

RN

Primacy Revision Crosswalk for the Radionuclides Rule for the State of Nevada

FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? EXPLAIN ON SEPARATE SHEET										
SUBPART B - MAXIMUM CONTAMINANT LEVELS													
§141.25 ANALYTICAL METHODS FOR RADIOACTIVITY													
Analysis for the following contaminants shall be conducted to determine compliance with § 141.66 (radioactivity) in accordance with the methods in the following table, or their equivalent determined by EPA in accordance with § 141.27.	§141.25 (a)	Adopted by reference. NAC 445A.4525											
To determine compliance with §141.66(b)(c) and (e) the detection limit shall not exceed the concentrations in Table B.	§141.25 (c)(1)	Adopted by reference. NAC 445A.4525											
Detection Limits for Gross alpha particle activity, Radium 226, Radium 228, and Uranium <table border="0" data-bbox="193 873 978 1036"> <tr> <td><u>Contaminant</u></td> <td><u>Detection Limit</u></td> </tr> <tr> <td>Gross alpha particle activity.....</td> <td>3 pCi/L</td> </tr> <tr> <td>Radium 226</td> <td>1 pCi/L</td> </tr> <tr> <td>Radium 228.....</td> <td>1 pCi/L</td> </tr> <tr> <td>Uranium.....</td> <td>Reserve</td> </tr> </table>	<u>Contaminant</u>	<u>Detection Limit</u>	Gross alpha particle activity.....	3 pCi/L	Radium 226	1 pCi/L	Radium 228.....	1 pCi/L	Uranium.....	Reserve	§141.25 (c)(1) Table B	Adopted by reference. NAC 445A.4525	
<u>Contaminant</u>	<u>Detection Limit</u>												
Gross alpha particle activity.....	3 pCi/L												
Radium 226	1 pCi/L												
Radium 228.....	1 pCi/L												
Uranium.....	Reserve												
To determine compliance with §141.66 (d) the detection limits shall not exceed the concentrations listed in Table C.	§141.25 (c)(2)	Adopted by reference. NAC 445A.4525											
Table C–Detection Limits for Man-Made Beta Particle and Photon Emitters [Note: name revised]	§141.25 (c)(2) Table C	Adopted by reference. NAC 445A.4525											
To judge compliance with the maximum contaminant levels listed in §141.66, averages of data shall be used and shall be rounded to the same number of significant figures as the maximum contaminant level for the substance in question.	§141.25 (d)	Adopted by reference. NAC 445A.4525											

SUBPART C - MONITORING AND ANALYTICAL REQUIREMENTS

§141.26 MONITORING FREQUENCY AND COMPLIANCE REQUIREMENTS FOR RADIONUCLIDES IN COMMUNITY WATER SYSTEMS

Monitoring and compliance requirements for gross alpha particle activity, radium-226, radium-228, and uranium.	§141.26 (a)	Adopted by reference. NAC 445A.4525	
Community water systems (CWSs) must conduct initial monitoring to determine compliance with § 141.66 (b), (c) and (e) by December 31, 2007. For the purposes of monitoring for gross alpha particle activity, radium-226, radium-228, uranium, and beta particle and photon radioactivity in drinking water, "detection limit" is defined as in §141.25(c).	§141.26 (a)(1)	Adopted by reference. NAC 445A.4525	
Applicability and sampling location for existing community water systems or sources. All existing CWSs using ground water, surface water or systems using both ground and surface water ("systems") must sample at every entry point to the distribution system that is representative of all sources being used ("sampling point") under normal operating conditions. The system must take each sample at the same sampling point unless conditions make another sampling point more representative of each source or the State has designated a distribution system location, in accordance with §141.26(a)(2)(ii)(C).	§141.26 (a)(1)(i)	Adopted by reference. NAC 445A.4525	
Applicability and sampling location for new community water systems or sources. All new CWSs or CWSs that use a new source of water must begin to conduct initial monitoring for the new source within the first quarter after initiating use of the source. CWSs must conduct more frequent monitoring when ordered by the State in the event of possible contamination or when changes in the distribution system or treatment processes occur which may increase the concentration of radioactivity in finished water.	§141.26 (a)(1)(ii)	Adopted by reference. NAC 445A.4525	
Initial monitoring: Systems must conduct initial monitoring for gross alpha particle activity, radium-226, radium-228, and uranium as follows:	§141.26 (a)(2)	Adopted by reference. NAC 445A.4525	
Systems without acceptable historical data (defined below) must collect four consecutive quarterly samples at all sampling points before December 31, 2007.	§141.26 (a)(2)(i)	Adopted by reference. NAC 445A.4525	

