Universität Stuttgart

**Institute for Sanitary Engineering,
Water Quality and Solid Waste Management**

Universität Stuttgart
ISWA • AQS BW • Bandtäle 2 • 70569 Stuttgart, Germany

To the attention of
interested water laboratories
in Europe

AQS Baden-Württemberg
Telephone
+49 711/685-65446
Telefax
+49 711/685-63769
E-Mail
info@aqsbw.de
Internet
www.aqsbw.de

Date
Stuttgart, 7th July 2015

Proficiency test 6/15
TW S6 – X-ray- and MRI-contrast media in drinking water –

Dear Madams and Sirs,

in October 2015 the execution of the above mentioned proficiency test (PT) round „X-ray- and MRI-contrast-media 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 complete, sign and return the enclosed application form.

Application deadline: 31th August 2015

You may also register for this PT round online via our website http://www.aqsbw.de.

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 can not guarantee that participation will be possible.

The production of PT samples in this dimension is accompanied with high effort. You support us if you register early.

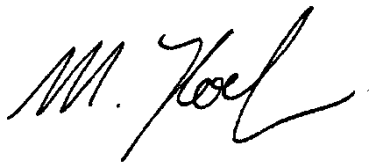
In cooperation with

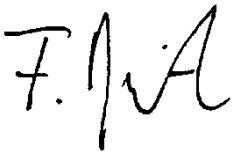
For formal reasons we confirm your application by sending a registration confirmation by fax.
If you do not receive this registration confirmation, you are not registered.

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

AQS Baden-Württemberg, Bandtäle 2, 70569 Stuttgart, Germany
Phone: +49 711 685 65446
Telefax: +49 711 685 63769
E-Mail: info@aqsbw.de
Contact: Heidi Sanwald, Dr. Frank Baumeister, Dr. Michael Koch

Best regards





Dr.-Ing. Michael Koch
Scientific director AQS

Dr.-Ing. Frank Baumeister
PT manager

Annex:
Details of the proficiency test exercise
Application form

Institute for Sanitary Engineering,
Water Quality and Solid Waste Management
Bandtäle 2 • 70569 Stuttgart, Germany
www.aqsbw.de

Details of the proficiency test round 6/15
TW S6 – X-ray- and MRI-contrast-media in drinking water – (July 2015)

Parameters

- **amidotrizoic acid**
- **iodipamide**
- **iohexol**
- **iomeprol**
- **iopamidol**
- **iopromide**
- **iothalamic acid**
- **ioxaglic acid**
- **ioxitalamic acid**
- **gadolinium**
- **gadolinium anomaly[1] (evaluation for information only)**

Matrix
Drinking water

Dates and deadlines

- Registration deadline: 31st August 2015
  Please register for this PT preferably via our website (http://www.aqsbw.de) or with the enclosed registration form.

- Dispatch of the samples: 13th October 2015
  The sample preparation and dispatch will be organised by IWW.

- **Deadline for submission of results: 02nd November 2015, 24:00h**
  in written form to the provider. Results submitted after the deadline will not be accepted.

Sample dispatch
Samples will be sent by courier service.

Sample details

- 3 x 1 sample for the determination of amidotrizoic acid, iodipamide, iohexol, iomeprol, iopamidol, iopromide, iothalamic acid, ioxaglic acid and ioxitalamic acid in 1000-ml-ground bottles with ground-in stopper.
- 3 x 1 sample for the determination of gadolinium and gadolinium anomaly in 50-ml-plastic tubes. Preservation with nitric acid.

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

[1] For the determination of the gadolinium anomaly the quotient of the measured and „expected“ Gd is calculated. The procedure is described in the following publication:
Lewandowski J, Putschew A, Schwesig D, Neumann C, Radke M (2011): Fate of organic micropollutants in the hyporheic zone of a eutrophic lowland stream: Results of a preliminary field study. Science of the Total Environment, 409, 1824-1835

Limit of quantification
The analytical methods must be able to achieve following limits of quantification:

parameter	limit of quantification [µg/l]	maximum to be expected upper limit [µg/l]
amidotrizoic acid	0,05	1 µg/l
iodipamide	0,05	1 µg/l
iohexol	0,05	1 µg/l
iomeprol	0,05	1 µg/l
iopamidol	0,05	1 µg/l
Iopromide	0,05	1 µg/l
iothalamic acid	0,05	1 µg/l
ioxaglic acid	0,05	1 µg/l
ioxitalamic acid	0,05	1 µg/l
gadolinium	0,005	0,1 µg/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[2,3] will be preferably used for the assessment of the single values. 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 the variance function for the calculation of the z_U-scores according to DIN 38402 - A45 (chapter 10.4) or ISO/TS 20612 respectively. σ_{pt} will be limited for both parameters as follows:

- lower limit: 5 %
- upper limit: 25 %

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

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

The z-score will be modified to a z_U-score with a correction factor for proficiency assessment (as described in DIN 38402-A45 and ISO/TS 20612).
The tolerance limit is defined as $|z_U| = 2$.

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

The single results will be assessed as follows:

$\lvert z_u \rvert \leq 2$	successful
$2 < \lvert z_u \rvert < 3$	questionable
$\lvert z_u \rvert \geq 3$	not successful

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 correctly determined (2 out of 3 values are within the tolerance limits).

Not successful are:

1) Values, which are not determined (if the other samples of this parameters are analysed),
2) Values, which are indicated with “lower than limit of quantification”,
3) Values, which are subcontracted,
4) Values, which are submitted after the deadline of submission of results.

Participation fee

The participation fee will be 500 € plus transport costs.

For remarks of the organizer

Registration for the
proficiency test round 6/15 - TW S6
“X-ray- and MRI-contrast media in drinking water”

Our laboratory will take part in the proficiency test TW S6 – “X-ray- and MRI-contrast media in drinking water” – provided by AQS Baden-Württemberg. The participation fee of € 500,- plus transportation costs will be paid after receipt of the invoice. I took note of the terms and conditions under http://www.aqsbw.de/pdf/agb_en.pdf.

For remarks of the organizer

Obligation

Our laboratory will perform the analyses in our own laboratory, with own personnel and own equipment.

Details of our laboratory:

	Type or print legibly
Name of the laboratory	
Street	
Postal code, City	
Delivery address (if different from the above address)	
Billing address (if different from the above address)	
Country	
Phone / FAX	
E-Mail	
VAT-ID (for participants outside Germany absolutely necessary)	
Contact Person	

date:_____ signature (legally binding):_____

AQS Baden-Württemberg
at Institute for Sanitary Engineering
Bandtäle 2
70569 Stuttgart
Germany