# CONTAMINATED LAND
# INTRUSIVE INVESTIGATION

Willow Mead
Wildern Lane
Hedge End
Hampshire
SO30 4RB

apple environmental

November 2026

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# 1 Introduction and scope of work

Apple Environmental has been appointed to undertake an intrusive soil contamination investigation on land at Willow Mead, Wildern Lane, Hedge End, Hampshire SO30 4RB.

An environmental desk study report and preliminary risk assessment previously undertaken at the site by Apple Environmental (Report Ref. CL/3736/WM) identified a potential land contamination concern due to the original use of the site for agricultural use including the presence of buildings up until the 1970s, since which the land has been unoccupied.

In view of the proposal to redevelop the site for residential use, potentially significant pathway linkages were deemed to be present, such that these could enable contamination to reach receptors.

In considering this, the contaminants potentially present included general inorganics, hydrocarbons (both petroleum and poly-aromatic), asbestos and ground gases.

A site investigation was undertaken in order to determine the presence and extent of any such contamination, and to assess the overall risk more fully.

The aims of the investigation were:

- to determine the nature of the sub-surface material on-site;
- to determine the presence of unacceptable ground contamination in specified areas, along with its nature and extent;
- to assess the degree to which the site itself could be contributing to the contamination of environmental media off-site;
- to observe or presume contaminant-pathway-receptor relationships on site; and
- to assess the risk to all identifiable receptors.

This type of assessment relies upon the visual examination of the area and sub-surface material, as well as the laboratory analysis of material samples.

As such, the specific objectives have been:

- to hand-excavate/drill six boreholes at the site down to an expected minimum depth of 1000mm;
- to characterise the nature of the sub-surface material at each of these locations;
- to collect at least 2 soil samples from each of the bores for laboratory analysis typically representing the direct and indirect contact zones;
- to collect additional soil samples from where there may be other specific or noticeable contamination concerns;
- to analyse the soil samples for a range of contamination indicators;
- to ascertain the significance of all chemical or physical data obtained;
- to determine the risk to future users based upon residential usage; and
- to make appropriate recommendations in order to reduce and/or eliminate any risks, as identified.

# 2 Methodology

As stated above, the overall aim of this investigation is to assess the sub-surface of the site in order to determine any risk that may be present as a result of ground contamination.

For this purpose, six boreholes were hand-excavated/drilled across the site, at the approximate locations shown below in Figure 1.

**Figure 1** Plan showing the sampling locations



The soil profile from each investigated location has been logged within Section 3 below, along with photographs showing the excavated arisings.

Soil samples were collected from each of the highlighted locations representing approximate depths of 100 - 200mm(bgl) and 500 - 600mm(bgl).

Each collected sample was placed immediately into a sterilised container and transferred into a refrigerated cold-box until removed for analysis.

Chemical analysis was undertaken for the following determinands:

- arsenic, boron, cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc;
- sulphate, sulphide, chloride, cyanide, ammonia and asbestos;
- benzene, toluene, ethylbenzene and xylene (all isomers);
- polycyclic aromatic hydrocarbons (speciated), petroleum hydrocarbons (banded TPHCWG); and
- phenols and non-speciated VOCs*

* Photo-ionisation detection was undertaken in-situ on the removed soil in order to detect vapours originating from any VOC residue (fuels/solvents etc.) that may be present in each excavated area.

This was performed by means of an externally calibrated Phocheck Tiger PID. Calibration certification has been appended to this report.

All chemical analyses were undertaken by a UKAS accredited laboratory. Laboratory certification has been appended to this report.

# 3 On-site observations

The subject site currently exists as an unoccupied parcel of land with vegetation.

It is understood from BGS data that the bedrock beneath the site is characterised by the Earnley Sand Formation (sand, silt and clay) with no overlying superficial deposits.

The bedrock is believed to have been observed in all of the boreholes.

Made-ground was however noted in a number of bores extending to an observed maximum depth of 670mm in BH.01, where it comprised brick and mortar fragments. It was also noted that some parts of the site showed evidence of soil and construction waste deposition, or similar, on the surface of the site.

The sub-surface material strata logs have been reproduced below in Tables 1 to 6 along with any detailed observations.

Photographs showing the removed material have been appended to each strata log (Photographs 1 to 6).

The intrusive investigation was undertaken on the 14th April 2026.

**Table 1** Strata log - Location **BH.01**

| Location ID | Depth (mm) | Notes |
|---|---|---|
| **BH.01** | 0 - 330 | Dark-brown, silty topsoil with rootlets (made-ground) |
| | 330 - 670 | Dark-brown made-ground comprising brick and mortar fragments |
| | 670 - 870 | Orange, very fine, damp, silty sand |
| | 870 - 1100 | Mid-brown, damp, sandy, clayey silt |
| **Groundwater** | - | Groundwater was not reached |

**Photograph 1** Removed soil material - Location BH.01



Left to right 0 - 1100mm

**Table 2** Strata log - Location **BH.02**

| Location ID | Depth (mm) | Notes |
|---|---|---|
| **BH.02** | 0 - 30 | Dark-brown, sandy, silty topsoil |
| | 30 - 540 | Mid-brown subsoil with made-ground comprising brick, angular flints, mortar and cement fragments (presumed asbestos) |
| | 540 - 600 | Light-brown and orange damp, clayey sand |
| | 600 - 1100 | Light-brown/grey/orange damp, mottled, sandy, soft clay |
| **Groundwater** | - | Groundwater was not reached |

**Photograph 2** Removed soil material - Location BH.02



Left to right 0 - 1100mm

**Table 3** Strata log - Location **BH.03**

| Location ID | Depth (mm) | Notes |
|---|---|---|
| **BH.03** | 0 - 360 | Dark-brown, silty, sandy topsoil with rootlets |
| | 360 - 610 | Mid-brown, damp, silty, sandy soil with rootlets |
| | 610 - 790 | Light-brown, damp, sandy silt |
| | 790 - 1050 | Light-brown/grey/orange, damp, mottled, silty, very fine, slightly clayey sand |
| **Groundwater** | - | Groundwater was not reached |

**Photograph 3** Removed soil material - Location BH.03



Left to right 0 - 1050mm

**Table 4** Strata log - Location **BH.04**

| Location ID | Depth (mm) | Notes |
|---|---|---|
| **BH.04** | 0 - 90 | Dark-brown, silty, sandy topsoil with rootlets |
| | 90 - 480 | Dark-brown subsoil with made-ground comprising brick, mortar, flint fragments and angular gravels |
| | 480 - 850 | Light brown/grey, damp, mottled, sandy clay |
| | 850 - 1050 | Light-brown/grey/orange, damp, mottled, very fine clayey sand |
| **Groundwater** | - | Groundwater was not reached |

**Photograph 4** Removed soil material - Location BH.04



Left to right 0 - 1050mm

**Table 5** Strata log - Location **BH.05**

| Location ID | Depth (mm) | Notes |
|---|---|---|
| **BH.05** | 0 - 310 | Dark-brown, silty, sandy topsoil with rootlets |
| | 310 - 630 | Light-brown/grey/orange, damp, mottled, soft, sandy clay |
| | 630 - 820 | Light-brown/grey/orange, damp, mottled, very fine clayey sand |
| | 820 - 1050 | Orange/grey, damp, mottled, very fine, slight clayey sand |
| **Groundwater** | - | Groundwater was not reached |

**Photograph 5** Removed soil material - Location BH.05



Left to right 0 - 1050mm

**Table 6** Strata log - Location **BH.06**

| Location ID | Depth (mm) | Notes |
|---|---|---|
| **BH.06** | 0 - 120 | Dark-brown, silty, sandy topsoil with rootlets |
| | 120 - 320 | Dark and light-brown subsoil with very stiff clay |
| | 320 - 550 | Light-brown, stiff, sandy clay |
| | 550 - 830 | Light-brown/black, stiff, sandy clay with peat pockets |
| | 830 - 1050 | Light-brown/grey/orange, damp, mottled, very fine sand |
| **Groundwater** | - | Groundwater was not reached |

**Photograph 6** Trial pit and removed soil material - Location TP.06



Left to right 0 - 1050mm

# 4 Results from soil analyses

The results from the soil analyses are displayed in Tables 7 to 12 below. Any determinand detected has been highlighted in **bold** type.

**Table 7** Results for specified inorganics in soil - metals

| Determinand (mg/kg) | BH.01 | | BH.02 | | BH.03 | |
|---|---|---|---|---|---|---|
| | Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm |
| Arsenic | < 10 | **10** | < 10 | **11** | < 10 | < 10 |
| Boron | < 2.5 | < 2.5 | < 2.5 | < 2.5 | < 2.5 | < 2.5 |
| Cadmium | **0.7** | **1.0** | **0.4** | **0.8** | **0.8** | **0.4** |
| Chromium | **7.3** | **8.0** | **6.3** | **11** | **11** | **6.3** |
| Hexavalent chromium | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 2.0 | < 1.0 |
| Copper | **31** | **36** | **11** | **25** | **36** | **11** |
| Lead | **140** | **150** | **43** | **84** | **110** | **44** |
| Mercury (total) | < 2.5 | < 2.5 | < 2.5 | < 2.5 | < 2.5 | < 2.5 |
| Nickel | **5.5** | **7.1** | **2.3** | **6.0** | **5.6** | **2.3** |
| Selenium | < 8.0 | < 8.0 | < 8.0 | < 8.0 | < 8.0 | < 8.0 |
| Zinc | **240** | **520** | **86** | **180** | **120** | **87** |

**Table 7 (Cont.)** Results for specified inorganics in soil - metals

| Determinand (mg/kg) | BH.04 | | BH.05 | | BH.06 | |
|---|---|---|---|---|---|---|
| | Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm |
| Arsenic | < 10 | **13** | < 10 | < 10 | < 10 | **10** |
| Boron | < 2.5 | < 2.5 | < 2.5 | < 2.5 | < 2.5 | < 2.5 |
| Cadmium | **0.7** | **0.8** | **0.8** | **0.7** | **0.7** | **0.8** |
| Chromium | **8.8** | **12** | **12** | **8.2** | **7.9** | **11** |
| Hexavalent chromium | < 1.0 | < 1.0 | < 2.0 | < 1.0 | < 1.0 | < 1.0 |
| Copper | **24** | **17** | **35** | **11** | **15** | **13** |
| Lead | **100** | **32** | **130** | **26** | **25** | **12** |
| Mercury (total) | < 2.5 | < 2.5 | < 2.5 | < 2.5 | < 2.5 | < 2.5 |
| Nickel | **7.6** | **3.6** | **7.2** | **1.5** | **6.4** | **2.0** |
| Selenium | < 8.0 | < 8.0 | < 8.0 | < 8.0 | < 8.0 | < 8.0 |
| Zinc | **120** | **39** | **130** | **59** | **49** | **17** |

**Table 8** Results for specified inorganics in soil - non-metals

| Determinand (mg/kg) | BH.01 | | BH.02 | | BH.03 | |
|---|---|---|---|---|---|---|
| | Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm |
| Cyanide (total) | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 2.0 | < 1.0 |
| Sulphate (total) | **240** | **110** | **70** | **55** | **18** | < 10 |
| Sulphide | **20** | **16** | **16** | < 15 | < 15 | < 15 |
| Chloride | **15** | **8.5** | **3.9** | **5.5** | **8.0** | **4.9** |
| Asbestos | None detected | None detected | **Chrysotile** | None detected | None detected | None detected |
| **Determinand (mg/kg)** | **BH.04** | | **BH.05** | | **BH.06** | |
| | Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm |
| Cyanide (total) | < 1.0 | < 1.0 | < 2.0 | < 1.0 | < 1.0 | < 1.0 |
| Sulphate (total) | **15** | **16** | < 10 | **77** | **32** | < 10 |
| Sulphide | **16** | < 15 | < 15 | < 15 | < 15 | < 15 |
| Chloride | **8.1** | **5.0** | **7.5** | **10** | **6.9** | **12** |
| Asbestos | None detected | None detected | None detected | None detected | None detected | None detected |

**Table 9** Results for specified hydrocarbons in soil

| Determinand (mg/kg) | BH.01 | | BH.02 | | BH.03 | |
|---|---|---|---|---|---|---|
| | Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm |
| Benzene | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Toluene | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Ethylbenzene | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| p & m-Xylene | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| o-Xylene | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| MTBE | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| **Determinand (mg/kg)** | **BH.04** | | **BH.05** | | **BH.06** | |
| | Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm |
| Benzene | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Toluene | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Ethylbenzene | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| p & m-Xylene | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| o-Xylene | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| MTBE | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |

**Table 10** Results for poly-aromatic hydrocarbons in soil

| Determinand (mg/kg) | BH.01 | | BH.02 | | BH.03 | |
|---|---|---|---|---|---|---|
| | Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm |
| Acenaphthene | **0.04** | **0.09** | < 0.02 | < 0.02 | **0.07** | < 0.02 |
| Acenaphthylene | **0.15** | **0.37** | **0.04** | **0.10** | **0.24** | < 0.02 |
| Anthracene | **0.24** | **0.43** | **0.06** | **0.20** | **0.39** | < 0.02 |
| Benzo(a)anthracene | **0.93** | **1.9** | **0.31** | **0.97** | **1.1** | **0.08** |
| Benzo(a)pyrene | **0.97** | **2.3** | **0.42** | **1.2** | **1.1** | **0.10** |
| Benzo(b)fluoranthene | **0.93** | **2.5** | **0.38** | **1.1** | **1.1** | **0.09** |
| Benzo(ghi)perylene | **0.64** | **1.7** | **0.33** | **0.83** | **0.66** | **0.08** |
| Benzo(k)fluoranthene | **0.53** | **1.4** | **0.19** | **0.58** | **0.57** | **0.05** |
| Chrysene | **0.92** | **2.6** | **0.28** | **0.89** | **0.96** | **0.07** |
| Dibenzo(ah)anthracene | **0.14** | **0.38** | **0.06** | **0.17** | **0.16** | < 0.02 |
| Fluoranthene | **2.6** | **7.7** | **0.67** | **2.6** | **3.8** | **0.17** |
| Fluorene | **0.08** | **0.11** | **< 0.02** | **0.04** | **0.20** | < 0.02 |
| Indeno(123-cd)pyrene | **0.66** | **1.8** | **0.32** | **0.91** | **0.75** | **0.09** |
| Naphthalene | **0.05** | **1.3** | **< 0.02** | **0.02** | **0.03** | < 0.02 |
| Phenanthrene | **1.4** | **5.6** | **0.23** | **0.92** | **2.7** | **0.06** |
| Pyrene | **2.1** | **6.7** | **0.60** | **2.2** | **3.0** | **0.15** |
| Coronene | **0.13** | **0.42** | **0.07** | **0.18** | **0.13** | **0.02** |
| **Total PAHs** | **13** | **37** | **4.0** | **13** | **17** | **1.1** |

**Table 10 (Cont.)** Results for poly-aromatic hydrocarbons in soil

| Determinand (mg/kg) | BH.04 | | BH.05 | | BH.06 | |
|---|---|---|---|---|---|---|
| | Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm |
| Acenaphthene | **0.05** | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| Acenaphthylene | **0.14** | < 0.02 | **0.07** | < 0.02 | < 0.02 | < 0.02 |
| Anthracene | **0.34** | < 0.02 | **0.15** | < 0.02 | **0.03** | < 0.02 |
| Benzo(a)anthracene | **1.6** | < 0.02 | **0.53** | < 0.02 | **0.16** | < 0.02 |
| Benzo(a)pyrene | **2.1** | < 0.02 | **0.60** | < 0.02 | **0.20** | < 0.02 |
| Benzo(b)fluoranthene | **1.7** | < 0.02 | **0.65** | < 0.02 | **0.19** | < 0.02 |
| Benzo(ghi)perylene | **1.7** | < 0.02 | **0.42** | < 0.02 | **0.16** | < 0.02 |
| Benzo(k)fluoranthene | **1.0** | < 0.02 | **0.31** | < 0.02 | **0.09** | < 0.02 |
| Chrysene | **1.5** | < 0.02 | **0.59** | < 0.02 | **0.14** | < 0.02 |
| Dibenzo(ah)anthracene | **0.31** | < 0.02 | **0.08** | < 0.02 | **0.02** | < 0.02 |
| Fluoranthene | **3.4** | < 0.02 | **1.2** | < 0.02 | **0.32** | < 0.02 |
| Fluorene | **0.04** | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| Indeno(123-cd)pyrene | **1.6** | < 0.02 | **0.47** | < 0.02 | **0.16** | < 0.02 |
| Naphthalene | < 0.02 | < 0.02 | **0.03** | < 0.02 | < 0.02 | < 0.02 |
| Phenanthrene | **1.1** | < 0.02 | **0.47** | < 0.02 | **0.08** | < 0.02 |
| Pyrene | **3.0** | < 0.02 | **1.1** | < 0.02 | **0.29** | < 0.02 |
| Coronene | **0.30** | < 0.02 | **0.10** | < 0.02 | **0.05** | < 0.02 |
| **Total PAHs** | **20** | < 0.34 | **6.9** | < 0.34 | **2.0** | < 0.34 |