Grandfathering of data: States may allow historical monitoring data collected at a sampling point to satisfy the initial monitoring requirements, for that sampling point, for the following situations:	§141.26 (a)(2)(ii)	Adopted by reference. NAC 445A.4525	
To satisfy initial monitoring requirements, a community water system having only one entry point to the distribution system may use the monitoring data from the last compliance monitoring period that began between June 2000 and December 8, 2003.	§141.26 (a)(2)(ii)(A)	Adopted by reference. NAC 445A.4525	
To satisfy initial monitoring requirements, a community water system with multiple entry points and having appropriate historical monitoring data for each entry point to the distribution system may use the monitoring data from the last compliance monitoring period that began between June 2000 and December 8, 2003.	§141.26 (a)(2)(ii)(B)	Adopted by reference. NAC 445A.4525	
To satisfy initial monitoring requirements, a community water system with appropriate historical data for a representative point in the distribution system may use the monitoring data from the last compliance monitoring period that began between June 2000 and December 8, 2003, provided that the State finds that the historical data satisfactorily demonstrate that each entry point to the distribution system is expected to be in compliance based upon the historical data and reasonable assumptions about the variability of contaminant levels between entry points. The State must make a written finding indicating how the data conforms to the these requirements.	§141.26 (a)(2)(ii)(C)	Adopted by reference. NAC 445A.4525	
For gross alpha particle activity, uranium, radium-226 and radium-228 monitoring, the State may waive the final two quarters of initial monitoring for a sampling point if the results of the samples from the previous two quarters are below the detection limit.	§141.26 (a)(2)(iii)	Adopted by reference. NAC 445A.4525	
If the average of the initial monitoring results for a sampling point is above the MCL, the system must collect and analyze quarterly samples at that sampling point until the system has results from four consecutive quarters that are at or below the MCL, unless the system enters into another schedule as part of a formal compliance agreement with the State.	§141.26 (a)(2)(iv)	Adopted by reference. NAC 445A.4525	

Reduced monitoring: States may allow community water systems to reduce the future frequency of monitoring from once every three years to once every six or nine years at each sampling point, based on the following criteria:	§141.26 (a)(3)	Adopted by reference. NAC 445A.4525	
If the average of the initial monitoring results for each contaminant is below the detection limit specified in §141.25 (c)(1) (Table B), the system must collect and analyze for that contaminant using at least one sample at that sampling point every nine years.	§141.26 (a)(3)(i)	Adopted by reference. NAC 445A.4525	
For gross alpha particle activity and uranium, if the average of the initial monitoring results for each contaminant is at or above the detection limit but at or below ½ the MCL, the system must collect and analyze for that contaminant using at least one sample at that sampling point every six years. For combined radium-226 and radium-228, the analytical results must be combined. If the average of the combined initial monitoring results for radium-226 and radium-228 is at or above the detection limit but at or below ½ the MCL, the system must collect and analyze for that contaminant using at least one sample at that sampling point every six years.	§141.26(a)(3)(ii)	Adopted by reference. NAC 445A.4525	
For gross alpha particle activity and uranium, if the average of the initial monitoring results for each contaminant is above ½ the MCL but at or below the MCL, the system must collect and analyze at least one sample at that sampling point every three years. For combined radium-226 and radium-228, the analytical results must be combined. If the average of the combined initial monitoring results for radium-226 and radium-228 is above ½ the MCL but at or below the MCL, the system must collect and analyze at least one sample at that sampling point every three years.	§141.26 (a)(3)(iii)	Adopted by reference. NAC 445A.4525	
Systems must use the samples collected during the reduced monitoring period to determine the monitoring frequency for subsequent monitoring periods (e.g., if a system's sampling point is on a nine year monitoring period, and the sample result is above ½ MCL, then the next monitoring period for that sampling point is three years).	§141.26 (a)(3)(iv)	Adopted by reference. NAC 445A.4525	

