

To: Laboratories participating in ProfTest Syke proficiency tests

## Proficiency test WW 03/2025 – Wastewater analyses I

ProfTest Syke will organize a proficiency test (PT) for the analysis of BOD<sub>7</sub>, COD<sub>Cr</sub>, COD<sub>Mn</sub>, Ca, K, Mg, Na, suspended solids, and TOC in wastewaters. In this PT it is also possible to determine BOD<sub>7</sub> and COD<sub>Mn</sub> in natural water sample.

The purpose of this proficiency test is to ensure the comparability and accuracy of the results of the participants. About 50 laboratories are expected to participate in this proficiency test. The measurands and samples of this proficiency test are included in the Water chemistry scheme of the ProfTest Syke accreditation scope ([finas.fi/sites/en](https://finas.fi/sites/en)).

### Sample matrices


Synthetic sample, pulp and paper industrial wastewater, municipal wastewater as well as natural water (river water, only for BOD<sub>7</sub> and COD<sub>Mn</sub> measurements).

### Timetable


Registration	<b>20 January – 17 February 2025</b>	
Sample dispatch date (national participants)	18 March 2025 (see Chapter 4 <i>Sample delivery</i> )	
Analysis of the samples	BOD <sub>7</sub> , COD <sub>Mn</sub> and suspended solids	20 March 2025
	COD <sub>Cr</sub>	at the latest on 21 March 2025
	Ca, K, Mg, Na, TOC	at the latest on 7 April 2025
Reporting of the results	<b>19 March – 9 April 2025</b>	

### Participation fee

The participation fee is **904 €** (+ 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, [finas.fi/sites/en](https://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](mailto:proftest@syke.fi)

#### Contact

Coordinator: Päivi Grönroos, tel. +358 295 252 174  
 Substitute for coordinator: Riitta Koivikko, tel. +358 295 251 750  
 Coordinator trainee: Mervi Pajula, tel. +358 295 252 320  
 Email: [firstname.lastname@syke.fi](mailto:firstname.lastname@syke.fi)  
 Technical assistance: [proftest@syke.fi](mailto:proftest@syke.fi)

#### Cooperation partner

KVVY Tutkimus Oy (T064, [finas.fi/sites/en](https://finas.fi/sites/en))

#### Analytical experts

BOD<sub>7</sub>, COD<sub>Mn</sub>, COD<sub>Cr</sub>, suspended solids, TOC      Mika Sarkkinen (Syke), tel. +358 295 251 620  
 Ca, K, Mg, Na      Timo Sara-Aho (Syke), tel. +358 295 251 618  
 Email: [firstname.lastname@syke.fi](mailto:firstname.lastname@syke.fi)

**Expert laboratory**      Finnish Environment Institute, Oulu and Helsinki (T003, [finas.fi/sites/en](https://finas.fi/sites/en))

#### Subcontracting

KVVY Tutkimus Oy: BOD<sub>7</sub>, COD<sub>Cr</sub>, and COD<sub>Mn</sub> measurements (T064, [finas.fi/sites/en](https://finas.fi/sites/en)).

## 2 Sample 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 BOD<sub>7</sub> and COD<sub>Mn</sub> measurements). Samples, measurands, concentration ranges and sample preservations are presented in Appendix 1.

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

**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.

## 3 Registration

The registration for this proficiency test is open until **17 February 2025**.

Registration is done via the electronic client interface, ProftestWEB: [wwwp5.ymparisto.fi/Labtest/en](https://wwwp5.ymparisto.fi/Labtest/en). If there are problems when using ProftestWEB or you need username and password, please contact [proftest@syke.fi](mailto:proftest@syke.fi).

## 4 Sample delivery

The sample dispatch day for national participants is **18 March 2025**. To ensure timely arrival, the samples are dispatched earlier for participants abroad.

If the sample package does not arrive **at the latest on 19 March 2025**, or there are missing and/or broken sample containers, please contact the provider immediately ([proftest@syke.fi](mailto:proftest@syke.fi)). More contact details in Chapter 1 *Organizer*.

## 5 Sample storage and analysis

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

For the COD<sub>Cr</sub> 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 **9 April 2025**.

ProfTest Syke delivers the preliminary results report to the participants latest in the week 17 (21 – 25 April 2025). The final report will be published at the latest in June 2025 and it is then available on ProfTestWEB and on ProfTest Syke website ([syke.fi/proftest/en](http://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<sub>n</sub> 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 **904 €** (+ VAT) including all measurements and samples. The basic fee is **455 €** (+ VAT) and the fees for each sample and measurand are as follows:

BOD <sub>7</sub>	30 €/sample	(4 samples)
COD <sub>Cr</sub> and COD <sub>Mn</sub>	25 €/sample	(5 samples)
Suspended solid	20 €/sample	(3 samples)
Ca, K, Mg, Na	25 €/ sample	(3 samples)
TOC	23 €/ 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 25,5 %. 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 matrix	Sample code	Sample volume <sup>1)</sup> and container	Concentration range and preservation
<b>BOD<sub>7</sub></b>	Synthetic sample	<b>A1B</b>	appr. 200 ml, glass	A1B: > 50 mg/l N2B: 5-10 mg/l P3B: > 5 mg/l V4B: > 5 mg/l <i>Synthetic sample A1B is autoclaved. Samples N2B, P3B and V4B should be prepared by the participant according to the guidelines given in sample letter</i>
	Natural water	<b>N2B</b>	1000 ml, plastic	
	Pulp and paper industrial wastewater	<b>P3B</b>		
	Municipal wastewater	<b>V4B</b>		
<b>COD<sub>Cr</sub></b>	Synthetic sample	<b>A1CR</b>	250 ml, plastic	A1CR: > 30 mg/l P3C: > 30 mg/l V4C: > 30 mg/l <i>Samples are preserved: with 2.5 ml 4 mol/l H<sub>2</sub>SO<sub>4</sub>/250 ml</i>
	Pulp and paper industrial wastewater	<b>P3C</b>		
	Municipal wastewater	<b>V4C</b>		
<b>COD<sub>Mn</sub></b>	Synthetic sample	<b>A1CM</b>	250 ml, plastic	A1CM: > 2 mg/l N2C: > 2 mg/l V4C: > 2 mg/l <i>Samples are preserved: with 2.5 ml 4 mol/l H<sub>2</sub>SO<sub>4</sub>/250 ml</i>
	Natural water	<b>N2C</b>		
	Municipal wastewater	<b>V4C</b>		
<b>Ca, K, Mg, Na</b>	Synthetic sample	<b>A1N</b>	500 ml, plastic	A1N: Ca, K, Mg, Na > 10 mg/l P3N: Na > 10 mg/l Ca, K, Mg > 2 mg/l V4N: Ca, K, Na > 10 mg/l Mg > 2 mg/l
	Pulp and paper industrial wastewater	<b>P3N</b>		
	Municipal wastewater	<b>V4N</b>		
<b>Suspended solids</b>	Synthetic sample	<b>A1K</b>	500 ml, plastic	A1K: > 3 mg/l P3K: > 3 mg/l V4K: > 3 mg/l
	Pulp and paper industrial wastewater	<b>P3K</b>	1000 ml, plastic	
	Municipal wastewater	<b>V4K</b>		
<b>TOC</b>	Synthetic sample	<b>A1T</b>	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 mol/l H<sub>3</sub>PO<sub>4</sub>/100 ml <sup>2)</sup></i>
	Pulp and paper industrial wastewater	<b>P3T</b>		
	Municipal wastewater	<b>V4T</b>		

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

<sup>2)</sup> 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