mm | | <0.5 | | | 0.000 | YES | | | |
| ..... of which plastics | | <0.25 | | | 0.000 | YES | | | |
| ..... man-made sharps | | zero in 1kg | | | 0.000 | YES | | | |

# APPENDIX 3

CHEMICAL TEST RESULTS AT SITE AND SCREENING TABLES

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# Analytical Report Number : 26-026687

Replaces Analytical Report Number: 26-026687, issue no. 1
Report split as per client's request.

| | | | |
|---|---|---|---|
| **Project / Site name:** | Whitefield FS | **Samples received on:** | 19/05/2026 |
| **Your job number:** | 3866A | **Samples instructed on/ Analysis started on:** | 19/05/2026 |
| **Your order number:** | 3866A JA | **Analysis completed by:** | 26/05/2026 |
| **Report Issue Number:** | 2B | **Report issued on:** | 01/06/2026 |
| **Samples Analysed:** | 3 soil samples | | |

**Signed:**

Rachel Chappell
Key Account Manager
**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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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 26-026687**
**Project / Site name: Whitefield FS**
**Your Order No: 3866A JA**

| Lab Sample Number | | | | 924221 | 924222 | 924223 |
|---|---|---|---|---|---|---|
| Sample Reference | | | | TS01 | TS02 | TS03 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied |
| Water Matrix | | | | N/A | N/A | N/A |
| Depth (m) | | | | None Supplied | None Supplied | None Supplied |
| Date Sampled | | | | 18/05/2026 | 18/05/2026 | 18/05/2026 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units | Test Limit of detection | Test Accreditation Status | | | |
| Mass of stone >10mm | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 20 | 21 | 20 |
| Total mass of sample received | kg | 0.1 | NONE | 1.1 | 1.1 | 1.1 |

**Asbestos**

| | | | | | | |
|---|---|---|---|---|---|---|
| Asbestos in Soil Detected/Not Detected | Type | N/A | ISO 17025 | Not-detected | Not-detected | Not-detected |
| Asbestos Analyst ID | N/A | N/A | N/A | WEM | WEM | WEM |
| Analysis completed | N/A | N/A | N/A | 26/05/2026 | 26/05/2026 | 26/05/2026 |

**General Inorganics**

| | | | | | | |
|---|---|---|---|---|---|---|
| pH (L099) | pH Units | N/A | MCERTS | 7.7 | 7.9 | 7.3 |
| Total Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| Free Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| Water Soluble Sulphate as $SO_4$ 16hr extraction (2:1) | mg/kg | 2.5 | MCERTS | 220 | 220 | 250 |
| Water Soluble $SO_4$ 16hr extraction (2:1 Leachate Equivalent) | mg/l | 1.25 | MCERTS | 110 | 110 | 124 |
| Organic Matter (automated) | % | 0.1 | MCERTS | 4.8 | 5.8 | 5.1 |
| Water Soluble Nitrate (2:1) as $NO_3$ (leachate equivalent) | mg/l | 0.9 | N/A | 31.6 | 28 | 32.9 |

**Speciated PAHs**

| | | | | | | |
|---|---|---|---|---|---|---|
| Naphthalene | mg/kg | 0.05 | MCERTS | 0.06 | 0.07 | 0.11 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.06 | 0.06 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | 0.29 | 0.43 | 0.28 |
| Fluorene | mg/kg | 0.05 | MCERTS | 0.19 | 0.32 | 0.25 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 2 | 2.8 | 2.7 |
| Anthracene | mg/kg | 0.05 | MCERTS | 0.46 | 0.64 | 0.63 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 3.6 | 4.1 | 4.4 |
| Pyrene | mg/kg | 0.05 | MCERTS | 3.4 | 3.9 | 4.2 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 1.8 | 2 | 2.2 |
| Chrysene | mg/kg | 0.05 | MCERTS | 1.8 | 1.9 | 2.1 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | ISO 17025 | 2.4 | 2.2 | 2.6 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | ISO 17025 | 0.66 | 0.82 | 0.76 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 2 | 2.2 | 2.3 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 0.92 | 0.99 | 1 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | 0.2 | 0.22 | 0.26 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | 0.98 | 1.1 | 1.2 |

**Total PAH**

| | | | | | | |
|---|---|---|---|---|---|---|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | 20.9 | 23.6 | 25 |

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**Analytical Report Number: 26-026687**
**Project / Site name: Whitefield FS**
**Your Order No: 3866A JA**

| Lab Sample Number | | | | 924221 | 924222 | 924223 |
|---|---|---|---|---|---|---|
| Sample Reference | | | | TS01 | TS02 | TS03 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied |
| Water Matrix | | | | N/A | N/A | N/A |
| Depth (m) | | | | None Supplied | None Supplied | None Supplied |
| Date Sampled | | | | 18/05/2026 | 18/05/2026 | 18/05/2026 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units | Test Limit of detection | Test Accreditation Status | | | |

**Heavy Metals / Metalloids**

| | | | | | | |
|---|---|---|---|---|---|---|
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 14 | 13 | 21 |
| Barium (aqua regia extractable) | mg/kg | 1 | MCERTS | 130 | 130 | 240 |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | 0.78 | 0.82 | 1.3 |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | 0.9 | 0.9 | 0.7 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | 0.3 | 0.4 | 0.6 |
| Chromium (hexavalent) Low Level | mg/kg | 1.2 | NONE | < 1.2 | < 1.2 | < 1.2 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 20 | 22 | 35 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 66 | 69 | 92 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 110 | 110 | 180 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 17 | 19 | 29 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | MCERTS | 25 | 26 | 42 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 120 | 130 | 180 |

**Petroleum Hydrocarbons**

| | | | | | | |
|---|---|---|---|---|---|---|
| TPHCWG - Aliphatic >EC5 - EC6 $_{HS_1D_AL}$ | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 | < 0.010 |
| TPHCWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$ | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 | < 0.010 |
| TPHCWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$ | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 | < 0.010 |
| TPHCWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$ | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| TPHCWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$ | mg/kg | 2 | MCERTS | < 2.0 | < 2.0 | < 2.0 |
| TPHCWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$ | mg/kg | 8 | MCERTS | < 8.0 | < 8.0 | < 8.0 |
| TPHCWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$ | mg/kg | 8 | MCERTS | < 8.0 | 12 | < 8.0 |
| TPHCWG - Aliphatic >EC35 - EC44 $_{EH_CU_1D_AL}$ | mg/kg | 8.4 | NONE | < 8.4 | < 8.4 | < 8.4 |
| TPHCWG - Aliphatic >EC5 - EC35 $_{EH_CU+HS_1D_AL}$ | mg/kg | 10 | NONE | < 10 | 12 | < 10 |
| TPHCWG - Aliphatic >EC5 - EC44 $_{EH_CU+HS_1D_AL}$ | mg/kg | 10 | NONE | < 10 | 12 | < 10 |

| | | | | | | |
|---|---|---|---|---|---|---|
| TPHCWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$ | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 | < 0.010 |
| TPHCWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$ | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 | < 0.010 |
| TPHCWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$ | mg/kg | 0.02 | MCERTS | < 0.020 | < 0.020 | < 0.020 |
| TPHCWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$ | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| TPHCWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$ | mg/kg | 2 | MCERTS | 2.6 | < 2.0 | 2.7 |
| TPHCWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$ | mg/kg | 10 | MCERTS | < 10 | < 10 | < 10 |
| TPHCWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$ | mg/kg | 10 | MCERTS | 13 | 23 | 11 |
| TPHCWG - Aromatic >EC35 - EC44 $_{EH_CU_1D_AR}$ | mg/kg | 8.4 | NONE | < 8.4 | 10 | < 8.4 |
| TPHCWG - Aromatic >EC5 - EC35 $_{EH_CU+HS_1D_AR}$ | mg/kg | 10 | NONE | 16 | 23 | 13 |
| TPHCWG - Aromatic >EC5 - EC44 $_{EH_CU+HS_1D_AR}$ | mg/kg | 10 | NONE | 16 | 33 | 13 |