**Table 11** Results for petroleum hydrocarbons in soil

| Determinand (mg/kg) | BH.01 | | BH.02 | | BH.03 | |
|---|---|---|---|---|---|---|
| | Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm |
| Aliphatic C5 - C6 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 |
| Aliphatic C6 - C8 | < 0.06 | 0.13 | < 0.06 | < 0.06 | < 0.06 | < 0.06 |
| Aliphatic C8 - C10 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 |
| Aliphatic C10 - C12 | < 1.0 | 1.6 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Aliphatic C12 - C16 | 2.0 | 5.3 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Aliphatic C16 - C21 | **11** | **16** | **6.8** | **4.6** | **7.0** | < 1.0 |
| Aliphatic C21 - C34 | **22** | **67** | **21** | **14** | **32** | < 2.0 |
| Aliphatic C35 - C44 | < 5.0 | **21** | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| | | | | | | |
| Aromatic C5 - C7 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Aromatic C7 - C8 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Aromatic C8 - C10 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 |
| Aromatic C10 - C12 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Aromatic C12 - C16 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Aromatic C16 - C21 | **12** | **33** | **9.5** | **9.8** | **11** | **12** |
| Aromatic C21 - C35 | **94** | **370** | **65** | **50** | **56** | < 2.0 |
| Aromatic C35 - C44 | **28** | **140** | **23** | **16** | **17** | < 5.0 |
| **Total Aliphatic / Aromatic (C5 -35)** | **140** | **490** | **100** | **78** | **110** | **12** |

**Table 11 (Cont.)** Results for petroleum hydrocarbons in soil

| Determinand (mg/kg) | BH.04 | | BH.05 | | BH.06 | |
|---|---|---|---|---|---|---|
| | Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm |
| Aliphatic C5 - C6 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 |
| Aliphatic C6 - C8 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 |
| Aliphatic C8 - C10 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 |
| Aliphatic C10 - C12 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Aliphatic C12 - C16 | **1.5** | < 1.0 | **1.5** | < 1.0 | **2.2** | < 1.0 |
| Aliphatic C16 - C21 | **11** | **1.4** | **7.8** | **1.3** | **2.5** | **1.3** |
| Aliphatic C21 - C34 | **21** | **3.5** | **30** | **3.7** | **10** | **5.0** |
| Aliphatic C35 - C44 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| | | | | | | |
| Aromatic C5 - C7 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Aromatic C7 - C8 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Aromatic C8 - C10 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 | < 0.06 |
| Aromatic C10 - C12 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Aromatic C12 - C16 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Aromatic C16 - C21 | **14** | **15** | **12** | **13** | **12** | **14** |
| Aromatic C21 - C35 | **130** | **3.0** | **69** | **4.0** | **28** | **3.7** |
| Aromatic C35 - C44 | **55** | < 5.0 | **21** | < 5.0 | **6.8** | < 5.0 |
| **Total Aliphatic / Aromatic (C5 -35)** | **170** | **23** | **120** | **22** | **54** | **24** |

**Table 12** Non-specified VOCs - measured by photo-ionisation detection in-situ

| **BH.01** | | **BH.02** | | **BH.03** | |
|---|---|---|---|---|---|
| Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm |
| < 0.1 ppm | < 0.1 ppm | < 0.1 ppm | < 0.1 ppm | < 0.1 ppm | < 0.1 ppm |
| **BH.04** | | **BH.05** | | **BH.06** | |
| Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm | Depth 100-200mm | Depth 500-600mm |
| < 0.1 ppm | < 0.1 ppm | < 0.1 ppm | < 0.1 ppm | < 0.1 ppm | < 0.1 ppm |

# 5 Interpretation

Tables 13 to 15 below show the soil guideline concentrations used as part of this assessment.

Where Environment Agency guideline values are unavailable, soil guideline concentrations derived using CLEA software packages and other published guidelines have been consulted.

In all instances guideline values for residential end-use with home-grown produce have been considered.

For the purposes of this assessment therefore, the following guideline criteria have been referred to:

- Environment Agency Category 4 Screening Levels (2014);
- CIEH (LQM) GAC 3rd Edition (residential end-use);
- Atkins ATRISK SSVs (residential end-use with home-grown produce);
- GAC CLEA generated value for residential end-use with home-grown produce; and
- others, as available.

Note that for some guideline values a choice of soil organic matter (SOM) concentration is provided whereby different guideline concentrations exist for SOM values of between 1% and 6%.

In this specific instance the guideline value for 1% SOM has been referred to, despite the mean organic content being determined as 3.4%; which approximates to 5.8% SOM.

**Table 13** Soil guideline concentrations for inorganics referred to for this assessment

| Determinand (mg/kg) | Guideline concentration for 1% SOM | Origin |
|---|---|---|
| Arsenic | 37 | Atkins ATRISK Category 4 Screening Level |
| Boron | 290 | LQM/CIEH S4ULs (CLEA 1.06) for residential with home-grown produce |
| Cadmium | 22.1 | Atkins ATRISK Category 4 Screening Level |
| Chromium | 14300 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Chromium VI | 20.5 | Atkins ATRISK Category 4 Screening Level |
| Copper | 4730 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Lead | 200 | Category 4 Screening Level[a] |
| Mercury (elemental) | 0.0863 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Mercury (inorganic $Hg^{2+}$) | 180 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Nickel | 136 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Selenium | 375 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Zinc | 20000 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Free Cyanide | 34 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Phenols (SOM 1%) | 267 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Benzene (SOM 1%) | 0.137 | Atkins ATRISK (C4SL) for residential with home-grown produce |
| Toluene (SOM 1%) | 113 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Ethylbenzene (SOM 1%) | 50.7 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| o-Xylene (SOM 1%) | 26.4 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| m-Xylene (SOM 1%) | 25 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| p-Xylene (SOM 1%) | 24 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |

(a) Quoted for residential land-use 0-7 year-old child taking into account bioavailability, with exposure parameters as detailed in report SR3.

**Table 14** Soil guideline concentrations for PAHs referred to for this assessment

| Determinand (mg/kg) | Guideline concentration for 1% SOM | Origin |
|---|---|---|
| Naphthalene | 0.829 | LQM/CIEH S4ULs (CLEA 1.06) for residential with home-grown produce |
| Acenaphthylene | 608 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Acenaphthene | 210 | LQM/CIEH S4ULs (CLEA 1.06) for residential with home-grown produce |
| Fluorene | 735 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Phenanthrene | 95 | LQM/CIEH S4ULs (CLEA 1.06) for residential with home-grown produce |
| Anthracene | 10200 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Fluoranthene | 983 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Pyrene | 668 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Benzo(a)anthracene | 7.2 | LQM/CIEH S4ULs (CLEA 1.06) for residential with home-grown produce |
| Chrysene | 15 | LQM/CIEH S4ULs (CLEA 1.06) for residential with home-grown produce |
| Benzo(b)fluoranthene | 2.6 | LQM/CIEH S4ULs (CLEA 1.06) for residential with home-grown produce |
| Benzo(k)fluoranthene | 77 | LQM/CIEH S4ULs (CLEA 1.06) for residential with home-grown produce |
| Benzo(a)pyrene | 2.2 | LQM/CIEH S4ULs (CLEA 1.06) for residential with home-grown produce |
| Indeno(123-cd)pyrene | 27 | LQM/CIEH S4ULs (CLEA 1.06) for residential with home-grown produce |
| Dibenzo(ah)anthracene | 0.24 | LQM/CIEH S4ULs (CLEA 1.06) for residential with home-grown produce |
| Benzo(ghi)perylene | 320 | LQM/CIEH S4ULs (CLEA 1.06) for residential with home-grown produce |

**Table 15** Soil guideline concentrations for TPHs referred to for this assessment

| Determinand (mg/kg) | Guideline concentration for 1% SOM | Origin |
|---|---|---|
| Aliphatic TPH C5-C6 | 42.7 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Aliphatic TPH C6-C8 | 99.3 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Aliphatic TPH C8-C10 | 13.9 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Aliphatic TPH C10-C12 | 81.7 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Aliphatic TPH C12-C16 | 385 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Aliphatic TPH C16-C35 | 210000 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Aliphatic TPH C35-C44 | 65000 | LQM/CIEH S4ULs (CLEA 1.06) for residential with home-grown produce |
| Aromatic TPH C5-C7 | 0.137 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Aromatic TPH C7-C8 | 113 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Aromatic TPH C8-C10 | 20.5 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Aromatic TPH C10-C12 | 70 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Aromatic TPH C12-C16 | 165 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Aromatic TPH C16-C21 | 319 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Aromatic TPH C21-C35 | 1120 | Atkins ATRISK (CLEA 1.07) for residential with home-grown produce |
| Aromatic TPH C5-C35 | 1100 | LQM/CIEH S4ULs (CLEA 1.06) for residential with home-grown produce |

# 6 Results evaluation

As detailed above, six boreholes were hand-excavated/drilled across the site to a maximum depth of 1100mm; from each of which two soil samples were collected for laboratory analysis, representing the direct and indirect contact zones.

In doing so, the analytical results reproduced in Tables 7 to 12 above have shown that there were a number of chemical determinands present exceeding soil guideline criteria when considered for residential development.

In the first instance, there was an elevated concentration of the poly-aromatic hydrocarbon (PAH) dibenzo(ah)anthracene found in the soil sample taken from a depth of 100 - 200mm within borehole TP.04 with a reported concentration of 0.31mg/kg. The corresponding residential guideline concentration for dibenzo(ah)anthracene in soil is 0.24mg/kg.

Secondly, a number of PAHs exceeded their guideline concentrations in the soil sample taken at a depth of 500 - 600mm within borehole BH.01.

More specifically, benzo(a)pyrene marginally exceeded its guideline concentration of 2.2mg/kg with a concentration of 2.3mg/kg, dibenzo(ah)anthracene exceeded its guideline concentration of 0.24mg/kg with a concentration of 0.38mg/kg and naphthalene exceeded its guideline concentration of 0.829mg/kg with a concentration of 1.3mg/kg.

Thirdly, chrysotile asbestos fibres were found to be present within the upper soil sample obtained from borehole BH.02.

The possible extent of any of this identified contamination (based on the results obtained herein) has been indicated below in Figure 2, although it is noted that the actual extent of contamination may well be greater than that which has been indicated; and could not be confirmed without further, more focussed intrusive investigation.

**Figure 2** Plan showing the possible extent of soil contamination based on these findings



# 7 Additional sampling

In view of the presence of asbestos and PAHs exceeding guideline criteria in several locations, the three areas highlighted above were excavated down to a depth of at least 400mm.

Following this, additional sampling was undertaken from the base and sides of each excavated area to determine whether or not all of the identified contamination had been removed.

More specifically 18 soil samples were obtained from the approximate positions detailed within Table 16 below and Photographs 7 to 9.

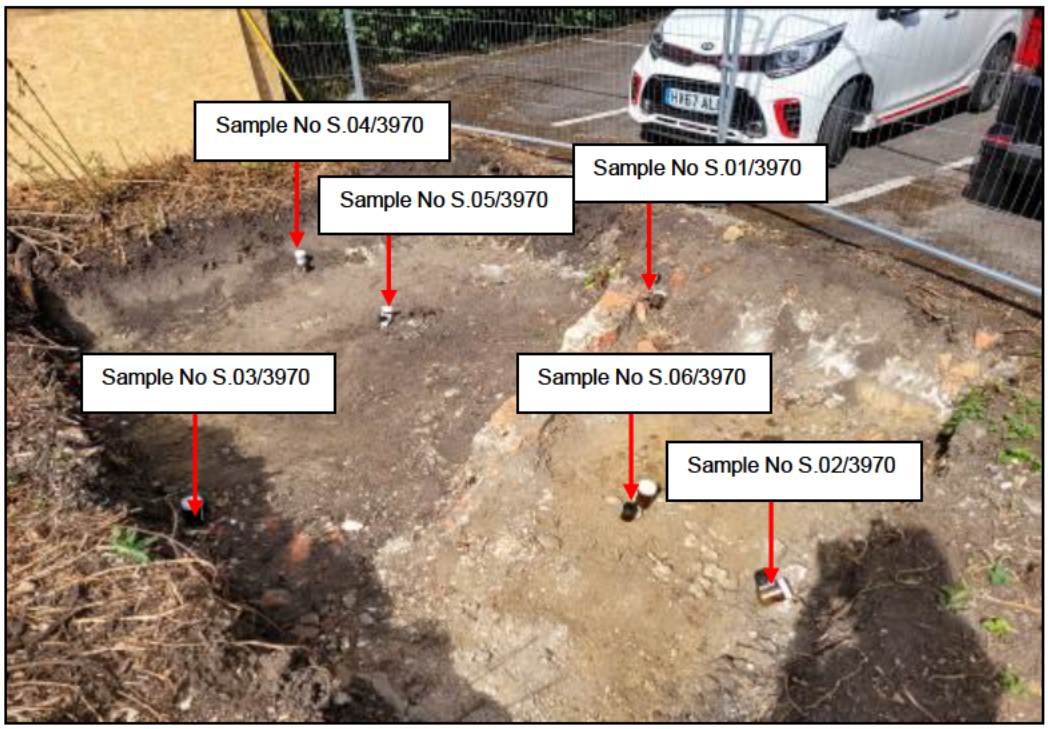
In each instance soil samples were obtained the base and sides of the excavations at depths of 100 - 200mm. The results from this delineation sampling have been reproduced below in Tables 17, 18 and 19.

**Table 16** Additional soil sample positions

| Area 1 | | Area 2 | | Area 3 | |
|---|---|---|---|---|---|
| Sample No S.01/3970 | Side | Sample No S.07/3970 | Side | Sample No S.13/3970 | Side |
| Sample No S.02/3970 | Side | Sample No S.08/3970 | Side | Sample No S.14/3970 | Side |
| Sample No S.03/3970 | Side | Sample No S.09/3970 | Side | Sample No S.15/3970 | Side |
| Sample No S.04/3970 | Side | Sample No S.10/3970 | Side | Sample No S.16/3970 | Side |
| Sample No S.05/3970 | Base | Sample No S.11/3970 | Base | Sample No S.17/3970 | Base |
| Sample No S.06/3970 | Base | Sample No S.12/3970 | Base | Sample No S.18/3970 | Base |

The additional sampling was undertaken on the 20th August 2026.

