

To: Laboratories participating in ProfTest Syke proficiency tests

Proficiency test MET 05/2024 – Groundwater and industrial wastewater metal analysis

ProfTest Syke will organize a proficiency test (PT) for the analysis of metals in ground waters and in industrial wastewaters.

The measurands for the synthetic sample, ground water and industrial wastewater are: Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sr, Ti, Tl, U, V, and Zn.

The purpose of this proficiency test is to ensure the comparability and accuracy of the results of the participants. Depending on the measurement, about 10–20 laboratories are expected to participate in this proficiency test. The organizing of this proficiency test is included in the accreditation scope with the exception of Be and Tl measurements (finas.fi/sites/en).

Sample matrices

Synthetic sample, ground water, and industrial wastewater.

Timetable

Registration	23 February – 22 March 2024	
Sample dispatch date (national participants)	23 April 2024 (see Chapter 4 <i>Sample delivery</i>)	
Analysis of the samples	Mercury samples	at the latest on 8 May 2024
	Other samples	at the latest on 10 May 2024
Reporting of the results	24 April – 14 May 2024	

Participation fee

The participation fee is **995 €** (+ VAT) including all measurements and samples.
See detailed information in Chapter 9 *Participation fee*.


Mirja Leivuori,
Group manager


Päivi Grönroos
Substitute for coordinator

ProfTest Syke is proficiency testing provider PT01
(EN ISO/IEC 17043:2010) accredited by FINAS
(Finnish Accreditation Service, finas.fi/sites/en).



Organizing the proficiency test

1 Organizer

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Contact

Coordinator: Mirja Leivuori, tel. +358 295 251 366
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Analytical experts

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Expert laboratory Finnish Environment Institute, Helsinki (T003, finas.fi/sites/en)

2 Sample and measurands

The sample matrices in this proficiency test are: synthetic sample, ground water and industrial wastewater. Samples, measurands, concentration ranges and sample preservations are presented in Appendix 1.

Note! Check the samples volumes and, in case needed, order additional samples.

3 Registration

The registration for this proficiency test is open until **22 March 2024**.

Registration is done via the electronic client interface, ProfTestWEB: wwwp5.ymparisto.fi/Labtest/en. If there are problems when using ProfTestWEB or you need username and password, please contact profTest@syke.fi.

4 Sample delivery

The sample dispatch day for national participants is **23 April 2024**. To ensure timely arrival, the samples are dispatched earlier for participants abroad.

If the sample package does not arrive **at the latest on 25 April 2024**, or there are missing and/or broken sample containers, please contact the provider immediately (profTest@syke.fi). More contact details in Chapter 1 *Organizer*.

5 Sample storage and analysis

The samples are stored at 4 °C. **Samples are analysed within the laboratory where they are delivered to, and analyses are conducted according to the participant's normal procedures.**

For the samples and measurements, replicated analysis should be done no more than according to the method of analysis or the instructions within the sample letter.

Timetable for sample analysis is on the first page of this letter.

6 Reporting the results

The participant results are reported to ProfTest Syke at the latest on **14 May 2024**.

ProfTest Syke delivers the preliminary result report to the participants latest in the week 22 (27 – 31 May 2024). The final report will be published at the latest in November 2024 and it is then available on ProfTestWEB and on ProfTest Syke website (syke.fi/proftest/en). The availability of the report will be informed to the participants.

7 Assigned values and evaluation of the results

Either the calculated concentration (synthetic samples) or the robust mean, the median, or the mean of the results reported by the participants will be used as the assigned value for the measurand. The calculation of the assigned value is based on the results reported according to the given guidelines. Also, when needed, the result of the expert laboratory can be used as the assigned value. The evaluation of the results will be based on z scores. The preliminary standard deviation for proficiency assessment will be given in the cover letter of the sample. In special cases also E_n or $D\%$ scores can be used for the performance evaluation.

8 Confidentiality

The results of participants are treated anonymously.

9 Participation fee

The participation fee is **995 € (+ VAT)** including all measurements and samples. The basic fee is **470 € (+ VAT)** and the fees for each sample and measurand are as follows:

Metals in water samples	120 €/ sample (3 samples)
Hg in water samples	55 €/ sample (3 samples)

The invoice will be sent after the delivery of the preliminary result report. If the participant orders additional samples, they are charged according to the prices listed above.

Note! In Finland VAT is 24 %. Further, if the invoicing address or any other additional information has to be corrected after the invoicing, the extra handling cost will be charged. The participant is also responsible for possible custom clearance or customs fee of the sample.

10 Appendices

Appendix 1 Samples, measurands, concentration ranges and preservations.

Appendix 1. Samples, measurands, concentration ranges and preservations.

Measurands	Sample type (volume) ¹⁾ and preservation	Sample code	Concentration range
Metals in synthetic sample Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sr, Ti, Tl, U, V and Zn (26 measurands)	Synthetic sample (60 ml plastic bottle) <i>0,3 ml conc. HNO₃/60 ml</i>	A1M	Be, Cd, Co, Tl: 0,1-1 µg/l As, Ni, Pb, Sb, Se, U, V: 1–10 µg/l Al, B, Ba, Cr, Cu, Ti, Zn: 10–100 µg/l Fe, Mn, Mo, Sr: > 100 µg/l Ca, K, Mg, Na: 5–50 mg/l
Metals in ground water and in wastewater Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sr, Ti, Tl, U, V and Zn (26 measurands)	Ground water (125 ml plastic bottle) <i>0,6 ml conc. HNO₃/125 ml</i>	G2M	Be, Cd, Co, Tl: 0,1–1 µg/l Al, As, Ba, Cr, Ni, Pb, Sb, Se, Ti, U, V, Zn: 1–10 µg/l B, Cu, Mo: 10–100 µg/l Fe, Mn, Sr: > 100 µg/l Ca, K, Mg, Na: 1–50 mg/l
	Industrial wastewater (125 ml plastic bottle) <i>0,6 ml conc. HNO₃/125 ml</i>	T3M	Cd, Co: 0,1–1 µg/l As, Be, Pb, Sb, Se, Tl, U: 1–10 µg/l Cr, Cu, Ni, Ti, V, Zn: 10–100 µg/l Al, B, Ba, Fe, Mn, Sr: > 100 µg/l Mo: > 1000 µg/l Ca, K, Mg: 1–100 mg/l Na: > 100 mg/l
Hg in synthetic sample, in ground water, and in wastewater	Synthetic sample (250 ml glass bottle) <i>12,5 ml conc. HCl/250 ml</i>	A1Hg	0.1–1 µg/l
	Ground water (250 ml glass bottle) <i>12,5 ml conc. HCl/250 ml</i>	G2Hg	0.01–1 µg/l
	Industrial wastewater (250 ml glass bottle) <i>12,5 ml conc. HCl/250 ml</i>	T3Hg	0.1–1.5 µg/l

¹⁾ Please check the sample volume and, in case needed, order additional samples.

Sample codes (first letter showing sample matrix):

A = Synthetic sample

G = Ground water

T = Industrial wastewater