<p>If a system has a monitoring result that exceeds the MCL while on reduced monitoring, the system must collect and analyze quarterly samples at that sampling point until the system has results from four consecutive quarters that are below the MCL, unless the system enters into another schedule as part of a formal compliance agreement with the State.</p>	<p>§141.26 (a)(3)(v)</p>	<p>Adopted by reference. NAC 445A.4525</p>	
<p>Compositing: To fulfill quarterly monitoring requirements for gross alpha particle activity, radium-226, radium-228, or uranium, a system may composite up to four consecutive quarterly samples from a single entry point if analysis is done within a year of the first sample. States will treat analytical results from the composited as the average analytical result to determine compliance with the MCLs and the future monitoring frequency. If the analytical result from the composited sample is greater than ½ MCL, the State may direct the system to take additional quarterly samples before allowing the system to sample under a reduced monitoring schedule.</p>	<p>§141.26 (a)(4)</p>	<p>Adopted by reference. NAC 445A.4525</p>	
<p>A gross alpha particle activity measurement may be substituted for the required radium-226 measurement provided that the measured gross alpha particle activity does not exceed 5 pCi/l. A gross alpha particle activity measurement may be substituted for the required uranium measurement provided that the measured gross alpha particle activity does not exceed 15 pCi/l. The gross alpha measurement shall have a confidence interval of 95% (1.65σ, where σ is the standard deviation of the net counting rate of the sample) for radium-226 and uranium. When a system uses a gross alpha particle activity measurement in lieu of a radium-226 and/or uranium measurement, the gross alpha particle activity analytical result will be used to determine the future monitoring frequency for radium-226 and/or uranium. If the gross alpha particle activity result is less than detection, ½ the detection limit will be used to determine compliance and the future monitoring frequency.</p>	<p>§141.26 (a)(5)</p>	<p>Adopted by reference. NAC 445A.4525</p>	
<p>Monitoring and compliance requirements for beta particle and photon radioactivity. To determine compliance with the maximum contaminant levels in §141.66(d) for beta particle and photon radioactivity, a system must monitor at a frequency as follows:</p>	<p>§141.26 (b)</p>	<p>Adopted by reference. NAC 445A.4525</p>	

<p>Community water systems (both surface and ground water) designated by the State as vulnerable must sample for beta particle and photon radioactivity. Systems must collect quarterly samples for beta emitters and annual samples for tritium and strontium-90 at each entry point to the distribution system (hereafter called a sampling point), beginning within one quarter after being notified by the State. Systems already designated by the State must continue to sample until the State reviews and either reaffirms or removes the designation.</p>	<p>§141.26 (b)(1)</p>	<p>Adopted by reference. NAC 445A.4525</p>	
<p>If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity at a sampling point has a running annual average (computed quarterly) less than or equal to 50 pCi/L (screening level), the State may reduce the frequency of monitoring at that sampling point to once every 3 years. Systems must collect all samples required in paragraph (b)(1) of this section during the reduced monitoring period.</p>	<p>§141.26 (b)(1)(i)</p>	<p>Adopted by reference. NAC 445A.4525</p>	
<p>For systems in the vicinity of a nuclear facility, the State may allow the CWS to utilize environmental surveillance data collected by the nuclear facility in lieu of monitoring at the system's entry point(s), where the State determines if such data is applicable to a particular water system. In the event that there is a release from a nuclear facility, systems which are using surveillance data must begin monitoring at the community water system's entry point(s) in accordance with paragraph (b)(1).</p>	<p>§141.26 (b)(1)(ii)</p>	<p>Adopted by reference. NAC 445A.4525</p>	
<p>Community water systems (both surface and ground water) designated by the State as utilizing waters contaminated by effluents from nuclear facilities must sample for beta particle and photon radioactivity. Systems must collect quarterly samples for beta emitters and iodine-131 and annual samples for tritium and strontium-90 at each entry point to the distribution system (hereafter called a sampling point), beginning within one quarter after being notified by the State. Systems already designated by the State as systems using waters contaminated by effluents from nuclear facilities must continue to sample until the State reviews and either reaffirms or removes the designation.</p>	<p>§141.26 (b)(2)</p>	<p>Adopted by reference. NAC 445A.4525</p>	
<p>Quarterly monitoring for gross beta particle activity shall be based on the analysis of monthly samples or the analysis of a composite of three monthly samples. The former is recommended.</p>	<p>§141.26 (b)(2)(i)</p>	<p>Adopted by reference. NAC 445A.4525</p>	