**Photograph 7** Showing the additional sampling positions for Area 1




**Photograph 8** Showing the additional sampling positions for Area 2



**Photograph 9** Showing the additional sampling positions for Area 3

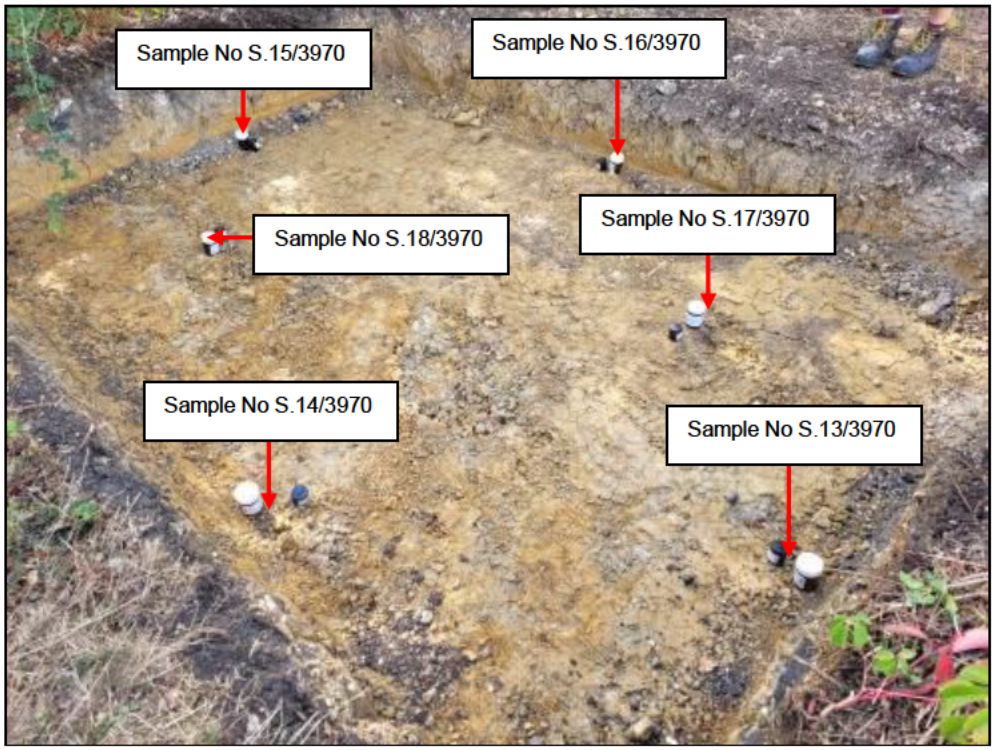



**Table 17** Results from asbestos analysis of soil in Area 2

| Determinand | S.07/3970 | S.08/3970 | S.09/3970 |
|---|---|---|---|
| | Side | Side | Side |
| Asbestos | Not detected | Not detected | Not detected |
| | **S.10/3970** | **S.11/3970** | **S.12/3970** |
| | Side | Base | Base |
| | Not detected | Not detected | Not detected |

**Table 18** Results from poly-aromatic hydrocarbon analysis in Area 1

| Determinand (mg/kg) | S.01/3970 | S.02/3970 | S.03/3970 | S.04/3970 | S.05/3970 | S.06/3970 |
|---|---|---|---|---|---|---|
| | Side | Side | Side | Side | Base | Base |
| Acenaphthene | < 0.20 | **0.04** | **0.03** | < 0.20 | **0.04** | < 0.02 |
| Acenaphthylene | < 0.20 | **0.08** | **0.09** | < 0.20 | **0.32** | **0.07** |
| Anthracene | < 0.20 | **0.19** | **0.15** | < 0.20 | **0.26** | **0.10** |
| Benzo(a)anthracene | **0.50** | **0.63** | **0.65** | < 0.20 | **1.3** | **0.55** |
| Benzo(a)pyrene | **0.60** | **0.67** | **0.75** | < 0.20 | **1.9** | **0.77** |
| Benzo(b)fluoranthene | **0.69** | **0.72** | **0.78** | **0.27** | **2.3** | **0.85** |
| Benzo(ghi)perylene | **0.51** | **0.53** | **0.52** | < 0.20 | **1.4** | **0.59** |
| Benzo(k)fluoranthene | **0.31** | **0.32** | **0.35** | < 0.20 | **1.0** | **0.37** |
| Chrysene | **0.62** | **0.65** | **0.64** | < 0.20 | **2.1** | **0.63** |
| Dibenzo(ah)anthracene | < 0.20 | **0.11** | **0.13** | < 0.20 | **0.28** | **0.12** |
| Fluoranthene | **1.6** | **1.5** | **1.3** | **0.38** | **6.0** | **1.7** |
| Fluorene | < 0.20 | **0.04** | **0.03** | < 0.20 | **0.09** | **0.02** |
| Indeno(123-cd)pyrene | **0.49** | **0.53** | **0.58** | **< 0.20** | **1.7** | **0.66** |
| Naphthalene | < 0.20 | **0.03** | < 0.02 | < 0.20 | **0.72** | **0.02** |
| Phenanthrene | **1.0** | **0.75** | **0.55** | < 0.20 | **4.2** | **0.69** |
| Pyrene | **1.4** | **1.3** | **1.2** | **0.34** | **4.9** | **1.3** |
| **Total PAHs** | **8.9** | **8.1** | **7.7** | **3.8** | **28** | **8.5** |

**Table 19** Results from poly-aromatic hydrocarbon analysis in Area 3

| Determinand (mg/kg) | S.13/3970 | S.14/3970 | S.15/3970 | S.16/3970 | S.17/3970 | S.18/3970 |
|---|---|---|---|---|---|---|
| | Side | Side | Side | Side | Base | Base |
| Acenaphthene | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| Acenaphthylene | **0.05** | < 0.02 | **0.06** | < 0.02 | < 0.02 | < 0.02 |
| Anthracene | **0.07** | < 0.02 | **0.13** | < 0.02 | < 0.02 | < 0.02 |
| Benzo(a)anthracene | **0.25** | < 0.02 | **0.67** | **0.09** | < 0.02 | < 0.02 |
| Benzo(a)pyrene | **0.37** | < 0.02 | **0.81** | **0.08** | < 0.02 | < 0.02 |
| Benzo(b)fluoranthene | **0.38** | < 0.02 | **0.89** | **0.14** | < 0.02 | < 0.02 |
| Benzo(ghi)perylene | **0.31** | < 0.02 | **0.59** | **0.11** | < 0.02 | < 0.02 |
| Benzo(k)fluoranthene | **0.17** | < 0.02 | **0.38** | **0.06** | < 0.02 | < 0.02 |
| Chrysene | **0.21** | < 0.02 | **0.59** | **0.08** | < 0.02 | < 0.02 |
| Dibenzo(ah)anthracene | **0.06** | < 0.02 | **0.14** | **0.02** | < 0.02 | < 0.02 |
| Fluoranthene | **0.41** | < 0.02 | **1.2** | **0.11** | < 0.02 | < 0.02 |
| Fluorene | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| Indeno(123-cd)pyrene | **0.33** | < 0.02 | **0.68** | **0.13** | < 0.02 | < 0.02 |
| Naphthalene | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| Phenanthrene | **0.15** | < 0.02 | **0.33** | **0.02** | < 0.02 | < 0.02 |
| Pyrene | **0.36** | < 0.02 | **1.0** | **0.09** | < 0.02 | < 0.02 |
| **Total PAHs** | **3.2** | < 0.32 | **7.5** | **1.0** | < 0.32 | < 0.32 |

Through reference to Tables 17 to 19 above, it was noted that PAH residue consisting of dibenzo(ah)anthracene was still present above residential guideline criteria within the soil sample obtained from location S.05 on the base of excavated Area 1.

It was noted that all of the identified contamination had been removed successfully from Areas 2 and 3.

In view of dibenzo(ah)anthracene still exceeding guideline criteria in Area 1, further soil removal was undertaken, taking the excavation down by another 200mm to a final depth of 600mm. Following this, sampling was then undertaken from two positions across the newly exposed base of the excavation (Sample No. S.19/4008 and Sample No. S.20/4008).

This additional sampling was undertaken on the 28th October 2026.

The sampled positions have been shown below in Photograph 10 and the results from the soil analysis have been reproduced below in Table 20.

**Photograph 10** Showing the additional sampling positions within Area 1 following further excavation



**Table 20** Results from poly-aromatic hydrocarbon analysis in Area 1 following further excavation

| Determinand (mg/kg) | S.19/4008 | S.20/4008 |
|---|---|---|
| | Base | Base |
| Acenaphthene | < 0.02 | < 0.02 |
| Acenaphthylene | **0.06** | **0.03** |
| Anthracene | **0.10** | **0.03** |
| Benzo(a)anthracene | **0.42** | **0.16** |
| Benzo(a)pyrene | **0.49** | **0.20** |
| Benzo(b)fluoranthene | **0.59** | **0.24** |
| Benzo(ghi)perylene | **0.34** | **0.15** |
| Benzo(k)fluoranthene | **0.24** | **0.09** |
| Chrysene | **0.48** | **0.17** |
| Dibenzo(ah)anthracene | **0.08** | **0.04** |
| Fluoranthene | **1.2** | **0.34** |
| Fluorene | < 0.02 | < 0.02 |
| Indeno(123-cd)pyrene | **0.38** | **0.16** |
| Naphthalene | **0.04** | < 0.02 |
| Phenanthrene | **0.52** | **0.12** |
| Pyrene | **1.0** | **0.30** |
| **Total PAHs** | **6.0** | **2.1** |

As shown in Table 20 above, it appears that all PAH contamination has now been adequately removed from Area 1.

# 8 Review of conceptual model and risk assessment

Using the sampling results and observations made, the conceptual site model (CSM) from the Phase 1 desk study can now be reviewed and updated. In doing so any uncertainties highlighted within that report can now be readdressed and the corresponding risk reassessed.

In reviewing this conceptual model, Table 21 below highlights any perceived pollutant pathway linkages that may be present.

It should be noted that the following re-assessment of risk, has been made on the basis that there will be a soft landscaped recreational areas associated with the proposed dwellings, and groundworks will be undertaken for the installation of footings/foundations and new underground services.

The risk matrix used for this purpose is reproduced below in Figure 3.

**Figure 3** Risk assessment algorithm

| Potential severity | Risk rating | | | | | | Severity of hazard | Probability of hazard | Overall risk |
|---|---|---|---|---|---|---|---|---|---|
| | 5 | 5 | 10 | 15 | 20 | 25 | 5 = Fatality | 1 = Improbable | 1 - 6 Low |
| | 4 | 4 | 8 | 12 | 16 | 20 | 4 = Major | 2 = Remote | 8 - 12 Medium |
| | 3 | 3 | 6 | 9 | 12 | 15 | 3 = Minor | 3 = Possible | 15 - 25 High |
| | 2 | 2 | 4 | 6 | 8 | 10 | 2 = Negligible | 4 = Probable | |
| | 1 | 1 | 2 | 3 | 4 | 5 | 1 = None | 5 = Certainty | |
| | | 1 | 2 | 3 | 4 | 5 | | | |
| | Probability | | | | | | Severity of hazard x probability = risk rating | | |

**Table 21** Perceived risk to receptors

| Contaminants present | Potential pathways | Perceived level of risk | Comments and reasoning |
|---|---|---|---|
| None detected | Ingestion of soil | 4 | In the absence of any identified chemical soil contamination beneath the surface, the corresponding risk to ingestion of soil is expected to be low |
| | Dermal contact with soil | 4 | In the absence of any identified chemical soil contamination beneath the surface, the corresponding risk to dermal contact with soil is expected to be low |
| | Inhalation of soil dust | 4 | In the absence of any identified chemical soil contamination beneath the surface, the corresponding risk to inhalation of soil is expected to be low |
| | Inhalation or ignition of gases or vapours | 5 | In the absence of any significant VOC concentration or soil organic matter beneath the surface, the corresponding risk from ignition or inhalation of vapours or gases is expected to be low |
| | Contact with mains services and building fabric below ground | 4 | In the absence of any identified aggressive chemical soil contamination beneath the surface, the corresponding risk to underground services and building fabric is expected to be low |
| | Contact with groundwater or other environmental media | 4 | In the absence of any chemical soil contamination across the site, the corresponding risk to groundwater resources and other off-site media is expected to be low |

# 9 Summary and recommendations

## 9.1 Summary

This report has aimed to determine whether or not there is any significant soil contamination beneath the surface of the site prior to the proposed residential development of the site. For this purpose, the sub-surface was intrusively investigated down to an approximate depth of 1000mm, allowing it to be both visually characterised, and analytically assessed for any chemical contamination.

Soil samples were obtained from two separate depths at each location, and analysed for the determinands highlighted in the conceptual site model (CSM).

The results from this intrusive investigation had shown that PAHs dibenzo(ah)anthracene, benzo(a)pyrene and naphthalene were present above their soil guideline concentrations in two areas of the site down to a depth of 600mm. These have been identified above as Areas 1 and 3.

The precise source of the PAH contamination was not evident at the time of the investigation; however it is expected to have resulted from construction waste previously deposited on the site.

In addition to this, chrysotile asbestos residue was detected within the soil sample obtained from a depth of 200mm in a third area (Area 2), and was believed to be a component of the made-ground noted in this area.

In view of these findings the soil in each of these three areas was excavated to a depth of 400mm below the existing ground level and removed off-site for appropriate disposal.

Soil samples were subsequently obtained from the base and sides of each excavated area, and analysed for the presence of PAHs or asbestos, as necessary, to determine whether or not the identified contamination had been removed. This additional analysis showed that the contamination had been successfully removed from Areas 2 and 3, whereas some PAH contamination was still evident across the base of excavated Area 1.

In view of this, Area 1 was excavated further vertically by 200mm, following which two more soil samples were obtained from the base for PAH analysis. The findings from these analyses showed that all of the identified PAH contamination had now been removed.

## 9.2 Recommendations

Any soil bought onto site to fill the excavated areas (or for any other general landscaping) should arrive 'fit for purpose', and comply with the British Standard BS3882:2015.

Any imported soil will need to undergo independent confirmatory laboratory analyses to show that it is free from contamination.

Photographic evidence of all remedial work undertaken should be collated and presented to the planning authority in the form of a post-remediation validation report, along with any waste transfer documentation relating to the off-site disposal of soil, and any receipts or other documentation relating to the importation of 'clean' soil.

In addition to these proposed remedial works, it would be necessary to put an informal observation strategy in place during all ground-works that may take place as part of this redevelopment, whereupon care should be taken during the working of the site to investigate any soils, which are suspected by sight, odour or suspicion, to be contaminated.

In the event of any discovery of potentially contaminated soils or materials, the location, type and quantity should be recorded, and the contaminated land officer at Eastleigh Borough Council notified immediately. Approval should be sought prior to continuing groundworks or implementing any mitigation.

# 10 Limitations

This work has been undertaken in accordance with Apple Environmental Limited's standard terms and conditions.

The findings represent the professional opinion of the report author. All work carried out is based upon Apple Environmental Limited's current professional knowledge and understanding. It is therefore stated that the conclusions of this report have been based upon information gathered from a number of sources and it can only be assumed that this information provided was accurate and correct.

Intrusive investigation undertaken as part of this work has been restricted to a level of detail required to achieve the stated objectives of this work. The results of any measurements taken may vary spatially or with time, and further confirmatory measurements may wish to be considered, as necessary.

It is also pointed out that sampling may only provide a general indication of contamination present. There is always the possibility that other undetected contaminants exist, or, that the detected contaminants may exist at a greater concentration than that specified in areas of the site that have not been intrusively investigated.

It is further noted that the findings detailed in this report relate entirely to the contaminative status of the site as at the time of compiling this report, and therefore can not take account of subsequent on or off-site activities that may have impacted the site after this date.

# 11 References and specific sources of information


1. Investigation of potentially contaminated sites - code of practice (BSI 10175:2026)

2. Land Contamination Risk Management (LCRM) - Environment Agency (April 2021)

3. Using Soil Guideline Values - Environment Agency Science Report SC050021/SGV (March 2009)

4. The LQM/CIEH Generic Assessment Criteria for Human Health Risk Assessment CIEH 3rd Ed. - Land Quality Management Ltd. (2015)

5. Atkins ATRISK SSCs (July 2017)

6. CLEA Software (Version 1.05) Handbook - Environment Agency Science Report SC050021/SR4 (January 2014)

7. Code of practice for ground investigations (BSI 5930:2015+A1:2020)

8. Land Affected by Contamination - Planning Practice Guidance - The Department for Communities and Local Government (June 2014)

9. The National Planning Policy Framework (Revised) - August 2026

10. Model procedures for the management of contaminated land (CLR-11) - Environment Agency (September 2004)

11. Contaminated Land Risk Assessment: A Guide to Good Practice (C552) - CIRIA (2001)

12. SP1010 - Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination - CL:AIRE (September 2014)

13. British Geological Survey. Geology of Britain: http://mapapps.bgs.ac.uk/geologyofbritain/home.html?

# APPENDICES

i Laboratory data
ii Calibration certification

CONSTRUCTION TESTING SOLUTIONS
A PHENNA GROUP COMPANY

| | | |
|---|---|---|
| **Analytical Test Report** | **E26/05198/APL/26-16118** | **Tested on Behalf of** |
| Clients Project Reference | Willow Mead CL3906/WM | Apple Environmental Limited |
| Clients Order Number | | Unit 3 Estevan Farm |
| Sample(s) Analysed | 12 | Stoney Lane |
| Sample(s) received / instructed | 16/04/2026 / 16/04/2026 | |
| Sample(s) Tested | 16/04/2026 to 24/04/2026 | |
| Report issued | 24/04/2026 | GU34 5EL |
| Report issue number | 1 | |

Signed

[redacted]

**Emily Blissett**
**Report Manager**

Notes:

**General**

This report shall not be reproduced except in full

Please refer to Methodologies page for details pertaining to the analytical methods undertaken.

