

Methodology for Soil Verification and Risk Assessment

Discharge of Planning Condition 10 – SMD/2022/0083

1. PURPOSE OF THE METHODOLOGY

This methodology sets out the approach for further soil testing and assessment required to discharge Planning Condition 10, which requires confirmation that soils used or retained on site are suitable for the proposed end use and do not pose an unacceptable risk to human health or the environment.

The methodology aligns with current UK guidance for land affected by contamination.

2. SITE CONTEXT AND INTENDED END USE

The site is located at **Haregate Hall, Haregate Road, Leek, ST13 6PX**.

The proposed end use includes **residential gardens and soft landscaping**, which is considered a **residential with plant uptake** land use scenario.

3. SAMPLING STRATEGY

3.1 Sampling Locations

- Sampling shall target:
 - Areas of proposed gardens and soft landscaping.
 - Any areas where imported or reworked soils are to be placed.
 - Areas corresponding to or extending beyond previous sampling locations

3.2 Sampling depth

- Shallow soils shall be sampled from:
 - **0.0 – 0.3 m below ground level (bgl)**
This depth reflects likely human contact and plant uptake pathways

3.3 Sampling Frequency

- A minimum sampling density of:
 - **1 soil sample per 100 m²** of garden or landscaped area, or
 - **A minimum of 2 samples per discrete landscaped area**, whichever yields the greater number.
- Additional targeted samples shall be taken in:
 - Areas where visual staining, made ground, or suspect materials are encountered.

- Areas where previous results may have indicated elevated concentrations (e.g. lead).

4. SAMPLING METHODOLOGY

- Soil samples shall be collected by a competent person using clean, non-reactive tools.
- Samples for volatile analyses shall be placed directly into appropriate laboratory containers and filled to minimise headspace.
- Samples shall be clearly labelled with:
 - Sample ID
 - Location
 - Depth
 - Date and time of sampling
- All samples shall be stored and transported in accordance with laboratory chain-of-custody requirements.

5. LABORATORY TESTING SCHEDULE

5.1 Analytical Suite

Soil samples shall be analysed by a **UKAS-accredited laboratory** for the following determinands:

Metals

- Arsenic, Beryllium, Cadmium, Chromium (total and Chromium VI), Copper, Lead, Mercury, Nickel, Selenium, Vanadium, Zinc

Organic Contaminants

- Polycyclic Aromatic Hydrocarbons (PAH 16)
- BTEX and MTBE
- Total Petroleum Hydrocarbons (TPH CWG – Aliphatic and Aromatic fractions)

General Soil Parameters

- pH
- Total Organic Carbon / Organic Matter

Asbestos

- Qualitative asbestos identification

5.2 Testing Schedule

- Laboratory analysis shall be undertaken immediately following sampling.
- Sample holding times shall not be exceeded.
- Results shall be reported in mg/kg (dry weight) and accompanied by laboratory QA/QC data.

6. ASSESSMENT CRITERIA

6.1 Screening Values

Analytical results shall be assessed against the most appropriate and current human health screening criteria for **residential with plant uptake** land use, including:

- **LQM/CIEH Suitable 4 Use Levels (S4ULs)**
- **CL:AIRE Category 4 Screening Levels (C4SLs)**
- **Generic Assessment Criteria (GAC)** where applicable

These criteria reflect conservative assumptions for:

- Direct soil ingestion
- Dermal contact
- Inhalation of dust and vapours
- Ingestion of homegrown produce

6.2 Interpretation of Results

- Results **below screening values** shall be considered to represent *uncontaminated conditions* and acceptable for the proposed use.
- **Exceedance of a screening value** shall not automatically indicate unacceptable risk but will trigger:
 - A focused qualitative or quantitative risk assessment, and/or
 - Localised mitigation measures (e.g. soil cover systems or soil replacement).

7. VERIFICATION AND REPORTING

A **Verification Report** shall be prepared and submitted to the LPA, including:

- Description of sampling locations and methodology
- Laboratory certificates of analysis
- Tabulated comparison against assessment criteria
- Interpretation of results and confirmation of suitability
- Details of any mitigation measures undertaken (if required)

8. CRITERIA FOR DISCHARGE OF PLANNING CONDITION 10

Planning Condition 10 shall be considered discharged where:

- All soils within garden and landscaped areas are demonstrated to be suitable for residential with plant uptake use, or
- Any identified contamination has been appropriately mitigated and verified.