For iodine-131, a composite of five consecutive daily samples shall be analyzed once each quarter. As ordered by the State, more frequent monitoring shall be conducted when iodine-131 is identified in the finished water.	§141.26 (b)(2)(ii)	Adopted by reference. NAC 445A.4525	
Annual monitoring for strontium-90 and tritium shall be conducted by means of the analysis of a composite of four consecutive quarterly samples or analysis of four quarterly samples. The latter procedure is recommended.	§141.26 (b)(2)(iii)	Adopted by reference. NAC 445A.4525	
If the gross beta particle activity beta minus the naturally occurring potassium-40 beta particle activity at a sampling point has a running annual average (computed quarterly) less than or equal to 15 pCi/L, the State may reduce the frequency of monitoring at that sampling point to every 3 years. Systems must collect all samples required in paragraph (b)(2) of this section during the reduced monitoring period.	§141.26 (b)(2)(iv)	Adopted by reference. NAC 445A.4525	
For systems in the vicinity of a nuclear facility, the State may allow the CWS to utilize environmental surveillance data collected by the nuclear facility in lieu of monitoring at the system's entry point(s), where the State determines if such data is applicable to a particular water system. In the event that there is a release from a nuclear facility, systems which are using surveillance data must begin monitoring at the community water system's entry point(s) in accordance with paragraph (b)(2).	§141.26 (b)(2)(v)	Adopted by reference. NAC 445A.4525	
Community water systems designated by the State to monitor for beta particle and photon radioactivity can not apply to the State for a waiver from the monitoring frequencies specified in paragraphs (b)(1) or (b)(2) of this section.	§141.26 (b)(3)	Adopted by reference. NAC 445A.4525	
Community water systems may analyze for naturally occurring potassium-40 beta particle activity from the same or equivalent sample used for the gross beta particle activity analysis. Systems are allowed to subtract the potassium-40 beta particle activity value from the total gross beta particle activity value to determine if the screening level is exceeded. The potassium-40 beta particle activity must be calculated by multiplying elemental potassium concentrations (in mg/L) by a factor of 0.82.	§141.26 (b)(4)	Adopted by reference. NAC 445A.4525	

<p>If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity exceeds the screening level, an analysis of the sample must be performed to identify the major radioactive constituents present in the sample and the appropriate doses must be calculated and summed to determine compliance with § 141.66(d)(1), using (d)(2). Doses must also be calculated and combined for measured levels of tritium and strontium to determine compliance.</p>	<p>§141.26 (b)(5)</p>	<p>Adopted by reference. NAC 445A.4525</p>	
<p>Systems must monitor monthly at the sampling point(s) which exceed the maximum contaminant level in § 141.66(d) beginning the month after the exceedance occurs. Systems must continue monthly monitoring until the system has established, by a rolling average of 3 monthly samples, that the MCL is being met. Systems who establish that the MCL is being met must return to quarterly monitoring until they meet the requirements set forth in paragraphs (b)(1)(ii) or (b)(2)(i) of this section.</p>	<p>§141.26 (b)(6)</p>	<p>Adopted by reference. NAC 445A.4525</p>	
<p>General monitoring and compliance requirements for radionuclides.</p>	<p>§141.26 (c)</p>	<p>Adopted by reference. NAC 445A.4525</p>	
<p>The State may require more frequent monitoring than specified in paragraphs (a) and (b) of this section, or may require confirmation samples at its discretion. The results of the initial and confirmation samples will be averaged for use in compliance determinations.</p>	<p>§141.26 (c)(1)</p>	<p>Adopted by reference. NAC 445A.4525</p>	
<p>Each public water system shall monitor at the time designated by the State during each compliance period.</p>	<p>§141.26 (c)(2)</p>	<p>Adopted by reference. NAC 445A.4525</p>	
<p>Compliance: Compliance with 141.66 (b) through (e) will be determined based on the analytical result(s) obtained at each sampling point. If one sampling point is in violation of an MCL, the system is in violation of the MCL.</p>	<p>§141.26 (c)(3)</p>	<p>Adopted by reference. NAC 445A.4525</p>	
<p>For systems monitoring more than once per year, compliance with the MCL is determined by a running annual average at each sampling point. If the average of any sampling point is greater than the MCL, then the system is out of compliance with the MCL.</p>	<p>§141.26 (c)(3)(i)</p>	<p>Adopted by reference. NAC 445A.4525</p>	