Samples were supplied by customer, results apply to the samples as received.

Samples will be retained for 14 days after issue of this report with the exception of the asbestos test portion which is held for 6 months unless otherwise requested.

**Where specification limits are included these are for guidance only. Where a measured value has been highlighted this is not implying acceptance or failure and certainty of measurement values have not been taken into account.**

**Uncertainty of measurement values are available on request.**

Moisture Content was determined in accordance with CTS method statement MS - CL - Sample Prep, oven dried at <30°C.

Moisture Content is reported as a percentage of the dry mass of soil, this calculation is in accordance with BS1377, Part 2, 1990, Clause 3.2

Stone Content was determined in accordance with CTS method statement MS - CL - Sample Prep and refers to the percentage of stones retained on a 10mm BS test sieve.

MCERTS Accreditation only covers the SAND, CLAY and LOAM matrices

Please note: Where further analysis is required, samples identified as containing asbestos are screened and tested on an as received basis. No correction is made for moisture content and other than the asbestos test(s) these results are not covered by our accreditation.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation

**Deviating Samples**

On receipt samples are compared against our sample holding and handling protocols, where any deviations have been noted these are reported on our deviating sample page (if present)

**Accreditation Key**

U = UKAS Accreditation, M = MCERTS Accreditation, N = Unaccredited, SC = Subcontracted

**E26/05198/APL/26-16118**

**Willow Mead CL3906/WM**

**Analytical Test Results - ENV Analysis Solids**

| Lab Reference | | | | | 758590 | 758591 | 758592 |
|---|---|---|---|---|---|---|---|
| Client Sample ID | | | | | BH.01/01/3906 | BH.01/02/3906 | BH.02/01/3906 |
| Client Sample Location | | | | | - | - | - |
| Client Sample Type | | | | | Soil | Soil | Soil |
| Client Sample Number | | | | | - | - | - |
| Depth - Top (m) | | | | | - | - | - |
| Depth - Bottom (m) | | | | | - | - | - |
| Date of Sampling | | | | | 14/04/2026 | 14/04/2026 | 14/04/2026 |
| Time of Sampling | | | | | 1000 | 1005 | 1015 |
| Sample Matrix | | | | | Clay | Clay | Sand |
| **Determinant** | **Code** | **Units** | **LOD** | **Accreditation** | | | |
| Arsenic | ICPMETS | mg/kg | 10 | M | < 10 | 10 | < 10 |
| Boron (Water Soluble) | WSBORONS | mg/kg | 2.5 | N | < 2.5 | < 2.5 | < 2.5 |
| Cadmium | ICPMETS | mg/kg | 0.2 | M | 0.7 | 1.0 | 0.4 |
| Chromium (Total) | ICPMETS | mg/kg | 1 | U | 7.3 | 8.0 | 6.3 |
| Copper | ICPMETS | mg/kg | 2 | M | 31 | 36 | 11 |
| Iron | ICPMETS | mg/kg | 100 | N | 15000 | 18000 | 13000 |
| Lead | ICPMETS | mg/kg | 1.5 | M | 140 | 150 | 43 |
| Mercury | ICPMETS | mg/kg | 2.5 | U | < 2.5 | < 2.5 | < 2.5 |
| Nickel | ICPMETS | mg/kg | 1 | M | 5.5 | 7.1 | 2.3 |
| Selenium | ICPMETS | mg/kg | 8 | N | < 8.0 | < 8.0 | < 8.0 |
| Zinc | ICPMETS | mg/kg | 2 | M | 240 | 520 | 86 |
| Cyanide (Total) | SKALARCNS | mg/kg | 1 | M | < 1.0 | < 1.0 | < 1.0 |
| Chromium (Hexavalent) | SKALARHCS | mg/kg | 1 | N | < 1.0 | < 1.0 | < 1.0 |
| pH | PHS | pH units | 1 | M | 8.5 | 8.3 | 8.7 |
| Water Soluble Sulphate (as SO4) | ANIONSS | mg/L | 10 | N | 240 | 110 | 70 |
| Sulphide | SULPHIDES | mg/kg | 15 | N | 20 | 16 | 16 |
| Chloride | ANIONSS | mg/L | 0.1 | N | 15 | 8.5 | 3.9 |
| TOC | TOCS | % | 0.5 | M | 9.5 | 5.8 | 3.3 |
| Asbestos | ASB | p/a | - | U | No Asbestos Detected | No Asbestos Detected | Chrysotile |
| Acenaphthene | PAHASRDS | mg/kg | 0.02 | M | 0.04 | 0.09 | < 0.02 |
| Acenaphthylene | PAHASRDS | mg/kg | 0.02 | U | 0.15 | 0.37 | 0.04 |
| Anthracene | PAHASRDS | mg/kg | 0.02 | U | 0.24 | 0.43 | 0.06 |
| Benzo[a]anthracene | PAHASRDS | mg/kg | 0.02 | M | 0.93 | 1.9 | 0.31 |
| Benzo[a]pyrene | PAHASRDS | mg/kg | 0.02 | M | 0.97 | 2.3 | 0.42 |
| Benzo[b]fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 0.93 | 2.5 | 0.38 |
| Benzo[ghi]perylene | PAHASRDS | mg/kg | 0.02 | M | 0.64 | 1.7 | 0.33 |
| Benzo[k]fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 0.53 | 1.4 | 0.19 |
| Chrysene | PAHASRDS | mg/kg | 0.02 | M | 0.92 | 2.6 | 0.28 |
| Dibenzo[a,h]anthracene | PAHASRDS | mg/kg | 0.02 | M | 0.14 | 0.38 | 0.06 |
| Fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 2.6 | 7.7 | 0.67 |
| Fluorene | PAHASRDS | mg/kg | 0.02 | M | 0.08 | 0.11 | < 0.02 |
| Indeno[1,2,3,-cd]pyrene | PAHASRDS | mg/kg | 0.02 | M | 0.66 | 1.8 | 0.32 |
| Naphthalene | PAHASRDS | mg/kg | 0.02 | M | 0.05 | 1.3 | < 0.02 |
| Phenanthrene | PAHASRDS | mg/kg | 0.02 | M | 1.4 | 5.6 | 0.23 |



Date of Issue: 21.01.25
Issued by: J. Gane
Issue No: 1
Rev No: 9

Testing performed at
7-11 Harding Street, Leicester, LE1 4DH

UKAS TESTING
4161

**E26/05198/APL/26-16118**

**Willow Mead CL3906/WM**

**Analytical Test Results - ENV Analysis Solids**

| Lab Reference | | | | | 758593 | 758594 | 758595 |
|---|---|---|---|---|---|---|---|
| Client Sample ID | | | | | BH.02/02/3906 | BH.03/01/3906 | BH.03/02/3906 |
| Client Sample Location | | | | | - | - | - |
| Client Sample Type | | | | | Soil | Soil | Soil |
| Client Sample Number | | | | | - | - | - |
| Depth - Top (m) | | | | | - | - | - |
| Depth - Bottom (m) | | | | | - | - | - |
| Date of Sampling | | | | | 14/04/2026 | 14/04/2026 | 14/04/2026 |
| Time of Sampling | | | | | 1025 | 1035 | 1045 |
| Sample Matrix | | | | | Clay | Clay | Sand |
| **Determinant** | **Code** | **Units** | **LOD** | **Accreditation** | | | |
| Arsenic | ICPMETS | mg/kg | 10 | M | 11 | < 10 | < 10 |
| Boron (Water Soluble) | WSBORONS | mg/kg | 2.5 | N | < 2.5 | < 2.5 | < 2.5 |
| Cadmium | ICPMETS | mg/kg | 0.2 | M | 0.8 | 0.8 | 0.4 |
| Chromium (Total) | ICPMETS | mg/kg | 1 | U | 11 | 11 | 6.3 |
| Copper | ICPMETS | mg/kg | 2 | M | 25 | 36 | 11 |
| Iron | ICPMETS | mg/kg | 100 | N | 32000 | 20000 | 13000 |
| Lead | ICPMETS | mg/kg | 1.5 | M | 84 | 110 | 44 |
| Mercury | ICPMETS | mg/kg | 2.5 | U | < 2.5 | < 2.5 | < 2.5 |
| Nickel | ICPMETS | mg/kg | 1 | M | 6.0 | 5.6 | 2.3 |
| Selenium | ICPMETS | mg/kg | 8 | N | < 8.0 | < 8.0 | < 8.0 |
| Zinc | ICPMETS | mg/kg | 2 | M | 180 | 120 | 87 |
| Cyanide (Total) | SKALARCNS | mg/kg | 1 | M | < 1.0 | < 2.0 | < 1.0 |
| Chromium (Hexavalent) | SKALARHCS | mg/kg | 1 | N | < 1.0 | < 2.0 | < 1.0 |
| pH | PHS | pH units | 1 | M | 8.0 | 7.6 | 7.6 |
| Water Soluble Sulphate (as SO4) | ANIONSS | mg/L | 10 | N | 55 | 18 | < 10 |
| Sulphide | SULPHIDES | mg/kg | 15 | N | < 15 | < 15 | < 15 |
| Chloride | ANIONSS | mg/L | 0.1 | N | 5.5 | 8.0 | 4.9 |
| TOC | TOCS | % | 0.5 | M | 2.1 | 3.7 | 1.0 |
| Asbestos | ASB | p/a | - | U | No Asbestos Detected | No Asbestos Detected | No Asbestos Detected |
| Acenaphthene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | 0.07 | < 0.02 |
| Acenaphthylene | PAHASRDS | mg/kg | 0.02 | U | 0.10 | 0.24 | < 0.02 |
| Anthracene | PAHASRDS | mg/kg | 0.02 | U | 0.20 | 0.39 | < 0.02 |
| Benzo[a]anthracene | PAHASRDS | mg/kg | 0.02 | M | 0.97 | 1.1 | 0.08 |
| Benzo[a]pyrene | PAHASRDS | mg/kg | 0.02 | M | 1.2 | 1.1 | 0.10 |
| Benzo[b]fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 1.1 | 1.1 | 0.09 |
| Benzo[ghi]perylene | PAHASRDS | mg/kg | 0.02 | M | 0.83 | 0.66 | 0.08 |
| Benzo[k]fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 0.58 | 0.57 | 0.05 |
| Chrysene | PAHASRDS | mg/kg | 0.02 | M | 0.89 | 0.96 | 0.07 |
| Dibenzo[a,h]anthracene | PAHASRDS | mg/kg | 0.02 | M | 0.17 | 0.16 | < 0.02 |
| Fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 2.6 | 3.8 | 0.17 |
| Fluorene | PAHASRDS | mg/kg | 0.02 | M | 0.04 | 0.20 | < 0.02 |
| Indeno[1,2,3,-cd]pyrene | PAHASRDS | mg/kg | 0.02 | M | 0.91 | 0.75 | 0.09 |
| Naphthalene | PAHASRDS | mg/kg | 0.02 | M | 0.02 | 0.03 | < 0.02 |
| Phenanthrene | PAHASRDS | mg/kg | 0.02 | M | 0.92 | 2.7 | 0.06 |



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Rev No: 9

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**E26/05198/APL/26-16118**

**Willow Mead CL3906/WM**

**Analytical Test Results - ENV Analysis Solids**

| Lab Reference | | | | | 758596 | 758597 | 758598 |
|---|---|---|---|---|---|---|---|
| Client Sample ID | | | | | BH.04/01/3906 | BH.04/02/3906 | BH.05/01/3906 |
| Client Sample Location | | | | | - | - | - |
| Client Sample Type | | | | | Soil | Soil | Soil |
| Client Sample Number | | | | | - | - | - |
| Depth - Top (m) | | | | | - | - | - |
| Depth - Bottom (m) | | | | | - | - | - |
| Date of Sampling | | | | | 14/04/2026 | 14/04/2026 | 14/04/2026 |
| Time of Sampling | | | | | 1055 | 1105 | 1115 |
| Sample Matrix | | | | | Clay | Clay | Clay |
| **Determinant** | **Code** | **Units** | **LOD** | **Accreditation** | | | |
| Arsenic | ICPMETS | mg/kg | 10 | M | < 10 | 13 | < 10 |
| Boron (Water Soluble) | WSBORONS | mg/kg | 2.5 | N | < 2.5 | < 2.5 | < 2.5 |
| Cadmium | ICPMETS | mg/kg | 0.2 | M | 0.7 | 0.8 | 0.8 |
| Chromium (Total) | ICPMETS | mg/kg | 1 | U | 8.8 | 12 | 12 |
| Copper | ICPMETS | mg/kg | 2 | M | 24 | 17 | 35 |
| Iron | ICPMETS | mg/kg | 100 | N | 19000 | 40000 | 24000 |
| Lead | ICPMETS | mg/kg | 1.5 | M | 100 | 32 | 130 |
| Mercury | ICPMETS | mg/kg | 2.5 | U | < 2.5 | < 2.5 | < 2.5 |
| Nickel | ICPMETS | mg/kg | 1 | M | 7.6 | 3.6 | 7.2 |
| Selenium | ICPMETS | mg/kg | 8 | N | < 8.0 | < 8.0 | < 8.0 |
| Zinc | ICPMETS | mg/kg | 2 | M | 120 | 39 | 130 |
| Cyanide (Total) | SKALARCNS | mg/kg | 1 | M | < 1.0 | < 1.0 | < 2.0 |
| Chromium (Hexavalent) | SKALARHCS | mg/kg | 1 | N | < 1.0 | < 1.0 | < 2.0 |
| pH | PHS | pH units | 1 | M | 7.8 | 8.4 | 7.2 |
| Water Soluble Sulphate (as SO4) | ANIONSS | mg/L | 10 | N | 15 | 16 | < 10 |
| Sulphide | SULPHIDES | mg/kg | 15 | N | 16 | < 15 | < 15 |
| Chloride | ANIONSS | mg/L | 0.1 | N | 8.1 | 5.0 | 7.5 |
| TOC | TOCS | % | 0.5 | M | 5.8 | 1.2 | 3.6 |
| Asbestos | ASB | p/a | - | U | No Asbestos Detected | No Asbestos Detected | No Asbestos Detected |
| Acenaphthene | PAHASRDS | mg/kg | 0.02 | M | 0.05 | < 0.02 | < 0.02 |
| Acenaphthylene | PAHASRDS | mg/kg | 0.02 | U | 0.14 | < 0.02 | 0.07 |
| Anthracene | PAHASRDS | mg/kg | 0.02 | U | 0.34 | < 0.02 | 0.15 |
| Benzo[a]anthracene | PAHASRDS | mg/kg | 0.02 | M | 1.6 | < 0.02 | 0.53 |
| Benzo[a]pyrene | PAHASRDS | mg/kg | 0.02 | M | 2.1 | < 0.02 | 0.60 |
| Benzo[b]fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 1.7 | < 0.02 | 0.65 |
| Benzo[ghi]perylene | PAHASRDS | mg/kg | 0.02 | M | 1.7 | < 0.02 | 0.42 |
| Benzo[k]fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 1.0 | < 0.02 | 0.31 |
| Chrysene | PAHASRDS | mg/kg | 0.02 | M | 1.5 | < 0.02 | 0.59 |
| Dibenzo[a,h]anthracene | PAHASRDS | mg/kg | 0.02 | M | 0.31 | < 0.02 | 0.08 |
| Fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 3.4 | < 0.02 | 1.2 |
| Fluorene | PAHASRDS | mg/kg | 0.02 | M | 0.04 | < 0.02 | < 0.02 |
| Indeno[1,2,3,-cd]pyrene | PAHASRDS | mg/kg | 0.02 | M | 1.6 | < 0.02 | 0.47 |
| Naphthalene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | < 0.02 | 0.03 |
| Phenanthrene | PAHASRDS | mg/kg | 0.02 | M | 1.1 | < 0.02 | 0.47 |