**VOCs**

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

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

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number : 26-026687**
**Project / Site name: Whitefield FS**

* 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 * |
|---|---|---|---|---|
| 924221 | TS01 | None Supplied | None Supplied | Brown clay and sand with gravel and vegetation |
| 924222 | TS02 | None Supplied | None Supplied | Brown clay and sand with gravel and vegetation |
| 924223 | TS03 | None Supplied | None Supplied | Brown clay and sand with gravel |

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**Analytical Report Number : 26-026687**
**Project / Site name: Whitefield FS**

**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 |
|---|---|---|---|---|---|
| Asbestos identification in Soil | Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques | In-house method based on HSG 248, 2021 | A001B | D | ISO 17025 |
| Organic matter (Automated) in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method) | In-house method | L009B | D | MCERTS |
| Moisture Content (Wet Weight) | Moisture content (% wet weight), determined gravimetrically (up to 30°C) | In-house-procedure based on BS EN 12880:2000 | 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 |
| Sulphate, water soluble, in soil (16hr extraction) | Sulphate, water soluble, in soil (16hr extraction) | In-house method | 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 in soil | Determination of total petroleum hydrocarbons in soil by GC-FID with carbon banding aliphatic and aromatic | In-house method | L076B | D | MCERTS |
| Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil (Summed Bands) | Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic (Summed Bands). | Calculation | L076B/L088-PL | D/W | NONE |
| Hexavalent chromium in soil (low level) | Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry | In-house method | L080-PL | W | NONE |
| 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 |
| 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 |
| Total petroleum hydrocarbons with carbon banding by HS-GC/MS in soil | Determination of total petroleum hydrocarbons in soil by HS-GC/MS with carbon banding aliphatic and aromatic | In-house method | L088-PL | W | MCERTS |

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**Analytical Report Number : 26-026687**
**Project / Site name: Whitefield FS**

**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 |
|---|---|---|---|---|---|
| pH in soil (automated) | Determination of pH in soil by addition of water followed by automated electrometric measurement | In-house method | L099-PL | D | MCERTS |
| Water Soluble Nitrate (2:1) as NO3 in soil | Determination of nitrate as NO3 in soil by discrete method | In-house method by discrete analyzer based on TON as N, Total Oxidized Nitrogen (Vanadium Chloride reduction), Thermo Fisher Scientific, MANUAL 2015-0 | L082B | W | N/A |
| 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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The results included within the report are representative of the samples submitted for analysis.