For systems monitoring more than once a year, if any sample result will cause the running average to exceed the MCL at any sample point, the system is out of compliance with the MCL immediately.	§141.26 (c)(3)(ii)	Adopted by reference. NAC 445A.4525	
Systems must include all samples taken and analyzed under the provisions of this section in determining compliance, even if that number is greater than the minimum required.	§141.26 (c)(3)(iii)	Adopted by reference. NAC 445A.4525	
If a system does not collect all required samples when compliance is based on a running annual average of quarterly samples, compliance will be based on the running average of the samples collected.	§141.26 (c)(3)(iv)	Adopted by reference. NAC 445A.4525	
If a sample result is less than the detection limit, zero will be used to calculate the annual average, unless a gross alpha particle activity is being used in lieu of radium-226 and/or uranium. If the gross alpha particle activity result is less than detection, ½ the detection limit will be used to calculate the annual average.	§141.26 (c)(3)(v)	Adopted by reference. NAC 445A.4525	
States have the discretion to delete results of obvious sampling or analytic errors.	§141.26 (c)(4)	Adopted by reference. NAC 445A.4525	
If the MCL for radioactivity set forth in § 141.66(b) through (e) is exceeded, the operator of a community water system must give notice to the State pursuant to § 141.31 and to the public as required by subpart Q of this part.	§141.26 (c)(5)	Adopted by reference. NAC 445A.4525	

SUBPART F - MAXIMUM CONTAMINANT LEVEL GOALS AND MAXIMUM RESIDUAL DISINFECTANT LEVEL GOALS

§ 141.55 MAXIMUM CONTAMINANT LEVEL GOALS FOR RADIONUCLIDES

<u>Contaminant</u>	<u>MCLG</u>	<u>§ 141.55</u>		
1. Combined radium-226 and radium -228	Zero		Not adopted.	Adoption of MCLGs at the discretion of the State.
2. Gross alpha particle activity (excluding radon and uranium)	Zero			
3. Beta particle and photon radioactivity	Zero			
4. Uranium	Zero			

SUBPART G - NRPDWR: MAXIMUM CONTAMINANT LEVELS AND MAXIMUM RESIDUAL DISINFECTANT LEVELS

§ 141.66 MAXIMUM CONTAMINANT LEVELS FOR RADIONUCLIDES

[reserved]	§ 141.66 (a)		
MCL for combined radium-226 and 228. The maximum contaminant level for combined radium-226 and radium-228 is 5 pCi/L. The combined radium-226 and radium-228 value is determined by the addition of the results of the analysis for radium-226 and the analysis for radium-228.	§ 141.66 (b)	Adopted by reference. NAC 445A.4525	
MCL for gross alpha particle activity (excluding radon and uranium). The maximum contaminant level for gross alpha particle activity (including radium-226 but excluding radon and uranium) is 15 pCi/L.	§ 141.66 (c)	Adopted by reference. NAC 445A.4525	
MCL for beta particle and photon radioactivity.	§ 141.66 (d)	Adopted by reference. NAC 445A.4525	
The average annual concentration of beta particle and photon radioactivity from man-made radionuclides in drinking water must not produce an annual dose equivalent to the total body or any internal organ greater than 4 millirem/year (mrem/year).	§ 141.66 (d)(1)	Adopted by reference. NAC 445A.4525	