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Issued by: J. Gane
Issue No: 1
Rev No: 9

Testing performed at
7-11 Harding Street, Leicester, LE1 4DH

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**E26/05198/APL/26-16118**

**Willow Mead CL3906/WM**

**Analytical Test Results - ENV Analysis Solids**

| Lab Reference | | | | | 758599 | 758600 | 758601 |
|---|---|---|---|---|---|---|---|
| Client Sample ID | | | | | BH.05/02/3906 | BH.06/01/3906 | BH.06/02/3906 |
| Client Sample Location | | | | | - | - | - |
| Client Sample Type | | | | | Soil | Soil | Soil |
| Client Sample Number | | | | | - | - | - |
| Depth - Top (m) | | | | | - | - | - |
| Depth - Bottom (m) | | | | | - | - | - |
| Date of Sampling | | | | | 14/04/2026 | 14/04/2026 | 14/04/2026 |
| Time of Sampling | | | | | 1125 | 1135 | 1145 |
| Sample Matrix | | | | | Clay | Clay | Clay |
| **Determinant** | **Code** | **Units** | **LOD** | **Accreditation** | | | |
| Arsenic | ICPMETS | mg/kg | 10 | M | < 10 | < 10 | 10 |
| Boron (Water Soluble) | WSBORONS | mg/kg | 2.5 | N | < 2.5 | < 2.5 | < 2.5 |
| Cadmium | ICPMETS | mg/kg | 0.2 | M | 0.7 | 0.7 | 0.8 |
| Chromium (Total) | ICPMETS | mg/kg | 1 | U | 8.2 | 7.9 | 11 |
| Copper | ICPMETS | mg/kg | 2 | M | 11 | 15 | 13 |
| Iron | ICPMETS | mg/kg | 100 | N | 30000 | 31000 | 37000 |
| Lead | ICPMETS | mg/kg | 1.5 | M | 26 | 25 | 12 |
| Mercury | ICPMETS | mg/kg | 2.5 | U | < 2.5 | < 2.5 | < 2.5 |
| Nickel | ICPMETS | mg/kg | 1 | M | 1.5 | 6.4 | 2.0 |
| Selenium | ICPMETS | mg/kg | 8 | N | < 8.0 | < 8.0 | < 8.0 |
| Zinc | ICPMETS | mg/kg | 2 | M | 59 | 49 | 17 |
| Cyanide (Total) | SKALARCNS | mg/kg | 1 | M | < 1.0 | < 1.0 | < 1.0 |
| Chromium (Hexavalent) | SKALARHCS | mg/kg | 1 | N | < 1.0 | < 1.0 | < 1.0 |
| pH | PHS | pH units | 1 | M | 8.1 | 7.6 | 8.5 |
| Water Soluble Sulphate (as SO4) | ANIONSS | mg/L | 10 | N | 77 | 32 | < 10 |
| Sulphide | SULPHIDES | mg/kg | 15 | N | < 15 | < 15 | < 15 |
| Chloride | ANIONSS | mg/L | 0.1 | N | 10 | 6.9 | 12 |
| TOC | TOCS | % | 0.5 | M | 0.7 | 4.1 | 0.7 |
| Asbestos | ASB | p/a | - | U | No Asbestos Detected | No Asbestos Detected | No Asbestos Detected |
| Acenaphthene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | < 0.02 | < 0.02 |
| Acenaphthylene | PAHASRDS | mg/kg | 0.02 | U | < 0.02 | < 0.02 | < 0.02 |
| Anthracene | PAHASRDS | mg/kg | 0.02 | U | < 0.02 | 0.03 | < 0.02 |
| Benzo[a]anthracene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | 0.16 | < 0.02 |
| Benzo[a]pyrene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | 0.20 | < 0.02 |
| Benzo[b]fluoranthene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | 0.19 | < 0.02 |
| Benzo[ghi]perylene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | 0.16 | < 0.02 |
| Benzo[k]fluoranthene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | 0.09 | < 0.02 |
| Chrysene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | 0.14 | < 0.02 |
| Dibenzo[a,h]anthracene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | 0.02 | < 0.02 |
| Fluoranthene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | 0.32 | < 0.02 |
| Fluorene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | < 0.02 | < 0.02 |
| Indeno[1,2,3,-cd]pyrene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | 0.16 | < 0.02 |
| Naphthalene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | < 0.02 | < 0.02 |
| Phenanthrene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | 0.08 | < 0.02 |



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**E26/05198/APL/26-16118**

**Willow Mead CL3906/WM**

**Analytical Test Results - ENV Analysis Solids**

| Lab Reference | | | | | 758590 | 758591 | 758592 |
|---|---|---|---|---|---|---|---|
| Client Sample ID | | | | | BH.01/01/3906 | BH.01/02/3906 | BH.02/01/3906 |
| Client Sample Location | | | | | - | - | - |
| Client Sample Type | | | | | Soil | Soil | Soil |
| Client Sample Number | | | | | - | - | - |
| Depth - Top (m) | | | | | - | - | - |
| Depth - Bottom (m) | | | | | - | - | - |
| Date of Sampling | | | | | 14/04/2026 | 14/04/2026 | 14/04/2026 |
| Time of Sampling | | | | | 1000 | 1005 | 1015 |
| Sample Matrix | | | | | Clay | Clay | Sand |
| **Determinant** | **Code** | **Units** | **LOD** | **Accreditation** | | | |
| Pyrene | PAHASRDS | mg/kg | 0.02 | M | 2.1 | 6.7 | 0.60 |
| Total PAH (Sum of USEPA 16) | PAHASRDS | mg/kg | 0.32 | U | 12 | 37 | 4.0 |
| Coronene | PAHASRDS | mg/kg | 0.02 | N | 0.13 | 0.42 | 0.07 |
| Total PAH (Sum of 17) | PAHASRDS | mg/kg | 0.34 | N | 13 | 37 | 4.0 |



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4161

**E26/05198/APL/26-16118**

**Willow Mead CL3906/WM**

**Analytical Test Results - ENV Analysis Solids**

| Lab Reference | | | | | 758593 | 758594 | 758595 |
|---|---|---|---|---|---|---|---|
| Client Sample ID | | | | | BH.02/02/3906 | BH.03/01/3906 | BH.03/02/3906 |
| Client Sample Location | | | | | - | - | - |
| Client Sample Type | | | | | Soil | Soil | Soil |
| Client Sample Number | | | | | - | - | - |
| Depth - Top (m) | | | | | - | - | - |
| Depth - Bottom (m) | | | | | - | - | - |
| Date of Sampling | | | | | 14/04/2026 | 14/04/2026 | 14/04/2026 |
| Time of Sampling | | | | | 1025 | 1035 | 1045 |
| Sample Matrix | | | | | Clay | Clay | Sand |
| **Determinant** | **Code** | **Units** | **LOD** | **Accreditation** | | | |
| Pyrene | PAHASRDS | mg/kg | 0.02 | M | 2.2 | 3.0 | 0.15 |
| Total PAH (Sum of USEPA 16) | PAHASRDS | mg/kg | 0.32 | U | 13 | 17 | 1.1 |
| Coronene | PAHASRDS | mg/kg | 0.02 | N | 0.18 | 0.13 | 0.02 |
| Total PAH (Sum of 17) | PAHASRDS | mg/kg | 0.34 | N | 13 | 17 | 1.1 |



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**E26/05198/APL/26-16118**

**Willow Mead CL3906/WM**

**Analytical Test Results - ENV Analysis Solids**

| Lab Reference | | | | | 758596 | 758597 | 758598 |
|---|---|---|---|---|---|---|---|
| Client Sample ID | | | | | BH.04/01/3906 | BH.04/02/3906 | BH.05/01/3906 |
| Client Sample Location | | | | | - | - | - |
| Client Sample Type | | | | | Soil | Soil | Soil |
| Client Sample Number | | | | | - | - | - |
| Depth - Top (m) | | | | | - | - | - |
| Depth - Bottom (m) | | | | | - | - | - |
| Date of Sampling | | | | | 14/04/2026 | 14/04/2026 | 14/04/2026 |
| Time of Sampling | | | | | 1055 | 1105 | 1115 |
| Sample Matrix | | | | | Clay | Clay | Clay |
| **Determinant** | **Code** | **Units** | **LOD** | **Accreditation** | | | |
| Pyrene | PAHASRDS | mg/kg | 0.02 | M | 3.0 | < 0.02 | 1.1 |
| Total PAH (Sum of USEPA 16) | PAHASRDS | mg/kg | 0.32 | U | 20 | < 0.32 | 6.8 |
| Coronene | PAHASRDS | mg/kg | 0.02 | N | 0.30 | < 0.02 | 0.10 |
| Total PAH (Sum of 17) | PAHASRDS | mg/kg | 0.34 | N | 20 | < 0.34 | 6.9 |



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**Willow Mead CL3906/WM**

**Analytical Test Results - ENV Analysis Solids**

| Lab Reference | | | | | 758599 | 758600 | 758601 |
|---|---|---|---|---|---|---|---|
| Client Sample ID | | | | | BH.05/02/3906 | BH.06/01/3906 | BH.06/02/3906 |
| Client Sample Location | | | | | - | - | - |
| Client Sample Type | | | | | Soil | Soil | Soil |
| Client Sample Number | | | | | - | - | - |
| Depth - Top (m) | | | | | - | - | - |
| Depth - Bottom (m) | | | | | - | - | - |
| Date of Sampling | | | | | 14/04/2026 | 14/04/2026 | 14/04/2026 |
| Time of Sampling | | | | | 1125 | 1135 | 1145 |
| Sample Matrix | | | | | Clay | Clay | Clay |
| **Determinant** | **Code** | **Units** | **LOD** | **Accreditation** | | | |
| Pyrene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | 0.29 | < 0.02 |
| Total PAH (Sum of USEPA 16) | PAHASRDS | mg/kg | 0.32 | U | < 0.32 | 1.9 | < 0.32 |
| Coronene | PAHASRDS | mg/kg | 0.02 | N | < 0.02 | 0.05 | < 0.02 |
| Total PAH (Sum of 17) | PAHASRDS | mg/kg | 0.34 | N | < 0.34 | 2.0 | < 0.34 |



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**E26/05198/APL/26-16118**

**Willow Mead CL3906/WM**

**Analytical Test Results - EPHVPHS**

| Lab Reference | | | | | 758590 | 758591 | 758592 |
|---|---|---|---|---|---|---|---|
| Client Sample ID | | | | | BH.01/01/3906 | BH.01/02/3906 | BH.02/01/3906 |
| Client Sample Location | | | | | - | - | - |
| Client Sample Type | | | | | Soil | Soil | Soil |
| Client Sample Number | | | | | - | - | - |
| Depth - Top (m) | | | | | - | - | - |
| Depth - Bottom (m) | | | | | - | - | - |
| Date of Sampling | | | | | 14/04/2026 | 14/04/2026 | 14/04/2026 |
| Time of Sampling | | | | | 1000 | 1005 | 1015 |
| Sample Matrix | | | | | Clay | Clay | Sand |
| **Determinant** | **Code** | **Units** | **LOD** | **Accreditation** | | | |
| Benzene | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Toluene | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Ethylbenzene | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| m&p Xylene | VPHS | mg/kg | 0.02 | M | < 0.02 | < 0.02 | < 0.02 |
| o-Xylene | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Methyl tert-butyl ether (MTBE) | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Aliphatic >C5 to C6 [5] | VPHS | mg/kg | 0.06 | M | < 0.06 | < 0.06 | < 0.06 |
| Aliphatic >C6 to C8 [5] | VPHS | mg/kg | 0.06 | M | < 0.06 | 0.13 | < 0.06 |
| Aliphatic >C8 to C10 [5] | VPHS | mg/kg | 0.06 | M | < 0.06 | < 0.06 | < 0.06 |
| Aliphatic >C10-C12 [13] | GCXGCS | mg/kg | 1 | M | < 1.0 | 1.6 | < 1.0 |
| Aliphatic >C12-C16 [13] | GCXGCS | mg/kg | 1 | M | 2.0 | 5.3 | < 1.0 |
| Aliphatic >C16-C21 [13] | GCXGCS | mg/kg | 1 | M | 11 | 16 | 6.8 |
| Aliphatic >C21-C35 [13] | GCXGCS | mg/kg | 2 | M | 22 | 67 | 21 |
| Aliphatic >C35-C44 [13] | GCXGCS | mg/kg | 5 | N | < 5.0 | 21 | < 5.0 |
| Aromatic >C5 to C7 [6] | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Aromatic >C7 to C8 [6] | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Aromatic >C8 to C10 [6] | VPHS | mg/kg | 0.06 | M | < 0.06 | < 0.06 | < 0.06 |
| Aromatic >C10-C12 [14] | GCXGCS | mg/kg | 1 | M | < 1.0 | < 1.0 | < 1.0 |
| Aromatic >C12-C16 [14] | GCXGCS | mg/kg | 1 | M | < 1.0 | < 1.0 | < 1.0 |
| Aromatic >C16-C21 [14] | GCXGCS | mg/kg | 1 | M | 12 | 33 | 9.5 |
| Aromatic >C21-C35 [14] | GCXGCS | mg/kg | 2 | M | 94 | 370 | 65 |
| Aromatic >C35-C44 [14] | GCXGCS | mg/kg | 5 | N | 28 | 140 | 23 |
| Total >C5-C35 (Ali/Aro) [10] | CWGS | mg/kg | 10 | M | 140 | 490 | 100 |



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**E26/05198/APL/26-16118**

**Willow Mead CL3906/WM**

**Analytical Test Results - EPHVPHS**

| Lab Reference | | | | | 758593 | 758594 | 758595 |
|---|---|---|---|---|---|---|---|
| Client Sample ID | | | | | BH.02/02/3906 | BH.03/01/3906 | BH.03/02/3906 |
| Client Sample Location | | | | | - | - | - |
| Client Sample Type | | | | | Soil | Soil | Soil |
| Client Sample Number | | | | | - | - | - |
| Depth - Top (m) | | | | | - | - | - |
| Depth - Bottom (m) | | | | | - | - | - |
| Date of Sampling | | | | | 14/04/2026 | 14/04/2026 | 14/04/2026 |
| Time of Sampling | | | | | 1025 | 1035 | 1045 |
| Sample Matrix | | | | | Clay | Clay | Sand |
| **Determinant** | **Code** | **Units** | **LOD** | **Accreditation** | | | |
| Benzene | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Toluene | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Ethylbenzene | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| m&p Xylene | VPHS | mg/kg | 0.02 | M | < 0.02 | < 0.02 | < 0.02 |
| o-Xylene | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Methyl tert-butyl ether (MTBE) | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Aliphatic >C5 to C6 [5] | VPHS | mg/kg | 0.06 | M | < 0.06 | < 0.06 | < 0.06 |
| Aliphatic >C6 to C8 [5] | VPHS | mg/kg | 0.06 | M | < 0.06 | < 0.06 | < 0.06 |
| Aliphatic >C8 to C10 [5] | VPHS | mg/kg | 0.06 | M | < 0.06 | < 0.06 | < 0.06 |
| Aliphatic >C10-C12 [13] | GCXGCS | mg/kg | 1 | M | < 1.0 | < 1.0 | < 1.0 |
| Aliphatic >C12-C16 [13] | GCXGCS | mg/kg | 1 | M | < 1.0 | < 1.0 | < 1.0 |
| Aliphatic >C16-C21 [13] | GCXGCS | mg/kg | 1 | M | 4.6 | 7.0 | < 1.0 |
| Aliphatic >C21-C35 [13] | GCXGCS | mg/kg | 2 | M | 14 | 32 | < 2.0 |
| Aliphatic >C35-C44 [13] | GCXGCS | mg/kg | 5 | N | < 5.0 | < 5.0 | < 5.0 |
| Aromatic >C5 to C7 [6] | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Aromatic >C7 to C8 [6] | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Aromatic >C8 to C10 [6] | VPHS | mg/kg | 0.06 | M | < 0.06 | < 0.06 | < 0.06 |
| Aromatic >C10-C12 [14] | GCXGCS | mg/kg | 1 | M | < 1.0 | < 1.0 | < 1.0 |
| Aromatic >C12-C16 [14] | GCXGCS | mg/kg | 1 | M | < 1.0 | < 1.0 | < 1.0 |
| Aromatic >C16-C21 [14] | GCXGCS | mg/kg | 1 | M | 9.8 | 11 | 12 |
| Aromatic >C21-C35 [14] | GCXGCS | mg/kg | 2 | M | 50 | 56 | < 2.0 |
| Aromatic >C35-C44 [14] | GCXGCS | mg/kg | 5 | N | 16 | 17 | < 5.0 |
| Total >C5-C35 (Ali/Aro) [10] | CWGS | mg/kg | 10 | M | 78 | 110 | 12 |