**Project: Whitefield Firestation**

**Job No: 3866a**

| Lab Sample Number | | | 924221 | 924222 | 924223 | | | | | | GAC - S4UL unless stated | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | TS01 | TS02 | TS03 | Statistical Analysis | | | | | Statistical Results | | | |
| Sample Number | | | None Supplied | None Supplied | None Supplied | | | | | | | | | |
| Depth (m) | | | None Supplied | None Supplied | None Supplied | | | | | | | | | |
| Date Sampled | | | 18/05/2026 | 18/05/2026 | 18/05/2026 | Count | Standard Deviation | Minimum | Maximum | Average | Maximum | 2.5% Commercial | Pass/ Fail | Exceedances |
| **Analytical Parameter (Soil Analysis)** | **Units** | **LoD** | | | | | | | | | | | | |
| Stone Content | % | 0.1 | 0.1 | 0.1 | 0.1 | 3 | 0.00 | 0.1 | 0.1 | 0.1 | 0.1 | | | |
| Moisture Content | % | 0.01 | 20 | 21 | 20 | 3 | 0.58 | 20.00 | 21.00 | 20.33 | 21.00 | | | |
| Total mass of sample received | kg | 0.1 | 1.1 | 1.1 | 1.1 | 3 | 0.00 | 1.100 | 1.100 | 1.100 | 1.100 | | | |
| **Asbestos** | | | | | | | | | | | | | | |
| Asbestos in Soil Screen | Type | N/A | Not-detected | Not-detected | Not-detected | 3 | - | - | - | - | | | | |
| **General Inorganics** | | | | | | | | | | | | | | |
| pH - Automated | pH Units | N/A | 7.7 | 7.9 | 7.3 | 3 | 0.31 | 7.30 | 7.90 | 7.63 | | | | |
| Total Cyanide | mg/kg | 1 | 1 | 1 | 1 | 3 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | **60** | Pass | 0 |
| Free Cyanide | mg/kg | 1 | 1 | 1 | 1 | 3 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | **60** | Pass | 0 |
| Water Soluble Sulfate as SO4 16hr extraction (2:1) | mg/kg | 2.5 | 220 | 220 | 250 | 3 | 17.32 | 220.00 | 250.00 | 230.00 | | | | |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | mg/l | 1.25 | 110 | 110 | 124 | 3 | 8.08 | 110.00 | 124.00 | 114.67 | | | | |
| Organic Matter (automated) | % | 0.1 | 4.80 | 5.80 | 5.10 | 3 | 0.51 | 4.80 | 5.80 | **5.23** | | | | |
| Water Soluble Nitrate (2:1) as NO3 (leachate equivalent) | mg/l | 5 | 31.6 | 28 | 32.9 | 3 | 2.54 | 28.00 | 32.90 | 30.83 | | | | |
| **Speciated PAHs** | | | | | | | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | 0.06 | 0.07 | 0.11 | 3 | 0.03 | 0.06 | 0.11 | 0.08 | 0.11 | **460.00** | Pass | 0 |
| Acenaphthylene | mg/kg | 0.05 | 0.05 | 0.06 | 0.06 | 3 | 0.01 | 0.05 | 0.06 | 0.06 | 0.06 | **97000** | Pass | 0 |
| Acenaphthene | mg/kg | 0.05 | 0.29 | 0.43 | 0.28 | 3 | 0.08 | 0.28 | 0.43 | 0.33 | 0.43 | **97000** | Pass | 0 |
| Fluorene | mg/kg | 0.05 | 0.19 | 0.32 | 0.25 | 3 | 0.07 | 0.19 | 0.32 | 0.25 | 0.32 | **68000** | Pass | 0 |
| Phenanthrene | mg/kg | 0.05 | 2 | 2.8 | 2.7 | 3 | 0.44 | 2.00 | 2.80 | 2.50 | 2.80 | **22000** | Pass | 0 |
| Anthracene | mg/kg | 0.05 | 0.46 | 0.64 | 0.63 | 3 | 0.10 | 0.46 | 0.64 | 0.58 | 0.64 | **540000** | Pass | 0 |
| Fluoranthene | mg/kg | 0.05 | 3.6 | 4.1 | 4.4 | 3 | 0.40 | 3.60 | 4.40 | 4.03 | 4.40 | **23000** | Pass | 0 |
| Pyrene | mg/kg | 0.05 | 3.4 | 3.9 | 4.2 | 3 | 0.40 | 3.40 | 4.20 | 3.83 | 4.20 | **54000** | Pass | 0 |
| Benzo(a)anthracene | mg/kg | 0.05 | 1.8 | 2 | 2.2 | 3 | 0.20 | 1.80 | 2.20 | 2.00 | 2.20 | **170.00** | Pass | 0 |
| Chrysene | mg/kg | 0.05 | 1.8 | 1.9 | 2.1 | 3 | 0.15 | 1.80 | 2.10 | 1.93 | 2.10 | **350** | Pass | 0 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | 2.4 | 2.2 | 2.6 | 3 | 0.20 | 2.20 | 2.60 | 2.40 | 2.60 | **44.00** | Pass | 0 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | 0.66 | 0.82 | 0.76 | 3 | 0.08 | 0.66 | 0.82 | 0.75 | 0.82 | **1200** | Pass | 0 |
| Benzo(a)pyrene | mg/kg | 0.05 | 2 | 2.2 | 2.3 | 3 | 0.15 | 2.00 | 2.30 | 2.17 | 2.30 | **35.00** | Pass | 0 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | 0.92 | 0.99 | 1 | 3 | 0.04 | 0.92 | 1.00 | 0.97 | 1.00 | **510** | Pass | 0 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | 0.2 | 0.22 | 0.26 | 3 | 0.03 | 0.20 | 0.26 | 0.23 | 0.26 | **3.60** | Pass | 0 |
| Benzo(ghi)perylene | mg/kg | 0.05 | 0.98 | 1.1 | 1.2 | 3 | 0.11 | 0.98 | 1.20 | 1.09 | 1.20 | **4000** | Pass | 0 |
| **Total PAH** | | | | | | | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | 20.9 | 23.6 | 25 | 3 | 2.08 | 20.90 | 25.00 | 23.17 | | | | |
| **Heavy Metals / Metalloids** | | | | | | | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | 14 | 13 | 21 | 3 | 4.36 | 13.00 | 21.00 | 16.00 | 21.00 | **640** | Pass | 0 |
| Barium (aqua regia extractable) | mg/kg | 1 | 130 | 130 | 240 | 3 | 63.51 | 130.00 | 240.00 | 166.67 | 240.00 | **22000.00** | Pass | 0 |
| Boron (water soluble) | mg/kg | 0.2 | 0.9 | 0.9 | 0.7 | 3 | 0.12 | 0.70 | 0.90 | 0.83 | 0.90 | **240000** | Pass | 0 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | 0.3 | 0.4 | 0.6 | 3 | 0.15 | 0.30 | 0.60 | 0.43 | 0.60 | **190** | Pass | 0 |
| Chromium (hexavalent) | mg/kg | 1.2 | 1.2 | 1.2 | 1.2 | 3 | 0.00 | 1.20 | 1.20 | 1.20 | 1.20 | **33** | Pass | 0 |
| Chromium (aqua regia extractable) | mg/kg | 1 | 20 | 22 | 35 | 3 | 8.14 | 20.00 | 35.00 | 25.67 | 35.00 | **8600** | Pass | 0 |
| Copper (aqua regia extractable) | mg/kg | 1 | 66 | 69 | 92 | 3 | 14.22 | 66.00 | 92.00 | 75.67 | 92.00 | **68000** | Pass | 0 |
| Lead (aqua regia extractable) | mg/kg | 1 | 110 | 110 | 180 | 3 | 40.41 | 110.00 | 180.00 | 133.33 | 180.00 | **2330** | Pass | 0 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | 0.3 | 0.3 | 0.3 | 3 | 0.00 | 0.30 | 0.30 | 0.30 | 0.30 | **1100** | Pass | 0 |
| Nickel (aqua regia extractable) | mg/kg | 1 | 17 | 19 | 29 | 3 | 6.43 | 17.00 | 29.00 | 21.67 | 29.00 | **980** | Pass | 0 |
| Selenium (aqua regia extractable) | mg/kg | 1 | 1 | 1 | 1 | 3 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | **12000** | Pass | 0 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | 25 | 26 | 42 | 3 | 9.54 | 25.00 | 42.00 | 31.00 | 42.00 | **9000** | Pass | 0 |
| Zinc (aqua regia extractable) | mg/kg | 1 | 120 | 130 | 180 | 3 | 32.15 | 120.00 | 180.00 | 143.33 | 180.00 | **730000** | Pass | 0 |
| **Monoaromatics & Oxygenates** | | | | | | | | | | | | | | |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 5 | 5 | 5 | 5 | 3 | 0.00 | 5 | 5 | 5.00 | | **-** | | |
| Benzene | µg/kg | 5 | 5 | 5 | 5 | 3 | 0.00 | 5 | 5 | 5.00 | 5 | **47000** | Pass | 0 |
| Toluene | µg/kg | 5 | 5 | 5 | 5 | 3 | 0.00 | 5 | 5 | 5.00 | 5 | **110000000** | Pass | 0 |
| Ethylbenzene | µg/kg | 5 | 5 | 5 | 5 | 3 | 0.00 | 5 | 5 | 5.00 | 5 | **13000000** | Pass | 0 |
| p & m-xylene | µg/kg | 8 | 8 | 8 | 8 | 3 | 0.00 | 8 | 8 | 8.00 | 8 | **14000000** | Pass | 0 |
| o-xylene | µg/kg | 5 | 5 | 5 | 5 | 3 | 0.00 | 5 | 5 | 5.00 | 5 | **15000000** | Pass | 0 |
| **Petroleum Hydrocarbons** | | | | | | | | | | | | | | |
| TPH-CWG - Aliphatic >EC5 - EC6 | mg/kg | 0.01 | 0.01 | 0.01 | 0.01 | 3 | 0.000 | 0.010 | 0.010 | 0.010 | 0.010 | **5900** | Pass | 0 |
| TPH-CWG - Aliphatic >EC6 - EC8 | mg/kg | 0.01 | 0.01 | 0.01 | 0.01 | 3 | 0.000 | 0.010 | 0.010 | 0.010 | 0.010 | **17000** | Pass | 0 |
| TPH-CWG - Aliphatic >EC8 - EC10 | mg/kg | 0.01 | 0.01 | 0.01 | 0.01 | 3 | 0.000 | 0.010 | 0.010 | 0.010 | 0.010 | **4800** | Pass | 0 |
| TPH-CWG - Aliphatic >EC10 - EC12 | mg/kg | 1 | 1 | 1 | 1 | 3 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | **23000** | Pass | 0 |
| TPH-CWG - Aliphatic >EC12 - EC16 | mg/kg | 2 | 2 | 2 | 2 | 3 | 0.00 | 2.00 | 2.00 | 2.00 | 2.00 | **82000** | Pass | 0 |
| TPH-CWG - Aliphatic >EC16 - EC21 | mg/kg | 8 | 8 | 8 | 8 | 3 | 0.00 | 8.00 | 8.00 | 8.00 | 8.00 | **-** | | |
| TPH-CWG - Aliphatic >EC21 - EC35 | mg/kg | 8 | 8 | 12 | 8 | 3 | 2.31 | 8.00 | 12.00 | 9.33 | 12.00 | **1700000** | Pass | 0 |
| TPH-CWG - Aliphatic >EC35 - EC44 | mg/kg | 8.4 | 8.4 | 8.4 | 8.4 | 3 | 0.00 | 8.40 | 8.40 | 8.40 | 8.40 | **1700000** | Pass | 0 |
| TPH-CWG - Aliphatic (EC5 - EC35) | mg/kg | 10 | 10 | 12 | 10 | 3 | 1.15 | 10.00 | 12.00 | 10.67 | | **-** | | |
| TPH-CWG - Aliphatic (EC5 - EC44) | mg/kg | 10 | 10 | 12 | 10 | 3 | 1.15 | 10.00 | 12.00 | 10.67 | | **-** | | |
| | | | | | | | | | | | | | | |
| TPH-CWG - Aromatic >EC5 - EC7 | mg/kg | 0.01 | 0.01 | 0.01 | 0.01 | 3 | 0.000 | 0.010 | 0.010 | 0.010 | 0.010 | **46000** | Pass | 0 |
| TPH-CWG - Aromatic >EC7 - EC8 | mg/kg | 0.01 | 0.01 | 0.01 | 0.01 | 3 | 0.000 | 0.010 | 0.010 | 0.010 | 0.010 | **110000** | Pass | 0 |
| TPH-CWG - Aromatic >EC8 - EC10 | mg/kg | 0.02 | 0.02 | 0.02 | 0.02 | 3 | 0.000 | 0.020 | 0.020 | 0.020 | 0.020 | **8100** | Pass | 0 |
| TPH-CWG - Aromatic >EC10 - EC12 | mg/kg | 1 | 1 | 1 | 1 | 3 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | **28000** | Pass | 0 |
| TPH-CWG - Aromatic >EC12 - EC16 | mg/kg | 2 | 2.6 | 2 | 2.7 | 3 | 0.38 | 2.00 | 2.70 | 2.43 | 2.70 | **37000** | Pass | 0 |
| TPH-CWG - Aromatic >EC16 - EC21 | mg/kg | 10 | 10 | 10 | 10 | 3 | 0.00 | 10.00 | 10.00 | 10.00 | 10.00 | **28000** | Pass | 0 |
| TPH-CWG - Aromatic >EC21 - EC35 | mg/kg | 10 | 13 | 23 | 11 | 3 | 6.43 | 11.00 | 23.00 | 15.67 | 23.00 | **28000** | Pass | 0 |
| TPH-CWG - Aromatic >EC35 - EC44 | mg/kg | 8.4 | 8.4 | 10 | 8.4 | 3 | 0.92 | 8.40 | 10.00 | 8.93 | 10.00 | **28000** | Pass | 0 |
| TPH-CWG - Aromatic (EC5 - EC35) | mg/kg | 10 | 16 | 23 | 13 | 3 | 5.13 | 13.00 | 23.00 | 17.33 | | **-** | | |
| TPH-CWG - Aromatic (EC5 - EC44) | mg/kg | 10 | 16 | 33 | 13 | 3 | 10.79 | 13.00 | 33.00 | 20.67 | | **-** | | |

