



The International Atomic Reference Material Agency

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**Certificate of Analysis**  
**CERTIFIED REFERENCE MATERIAL**  
**IARMA-005**

**TRITIUM in DEAD WATER**  
**Certified Value: Derived Massic Activity**

| <b>Radionuclide</b> | <b>[TU]</b> |
|---------------------|-------------|
| H-3                 | <0.2        |

<sup>1</sup>The certified value estimation is based on long term analysis and monitoring of water sampled from lower aquifer of Ljubljansko Barje (Ljubljana's marsh), Slovenia.

\*Reference date for decay correction: 15-May-2023

Issue date of Certificate: 30-November-2023

J. P. Doherty  
Chief Executive Officer

A handwritten signature in black ink, appearing to read 'J. P. Doherty', is written over the printed name and title.

### **Origin and preparation of the material**

The IARMA-005 CRM is dead water sourced in one batch from lower aquifer of Ljubljansko Barje (Ljubljana's marsh), Slovenia. The dead water pH is:  $8.2 \pm 0.2$  and the conductivity is:  $292 \pm 12$  [ $\mu\text{S}/\text{cm}$ ].

The source of the dead water was a subject of a study since 2007. Samples were taken monthly, and H-3 was analysed using LSC after enrichment. All the observed measurement results of the studied dead water were below 0.2 TU which is the detection limit of the method.

### **Intended use**

This CRM is suitable for quality assurance and quality control purposes and for method development to monitor the background and/or contamination level in the system and for all aspects of analytical method validation, such as preparation of spike samples, and for training purposes.

### **Handling and storage**

It is recommended that the original unopened bottle be stored securely in a refrigerator at  $5 \pm 2$  °C. It is recommended to avoid direct exposure to sunlight or to a source of heat.

### **Issue and expiry date**

The issue date of this Certificate is 30-November-2023. Based on experience with similar materials and the performed stability study, the certified value for tritium is valid until 30-November-2027, provided the original bottle is handled and stored in accordance with the provided instructions.

### **Legal disclaimer**

IARMA Limited makes no warranties, expressed or implied, with respect to the data contained in this Certificate and shall not be liable for any damage that may result from the use of such data.

### **Compliance with ISO Guide 31:2000**

The content of this Certificate is in compliance with the ISO Guide 31:2000: Reference materials - Content of certificates and labels.

### **Note**

The certified value as stated in this Certificate may be updated if more information becomes available. Users of these CRMs should ensure that the Certificate in their possession is current. The current version can be found on the IARMA Limited website (<http://www.iarma.co.uk>).

For further information regarding this material, please contact [office@iarma.co.uk](mailto:office@iarma.co.uk)