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**E26/05198/APL/26-16118**

**Willow Mead CL3906/WM**

**Analytical Test Results - EPHVPHS**

| Lab Reference | | | | | 758596 | 758597 | 758598 |
|---|---|---|---|---|---|---|---|
| Client Sample ID | | | | | BH.04/01/3906 | BH.04/02/3906 | BH.05/01/3906 |
| Client Sample Location | | | | | - | - | - |
| Client Sample Type | | | | | Soil | Soil | Soil |
| Client Sample Number | | | | | - | - | - |
| Depth - Top (m) | | | | | - | - | - |
| Depth - Bottom (m) | | | | | - | - | - |
| Date of Sampling | | | | | 14/04/2026 | 14/04/2026 | 14/04/2026 |
| Time of Sampling | | | | | 1055 | 1105 | 1115 |
| Sample Matrix | | | | | Clay | Clay | Clay |
| **Determinant** | **Code** | **Units** | **LOD** | **Accreditation** | | | |
| Benzene | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Toluene | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Ethylbenzene | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| m&p Xylene | VPHS | mg/kg | 0.02 | M | < 0.02 | < 0.02 | < 0.02 |
| o-Xylene | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Methyl tert-butyl ether (MTBE) | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Aliphatic >C5 to C6 [5] | VPHS | mg/kg | 0.06 | M | < 0.06 | < 0.06 | < 0.06 |
| Aliphatic >C6 to C8 [5] | VPHS | mg/kg | 0.06 | M | < 0.06 | < 0.06 | < 0.06 |
| Aliphatic >C8 to C10 [5] | VPHS | mg/kg | 0.06 | M | < 0.06 | < 0.06 | < 0.06 |
| Aliphatic >C10-C12 [13] | GCXGCS | mg/kg | 1 | M | < 1.0 | < 1.0 | < 1.0 |
| Aliphatic >C12-C16 [13] | GCXGCS | mg/kg | 1 | M | 1.5 | < 1.0 | 1.5 |
| Aliphatic >C16-C21 [13] | GCXGCS | mg/kg | 1 | M | 11 | 1.4 | 7.8 |
| Aliphatic >C21-C35 [13] | GCXGCS | mg/kg | 2 | M | 21 | 3.5 | 30 |
| Aliphatic >C35-C44 [13] | GCXGCS | mg/kg | 5 | N | < 5.0 | < 5.0 | < 5.0 |
| Aromatic >C5 to C7 [6] | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Aromatic >C7 to C8 [6] | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Aromatic >C8 to C10 [6] | VPHS | mg/kg | 0.06 | M | < 0.06 | < 0.06 | < 0.06 |
| Aromatic >C10-C12 [14] | GCXGCS | mg/kg | 1 | M | < 1.0 | < 1.0 | < 1.0 |
| Aromatic >C12-C16 [14] | GCXGCS | mg/kg | 1 | M | < 1.0 | < 1.0 | < 1.0 |
| Aromatic >C16-C21 [14] | GCXGCS | mg/kg | 1 | M | 14 | 15 | 12 |
| Aromatic >C21-C35 [14] | GCXGCS | mg/kg | 2 | M | 130 | 3.0 | 69 |
| Aromatic >C35-C44 [14] | GCXGCS | mg/kg | 5 | N | 55 | < 5.0 | 21 |
| Total >C5-C35 (Ali/Aro) [10] | CWGS | mg/kg | 10 | M | 170 | 23 | 120 |



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**Willow Mead CL3906/WM**

**Analytical Test Results - EPHVPHS**

| Lab Reference | | | | | 758599 | 758600 | 758601 |
|---|---|---|---|---|---|---|---|
| Client Sample ID | | | | | BH.05/02/3906 | BH.06/01/3906 | BH.06/02/3906 |
| Client Sample Location | | | | | - | - | - |
| Client Sample Type | | | | | Soil | Soil | Soil |
| Client Sample Number | | | | | - | - | - |
| Depth - Top (m) | | | | | - | - | - |
| Depth - Bottom (m) | | | | | - | - | - |
| Date of Sampling | | | | | 14/04/2026 | 14/04/2026 | 14/04/2026 |
| Time of Sampling | | | | | 1125 | 1135 | 1145 |
| Sample Matrix | | | | | Clay | Clay | Clay |
| **Determinant** | **Code** | **Units** | **LOD** | **Accreditation** | | | |
| Benzene | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Toluene | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Ethylbenzene | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| m&p Xylene | VPHS | mg/kg | 0.02 | M | < 0.02 | < 0.02 | < 0.02 |
| o-Xylene | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Methyl tert-butyl ether (MTBE) | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Aliphatic >C5 to C6 [5] | VPHS | mg/kg | 0.06 | M | < 0.06 | < 0.06 | < 0.06 |
| Aliphatic >C6 to C8 [5] | VPHS | mg/kg | 0.06 | M | < 0.06 | < 0.06 | < 0.06 |
| Aliphatic >C8 to C10 [5] | VPHS | mg/kg | 0.06 | M | < 0.06 | < 0.06 | < 0.06 |
| Aliphatic >C10-C12 [13] | GCXGCS | mg/kg | 1 | M | < 1.0 | < 1.0 | < 1.0 |
| Aliphatic >C12-C16 [13] | GCXGCS | mg/kg | 1 | M | < 1.0 | 2.2 | < 1.0 |
| Aliphatic >C16-C21 [13] | GCXGCS | mg/kg | 1 | M | 1.3 | 2.5 | 1.3 |
| Aliphatic >C21-C35 [13] | GCXGCS | mg/kg | 2 | M | 3.7 | 10 | 5.0 |
| Aliphatic >C35-C44 [13] | GCXGCS | mg/kg | 5 | N | < 5.0 | < 5.0 | < 5.0 |
| Aromatic >C5 to C7 [6] | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Aromatic >C7 to C8 [6] | VPHS | mg/kg | 0.01 | M | < 0.01 | < 0.01 | < 0.01 |
| Aromatic >C8 to C10 [6] | VPHS | mg/kg | 0.06 | M | < 0.06 | < 0.06 | < 0.06 |
| Aromatic >C10-C12 [14] | GCXGCS | mg/kg | 1 | M | < 1.0 | < 1.0 | < 1.0 |
| Aromatic >C12-C16 [14] | GCXGCS | mg/kg | 1 | M | < 1.0 | < 1.0 | < 1.0 |
| Aromatic >C16-C21 [14] | GCXGCS | mg/kg | 1 | M | 13 | 12 | 14 |
| Aromatic >C21-C35 [14] | GCXGCS | mg/kg | 2 | M | 4.0 | 28 | 3.7 |
| Aromatic >C35-C44 [14] | GCXGCS | mg/kg | 5 | N | < 5.0 | 6.8 | < 5.0 |
| Total >C5-C35 (Ali/Aro) [10] | CWGS | mg/kg | 10 | M | 22 | 54 | 24 |



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**Willow Mead CL3906/WM**

**Sample Descriptions**

| Lab Reference | Client Sample ID | Client Sample Location | Client Sample Type | Client Sample Number | Description | Moisture Content (%) | Stone Content (%) | Passing 2mm test sieve (%) |
|---|---|---|---|---|---|---|---|---|
| 758590 | BH.01/01/3906 | - | SOIL | - | Dark brown slightly gravelly slightly sandy silty clay with occasional organic matter with rare bric | 58 | < 0.1 | 63 |
| 758591 | BH.01/02/3906 | - | SOIL | - | Made Ground- dark brown slightly gravelly slightly sandy silty clay with occasional brick fragments | 41 | < 0.1 | 93 |
| 758592 | BH.02/01/3906 | - | SOIL | - | Brown gravelly slightly clayey silty sand with rare organic matter brick fragments | 16 | 40 | 79 |
| 758593 | BH.02/02/3906 | - | SOIL | - | Made Ground- brown slightly gravelly slightly sandy silty clay with occasional organic matter brick | 18 | 23 | 90 |
| 758594 | BH.03/01/3906 | - | SOIL | - | Dark brown slightly gravelly slightly sandy silty clay with rare organic matter | 41 | < 0.1 | 88 |
| 758595 | BH.03/02/3906 | - | SOIL | - | Brown slightly gravelly clayey silty clay with rare organic matter | 22 | 1.4 | 85 |
| 758596 | BH.04/01/3906 | - | SOIL | - | Made Ground- dark brown gravelly sandy silty clay with occasional brick fragments mortar organic mat | 31 | 18 | 92 |
| 758597 | BH.04/02/3906 | - | SOIL | - | Light brown slightly gravelly silty clay with rare brick fragments | 26 | 4.6 | 100 |
| 758598 | BH.05/01/3906 | - | SOIL | - | Dark brown slightly gravelly silty clay with rare organic matter | 38 | 1.3 | 89 |
| 758599 | BH.05/02/3906 | - | SOIL | - | Light brown slightly sandy silty clay | 30 | < 0.1 | 100 |
| 758600 | BH.06/01/3906 | - | SOIL | - | Dark brown gravelly slightly sandy silty clay with occasional organic matter | 20 | 32 | 58 |
| 758601 | BH.06/02/3906 | - | SOIL | - | Light brown silty clay | 27 | < 0.1 | 100 |

**E26/05198/APL/26-16118**

**Willow Mead CL3906/WM**

**Sample Comments**

| Lab Reference | Client Sample ID | Client Sample Location | Client Sample Type | Client Sample Number | Comments |
|---|---|---|---|---|---|
| 758594 | BH.03/01/39 06 | - | SOIL | - | Cyanide(Total)/Chromium(Hexavalent) - Reporting limit raised due to sample matrix interference |
| 758596 | BH.04/01/39 06 | - | SOIL | - | VPH/BTEX - Sample taken from container with headspace. |
| 758598 | BH.05/01/39 06 | - | SOIL | - | Cyanide(Total)/Chromium(Hexavalent) - Reporting limit raised due to sample matrix interference |
| 758600 | BH.06/01/39 06 | - | SOIL | - | VPH/BTEX - Sample taken from container with headspace. |
| 758601 | BH.06/02/39 06 | - | SOIL | - | VPH/BTEX - Sample taken from container with headspace. |

**E26/05198/APL/26-16118**

**Willow Mead CL3906/WM**

**Analysis Methodologies - Please refer to sample comments page (if present) for any changes to methods Methods**

| Test Code | Test Name / Reference | Sample condition for analysis | Sample Preparation | Test Details |
|---|---|---|---|---|
| ANIONSS | MS - CL - Anions by Aquakem (2:1Extract) | Oven dried | Passing 2mm test sieve | Determination of Anions (inc Sulphate, chloride etc.) in soils by Aquakem. Analysis is based on a 2:1 water to soil extraction ratio |
| ASB | MS - AS - Asbestos | - | - | Fibre identification is in accordance with in house documented methods which are based on the procedure documented in the HSE Document HSG 248 "Asbestos: The analysts guide for sampling, analysis and clearance procedures" |
| CWGS | Calculation from VPH-S and EPH-S | As received | Passing 10mm test sieve | Determination of TPH CWG (Volatile Petroleum Hydrocarbons and Extractable Petroleum Hydrocarbons) in soils via Headspace-GC-MS and GC-GC-FID respectively |
| GCXGCS | MS - CL - TPH & EPH by GCXGC | As received | Passing 10mm test sieve | Determination of TPH and EPH in soils via GCxGC-FID |
| ICPMETS | MS - CL - ICP Metals | Air dried | Passing 10mm test sieve | Determination of metals in soils via ICP |
| PAHASRDS | MS - CL - PAH (As Received) | As received | Passing 10mm test sieve | Determination of Polyaromatic hydrocarbons in soil via GC-MS |
| PHS | MS - CL - pH in Soils | As received | Passing 10mm test sieve | Determination of pH in soils using a pH probe (using a 1:3 soil to water extraction) |
| SAMPLEPREP | MS - CL - Sample Preparation | - | - | Preparation of samples (including determination of moisture content) to allow for subsequent analysis |
| SKALARCNS | MS - CL - Cyanide by Skalar | As received | Passing 10mm test sieve | Determination of cyanide (total / free / complex) in soil using a Skalar segmented flow analyser |
| SKALARHCS | MS - CL - Hexavalent Chromium by Skalar | As received | Passing 10mm test sieve | Determination of hexavalent chromium in soil using Skalar segmented flow analyser |
| SULPHIDES | MS - CL - Sulphide in Soils | Air Dried | Passing 10mm test sieve | Determination of sulphide in soil via titration |
| TOCS | MS - CL - TOC Eltra | Air Dried | Passing 10mm test sieve | Determination of Total Organic Carbon in soils |
| VPHS | MS - CL - VPH | As received | Passing 10mm test sieve | Determination of VPH in soils via Headspace-GC-MS |
| WSBORONS | MS - CL - WS Boron | Air dried | Passing 10mm test sieve | Determination of Water soluble Boron in soils via ICP |





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**E26/05198/APL/26-16118**

**Willow Mead CL3906/WM**

**HWOL TPH Acronym Index**

| Acronym | Description |
|---|---|
| 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 and Aromatics |
| AL | Aliphatics Only |
| AR | Aromatics Only |
| 2D | GC-GC - Double Coil Gas Chromatography |
| #1 | EH_Total but with humics mathematically subtracted |
| #2 | EH_Total but with fatty acids mathematically subtracted |
| _ | Operator - underscore to separate acronyms (except for +) |
| + | Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total |
| MS | Mass Spectrometry |

| Key of Codes | |
|---|---|
| [1] | EH_1D_TOTAL |
| [2] | EH_CU_1D_TOTAL |
| [3] | EH_CU+HS_1D_TOTAL |
| [4] | EH_1D+HS_MS_TOTAL |
| [5] | HS_MS_1D_AL |
| [6] | HS_MS_1D_AR |
| [7] | HS_MS_1D_TOTAL |
| [8] | EH_CU_1D_AL |
| [9] | EH_CU_1D_AR |
| [10] | EH_2D+HS_1D_TOTAL |
| [11] | EH_CU_2D+HS_1D_TOTAL |
| [12] | EH_2D_TOTAL |
| [13] | EH_2D_AL |
| [14] | EH_2D_AR |
| [15] | EH_CU_2D_TOTAL |
| [16] | EH_CU_2D_AL |
| [17] | EH_CU_2D_AR |

ENVIRONMENTAL CHEMISTRY TESTING LABORATORIES
A PHENNA GROUP COMPANY

| | | |
|---|---|---|
| **Analytical Test Report** | **E26/11339/APL/26-37581** | **Tested on Behalf of** |
| Clients Project Reference | Willow Mead CL3970/WM | Apple Environmental Limited |
| Clients Order Number | | Unit 3 Estevan Farm |
| Sample(s) Analysed | 18 | Stoney Lane |
| Sample(s) received / instructed | 24/08/2026 / 24/08/2026 | |
| Sample(s) Tested | 24/08/2026 to 07/09/2026 | |
| Report issued | 08/09/2026 | GU34 5EL |
| Report issue number | 1 | |

Signed

[redacted]

James Gane
**Analytical Services Manager**

**Notes:**

**General**

This report shall not be reproduced except in full

Please refer to Methodologies page for details pertaining to the analytical methods undertaken.