**GAC used: LQM/CIEH Suitable 4 Use Levels for Human Health Risk Assessment (3rd edition, 2015)**

**Category 4 Screening Levels (March 2014) used for Arsenic**

**In-house methodology used for Cyanide - no GAC currently available**

**Exceeded GAC & C4SL**
**Exceeded GAC but not C4SL**
**Recorded below laboratory detection limit**

**This spreadsheet has been developed by IGE Consulting Ltd**

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# Analytical Report Number : 26-027230

| | | | |
|---|---|---|---|
| **Project / Site name:** | Whitefield Fire Station | **Samples received on:** | 21/05/2026 |
| **Your job number:** | 3866A | **Samples instructed on/ Analysis started on:** | 21/05/2026 |
| **Your order number:** | 3866A - LM | **Analysis completed by:** | 01/06/2026 |
| **Report Issue Number:** | 1 | **Report issued on:** | 01/06/2026 |
| **Samples Analysed:** | 5 soil samples | | |

**Signed:**

Rachel Chappell
Key Account Manager
**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 |

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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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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 26-027230**
**Project / Site name: Whitefield Fire Station**
**Your Order No: 3866A - LM**

| Lab Sample Number | | | | 926869 | 926870 | 926871 | 926872 | 926873 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | SS1 | SS2 | SS3 | SS4 | SS5 |
| 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 | | | | 21/05/2026 | 21/05/2026 | 21/05/2026 | 21/05/2026 | 21/05/2026 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units | Test Limit of detection | Test Accreditation Status | | | | | |
| Mass of stone >10mm | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 29 | 29 | 25 | 28 | 27 |
| Total mass of sample received | kg | 0.1 | NONE | 1.4 | 1.4 | 1.5 | 1.4 | 1.4 |
| **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 | MMI | MMI | MMI | MMI | MMI |
| Analysis completed | N/A | N/A | N/A | 28/05/2026 | 28/05/2026 | 28/05/2026 | 28/05/2026 | 28/05/2026 |
| **General Inorganics** | | | | | | | | |
| pH (L099) | pH Units | N/A | MCERTS | 8.8 | 8.9 | 9.1 | 9 | 9 |
| Total 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 |
| Water Soluble Sulphate as $SO_4$ 16hr extraction (2:1) | mg/kg | 2.5 | MCERTS | 1700 | 1600 | 1700 | 1700 | 1700 |
| Water Soluble $SO_4$ 16hr extraction (2:1 Leachate Equivalent) | mg/l | 1.25 | MCERTS | 832 | 793 | 827 | 849 | 836 |
| Organic Matter (automated) | % | 0.1 | MCERTS | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 |
| Total Organic Carbon (TOC) - Automated | % | 0.1 | MCERTS | 3 | 3 | 3 | 3 | 3 |
| Water Soluble Nitrate (2:1) as $NO_3$ (leachate equivalent) | mg/l | 0.9 | N/A | < 0.90 | < 0.90 | < 0.90 | < 0.90 | < 0.90 |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | 0.65 | 0.44 | 0.4 | 0.5 | 0.54 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | 0.28 | 0.16 | 0.14 | 0.18 | 0.18 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | 1.3 | 0.96 | 1.1 | 1.1 | 1.3 |
| Fluorene | mg/kg | 0.05 | MCERTS | 1.1 | 0.78 | 0.98 | 0.89 | 1.1 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 9.9 | 6.8 | 8.1 | 8.1 | 8.5 |
| Anthracene | mg/kg | 0.05 | MCERTS | 2.7 | 2.1 | 2.4 | 2.4 | 2.9 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 16 | 13 | 14 | 14 | 16 |
| Pyrene | mg/kg | 0.05 | MCERTS | 15 | 12 | 13 | 13 | 15 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 7.2 | 5.9 | 6.2 | 6.8 | 7.1 |
| Chrysene | mg/kg | 0.05 | MCERTS | 6.6 | 5.8 | 5.6 | 5.9 | 6.7 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | ISO 17025 | 7.8 | 7.2 | 6.7 | 7.2 | 8 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | ISO 17025 | 3.8 | 2.8 | 2.4 | 2.4 | 2.8 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 7.2 | 6.2 | 6.1 | 6.3 | 6.9 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 3.2 | 2.7 | 2.8 | 3 | 3.4 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | 0.93 | 0.69 | 0.59 | 0.68 | 0.69 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | 3.8 | 3.3 | 3.3 | 3.4 | 3.8 |
| **Total PAH** | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | 87.1 | 71.4 | 73.6 | 76.4 | 84.2 |