<p>Except for the radionuclides listed in Table A, the concentration of man-made radionuclides causing 4 mrem total body or organ dose equivalents must be calculated on the basis of 2 liter per day drinking water intake using the 168 hour data list in “ <i>Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure,</i>” NBS (National Bureau of Standards) Handbook 69 as amended August 1963, U.S. Department of Commerce. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of this document are available from the National Technical Information Service, NTIS ADA 280 282, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161. The toll-free number is 800-553-6847. Copies may be inspected at EPA's Drinking Water Docket, 401 M Street, SW., Washington, DC 20460; or at the Office of the Federal Register, 800 North Capitol Street, NW., Suite 700, Washington, DC. If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ shall not exceed 4 mrem/year.</p>	<p>§ 141.66 (d)(2)</p>	<p>Adopted by reference. NAC 445A.4525</p>										
<p>Table A - Average Annual Concentrations Assumed to Produce A Total Body or Organ Dose of 4 mrem/yr</p> <table border="1" data-bbox="199 854 978 967"> <thead> <tr> <th>Radionuclide</th> <th>Critical Organ</th> <th>pCi per Liter</th> </tr> </thead> <tbody> <tr> <td>Tritium</td> <td>Total body</td> <td>20,000</td> </tr> <tr> <td>Strontium-90</td> <td>Bone marrow</td> <td>8</td> </tr> </tbody> </table>	Radionuclide	Critical Organ	pCi per Liter	Tritium	Total body	20,000	Strontium-90	Bone marrow	8	<p>§ 141.66 (d)(2) Table A</p>	<p>Adopted by reference. NAC 445A.4525</p>	
Radionuclide	Critical Organ	pCi per Liter										
Tritium	Total body	20,000										
Strontium-90	Bone marrow	8										
<p>MCL for uranium. The maximum contaminant level for uranium is 30 µg/L.</p>	<p>§ 141.66 (e)</p>	<p>Adopted by reference. NAC 445A.4525</p>										
<p>Compliance dates</p>	<p>§ 141.66 (f)</p>	<p>Adopted by reference. NAC 445A.4525</p>										

<p>Compliance dates for combined radium 226 and 228, gross alpha particle activity, gross beta particle and photon radioactivity, and uranium: Community water systems must comply with the MCLs listed in paragraphs (b), (c), (d) and (e) of this section beginning December 8, 2003 and compliance shall be determined in accordance with the requirements of § 141.25 and § 141.26. Compliance with reporting requirements for the radionuclides under Appendix A to Subpart O and Appendix A and B to Subpart Q is required on December 8, 2003.</p>	<p>§ 141.66 (f)(1)</p>	<p>Adopted by reference. NAC 445A.4525</p>	
<p>Best Available Technologies (BATs) for Radionuclides. The Administrator, pursuant to section 1412 of the Act, hereby identifies as indicated in the following table the best technology available for achieving compliance with the maximum contaminant levels for combined radium-226 and radium-228, uranium, gross alpha particle activity, and beta particle and photon radioactivity.</p>	<p>§ 141.66 (g)</p>	<p>Adopted by reference. NAC 445A.4525</p>	

