



International Atomic Reference Material Agency

Instructions for IARMA EGROSS-PT-2024

IARMA Environmental Proficiency Test on the Determination of Gross Alpha and Gross Beta in Water

1. Package Receipt

Please check the content of the package and compare it with the items listed in the attached packing list. Sign and date the packing list and send it back to IARMA using your Portal page or email at: office@iarma.co.uk.

2. Choice of Method/Procedure.

Participants may use any routine and validated method of their choice (i.e. you should not use these samples to test a new procedure). The within bottle homogeneity is assured at 5 g test portion for water samples.

3. Description of the water samples:

a. Matrix origin:

Drinking water from controlled tap water system Radmirje was used to prepare the test items IARMA-187, IARMA-188, IARMA-189 and IARMA-190. The water was acidified by nitric acid before its usage.

Adriatic Sea water was used to prepare the test items: IARMA-191 and IARMA-192. The water was filtered and acidified by nitric acid before its usage.

b. Sample preparation:

The water was gravimetrically spiked with known amounts of standard solution containing a mixture of certified Am-241 and Sr-90. After bottling, a homogeneity and stability tests showed acceptable results.

4. Sample Handling:

- Weigh the bottles and record the measured gross mass (as received with screw-cap and labels) on the Packing list sent to you with the samples.

- Filter the water test items using a Whatman paper filter to remove any suspended particles.
- Thoroughly mix the sample before transferring the contents to your standard sample counting container for α -counting or β -spectrometry measurements.
- Kindly filter the sample before analysis.

5. Reporting Requirements:

Results should be reported using the IARMA Portal page. Username and password were sent to each participant.

The value of the measurement result of gross α and/or gross β and its combined standard uncertainty must be expressed in [Bq/kg] for the water samples.

Please report only two digits after the decimal point.

For results reporting you may use “NR” for unreported results and “NA” for not applicable.

All results should be decay corrected to the reference date **15 September 2024**.

Uncertainty should be expressed in [Bq/kg] as the combined standard uncertainty (1 sigma level) where all individual sources of uncertainty have been identified and taken into account.

Undetectable/unquantifiable activities shall be reported as “< the value of the method detection limit in Bq/kg” such as <0.1 Bq/kg.

The target date for result reporting is **15 November 2024**.

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