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 26-027230**
**Project / Site name: Whitefield Fire Station**
**Your Order No: 3866A - LM**

| Lab Sample Number | | | | 926869 | 926870 | 926871 | 926872 | 926873 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | SS1 | SS2 | SS3 | SS4 | SS5 |
| 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 | | | | 21/05/2026 | 21/05/2026 | 21/05/2026 | 21/05/2026 | 21/05/2026 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units | Test Limit of detection | Test Accreditation Status | | | | | |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 17 | 21 | 19 | 19 | 18 |
| Barium (aqua regia extractable) | mg/kg | 1 | MCERTS | 310 | 340 | 310 | 310 | 310 |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | 1.3 | 1.7 | 1.5 | 1.5 | 1.4 |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | 1.7 | 2.2 | 2 | 2.5 | 2.2 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | 0.8 | 0.8 | 0.7 | 0.7 | 0.7 |
| Chromium (hexavalent) Low Level | mg/kg | 1.2 | NONE | < 1.2 | < 1.2 | < 1.2 | < 1.2 | < 1.2 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 36 | 43 | 40 | 40 | 37 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 100 | 110 | 110 | 100 | 96 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 190 | 210 | 210 | 200 | 190 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | 0.3 | 0.5 | 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 34 | 38 | 35 | 35 | 33 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | 1.2 | 1.5 | 1.6 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | MCERTS | 42 | 50 | 47 | 46 | 44 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 220 | 240 | 230 | 240 | 210 |
| **Petroleum Hydrocarbons** | | | | | | | | |
| TPHCWG - Aliphatic >EC5 - EC6 $_{HS_1D_AL}$ | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 | < 0.010 | < 0.010 | < 0.010 |
| TPHCWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$ | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 | < 0.010 | < 0.010 | < 0.010 |
| TPHCWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$ | 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 | 3.9 | 2.2 | 7.8 | 7.7 | < 2.0 |
| TPHCWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$ | mg/kg | 8 | MCERTS | 12 | 10 | 21 | 26 | < 8.0 |
| TPHCWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$ | mg/kg | 8 | MCERTS | 82 | 74 | 120 | 160 | 44 |
| TPHCWG - Aliphatic >EC35 - EC44 $_{EH_CU_1D_AL}$ | mg/kg | 8.4 | NONE | 55 | 53 | 62 | 91 | 43 |
| TPHCWG - Aliphatic >EC5 - EC35 $_{EH_CU+HS_1D_AL}$ | mg/kg | 10 | NONE | 98 | 86 | 140 | 190 | 44 |
| TPHCWG - Aliphatic >EC5 - EC44 $_{EH_CU+HS_1D_AL}$ | mg/kg | 10 | NONE | 150 | 140 | 210 | 280 | 86 |
| TPHCWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$ | mg/kg | 0.01 | MCERTS | 0.02 | 0.01 | 0.011 | 0.02 | 0.012 |
| TPHCWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$ | mg/kg | 0.01 | MCERTS | < 0.010 | < 0.010 | < 0.010 | < 0.010 | < 0.010 |
| TPHCWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$ | 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 | 1.2 | 1.1 | < 1.0 | < 1.0 | < 1.0 |
| TPHCWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$ | mg/kg | 2 | MCERTS | 7.4 | 6.4 | 8.7 | 9.1 | 2.2 |
| TPHCWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$ | mg/kg | 10 | MCERTS | 34 | 33 | 61 | 72 | 21 |
| TPHCWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$ | mg/kg | 10 | MCERTS | 92 | 94 | 210 | 240 | 73 |
| TPHCWG - Aromatic >EC35 - EC44 $_{EH_CU_1D_AR}$ | mg/kg | 8.4 | NONE | 57 | 57 | 110 | 140 | 53 |
| TPHCWG - Aromatic >EC5 - EC35 $_{EH_CU+HS_1D_AR}$ | mg/kg | 10 | NONE | 130 | 130 | 280 | 320 | 97 |
| TPHCWG - Aromatic >EC5 - EC44 $_{EH_CU+HS_1D_AR}$ | mg/kg | 10 | NONE | 190 | 190 | 380 | 450 | 150 |
| **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 | 18 | 8.6 | 9.7 | 19 | 11 |
| 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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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number : 26-027230**
**Project / Site name: Whitefield Fire Station**

* 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 * |
|---|---|---|---|---|
| 926869 | SS1 | None Supplied | None Supplied | Brown clay |
| 926870 | SS2 | None Supplied | None Supplied | Brown clay |
| 926871 | SS3 | None Supplied | None Supplied | Brown clay |
| 926872 | SS4 | None Supplied | None Supplied | Brown clay with vegetation |
| 926873 | SS5 | None Supplied | None Supplied | Brown clay with vegetation |

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number : 26-027230**
**Project / Site name: Whitefield Fire Station**

**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 |
|---|---|---|---|---|---|
| Asbestos identification in Soil | Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques | In-house method based on HSG 248, 2021 | A001B | D | ISO 17025 |
| Organic matter (Automated) in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method) | In-house method | L009B | D | MCERTS |
| Total organic carbon (Automated) in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method) | In-house method | L009B | D | MCERTS |
| Moisture Content (Wet Weight) | Moisture content (% wet weight), determined gravimetrically (up to 30°C) | In-house-procedure based on BS EN 12880:2000 | 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 |
| Sulphate, water soluble, in soil (16hr extraction) | Sulphate, water soluble, in soil (16hr extraction) | In-house method | 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 in soil | Determination of total petroleum hydrocarbons in soil by GC-FID with carbon banding aliphatic and aromatic | In-house method | L076B | D | MCERTS |
| Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil (Summed Bands) | Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic (Summed Bands). | Calculation | L076B/L088-PL | D/W | NONE |
| Hexavalent chromium in soil (low level) | Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry | In-house method | L080-PL | W | NONE |
| 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 |
| 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 : 26-027230**
**Project / Site name: Whitefield Fire Station**

**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 with carbon banding by HS-GC/MS in soil | Determination of total petroleum hydrocarbons in soil by HS-GC/MS with carbon banding aliphatic and aromatic | In-house method | L088-PL | W | MCERTS |
| pH in soil (automated) | Determination of pH in soil by addition of water followed by automated electrometric measurement | In-house method | L099-PL | D | MCERTS |
| Water Soluble Nitrate (2:1) as NO3 in soil | Determination of nitrate as NO3 in soil by discrete method | In-house method by discrete analyzer based on TON as N, Total Oxidized Nitrogen (Vanadium Chloride reduction), Thermo Fisher Scientific, MANUAL 2015-0 | L082B | W | N/A |
| 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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The results included within the report are representative of the samples submitted for analysis.

# Sample Deviation Report

**Analytical Report Number : 26-027230**
**Project / Site name: Whitefield Fire Station**

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container/Insufficient material provided c - Holding time d - Headspace e - Temperature

| Sample ID | Other ID | Sample Type | Lab Sample Number | Sample Deviation | Test Name | Test Ref | Test Deviation |
|---|---|---|---|---|---|---|---|
| SS1 | None Supplied | S | 926869 | b | Asbestos identification in Soil | A001B | b |
| SS2 | None Supplied | S | 926870 | b | Asbestos identification in Soil | A001B | b |
| SS3 | None Supplied | S | 926871 | b | Asbestos identification in Soil | A001B | b |
| SS4 | None Supplied | S | 926872 | b | Asbestos identification in Soil | A001B | b |
| SS5 | None Supplied | S | 926873 | b | Asbestos identification in Soil | A001B | b |

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The results included within the report are representative of the samples submitted for analysis.

