

SCHEDULE 11

Regulation 25(1)(b)

Sampling and analysis for indicative dose in water bottled and labelled
as “spring water” or “dŵr ffynnon” and bottled drinking water

PART 1

General

Analysis of samples

1. The food authority must ensure that each sample is analysed for indicative dose in accordance with ^{F1}... this Part.

Textual Amendments

F1 Words in [Sch. 11 para. 1](#) omitted (31.12.2020) by virtue of [The Food \(Miscellaneous Amendments\) \(Wales\) \(EU Exit\) \(No. 2\) Regulations 2019 \(S.I. 2019/1046\)](#), regs. 1(3), **8(13)**; 2020 c. 1, Sch. 5 para. 1(1)

2. For each parameter and radionuclide specified in the first column of Table 1 in Part 2 of this Schedule, the derived concentration and dose coefficient for calculating the indicative dose is specified in the second column of that table.

3. For each parameter specified in the first column of Table 2 in Part 2 of this Schedule, the method of analysis must be one that is capable of detecting the parameter at the limit of detection specified in the second column of that table.

4. If the following formula is satisfied, the indicative dose is considered to be less than the parametric value of 0.1 mSv and no further investigation is required—

$$\sum_{i=1}^n \frac{C_i(obs)}{C_i(der)} \leq 1$$

where

$C_i(obs)$ = observed concentration radionuclide i

$C_i(der)$ = derived concentration of radionuclide i

n = number of radionuclides detected

PART 2

Methods of analysis and performance characteristics

Table 1

Derived concentrations for radioactivity

<i>Origin</i>	<i>Nuclide</i>	<i>Derived concentration</i>
¹ This table allows only for the radiological properties of uranium, not for its chemical toxicity.		

Status: Point in time view as at 31/12/2020.

Changes to legislation: There are currently no known outstanding effects for the The Natural Mineral Water, Spring Water and Bottled Drinking Water (Wales) Regulations 2015, SCHEDULE 11. (See end of Document for details)

Natural	U-238 ¹	3.0 Bq/l
	U-234 ¹	2.8 Bq/l
	Ra-226	0.5 Bq/l
	Ra-228	0.2 Bq/l
	Pb-210	0.2 Bq/l
	Po-210	0.1 Bq/l
Artificial	C-14	240 Bq/l
	Sr-90	4.9 Bq/l
	Pu-239/Pu-240	0.6 Bq/l
	Am-241	0.7 Bq/l
	Co-60	40 Bq/l
	Cs-134	7.2 Bq/l
	Cs-137	11 Bq/l
	I-131	6.2 Bq/l

¹ This table allows only for the radiological properties of uranium, not for its chemical toxicity.

Table 2

Performance characteristics and methods of analysis

<i>Parameters and radionuclides</i>	<i>Limit of detection</i> ¹²
Tritium	10 Bq/l ³
Radon	10 Bq/l ³
gross alpha activity	0.04 Bq/l ⁴
gross beta activity	0.4 Bq/l ⁴
U-238	0.02 Bq/l
U-234	0.02 Bq/l
Ra-226	0.04 Bq/l
Ra-228	0.02 Bq/l ⁵
Pb-210	0.02 Bq/l
Po-210	0.01 Bq/l
C-14	20 Bq/l
Sr-90	0.4 Bq/l
Pu-239/Pu-240	0.04 Bq/l
Am-241	0.06 Bq/l
Co-60	0.5 Bq/l

Cs-134	0.5 Bq/l
Cs-137	0.5 Bq/l
I-131	0.5 Bq/l

¹ The limit of detection is calculated according to the ISO standard 11929: Determination of the characteristic limits (decision threshold, detection limit and limits of the confidence interval) for measurements of ionising radiation – Fundamentals and application, with probabilities of errors of 1st and 2nd kind of 0.05 each.

² Measurement uncertainties are calculated and reported as complete standard uncertainties, or as expanded standard uncertainties with an expansion factor of 1.96, according to the ISO Guide for the Expression of Uncertainty in Measurement.

³ The limit of detection for tritium and for radon is 10% of its parametric value of 100 Bq/l.

⁴ The limit of detection for gross alpha activity and gross beta activities are 40% of the screening values of 0.1 and 1.0 Bq/l respectively.

⁵ This limit of detection applies only to initial screening for indicative dose for a new water source. If initial checking indicates that it is not plausible that Ra-228 exceeds 20% of the derived concentration, the limit of detection may be increased to 0.08 Bq/l for routine Ra-228 nuclide specific measurements, until a subsequent re-check is required.

Status:

Point in time view as at 31/12/2020.

Changes to legislation:

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