



USER: STADTENTWÄSSERUNG STUTTGART

The central laboratory of Stadtentwässerung Stuttgart is a municipal environmental laboratory with 22 employees. The roots of the laboratory go back to 1869, when it was founded as a municipal gas testing centre. From 1874 to 1999, food monitoring was the core task of the Chemical Investigation Office. However, this was transferred to the state of Baden-Württemberg in 2000.

After that, only environmental analysis remained in municipal hands, combined with an organisational change to the Eigenbetrieb Stadtentwässerung Stuttgart. About 2/3 of the samples to be analysed annually are for operational monitoring of the 4 sewage treatment plants in Stuttgart. The samples of the non-wastewater sector are mainly distributed among groundwater, drinking water, mineral water and swimming pool water, as well as soil/legacy and demolition material.

DEVICE VARIANT

The Berghof microwave digestion unit speedwave XPERT with DAP-60 vessels is used.



APPLICATION

Especially in our solids sector (soil, waste, sludge), the element contents after aqua regia digestion are often required. With an increasing number of samples, this was no longer possible with the classic wet-chemical digestion method. Therefore, the logical consequence was to simplify and accelerate this work step.

For this process, the Speedwave Xpert was the optimal solution for us, which then led to the procurement of a device in summer 2020.

We already had basic experience with microwave digestion in soil analysis from the years 2002 to 2007, so the change from classic digestion to microwave digestion was much easier. In addition, thanks to the Berghof team, the existing PTFE digestion equipment from that time could be adapted to today's application and taken over. This is a very positive impression in terms of sustainability.

FIRST RESULTS

With the standard aqua regia application (1g soil / 6ml hydrochloric acid conc. / 2ml nitric acid conc. / 175 ± 5 °C / approx. 30 minutes), a soil ring test of the BAM was currently carried out successfully (analysis by ICP-MS).

For direct internal comparison, the interlaboratory test samples were also digested classically and the elements analysed by ICP-MS. The results were easily comparable and would also have been within the limits of the interlaboratory comparison.

We had already made similar experiences in the previous year within the scope of a sewage sludge round robin test, so that we could switch to the speedwave Xpert for our two most important solid matrices with a clear conscience.

Peter Schilling (laboratory manager from Stadtentwässerung Stuttgart)