**Project: Whitefield Fire Station**

**Job No: 3866a**

| Lab Sample Number | | | 926869 | 926870 | 926871 | 926872 | 926873 | Statistical Analysis | | | | | GAC - S4UL unless stated Statistical Results | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | SS1 | SS2 | SS3 | SS4 | SS5 | | | | | | | | | |
| Sample Number | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied | | | | | | | | | |
| Depth (m) | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied | | | | | | | | | |
| Date Sampled | | | 21/05/2026 | 21/05/2026 | 21/05/2026 | 21/05/2026 | 21/05/2026 | Count | Standard Deviation | Minimum | Maximum | Average | Maximum | 2.5% Commercial | Pass/ Fail | Exceedances |
| **Analytical Parameter (Soil Analysis)** | **Units** | **LoD** | | | | | | | | | | | | | | |
| Stone Content | % | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 5 | 0.00 | 0.1 | 0.1 | 0.1 | 0.1 | | | |
| Moisture Content | % | 0.01 | 29 | 29 | 25 | 28 | 27 | 5 | 1.67 | 25.00 | 29.00 | 27.60 | 29.00 | | | |
| Total mass of sample received | kg | 0.1 | 1.4 | 1.4 | 1.5 | 1.4 | 1.4 | 5 | 0.04 | 1.400 | 1.500 | 1.420 | 1.500 | | | |
| **Asbestos** | | | | | | | | | | | | | | | | |
| Asbestos in Soil Screen | Type | N/A | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected | 5 | - | - | - | - | | | | |
| **General Inorganics** | | | | | | | | | | | | | | | | |
| pH - Automated | pH Units | N/A | 8.8 | 8.9 | 9.1 | 9 | 9 | 5 | 0.11 | 8.80 | 9.10 | 8.96 | | | | |
| Total Cyanide | mg/kg | 1 | 1 | 1 | 1 | 1 | 1 | 5 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | **60** | Pass | 0 |
| Free Cyanide | mg/kg | 1 | 1 | 1 | 1 | 1 | 1 | 5 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | **60** | Pass | 0 |
| Water Soluble Sulfate as SO4 16hr extraction (2:1) | mg/kg | 2.5 | 1700 | 1600 | 1700 | 1700 | 1700 | 5 | 44.72 | 1600.00 | 1700.00 | 1680.00 | | | | |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | mg/l | 1.25 | 832 | 793 | 827 | 849 | 836 | 5 | 20.89 | 793.00 | 849.00 | 827.40 | | | | |
| Organic Matter (automated) | % | 0.1 | 5.20 | 5.20 | 5.20 | 5.20 | 5.20 | 5 | 0.00 | 5.20 | 5.20 | **5.20** | | | | |
| Total Organic Carbon (automated) | % | 0.1 | 3.000 | 3.000 | 3.000 | 3.000 | 3.000 | 5 | 0.00 | 3.00 | 3.00 | **3.00** | | | | |
| Water Soluble Nitrate (2:1) as NO3 (leachate equivalent) | mg/l | 5 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 5 | 0.00 | 0.90 | 0.90 | 0.90 | | | | |
| **Speciated PAHs** | | | | | | | | | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | 0.65 | 0.44 | 0.4 | 0.5 | 0.54 | 5 | 0.10 | 0.40 | 0.65 | 0.51 | 0.65 | **460.00** | Pass | 0 |
| Acenaphthylene | mg/kg | 0.05 | 0.28 | 0.16 | 0.14 | 0.18 | 0.18 | 5 | 0.05 | 0.14 | 0.28 | 0.19 | 0.28 | **97000** | Pass | 0 |
| Acenaphthene | mg/kg | 0.05 | 1.3 | 0.96 | 1.1 | 1.1 | 1.3 | 5 | 0.15 | 0.96 | 1.30 | 1.15 | 1.30 | **97000** | Pass | 0 |
| Fluorene | mg/kg | 0.05 | 1.1 | 0.78 | 0.98 | 0.89 | 1.1 | 5 | 0.14 | 0.78 | 1.10 | 0.97 | 1.10 | **68000** | Pass | 0 |
| Phenanthrene | mg/kg | 0.05 | 9.9 | 6.8 | 8.1 | 8.1 | 8.5 | 5 | 1.11 | 6.80 | 9.90 | 8.28 | 9.90 | **22000** | Pass | 0 |
| Anthracene | mg/kg | 0.05 | 2.7 | 2.1 | 2.4 | 2.4 | 2.9 | 5 | 0.31 | 2.10 | 2.90 | 2.50 | 2.90 | **540000** | Pass | 0 |
| Fluoranthene | mg/kg | 0.05 | 16 | 13 | 14 | 14 | 16 | 5 | 1.34 | 13.00 | 16.00 | 14.60 | 16.00 | **23000** | Pass | 0 |
| Pyrene | mg/kg | 0.05 | 15 | 12 | 13 | 13 | 15 | 5 | 1.34 | 12.00 | 15.00 | 13.60 | 15.00 | **54000** | Pass | 0 |
| Benzo(a)anthracene | mg/kg | 0.05 | 7.2 | 5.9 | 6.2 | 6.8 | 7.1 | 5 | 0.57 | 5.90 | 7.20 | 6.64 | 7.20 | **170.00** | Pass | 0 |
| Chrysene | mg/kg | 0.05 | 6.6 | 5.8 | 5.6 | 5.9 | 6.7 | 5 | 0.50 | 5.60 | 6.70 | 6.12 | 6.70 | **350** | Pass | 0 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | 7.8 | 7.2 | 6.7 | 7.2 | 8 | 5 | 0.52 | 6.70 | 8.00 | 7.38 | 8.00 | **44.00** | Pass | 0 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | 3.8 | 2.8 | 2.4 | 2.4 | 2.8 | 5 | 0.57 | 2.40 | 3.80 | 2.84 | 3.80 | **1200** | Pass | 0 |
| Benzo(a)pyrene | mg/kg | 0.05 | 7.2 | 6.2 | 6.1 | 6.3 | 6.9 | 5 | 0.48 | 6.10 | 7.20 | 6.54 | 7.20 | **35.00** | Pass | 0 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | 3.2 | 2.7 | 2.8 | 3 | 3.4 | 5 | 0.29 | 2.70 | 3.40 | 3.02 | 3.40 | **510** | Pass | 0 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | 0.93 | 0.69 | 0.59 | 0.68 | 0.69 | 5 | 0.13 | 0.59 | 0.93 | 0.72 | 0.93 | **3.60** | Pass | 0 |
| Benzo(ghi)perylene | mg/kg | 0.05 | 3.8 | 3.3 | 3.3 | 3.4 | 3.8 | 5 | 0.26 | 3.30 | 3.80 | 3.52 | 3.80 | **4000** | Pass | 0 |
| **Total PAH** | | | | | | | | | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | 87.1 | 71.4 | 73.6 | 76.4 | 84.2 | 5 | 6.81 | 71.40 | 87.10 | 78.54 | | | | |
| **Heavy Metals / Metalloids** | | | | | | | | | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | 17 | 21 | 19 | 19 | 18 | 5 | 1.48 | 17.00 | 21.00 | 18.80 | 21.00 | **640** | Pass | 0 |
| Barium (aqua regia extractable) | mg/kg | 1 | 310 | 340 | 310 | 310 | 310 | 5 | 13.42 | 310.00 | 340.00 | 316.00 | 340.00 | **22000.00** | Pass | 0 |