Samples were supplied by customer, results apply to the samples as received.

Samples will be retained for 14 days after issue of this report with the exception of the asbestos test portion which is held for 6 months unless otherwise requested.

**Where specification limits are included these are for guidance only. Where a measured value has been highlighted this is not implying acceptance or failure and certainty of measurement values have not been taken into account.**

**Uncertainty of measurement values are available on request.**

Moisture Content was determined in accordance with CTS method statement MS - CL - Sample Prep, oven dried at <30°C.

Moisture Content is reported as a percentage of the dry mass of soil, this calculation is in accordance with BS1377, Part 2, 1990, Clause 3.2

Stone Content was determined in accordance with CTS method statement MS - CL - Sample Prep and refers to the percentage of stones retained on a 10mm BS test sieve.

MCERTS Accreditation only covers the SAND, CLAY and LOAM matrices

Please note: Where further analysis is required, samples identified as containing asbestos are screened and tested on an as received basis. No correction is made for moisture content and other than the asbestos test(s) these results are not covered by our accreditation.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation

**Deviating Samples**

On receipt samples are compared against our sample holding and handling protocols, where any deviations have been noted these are reported on our deviating sample page (if present)

**Accreditation Key**

U = UKAS Accreditation, M = MCERTS Accreditation, N = Unaccredited, SC = Subcontracted



UKAS TESTING 4150

MCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

ENVIRONMENTAL CHEMISTRY TESTING LABORATORIES
A PHENNA GROUP COMPANY

**E26/11339/APL/26-37581**

**Willow Mead CL3970/WM**

**Analytical Test Results - ENV Analysis Solids**

| Lab Reference | | | | | 869612 | 869613 | 869614 |
|---|---|---|---|---|---|---|---|
| Client Sample ID | | | | | S.01/3970 | S.02/3970 | S.03/3970 |
| Client Sample Location | | | | | - | - | - |
| Client Sample Type | | | | | - | - | - |
| Client Sample Number | | | | | - | - | - |
| Supplier / Source | | | | | - | - | - |
| Client Material | | | | | - | - | - |
| Depth - Top (m) | | | | | 0.1 | 0.1 | 0.1 |
| Depth - Bottom (m) | | | | | 0.3 | 0.3 | 0.3 |
| Date of Sampling | | | | | 20/08/2026 | 20/08/2026 | 20/08/2026 |
| Time of Sampling | | | | | 930 | 930 | 930 |
| Sample Matrix | | | | | Clay | Clay | Clay |
| **Determinant** | **Code** | **Units** | **LOD** | **Accreditation** | | | |
| Asbestos | ASB | p/a | - | U | - | - | - |
| Acenaphthene | PAHASRDS | mg/kg | 0.02 | M | < 0.20 | 0.04 | 0.03 |
| Acenaphthylene | PAHASRDS | mg/kg | 0.02 | U | < 0.20 | 0.08 | 0.09 |
| Anthracene | PAHASRDS | mg/kg | 0.02 | U | < 0.20 | 0.19 | 0.15 |
| Benzo[a]anthracene | PAHASRDS | mg/kg | 0.02 | M | 0.50 | 0.63 | 0.65 |
| Benzo[a]pyrene | PAHASRDS | mg/kg | 0.02 | M | 0.60 | 0.67 | 0.75 |
| Benzo[b]fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 0.69 | 0.72 | 0.78 |
| Benzo[ghi]perylene | PAHASRDS | mg/kg | 0.02 | M | 0.51 | 0.53 | 0.52 |
| Benzo[k]fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 0.31 | 0.32 | 0.35 |
| Chrysene | PAHASRDS | mg/kg | 0.02 | M | 0.62 | 0.65 | 0.64 |
| Dibenzo[a,h]anthracene | PAHASRDS | mg/kg | 0.02 | M | < 0.20 | 0.11 | 0.13 |
| Fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 1.6 | 1.5 | 1.3 |
| Fluorene | PAHASRDS | mg/kg | 0.02 | M | < 0.20 | 0.04 | 0.03 |
| Indeno[1,2,3,-cd]pyrene | PAHASRDS | mg/kg | 0.02 | M | 0.49 | 0.53 | 0.58 |
| Naphthalene | PAHASRDS | mg/kg | 0.02 | M | < 0.20 | 0.03 | < 0.02 |
| Phenanthrene | PAHASRDS | mg/kg | 0.02 | M | 1.0 | 0.75 | 0.55 |
| Pyrene | PAHASRDS | mg/kg | 0.02 | M | 1.4 | 1.3 | 1.2 |
| Total PAH (Sum of USEPA 16) | PAHASRDS | mg/kg | 0.32 | U | 8.9 | 8.1 | 7.7 |

ENVIRONMENTAL CHEMISTRY TESTING LABORATORIES
A PHENNA GROUP COMPANY

**E26/11339/APL/26-37581**

**Willow Mead CL3970/WM**

**Analytical Test Results - ENV Analysis Solids**

| Lab Reference | | | | | 869615 | 869616 | 869617 |
|---|---|---|---|---|---|---|---|
| Client Sample ID | | | | | S.04/3970 | S.05/3970 | S.06/3970 |
| Client Sample Location | | | | | - | - | - |
| Client Sample Type | | | | | - | - | - |
| Client Sample Number | | | | | - | - | - |
| Supplier / Source | | | | | - | - | - |
| Client Material | | | | | - | - | - |
| Depth - Top (m) | | | | | 0.1 | 0 | 0 |
| Depth - Bottom (m) | | | | | 0.3 | 0.1 | 0.1 |
| Date of Sampling | | | | | 20/08/2026 | 20/08/2026 | 20/08/2026 |
| Time of Sampling | | | | | 930 | 930 | 930 |
| Sample Matrix | | | | | Clay | Clay | Clay |
| **Determinant** | **Code** | **Units** | **LOD** | **Accreditation** | | | |
| Asbestos | ASB | p/a | - | U | - | - | - |
| Acenaphthene | PAHASRDS | mg/kg | 0.02 | M | < 0.20 | 0.04 | < 0.02 |
| Acenaphthylene | PAHASRDS | mg/kg | 0.02 | U | < 0.20 | 0.32 | 0.07 |
| Anthracene | PAHASRDS | mg/kg | 0.02 | U | < 0.20 | 0.26 | 0.10 |
| Benzo[a]anthracene | PAHASRDS | mg/kg | 0.02 | M | < 0.20 | 1.3 | 0.55 |
| Benzo[a]pyrene | PAHASRDS | mg/kg | 0.02 | M | < 0.20 | 1.9 | 0.77 |
| Benzo[b]fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 0.27 | 2.3 | 0.85 |
| Benzo[ghi]perylene | PAHASRDS | mg/kg | 0.02 | M | < 0.20 | 1.4 | 0.59 |
| Benzo[k]fluoranthene | PAHASRDS | mg/kg | 0.02 | M | < 0.20 | 1.0 | 0.37 |
| Chrysene | PAHASRDS | mg/kg | 0.02 | M | < 0.20 | 2.1 | 0.63 |
| Dibenzo[a,h]anthracene | PAHASRDS | mg/kg | 0.02 | M | < 0.20 | 0.28 | 0.12 |
| Fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 0.38 | 6.0 | 1.7 |
| Fluorene | PAHASRDS | mg/kg | 0.02 | M | < 0.20 | 0.09 | 0.02 |
| Indeno[1,2,3,-cd]pyrene | PAHASRDS | mg/kg | 0.02 | M | < 0.20 | 1.7 | 0.66 |
| Naphthalene | PAHASRDS | mg/kg | 0.02 | M | < 0.20 | 0.72 | 0.02 |
| Phenanthrene | PAHASRDS | mg/kg | 0.02 | M | < 0.20 | 4.2 | 0.69 |
| Pyrene | PAHASRDS | mg/kg | 0.02 | M | 0.34 | 4.9 | 1.3 |
| Total PAH (Sum of USEPA 16) | PAHASRDS | mg/kg | 0.32 | U | 3.8 | 28 | 8.5 |

**E26/11339/APL/26-37581**

**Willow Mead CL3970/WM**

**Analytical Test Results - ENV Analysis Solids**

| Lab Reference | | | | | 869618 | 869619 | 869620 |
|---|---|---|---|---|---|---|---|
| Client Sample ID | | | | | S.07/3970 | S.08/3970 | S.09/3970 |
| Client Sample Location | | | | | - | - | - |
| Client Sample Type | | | | | - | - | - |
| Client Sample Number | | | | | - | - | - |
| Supplier / Source | | | | | - | - | - |
| Client Material | | | | | - | - | - |
| Depth - Top (m) | | | | | 0.1 | 0.1 | 0.1 |
| Depth - Bottom (m) | | | | | 0.3 | 0.3 | 0.3 |
| Date of Sampling | | | | | 20/08/2026 | 20/08/2026 | 20/08/2026 |
| Time of Sampling | | | | | 930 | 930 | 930 |
| Sample Matrix | | | | | SOIL | SOIL | SOIL |
| **Determinant** | **Code** | **Units** | **LOD** | **Accreditation** | | | |
| Asbestos | ASB | p/a | - | U | No Asbestos Detected | No Asbestos Detected | No Asbestos Detected |
| Acenaphthene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Acenaphthylene | PAHASRDS | mg/kg | 0.02 | U | - | - | - |
| Anthracene | PAHASRDS | mg/kg | 0.02 | U | - | - | - |
| Benzo[a]anthracene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Benzo[a]pyrene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Benzo[b]fluoranthene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Benzo[ghi]perylene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Benzo[k]fluoranthene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Chrysene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Dibenzo[a,h]anthracene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Fluoranthene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Fluorene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Indeno[1,2,3,-cd]pyrene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Naphthalene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Phenanthrene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Pyrene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Total PAH (Sum of USEPA 16) | PAHASRDS | mg/kg | 0.32 | U | - | - | - |

**E26/11339/APL/26-37581**

**Willow Mead CL3970/WM**

**Analytical Test Results - ENV Analysis Solids**

| Lab Reference | | | | | 869621 | 869622 | 869623 |
|---|---|---|---|---|---|---|---|
| Client Sample ID | | | | | S.10/3970 | S.11/3970 | S.12/3970 |
| Client Sample Location | | | | | - | - | - |
| Client Sample Type | | | | | - | - | - |
| Client Sample Number | | | | | - | - | - |
| Supplier / Source | | | | | - | - | - |
| Client Material | | | | | - | - | - |
| Depth - Top (m) | | | | | 0.1 | 0 | 0 |
| Depth - Bottom (m) | | | | | 0.3 | 0.1 | 0.1 |
| Date of Sampling | | | | | 20/08/2026 | 20/08/2026 | 20/08/2026 |
| Time of Sampling | | | | | 930 | 930 | 930 |
| Sample Matrix | | | | | SOIL | SOIL | SOIL |
| **Determinant** | **Code** | **Units** | **LOD** | **Accreditation** | | | |
| Asbestos | ASB | p/a | - | U | No Asbestos Detected | No Asbestos Detected | No Asbestos Detected |
| Acenaphthene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Acenaphthylene | PAHASRDS | mg/kg | 0.02 | U | - | - | - |
| Anthracene | PAHASRDS | mg/kg | 0.02 | U | - | - | - |
| Benzo[a]anthracene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Benzo[a]pyrene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Benzo[b]fluoranthene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Benzo[ghi]perylene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Benzo[k]fluoranthene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Chrysene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Dibenzo[a,h]anthracene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Fluoranthene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Fluorene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Indeno[1,2,3,-cd]pyrene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Naphthalene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Phenanthrene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Pyrene | PAHASRDS | mg/kg | 0.02 | M | - | - | - |
| Total PAH (Sum of USEPA 16) | PAHASRDS | mg/kg | 0.32 | U | - | - | - |

ENVIRONMENTAL CHEMISTRY TESTING LABORATORIES
A PHENNA GROUP COMPANY

**E26/11339/APL/26-37581**

**Willow Mead CL3970/WM**

**Analytical Test Results - ENV Analysis Solids**

| Lab Reference | | | | | 869624 | 869625 | 869626 |
|---|---|---|---|---|---|---|---|
| Client Sample ID | | | | | S.13/3970 | S.14/3970 | S.15/3970 |
| Client Sample Location | | | | | - | - | - |
| Client Sample Type | | | | | - | - | - |
| Client Sample Number | | | | | - | - | - |
| Supplier / Source | | | | | - | - | - |
| Client Material | | | | | - | - | - |
| Depth - Top (m) | | | | | 0.1 | 0.1 | 0.1 |
| Depth - Bottom (m) | | | | | 0.3 | 0.3 | 0.3 |
| Date of Sampling | | | | | 20/08/2026 | 20/08/2026 | 20/08/2026 |
| Time of Sampling | | | | | 930 | 930 | 930 |
| Sample Matrix | | | | | Clay | Clay | Clay |
| **Determinant** | **Code** | **Units** | **LOD** | **Accreditation** | | | |
| Asbestos | ASB | p/a | - | U | - | - | - |
| Acenaphthene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | < 0.02 | < 0.02 |
| Acenaphthylene | PAHASRDS | mg/kg | 0.02 | U | 0.05 | < 0.02 | 0.06 |
| Anthracene | PAHASRDS | mg/kg | 0.02 | U | 0.07 | < 0.02 | 0.13 |
| Benzo[a]anthracene | PAHASRDS | mg/kg | 0.02 | M | 0.25 | < 0.02 | 0.67 |
| Benzo[a]pyrene | PAHASRDS | mg/kg | 0.02 | M | 0.37 | < 0.02 | 0.81 |
| Benzo[b]fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 0.38 | < 0.02 | 0.89 |
| Benzo[ghi]perylene | PAHASRDS | mg/kg | 0.02 | M | 0.31 | < 0.02 | 0.59 |
| Benzo[k]fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 0.17 | < 0.02 | 0.38 |
| Chrysene | PAHASRDS | mg/kg | 0.02 | M | 0.21 | < 0.02 | 0.59 |
| Dibenzo[a,h]anthracene | PAHASRDS | mg/kg | 0.02 | M | 0.06 | < 0.02 | 0.14 |
| Fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 0.41 | < 0.02 | 1.2 |
| Fluorene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | < 0.02 | < 0.02 |
| Indeno[1,2,3,-cd]pyrene | PAHASRDS | mg/kg | 0.02 | M | 0.33 | < 0.02 | 0.68 |
| Naphthalene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | < 0.02 | < 0.02 |
| Phenanthrene | PAHASRDS | mg/kg | 0.02 | M | 0.15 | < 0.02 | 0.33 |
| Pyrene | PAHASRDS | mg/kg | 0.02 | M | 0.36 | < 0.02 | 1.0 |
| Total PAH (Sum of USEPA 16) | PAHASRDS | mg/kg | 0.32 | U | 3.2 | < 0.32 | 7.5 |

