University of Stuttgart
Germany

Institute for Sanitary Engineering, Water Quality and Solid Waste Management

AQS Baden-Württemberg

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To the participants of AQS Baden-Württemberg

2016-06-06

Proficiency test 5/16
TW S2 – Pharmaceuticals in drinking water

Dear Madam or Sir,

in October 2016 the execution of the above mentioned proficiency test (PT) round „Pharmaceuticals in drinking water" is planned.

The PT is carried out under the umbrella of the NORMAN Network of Reference Laboratories for Monitoring of Emerging Environmental Pollutants (http://www.norman-network.net) in cooperation with IWW Water Centre.

Details about the PT round are enclosed. Please read them with care.

If you are interested in participation, please register online via our website http://www.aqsbw.de/rv/anm_rv.en.php?id=139.

You will receive a confirmation of receipt by e-mail. With a second e-mail we will bindingly confirm your application to the PT. You are not registered if you do not receive any e-mail.

Application deadline: 01 July 2016

Please consider our general terms and conditions of business for the execution of the PT, which can be downloaded from http://www.aqsbw.de/pdf/agb_en.pdf.

If we receive your application after the deadline we cannot guarantee that participation will be possible.

The production of PT samples in this dimension is accompanied with high effort. Early registration is highly appreciated.

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In cooperation with

If you have any questions, please do not hesitate to contact us:

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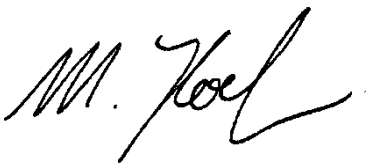
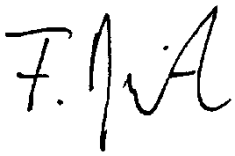
Best regards





Dr.-Ing. Michael Koch

Scientific director AQS

Dr.-Ing. Frank Baumeister

PT coordinator

Annex:

Details of the proficiency test exercise

In cooperation with

Details of the proficiency test round RV 5/16
TW S2 – Pharmaceuticals in drinking water – June 2016

Parameters

- sulfadiazine
- sulfadimidine
- sulfamethoxazole
- sulfaethoxypyridazine
- sulfamerazine
- sulfathiazole
- sulfadoxine
- sulfamethoxypyridazine
- sulfachloropyridazine
- sulfadimethoxine
- trimethoprime

Matrix
Drinking water

Dates and deadlines

- Registration deadline: 01 July 2016

Please register for this PT preferably via our website (http://www.aqsbw.de/rv/anm_rv.en.php?id=139).
You will receive a confirmation of receipt by e-mail. With a second e-mail we will bindingly confirm your application to the PT. You are not registered if you do not receive any e-mail.

- Dispatch of the samples: 11 October 2016
- The sample preparation and dispatch will be organised by IWW
- **Deadline for submission of results: Via our website only. Data input will be possible only until 07 November 2016, 24:00h**

Sample dispatch
Samples will be sent by courier service.

Sample details

- 3 samples for the determination of above mentioned parameters in 1000-ml-ground bottles. Preservation by adding 40 mg/l sodium azide. The samples also contain acetonitrile as solubility promoter.

Permitted analytical methods
Participants are free to choose a suitable method.

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Limit of quantification

The analytical methods must be suitable to achieve the following limits of quantification:

Parameter	limit of quantification
• sulfadiazine	50 ng/L
• sulfadimidine	50 ng/L
• sulfamethoxazole	50 ng/L
• sulfaethoxypyridazine	50 ng/L
• sulfamerazine	50 ng/L
• sulfathiazole	50 ng/L
• sulfadoxine	50 ng/L
• sulfamethoxypyridazine	50 ng/L
• sulfachloropyridazine	50 ng/L
• sulfadimethoxine	50 ng/L
• trimethoprime	50 ng/L

Execution of the analysis

The samples must be analysed in the own laboratory with own personnel and own equipment. Subcontracting of the analysis is not allowed.

Evaluation and assessment of the single values

The statistical evaluation will be executed according to DIN 38402 – A45 or ISO/TS 20612 "Interlaboratory comparison for proficiency testing of analytical chemistry laboratories" with the combined estimator Hampel/Q-method, a method of robust statistics. The assigned value x_{pt}, derived from the weighings of the spiked samples and the matrix content[1,2] will be used for the assessment of the single values preferably. Only if this is not possible, the Hampel estimator as robust mean value of the participants' data will be used.
If possible, the standard deviation for proficiency assessment σ_{pt} will be taken from a variance function. Otherwise, the standard deviation calculated with the Q method will be used for the calculation of z_U-scores according to DIN 38402 - A45 (chapter 10.4) or ISO/TS 20612 respectively. σ_{pt} will be limited for all parameters as follows:

lower limit: 5%
upper limit: 25%

[1] Rienitz, O., Schiel, D., Güttler, B., Koch, M., Borchers, U.: A convenient and economic approach to achieve SI-traceable reference values to be used in drinking-water interlaboratory comparisons. Accred Qual Assur (2007) 12: 615-622.

[2] Koch, M., Baumeister, F.: Traceable reference values for routine drinking water proficiency testing: first experiences. Accred Qual Assur (2008) 13: 77-82.

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A z-score for a result x is calculated for each measurement result derived from the assigned value x_{pt} and the standard deviation for proficiency assessment σ_{pt}:

$$z = \frac{x - x_{pt}}{\sigma_{pt}}$$

The z-score will be modified to a z_U-score with a correction factor for proficiency assessment (as described in the above mentioned standards).
The tolerance limits are defined as $|z_U|=2$.

The single results will be assessed as follows:

$\|z_u\| \leq 2$	satisfacory
$2 < \|z_u\| < 3$	questionable
$\|z_u\| \geq 3$	unsatisfactory

Overall assessment

There is no overall assessment of the proficiency test round, but the single parameters are assessed.
A parameter is assessed as successful, if more than half of the values are assessed as "satisfactory".

In addition those values are assessed as "unsatisfactory":

1) that are not determined (if the other samples of this parameters are analysed),
2) that are indicated with "lower than limit of quantification",
3) that have been subcontracted,
4) that have been submitted after the deadline of submission of results.

Participation fee

The participation fee will be 500 € plus transport costs.

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