| Boron (water soluble) | mg/kg | 0.2 | 1.7 | 2.2 | 2 | 2.5 | 2.2 | 5 | 0.29 | 1.70 | 2.50 | 2.12 | 2.50 | **240000** | Pass | 0 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | 0.8 | 0.8 | 0.7 | 0.7 | 0.7 | 5 | 0.05 | 0.70 | 0.80 | 0.74 | 0.80 | **190** | Pass | 0 |
| Chromium (hexavalent) | mg/kg | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 5 | 0.00 | 1.20 | 1.20 | 1.20 | 1.20 | **33** | Pass | 0 |
| Chromium (aqua regia extractable) | mg/kg | 1 | 36 | 43 | 40 | 40 | 37 | 5 | 2.77 | 36.00 | 43.00 | 39.20 | 43.00 | **8600** | Pass | 0 |
| Copper (aqua regia extractable) | mg/kg | 1 | 100 | 110 | 110 | 100 | 96 | 5 | 6.42 | 96.00 | 110.00 | 103.20 | 110.00 | **68000** | Pass | 0 |
| Lead (aqua regia extractable) | mg/kg | 1 | 190 | 210 | 210 | 200 | 190 | 5 | 10.00 | 190.00 | 210.00 | 200.00 | 210.00 | **2330** | Pass | 0 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | 0.3 | 0.3 | 0.3 | 0.5 | 0.3 | 5 | 0.09 | 0.30 | 0.50 | 0.34 | 0.50 | **1100** | Pass | 0 |
| Nickel (aqua regia extractable) | mg/kg | 1 | 34 | 38 | 35 | 35 | 33 | 5 | 1.87 | 33.00 | 38.00 | 35.00 | 38.00 | **980** | Pass | 0 |
| Selenium (aqua regia extractable) | mg/kg | 1 | 1 | 1 | 1.2 | 1.5 | 1.6 | 5 | 0.28 | 1.00 | 1.60 | 1.26 | 1.60 | **12000** | Pass | 0 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | 42 | 50 | 47 | 46 | 44 | 5 | 3.03 | 42.00 | 50.00 | 45.80 | 50.00 | **9000** | Pass | 0 |
| Zinc (aqua regia extractable) | mg/kg | 1 | 220 | 240 | 230 | 240 | 210 | 5 | 13.04 | 210.00 | 240.00 | 228.00 | 240.00 | **730000** | Pass | 0 |
| **Monoaromatics & Oxygenates** | | | | | | | | | | | | | | | | |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 0.00 | 5 | 5 | 5.00 | | **-** | | |
| Benzene | µg/kg | 5 | 18 | 8.6 | 9.7 | 19 | 11 | 5 | 4.87 | 9 | 19 | 13.26 | 19 | **47000** | Pass | 0 |
| Toluene | µg/kg | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 0.00 | 5 | 5 | 5.00 | 5 | **110000000** | Pass | 0 |
| Ethylbenzene | µg/kg | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 0.00 | 5 | 5 | 5.00 | 5 | **13000000** | Pass | 0 |
| p & m-xylene | µg/kg | 8 | 8 | 8 | 8 | 8 | 8 | 5 | 0.00 | 8 | 8 | 8.00 | 8 | **14000000** | Pass | 0 |
| o-xylene | µg/kg | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 0.00 | 5 | 5 | 5.00 | 5 | **15000000** | Pass | 0 |
| **Petroleum Hydrocarbons** | | | | | | | | | | | | | | | | |
| TPH-CWG - Aliphatic >EC5 - EC6 | mg/kg | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 5 | 0.000 | 0.010 | 0.010 | 0.010 | 0.010 | **5900** | Pass | 0 |
| TPH-CWG - Aliphatic >EC6 - EC8 | mg/kg | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 5 | 0.000 | 0.010 | 0.010 | 0.010 | 0.010 | **17000** | Pass | 0 |
| TPH-CWG - Aliphatic >EC8 - EC10 | mg/kg | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 5 | 0.000 | 0.010 | 0.010 | 0.010 | 0.010 | **4800** | Pass | 0 |
| TPH-CWG - Aliphatic >EC10 - EC12 | mg/kg | 1 | 1 | 1 | 1 | 1 | 1 | 5 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | **23000** | Pass | 0 |
| TPH-CWG - Aliphatic >EC12 - EC16 | mg/kg | 2 | 3.9 | 2.2 | 7.8 | 7.7 | 2 | 5 | 2.86 | 2.00 | 7.80 | 4.72 | 7.80 | **82000** | Pass | 0 |
| TPH-CWG - Aliphatic >EC16 - EC21 | mg/kg | 8 | 12 | 10 | 21 | 26 | 8 | 5 | 7.73 | 8.00 | 26.00 | 15.40 | 26.00 | **-** | | |
| TPH-CWG - Aliphatic >EC21 - EC35 | mg/kg | 8 | 82 | 74 | 120 | 160 | 44 | 5 | 44.88 | 44.00 | 160.00 | 96.00 | 160.00 | **1700000** | Pass | 0 |
| TPH-CWG - Aliphatic >EC35 - EC44 | mg/kg | 8.4 | 55 | 53 | 62 | 91 | 43 | 5 | 18.20 | 43.00 | 91.00 | 60.80 | 91.00 | **1700000** | Pass | 0 |
| TPH-CWG - Aliphatic (EC5 - EC35) | mg/kg | 10 | 98 | 86 | 140 | 190 | 44 | 5 | 55.59 | 44.00 | 190.00 | 111.60 | | **-** | | |
| TPH-CWG - Aliphatic (EC5 - EC44) | mg/kg | 10 | 150 | 140 | 210 | 280 | 86 | 5 | 74.17 | 86.00 | 280.00 | 173.20 | | **-** | | |
| | | | | | | | | | | | | | | | | |
| TPH-CWG - Aromatic >EC5 - EC7 | mg/kg | 0.01 | 0.02 | 0.01 | 0.011 | 0.02 | 0.012 | 5 | 0.005 | 0.010 | 0.020 | 0.015 | 0.020 | **46000** | Pass | 0 |
| TPH-CWG - Aromatic >EC7 - EC8 | mg/kg | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 5 | 0.000 | 0.010 | 0.010 | 0.010 | 0.010 | **110000** | Pass | 0 |
| TPH-CWG - Aromatic >EC8 - EC10 | mg/kg | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 5 | 0.000 | 0.020 | 0.020 | 0.020 | 0.020 | **8100** | Pass | 0 |
| TPH-CWG - Aromatic >EC10 - EC12 | mg/kg | 1 | 1.2 | 1.1 | 1 | 1 | 1 | 5 | 0.09 | 1.00 | 1.20 | 1.06 | 1.20 | **28000** | Pass | 0 |
| TPH-CWG - Aromatic >EC12 - EC16 | mg/kg | 2 | 7.4 | 6.4 | 8.7 | 9.1 | 2.2 | 5 | 2.76 | 2.20 | 9.10 | 6.76 | 9.10 | **37000** | Pass | 0 |
| TPH-CWG - Aromatic >EC16 - EC21 | mg/kg | 10 | 34 | 33 | 61 | 72 | 21 | 5 | 21.35 | 21.00 | 72.00 | 44.20 | 72.00 | **28000** | Pass | 0 |
| TPH-CWG - Aromatic >EC21 - EC35 | mg/kg | 10 | 92 | 94 | 210 | 240 | 73 | 5 | 77.12 | 73.00 | 240.00 | 141.80 | 240.00 | **28000** | Pass | 0 |
| TPH-CWG - Aromatic >EC35 - EC44 | mg/kg | 8.4 | 57 | 57 | 110 | 140 | 53 | 5 | 39.46 | 53.00 | 140.00 | 83.40 | 140.00 | **28000** | Pass | 0 |
| TPH-CWG - Aromatic (EC5 - EC35) | mg/kg | 10 | 130 | 130 | 280 | 320 | 97 | 5 | 101.04 | 97.00 | 320.00 | 191.40 | | **-** | | |
| TPH-CWG - Aromatic (EC5 - EC44) | mg/kg | 10 | 190 | 190 | 380 | 450 | 150 | 5 | 133.87 | 150.00 | 450.00 | 272.00 | | **-** | | |