ENVIRONMENTAL CHEMISTRY TESTING LABORATORIES
A PHENNA GROUP COMPANY

**E26/11339/APL/26-37581**

**Willow Mead CL3970/WM**

**Analytical Test Results - ENV Analysis Solids**

| Lab Reference | | | | | 869627 | 869628 | 869629 |
|---|---|---|---|---|---|---|---|
| Client Sample ID | | | | | S.16/3970 | S.17/3970 | S.18/3970 |
| Client Sample Location | | | | | - | - | - |
| Client Sample Type | | | | | - | - | - |
| Client Sample Number | | | | | - | - | - |
| Supplier / Source | | | | | - | - | - |
| Client Material | | | | | - | - | - |
| Depth - Top (m) | | | | | 0.1 | 0 | 0 |
| Depth - Bottom (m) | | | | | 0.3 | 0.1 | 0.1 |
| Date of Sampling | | | | | 20/08/2026 | 20/08/2026 | 20/08/2026 |
| Time of Sampling | | | | | 930 | 930 | 930 |
| Sample Matrix | | | | | Clay | Clay | Clay |
| **Determinant** | **Code** | **Units** | **LOD** | **Accreditation** | | | |
| Asbestos | ASB | p/a | - | U | - | - | - |
| Acenaphthene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | < 0.02 | < 0.02 |
| Acenaphthylene | PAHASRDS | mg/kg | 0.02 | U | < 0.02 | < 0.02 | < 0.02 |
| Anthracene | PAHASRDS | mg/kg | 0.02 | U | < 0.02 | < 0.02 | < 0.02 |
| Benzo[a]anthracene | PAHASRDS | mg/kg | 0.02 | M | 0.09 | < 0.02 | < 0.02 |
| Benzo[a]pyrene | PAHASRDS | mg/kg | 0.02 | M | 0.08 | < 0.02 | < 0.02 |
| Benzo[b]fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 0.14 | < 0.02 | < 0.02 |
| Benzo[ghi]perylene | PAHASRDS | mg/kg | 0.02 | M | 0.11 | < 0.02 | < 0.02 |
| Benzo[k]fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 0.06 | < 0.02 | < 0.02 |
| Chrysene | PAHASRDS | mg/kg | 0.02 | M | 0.08 | < 0.02 | < 0.02 |
| Dibenzo[a,h]anthracene | PAHASRDS | mg/kg | 0.02 | M | 0.02 | < 0.02 | < 0.02 |
| Fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 0.11 | < 0.02 | < 0.02 |
| Fluorene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | < 0.02 | < 0.02 |
| Indeno[1,2,3,-cd]pyrene | PAHASRDS | mg/kg | 0.02 | M | 0.13 | < 0.02 | < 0.02 |
| Naphthalene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | < 0.02 | < 0.02 |
| Phenanthrene | PAHASRDS | mg/kg | 0.02 | M | 0.02 | < 0.02 | < 0.02 |
| Pyrene | PAHASRDS | mg/kg | 0.02 | M | 0.09 | < 0.02 | < 0.02 |
| Total PAH (Sum of USEPA 16) | PAHASRDS | mg/kg | 0.32 | U | 1.0 | < 0.32 | < 0.32 |

ENVIRONMENTAL CHEMISTRY TESTING LABORATORIES
A PHENNA GROUP COMPANY

**E26/11339/APL/26-37581**

**Willow Mead CL3970/WM**

**Sample Descriptions**

| Lab Reference | Client Sample ID | Client Sample Location | Client Sample Type | Client Sample Number | Description | Moisture Content (%) | Stone Content (%) | Passing 2mm test sieve (%) |
|---|---|---|---|---|---|---|---|---|
| 869612 | S.01/3970 | - | SOIL | - | Dark brown slightly gravelly slightly sandy silty clay | 3.1 | 14 | - |
| 869613 | S.02/3970 | - | SOIL | - | Dark brown slightly gravelly slightly sandy silty clay | 4.1 | 25 | - |
| 869614 | S.03/3970 | - | SOIL | - | Dark brown slightly gravelly slightly sandy silty clay | 4.9 | < 0.1 | - |
| 869615 | S.04/3970 | - | SOIL | - | Dark brown slightly gravelly slightly sandy silty clay | 8.4 | < 0.1 | - |
| 869616 | S.05/3970 | - | SOIL | - | Dark brown slightly gravelly slightly sandy silty clay | 13 | < 0.1 | - |
| 869617 | S.06/3970 | - | SOIL | - | Brown slightly gravelly slightly sandy silty clay | 9.4 | < 0.1 | - |
| 869624 | S.13/3970 | - | SOIL | - | Yellowish brown slightly gravelly silty clay | 7.3 | 40 | - |
| 869625 | S.14/3970 | - | SOIL | - | Yellowish brown slightly gravelly silty clay | 9.2 | < 0.1 | - |
| 869626 | S.15/3970 | - | SOIL | - | Yellowish brown slightly gravelly silty clay | 5.1 | < 0.1 | - |
| 869627 | S.16/3970 | - | SOIL | - | Yellowish brown slightly gravelly silty clay | 5.1 | 26 | - |
| 869628 | S.17/3970 | - | SOIL | - | Yellowish brown slightly gravelly silty clay | 3.5 | < 0.1 | - |
| 869629 | S.18/3970 | - | SOIL | - | Yellowish brown slightly gravelly silty clay | 34 | < 0.1 | - |

**E26/11339/APL/26-37581**

**Willow Mead CL3970/WM**

**Sample Comments**

| Lab Reference | Client Sample ID | Client Sample Location | Client Sample Type | Client Sample Number | Comments |
|---|---|---|---|---|---|
| 869612 | S.01/3970 | - | SOIL | - | PAHAR - 1/10 dark colour extract |
| 869615 | S.04/3970 | - | SOIL | - | PAHAR - 1/10 dark colour extract |

**E26/11339/APL/26-37581**

**Willow Mead CL3970/WM**

**Analysis Methodologies - Please refer to sample comments page (if present) for any changes to methods Methods**

Site addresses where testing is performed: Leicester - 7-11 Harding Street, Leicester, LE1 4DH Poole - Unit D11, Admiralty Park, Station Road, Holton Heath, Poole, BH16 6HX

| Test Code | Test Name / Reference | Sample condition for analysis | Sample Preparation | Test Site | Accredited Matrices | Test Details |
|---|---|---|---|---|---|---|
| ASB | MS - AS - Asbestos | - | - | Leicester | SOIL, BULK MATERIAL | Fibre identification is in accordance with in house documented methods which are based on the procedure documented in the HSE Document HSG 248 "Asbestos: The analysts guide for sampling, analysis and clearance procedures" |
| PAHASRDS | MS - CL - PAH (As Received) | As received | Passing 10mm test sieve | Leicester | SOIL | Determination of Polyaromatic hydrocarbons in soil via GC-MS |
| SAMPLEPREP | MS - CL - Sample Preparation | - | - | Leicester | | Preparation of samples (including determination of moisture content) to allow for subsequent analysis |

ENVIRONMENTAL CHEMISTRY TESTING LABORATORIES
A PHENNA GROUP COMPANY

| | | |
|---|---|---|
| **Analytical Test Report** | **E26/14347/APL/26-48498** | **Tested on Behalf of** |
| Clients Project Reference | CL/4008/WM Willow Mead | Apple Environmental Limited |
| Clients Order Number | CL/4008/WM | Unit 3 Estevan Farm |
| Sample(s) Analysed | 2 | Stoney Lane |
| Sample(s) received / instructed | 30/10/2026 / 30/10/2026 | |
| Sample(s) Tested | 30/10/2026 to 05/11/2026 | |
| Report issued | 05/11/2026 | GU34 5EL |
| Report issue number | 1 | |

Signed

[redacted]

**Analytical Services Manager**

**Notes:**

**General**

This report shall not be reproduced except in full

Please refer to Methodologies page for details pertaining to the analytical methods undertaken.

Samples were supplied by customer, results apply to the samples as received.

Samples will be retained for 14 days after issue of this report unless otherwise requested.

**Where specification limits are included these are for guidance only. Where a measured value has been highlighted this is not implying acceptance or failure and certainty of measurement values have not been taken into account.**

**Uncertainty of measurement values are available on request.**

Moisture Content was determined in accordance with ECT method statement MS - CL - Sample Prep, oven dried at <30°C.

Moisture Content is reported as a percentage of the dry mass of soil, this calculation is in accordance with BS1377, Part 2, 1990, Clause 3.2

Stone Content was determined in accordance with ECT method statement MS - CL - Sample Prep and refers to the percentage of stones retained on a 10mm BS test sieve.

MCERTS Accreditation only covers the SAND, CLAY and LOAM matrices

**Deviating Samples**

On receipt samples are compared against our sample holding and handling protocols, where any deviations have been noted these are reported on our deviating sample page (if present)

**Accreditation Key**

U = UKAS Accreditation, M = MCERTS Accreditation, N = Unaccredited, SC = Subcontracted

ENVIRONMENTAL CHEMISTRY TESTING LABORATORIES
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**E26/14347/APL/26-48498**

**CL/4008/WM Willow Mead**

**Analytical Test Results - ENV Analysis Solids**

| Lab Reference | | | | | 925565 | 925566 |
|---|---|---|---|---|---|---|
| Client Sample ID | | | | | S.19/4008 | S.20/4008 |
| Client Sample Location | | | | | - | - |
| Client Sample Type | | | | | Soil | Soil |
| Client Sample Number | | | | | - | - |
| Supplier / Source | | | | | - | - |
| Client Material | | | | | - | - |
| Depth - Top (m) | | | | | 0.1 | 0.1 |
| Depth - Bottom (m) | | | | | 0.3 | 0.3 |
| Date of Sampling | | | | | 28/10/2026 | 28/10/2026 |
| Time of Sampling | | | | | 1400 | 1405 |
| Sample Matrix | | | | | Clay | Clay |
| **Determinant** | **Code** | **Units** | **LOD** | **Accreditation** | | |
| Acenaphthene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | < 0.02 |
| Acenaphthylene | PAHASRDS | mg/kg | 0.02 | U | 0.06 | 0.03 |
| Anthracene | PAHASRDS | mg/kg | 0.02 | U | 0.10 | 0.03 |
| Benzo[a]anthracene | PAHASRDS | mg/kg | 0.02 | M | 0.42 | 0.16 |
| Benzo[a]pyrene | PAHASRDS | mg/kg | 0.02 | M | 0.49 | 0.20 |
| Benzo[b]fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 0.59 | 0.24 |
| Benzo[ghi]perylene | PAHASRDS | mg/kg | 0.02 | M | 0.34 | 0.15 |
| Benzo[k]fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 0.24 | 0.09 |
| Chrysene | PAHASRDS | mg/kg | 0.02 | M | 0.48 | 0.17 |
| Dibenzo[a,h]anthracene | PAHASRDS | mg/kg | 0.02 | M | 0.08 | 0.04 |
| Fluoranthene | PAHASRDS | mg/kg | 0.02 | M | 1.2 | 0.34 |
| Fluorene | PAHASRDS | mg/kg | 0.02 | M | < 0.02 | < 0.02 |
| Indeno[1,2,3,-cd]pyrene | PAHASRDS | mg/kg | 0.02 | M | 0.38 | 0.16 |
| Naphthalene | PAHASRDS | mg/kg | 0.02 | M | 0.04 | < 0.02 |
| Phenanthrene | PAHASRDS | mg/kg | 0.02 | M | 0.52 | 0.12 |
| Pyrene | PAHASRDS | mg/kg | 0.02 | M | 1.0 | 0.30 |
| Total PAH (Sum of USEPA 16) | PAHASRDS | mg/kg | 0.32 | U | 6.0 | 2.1 |

***For details on the specific matrices covered by the determinant please consult the methods page**

UKAS TESTING 4150

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

ENVIRONMENTAL CHEMISTRY TESTING LABORATORIES
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**E26/14347/APL/26-48498**

**CL/4008/WM Willow Mead**

**Sample Descriptions**

| Lab Reference | Client Sample ID | Client Sample Location | Client Sample Type | Client Sample Number | Description | Moisture Content (%) | Stone Content (%) | Passing 2mm test sieve (%) |
|---|---|---|---|---|---|---|---|---|
| 925565 | S.19/4008 | - | SOIL | - | Dark brown slightly gravelly slightly sandy silty clay | 34 | < 0.1 | - |
| 925566 | S.20/4008 | - | SOIL | - | Dark brown slightly gravelly slightly sandy silty clay | 30 | < 0.1 | - |

**E26/14347/APL/26-48498**

**CL/4008/WM Willow Mead**

**Analysis Methodologies - Please refer to sample comments page (if present) for any changes to methods Methods**

Site addresses where testing is performed: Leicester - 7-11 Harding Street, Leicester, LE1 4DH
Poole - Unit D11, Admiralty Park, Station Road, Holton Heath, Poole, BH16 6HX and Unit 14 Blackhill Rd W, Poole BH16 6LE

| Test Code | Test Name / Reference | Sample condition for analysis | Sample Preparation | Test Site | Accredited Matrices | Test Details |
|---|---|---|---|---|---|---|
| PAHASRDS | MS - CL - PAH (As Received) | As received | Passing 10mm test sieve | Leicester | SOIL | Determination of Polyaromatic hydrocarbons in soil via GC-MS |
| SAMPLEPREP | MS - CL - Sample Preparation | - | - | Leicester | | Preparation of samples (including determination of moisture content) to allow for subsequent analysis |

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Life-saving solutions

Instrument House
91-92 Shrivenham Hundred Business Park
Watchfield
Oxfordshire
SN6 8TY

# SERVICE / INSPECTION SHEET

JOB NUMBER: 87272
INSTRUMENT: Tiger Select PPM/ H&S/DL W-2B

SERIAL NUMBER: T-113211
DATE RECEIVED: 08/09/2026

FIRMWARE: 1.0.7

CUSTOMER: Apple Environmental Ltd

| ITEMS RECEIVED | Received | RTN? |
|---|---|---|
| Instrument | yes | |
| Rubber Boot | yes | |
| Battery Charger | yes | |
| Charging Cradle | | |
| Operation Manual | | |
| Quick Start Guide | | |
| Spares Kit | | |
| Comms Cable | | |
| Probe FLEXI | | |
| Peli Case | yes | |
| Tubing | | |
| Regulator | | |
| Software (Memory Stick) | | |
| PLASTIC CASE | | |
| silver case | | |
| Software version | | |
| | | |
| | | |
| | | |
| | | |
| | SIGNED: | |

| TESTS | Pre Service | Post Service |
|---|---|---|
| Charger Test | | ok |
| Battery charge Test | | ok |
| Lamp Test | | ok |
| Air Flow Test ≥ 220ml/min | | 250 |
| Block Flow Test ≤ 15ml/min | | 12 |
| Moisture Sensitivity = 0.0ppm | | 0 |
| Switch Test | | ok |
| Sensor Test | | ok |
| Alarm Test | | ok |
| PC Comms Test | | ok |
| Datalog Test | | ok |
| Display Test | | ok |
| Physical Inspection | | ok |
| PAT Test | | overdue |
| Firmware Upgrade | | no |
| Software Upgrade (usb) | | no |
| Function Test | | ok |
| Run time | | 56hrs 25mins |

**Comments:**
Unit came in for service and cal
PTFE filter, inlet seal, outlet seal, sensor seal and 10ev stack replaced as per service
Lamp changed as per biennial service
Arirflow 250ml/min, Block 12ml/min - pump works correctly
User, Tube and factory calibration passed as per service

TECHNICIAN: Jake Stone [redacted] DATE: 10/09/2026

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# CERTIFICATE OF CALIBRATION
Tiger Select - PPM / H&S / Data Logging

## CALIBRATION CERTIFICATE NO: 87272

ISSUED BY: SHAWCITY LIMITED
DATE:

APPROVED SIGNATOR [redacted]

NAME: Jake Stone

CUSTOMER: Apple Environmental Ltd
INSTRUMENT: Tiger Select - PPM / H&S / Data Logging
SERIAL NUMBER: T-113211

CALIBRATION METHOD: CM03
AMBIENT CONDITIONS: 20°C ± 2°C and 50% (± 20%) RH

| | | |
|---|---|---|
| S500748-1 | WO497067-1 | S500705-1 |

The instrument has been factory calibrated to documented procedures in accordance with ISO9001:2015 Quality Management System.
The instrument is calibrated following manufacturer guidance.
Measurement standards are derived from volumetric and time sources which have been calibrated at an accredited laboratory traceable to national or international standards.

## CALIBRATION RESULTS

| REF. VALUE | INDICATED VALUE |
|---|---|
| 100 ppm - Isobutylene | 100 ppm - Isobutylene |
| 1000 ppm - Isobutylene | 1000 ppm - Isobutylene |
| 5 ppm - Benzene | 5 ppm - Benzene |

Prior to calibration, the instrument was allowed to stabilise in the laboratory for at least 30 minutes.
The instrument was calibrated by exposing the sensor to known values of gas concentrations.
All gases were sampled through the complete probe and in line filter, where applicable.
The reference value is that generated by the certified source and the indicated value is that measured by the instrument.
Gas mixture prepared using equipment traceable to N.P.L standards against suppliers' certificate No.
On the day of calibration, the instrument was working according to the manufacturer's original specifications.

**COMMENTS:**
The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor of $k=2$.
This provides a level of confidence of uncertainty of approximately 95%.
The uncertainty of measurement is ±2 %
The results indicate that the instrument conforms to the applicable parts of the published specification.



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Watchfield, Oxfordshire, SN6 8TY