

## SOIL TESTING

### WORK INSTRUCTIONS

### YEAR 2026 PROGRAMME

### PT ID: QDJV-2-2026

## 1. T-M-1, T-M-2 SAMPLES

Parameters: Ag, As, B, Ba, Cd, Co, Cr, Cu, Mo, Ni, Pb, Sb, Se, Sn, Zn and Hg

### 1.1. Storage of samples

The samples are **air-dried** and must be stored unopened in a **cool, dry place** upon receipt, until analysis.

The test samples are **real samples originating from a contaminated soil area**. The samples have been **spiked** with those elements whose concentrations were too low for proficiency testing purposes.

With regard to sample handling, please comply with **laboratory safety regulations applicable to chemical substances**, and treat the proficiency testing samples **in the same manner as the majority of routine samples analysed in your laboratory**.

### 1.2. Sample preparation

Before opening the containers, the contents must be **thoroughly homogenised by shaking**, and sample processing shall be initiated immediately after opening.

The determination of dry matter content (at 105°C) shall be carried out on a separate sub-sample.

The sample amount is approximately **20 g**, with a particle size of **< 224 µm**.

For **Ag, As, B, Ba, Cd, Co, Cr, Cu, Hg, Mo, Ni, Pb, Se, and Zn**, the results obtained using the two digestion methods (nitric acid–hydrogen peroxide digestion and aqua regia digestion) will not be evaluated separately, as previous experience shows that the differences between them are negligible. Therefore, either the nitric acid–hydrogen peroxide digestion or the aqua regia digestion result should be reported, applying the laboratory's routine method.

For **Sb and Sn sample preparation**, please take into account the relevant standards (e.g. MSZ 21470-50:2006 and EPA 3051A:2007), according to which digestion using nitric acid alone does not provide adequate results; therefore, **aqua regia digestion shall be used**.

**Recommended sample intake for analysis:** 1–2 g. Results shall be reported on a **dry matter basis** (sample dried at 105 °C to constant mass), expressed in **mg/kg (dry weight)**.

## 2. T-ORG-1, T-ORG-2 SAMPLES

Amount of samples: 3-3 suspension in brown bottles

### 2.1. Storage of samples

The test materials are **suspensions of loess soil samples with methanol**, which have been **spiked with the analytes of interest**.

Participants will receive **three parallel samples at each of two concentration levels**.

Upon receipt, the samples must be stored **unopened, refrigerated ( $4 \pm 2$  °C), and protected from light** until analysis, taking care to avoid **cross-contamination**.

### 1.2. Sample preparation

The septum-sealed glass vials ( $20 \text{ cm}^3$ ) contain  **$5.00 \pm 0.01$  g of dry soil sample** with a particle size of **< 224  $\mu\text{m}$** .

A volume of  **$10.0 \pm 0.1 \text{ cm}^3$  methanol spiked with the analytes of interest** has been added to the soil sample.

**IMPORTANT:** Prior to the start of the analysis, please weigh the **unopened vials** and record their mass **with a precision of two decimal places**.

With regard to sample handling, please comply with the **laboratory safety regulations applicable to chemical substances**, and treat the proficiency testing samples **in the same manner as the majority of routine samples analysed in your laboratory**.

**Parameters to be analysed and expected measurement ranges:**

**BTEX:**

Sample ID	Parameter	Expected measurement range for soil [mg/kg dry weight]	Expected measurement range for solution [mg/dm <sup>3</sup> ]
T-Org-1	Benzene	0.5 – 5.0	0.25 -2.5
	Toluene	0.5 – 8.0	0.25 – 4.0
	Ethylbenzene	0.5 – 10	0.25 – 5.0
T-Org-2	o-Xylene	0.5 – 10	0.25 – 5.0
	m-, p-Xylene (sum)	0.5 – 12	0.25 – 6.0
	Total xylenes (o-, m-, p-)	0.5 – 12	0.25 – 6.0

### 3. SUBMISSION OF RESULTS

Participants are requested to report the measured values together with their **expanded measurement uncertainty** (coverage factor  $k = 2$ ), expressed in the **same unit** as the measurement results.

Results must be submitted electronically via [www.qualcoduna.hu](http://www.qualcoduna.hu) electronic submission portal.

#### Results submission steps:

- Open the website and select **Login to electronic services**.
- Log in to access the participant interface.
- Select **Recording and viewing measurement results**.
- After submission, a confirmation will be generated (save/print it).
- Keep and verify the confirmation.
- **Important:** if no confirmation appears, submission was not successful.

#### SUBMISSION DEADLINE: JULY 3, 2026 (FRIDAY)

Results submitted after the deadline, values marked with “<” or “>”, or results in different units will not be considered. (Reference: ISO 13528:2022. Statistical methods for use in proficiency testing by interlaboratory comparisons).

Reporting zero ("0") as a result will be considered a physically incorrect value and will be evaluated.

Budapest, 21<sup>st</sup> May, 2026

A handwritten signature in blue ink, appearing to read "Dr. Norbert Mátrai".

Dr. Norbert Mátrai  
Head of Department