**GAC used: LQM/CIEH Suitable 4 Use Levels for Human Health Risk Assessment (3rd edition, 2015)**

**Category 4 Screening Levels (March 2014) used for Arsenic**

**In-house methodology used for Cyanide - no GAC currently available**

**Exceeded GAC & C4SL**
**Exceeded GAC but not C4SL**
**Recorded below laboratory detection limit**

**This spreadsheet has been developed by IGE Consulting Ltd**

**APPENDIX 4**

IMPORTED CLAY LINER PRODUCT TECHNICAL DATA SHEET

# PRODUCT TECHNICAL DATA SHEET

**Date: July 2024**
**Version: 02**

| | | |
|---|---|---|
| **Product** | Cohesive Engineering Fill | |
| **Suitable Uses** | Manufactured cohesive material tested and compliant as a Class 2 'Engineering fill' (Series 600 Specification of Highway Works).<br><br>The material has a permeability of < 2 x $10^{-9}$ m/ when suitably compacted and is geotechnically suitable as a geological barrier or capping layer in accordance with the Environment Agency publication 'LFE4 – Earthworks in Landfill Engineering'. In line with the Construction Quality Assurance regime, Environment Agency or SEPA should approve material prior to use.<br><br>Refer to toxicity and environmental risks for specific working controls. | |
| **Compiling Organisation** | NRE Aggregates Limited | |
| **Technical Advisors** | AA Environmental Limited<br>ASL Environmental Limited<br>McDonnell Cole Limited | |
| **Overview of manufacture** | The silt/clay is generated from the washing of mineral based wastes from the construction sector. The silt/clay is pressed material consisting of mineral material generally less than 2 mm. | |
| **Physical Properties** | | |
| Maximum Particle Size | 2 mm | |
| Percentage Gravel (>5 mm) | < 1 % | |
| Percentage < 0.063 mm | > 76 % | |
| Percentage Clay | 26 to 56 % | |
| Plasticity Index ($I_P$) | 22 to 49 % | |
| Liquid Limit | 45 to 78 % | |
| Permeability @ OMC | < 3.2 x $10^{-10}$ m/s | |
| **Representative Environmental Contamination Levels** | **Solid (mg/kg)** | **Leachate (ug/l)** |
| pH | 9.5 units | 9.5 units |
| Asbestos | None | Not Applicable |
| Arsenic (total) | 30.8 | 12.0 |
| Cadmium (total) | 0.8 | 0.08 |
| Chromium (total) | 44.3 | 8.0 |
| Cyanide (total) | 2.2 | Not Applicable |
| Copper (total) | 110.1 | 112 |
| Lead (total) | 416.6 | 5.2 |
| Mercury (total) | 1.2 | <LOD |
| Nickel (total) | 44.3 | 9.6 |
| Zinc (total) | 231.8 | 18.2 |
| Sulphate | Not Applicable | 291.8 mg/l |
| Total TPH | 154.2 | Not Applicable |
| Total PAH | 49.6 | Not Applicable |
| Testing Notes | Results presented are the upper 95th percentile value taken from testing undertaken by NRE Aggregates Ltd.. | |
| **Hazards** | The silt/clay is assessed as non-hazardous. The clay is considered an Article and is not subject to REACH. Note, the use of the material should be undertaken in accordance with this technical sheet. | |
| **First Aid Measures** | No specific measures are deemed necessary when using the material, however the following good practices should be adhered to.<br><br>**Skin**: whilst material contains no significant acute hazards, if exposed areas of skin have been contaminated, they should be washed with soap and water as soon as practical. If skin irritation is observed/experienced seek medical advice.<br><br>**Eyes**: if the substance enters the eyes then irrigate with emergency eye wash. If redness persists seek medical advice. | |

| | |
|---|---|
| | **Inhalation**: In the unlikely event if dusts are inhaled causes irritation move patient away from works into fresh air. Patient should carefully remove dust from in and around nasal passage. If symptoms of irritation (sneezing/coughing persist) then seek medical advice.<br><br>**Ingestion**: there are no known adverse effects. Wash mouth out with water and drink. Do not induce vomiting. If side effects are observed seek medical advice. |
| **Fire Fighting Measures** | The material is mineral based and not flammable. |
| **Accidental Releases** | Environmental Precaution: If deposited in a water course, it should be removed as soon as practicably possible. Primary risk is release of elevated suspended solids. If working in/near water course it is recommended to notify relevant regulator. Clean up methods: the material is cohesive and should be physically/mechanically removed from unauthorised locations. |
| **Handling and Storage** | When dry, avoid creating dusts and emissions by controlled loading and handling (i.e. minimising drop heights). Use of misting systems is not typically required but utilise in the event dust emissions are observed. This is in accordance with good construction practices. Material should be stockpiled when not used. Side slopes compacted to prevent uncontrolled dust emissions.<br><br>The material is not considered dangerous under Classification, Labelling and Packaging of Substances and Mixtures Regulations. It should be transferred as non-hazardous material. |
| **Exposure Controls / Personal Protection** | **Exposure limits**: Relevant EH40/2005 Workplace Exposure Limits<br>Total inhalable dust 10 mg/m$^3$ TWA (8 hr average)<br>Total respirable dust 4 mg/m$^3$ TWA (8 hr average)<br>**Respiratory**: If dust levels are considered likely to exceed levels then suitable dust masks must be used.<br>**Protection of Eyes**: Albeit due to material cohesiveness risks of fugitive dusts is not considered likely, it is recommended that glasses/goggles are worn. |
| **Disposal** | In the event the material is considered waste, it should be classified as EWC 19 02 06 'Silt/clay soil from soil washing facility'. |
| **Toxicological and environmental risks** | **Eyes**: As with all potential mineral dusts, if enters the eyes irritation can be caused.<br>**Skin and ingestion**: The product contains low levels of metals, hydrocarbons and semi-volatile organic compounds and should not be used in areas of soft landscaping where there is residential or amenity land uses. Where proposed in earthworks for these land-uses, the material should be capped by 600 mm of sub and/or top soils.<br>**Inhalation**: Risk assessments indicate no significant risk to human health from inhalation pathways.<br>**Controlled waters:** Prior to use within 8 m of a controlled water, 50 m from an abstraction borehole or in saturated ground conditions, a project specific risk assessment by the potential purchaser should be completed.<br>**Ecology**: Where proposed for use in areas of soft landscaping or in areas of agriculture, its properties should be assessed against the required soil condition. |
| **Contact Information** | NRE Aggregates Limited<br>Aggregate Recycling Facility<br>15 Port Salford Way<br>Eccles<br>Manchester<br>M30 7SF<br>**E:** jdrabble@peellandp.co.uk<br>**T:** 0161 933 2840 |

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