

To: Laboratories participating in ProfTest Syke proficiency tests

Proficiency test WW 04/2023 – Wastewater analyses I

ProfTest Syke will organize a proficiency test for the analysis of BOD₇, COD_{Cr}, COD_{Mn}, Ca, K, Mg, Na, suspended solids (SS), and TOC in waste waters. Additionally, for BOD₇ and COD_{Mn} analysis also a natural water sample is available.

The purpose of this proficiency test is to ensure the comparability and accuracy of the results of the participants. About 55 laboratories are expected to participate in this proficiency test. The organizing of this proficiency test is included in the accreditation scope (www.finas.fi/sites/en).

Sample matrices

Synthetic sample, pulp and paper industrial wastewater, municipal wastewater as well as natural water (river water, only for BOD₇ and COD_{Mn} measurements).

Timetable

Registration	1 February – 1 March 2023		
Sample dispatch date (national participants)	28 March 2023 (see Chapter 4 <i>Sample delivery</i>)		
Analysis of the samples	BOD ₇ , COD _{Mn} , suspended solids	30 March 2023	
	COD _{Cr}	at the latest on 31 March 2023	
	Ca, K, Mg, Na, TOC	at the latest on 17 April 2023	
Reporting of the results	29 March – 17 April 2023		

Participation fee

The participation fee is **860 €** (+ VAT) including all measurements and samples.
See detailed information in Chapter 9 *Participation fee*.



Päivi Grönroos,
Coordinator



Mirja Leivuori,
Group manager

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



Organizing the proficiency test

1 Organizer

Proftest Syke, Finnish Environment Institute (Syke)
Address: Mustialankatu 3, FI-00790 Helsinki, Finland
Email: proftest@syke.fi

Contact

Coordinator: Päivi Grönroos, tel. +358 295 252 174
Substitute for coordinator: Riitta Koivikko, tel. +358 295 251 750
Email: firstname.lastname@syke.fi

Analytical experts

BOD₇, COD_{Mn}, COD_{Cr}, SS, TOC: Teemu Näykki (Syke), tel. +358 295 251 471
Ca, K, Mg, Na: Timo Sara-Aho, tel. +358 295 251 618
Email: firstname.lastname@syke.fi

Expert laboratory Syke, Oulu and Helsinki (T003, www.finas.fi/sites/en)

Subcontracting BOD₇, COD_{Cr} and COD_{Mn} measurements: KVVY Tutkimus Oy (T064, www.finas.fi/sites/en).

2 Samples and measurands

The sample matrices in this proficiency test are: synthetic sample, pulp and paper industrial wastewater, municipal wastewater as well as natural water (river water - only for BOD₇ and COD_{Mn} measurements)
Samples, measurands, concentration ranges and sample preservations are presented in Appendix 1.

Note! The TOC samples can be ordered as preserved in hydrochloric acid or phosphoric acid. Please choose the right type of preservation when placing your order.

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

3 Registration

The registration for this proficiency test is open until 1 March 2023.

Registration is done via the electronic client interface, ProftestWEB: <https://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 28 March 2023. To ensure timely arrival, the samples are dispatched earlier for participants abroad.

If the sample package does not arrive **at the latest on 29 March 2023**, 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.

For the COD_{Cr} measurements, the analyses are performed as duplicate determinations and two results are reported. For the other samples and measurements, no 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 **17 April 2023**.

ProfTest Syke delivers the preliminary result report to the participants at the latest in the week 17 (24 – 28 April 2023). The final report will be published at the latest in June 2023 and it is then available via ProfTestWEB and via ProfTest Syke website (www.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 preliminary standard deviation for proficiency assessment will be given in the cover letter of the samples. The evaluation of the results will be based on z scores. 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 **860 €** (+ VAT) including all measurements and samples. The basic fee is **450 €** (+ VAT) and the fees for each sample and measurand are as follows:

BOD ₇	25 €/sample	(4 samples)
COD _{Cr} , COD _{Mn}	22 €/sample	(5 samples)
Ca, K, Mg, Na	12 €/sample	(3 samples)
Suspended solids	15 €/sample	(3 samples)
TOC	20 €/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 is the samples.

10 Appendices

Appendix 1 Samples, measurands, concentration ranges and preservations

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Measurands	Sample matrix	Sample code	Sample volume ¹⁾ and container	Concentration range and preservation
BOD₇	Synthetic sample	A1B	appr. 200 ml, glass	A1B: > 50mg/l N2B: 5-10 mg/l P3B: > 5mg/l V4B: > 5mg/l <i>Synthetic sample A1B is autoclaved. Samples N2B, P3B and V4B should be prepared by the participant according to the guidelines given in the sample letter.</i>
	Natural water	N2B	1000 ml, plastic	
	Pulp and paper industrial wastewater	P3B		
	Municipal wastewater	V4B		
COD_{Cr}	Synthetic sample	A1CR	250 ml, plastic	A1CR: > 30 mg/l P3C: > 30 mg/l V4C: > 30 mg/l <i>Samples are preserved: 2.5 ml 4 mol/l H₂SO₄/250 ml</i>
	Pulp and paper industrial wastewater	P3C		
	Municipal wastewater	V4C		
COD_{Mn}	Synthetic sample	A1CM	250 ml, plastic	A1CM: > 2 mg/l N2C: > 2 mg/l V4C: > 2 mg/l <i>Samples are preserved: 2.5 ml 4 mol/l H₂SO₄/250 ml</i>
	Natural water	N2C		
	Municipal wastewater	V4C		
Ca, K, Mg, Na	Synthetic sample	A1N	500 ml, plastic	A1N: > 10 mg/l P3N: > 10 mg/l V4N: > 10 mg/l
	Pulp and paper industrial wastewater	P3N		
	Municipal wastewater	V4N		
Suspended solids	Synthetic sample	A1K	500 ml, plastic	A1K: > 3 mg/l P3K: > 3 mg/l V4K: > 3 mg/l
	Pulp and paper industrial wastewater	P3K	1000 ml, plastic	
	Municipal wastewater	V4K		
TOC	Synthetic sample	A1T	100 ml, plastic	A1T: > 5 mg/l P3T: > 5 mg/l V4T: > 5 mg/l <i>Samples are preserved: 1 ml 2 mol/l HCl/100 ml or 1 ml 2 mo/l H₃PO₄/100 ml ²⁾</i>
	Pulp and paper industrial wastewater	P3T		
	Municipal wastewater	V4T		

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

²⁾ Please choose the preservation acid when ordering samples.

Sample codes (first letter showing sample matrix):

A = Synthetic sample

N = Natural water (river water)

P = Pulp and paper industrial wastewater

V= Municipal wastewater