



# Radionuclides Rule: A Quick Reference Guide



Overview of the Rule	
Title	Radionuclides Rule 66 FR 76708 December 7, 2000 Vol. 65, No. 236
Purpose	Reducing the exposure to radionuclides in drinking water will reduce the risk of cancer. This rule will also improve public health protection by reducing exposure to all radionuclides.
General Description	The rule retains the existing MCLs for combined radium-226 and radium-228, gross alpha particle radioactivity, and beta particle and photon activity. The rule regulates uranium for the first time.
Utilities Covered	Community water systems, all size categories.

Public Health Benefits	
Implementation of the Radionuclides Rule will result in . . .	Reduced uranium exposure for 620,000 persons, protection from toxic kidney effects of uranium, and a reduced risk of cancer.
Estimated impacts of the Radionuclides Rule include . . .	Annual compliance costs of \$81 million. Only 795 systems will have to install treatment.

Regulated Contaminants		
Regulated Radionuclide	MCL	MCLG
Beta/photon emitters*	4 mrem/yr	0
Gross alpha particle	15 pCi/L	0
Combined radium-226/228	5 pCi/L	0
Uranium	30 µg/L	0

\*A total of 168 individual beta particle and photon emitters may be used to calculate compliance with the MCL.

Critical Deadlines & Requirements	
For Drinking Water Systems	
June 2000 - December 8, 2003	When allowed by the State, data collected between these dates may be eligible for use as grandfathered data (excluding beta particle and photon emitters).
December 8, 2003	Systems begin initial monitoring under State-specified monitoring plan unless the State permits use of grandfathered data.
December 31, 2007	All systems must complete initial monitoring.
For States	
December 2000 - December 2003	States work with systems to establish monitoring schedules.
December 8, 2000	States should begin to update vulnerability assessments for beta photon and particle emitters and notify systems of monitoring requirements.
Spring 2001	EPA meets and works with States to explain new rules and requirements and to initiate adoption and implementation activities.
December 8, 2002	State submits primacy revision application to EPA. (EPA approves within 90 days.)



# Monitoring Requirements

<b>Gross Alpha, Combined Radium-226/228, and Uranium (1)</b>	<b>Beta Particle and Photon Radioactivity (1)</b>
--	---

## Initial Monitoring

Four consecutive quarters of monitoring.	No monitoring required for most CWSs. Vulnerable CWSs (2) must sample for: <ul style="list-style-type: none"> <li>Gross beta: quarterly samples.</li> <li>Tritium and Strontium-90: annual samples.</li> </ul>
--	--

## Reduced Monitoring

<p>If the average of the initial monitoring results for each contaminant is below the detection limit: One sample every 9 years.</p> <p>If the average of the initial monitoring results for each contaminant is greater than or equal to the detection limit, but less than or equal to one-half the MCL: One sample every 6 years.</p> <p>If the average of the initial monitoring results for each contaminant is greater than one-half the MCL, but less than or equal to the MCL: One sample every 3 years.</p>	<p>If the running annual average of the gross beta particle activity minus the naturally occurring potassium-40 activity is less than or equal to 50 pCi/L: One sample every 3 years.</p>
--	---

## Increased Monitoring

A system with an entry point result above the MCL must return to quarterly sampling until 4 consecutive quarterly samples are below the MCL.	If gross beta particle activity minus the naturally occurring potassium-40 activity exceeds 50 pCi/L, the system must: <ul style="list-style-type: none"> <li>Speciate as required by the State.</li> <li>Sample at the initial monitoring frequency.</li> </ul>
--	--

(1) All samples must be collected at each entry point to the distribution system.  
(2) The rule also contains requirements for CWSs using waters contaminated by effluents from nuclear facilities.

## Grandfathering of Data

When allowed by the State, data collected between June, 2000 and December 8, 2003 may be used to satisfy the initial monitoring requirements if samples have been collected from:

- Each entry point to the distribution system (EPTDS).
- The distribution system, provided the system has a single EPTDS.
- The distribution system, provided the State makes a written justification explaining why the sample is representative of all EPTDS.

**For additional information on the Radionuclides Rule**

Call the Safe Drinking Water Hotline at 1-800-426-4791; visit the EPA Web site at [www.epa.gov/safewater](http://www.epa.gov/safewater); or contact your State drinking water representative. EPA will provide radionuclide training over the next year.