<p>Contaminant</p> <p>1. Combined Radium-226 and Radium-228</p> <p>2. Uranium</p> <p>3. Gross alpha particle activity (Excluding Radon and Uranium)</p> <p>4. Beta Particle and Photon Radioactivity</p>	<p>BAT</p> <p>Ion Exchange, Reverse Osmosis, Lime Softening</p> <p>Ion Exchange, Reverse Osmosis, Lime Softening, Coagulation/Filtration</p> <p>Reverse Osmosis</p> <p>Ion Exchange, Reverse Osmosis</p>	<p>§ 141.66 (g) Table B</p>	<p>Adopted by reference. NAC 445A.4525</p>															
<p>List of Small Systems Compliance Technologies for Radionuclides and Limitations to Use</p> <table border="1"> <thead> <tr> <th data-bbox="199 722 388 787">Limitations (see footnotes)</th> <th data-bbox="388 722 577 787">Operator Skill Level Required</th> <th data-bbox="577 722 982 787">Raw Water Quality Range and Considerations</th> </tr> </thead> <tbody> <tr> <td data-bbox="199 820 388 901">1. Ion Exchange (IE) (a)</td> <td data-bbox="388 820 577 901">Intermediate</td> <td data-bbox="577 820 982 901">All ground waters</td> </tr> <tr> <td data-bbox="199 933 388 1015">2. Point of Use (POU²) IE (b)</td> <td data-bbox="388 933 577 1015">Basic</td> <td data-bbox="577 933 982 1015">All ground waters</td> </tr> <tr> <td data-bbox="199 1047 388 1128">3. Reverse Osmosis (RO) (c)</td> <td data-bbox="388 1047 577 1128">Advanced</td> <td data-bbox="577 1047 982 1128">Surface waters usually require pre-filtration</td> </tr> <tr> <td data-bbox="199 1161 388 1242">4. POU² RO (b)</td> <td data-bbox="388 1161 577 1242">Basic</td> <td data-bbox="577 1161 982 1242">Surface waters usually require pre-filtration</td> </tr> </tbody> </table>		Limitations (see footnotes)	Operator Skill Level Required	Raw Water Quality Range and Considerations	1. Ion Exchange (IE) (a)	Intermediate	All ground waters	2. Point of Use (POU ²) IE (b)	Basic	All ground waters	3. Reverse Osmosis (RO) (c)	Advanced	Surface waters usually require pre-filtration	4. POU ² RO (b)	Basic	Surface waters usually require pre-filtration	<p>§ 141.66 (h) Table C</p>	<p>Adopted by reference. NAC 445A.4525</p>
Limitations (see footnotes)	Operator Skill Level Required	Raw Water Quality Range and Considerations																
1. Ion Exchange (IE) (a)	Intermediate	All ground waters																
2. Point of Use (POU ²) IE (b)	Basic	All ground waters																
3. Reverse Osmosis (RO) (c)	Advanced	Surface waters usually require pre-filtration																
4. POU ² RO (b)	Basic	Surface waters usually require pre-filtration																

Limitations (see footnotes)	Operator Skill Level Required	Raw Water Quality Range and Considerations	§ 141.66 (h) Table C continued	Adopted by reference. NAC 445A.4525
5. Lime Softening (d)	Advanced	All waters		
6. Green Sand Filtration (e)	Basic			
7. Co-precipitation with Barium Sulfate (f)	Intermediate to Advanced	Ground waters with suitable water quality		
8. Electrodialysis/Electrodialysis Reversal	Basic to Intermediate	All ground waters		
9. Pre-formed Hydrous Manganese Oxide Filtration (g)	Intermediate	All ground waters		
10. Activated alumina (a), (h)	Advanced	All ground waters, competing anion concentrations may affect regeneration frequency		
11. Enhanced coagulation/filtration (i)	Advanced	Can treat a wide range of water qualities		
See § 141.66 (h) Table C for footnotes.			§ 141.66 (h) Table C, Footnotes	Adopted by reference. NAC 445A.4525

<p>Compliance Technologies by System Size Category for Radionuclide NPDWRs</p> <p>1. Combined radium-226 and radium-228</p> <table border="0"> <tr> <td>25-500</td> <td>501-3,300</td> <td>3,300-10,000</td> </tr> <tr> <td>1,2,3,4,5,6,7,8,9</td> <td>1,2,3,4,5,6,7,8,9</td> <td>1,2,3,4,5,6,7,8,9</td> </tr> </table> <p>2. Gross alpha particle activity</p> <table border="0"> <tr> <td>25-500</td> <td>501-3,300</td> <td>3,300-10,000</td> </tr> <tr> <td>3,4</td> <td>3,4</td> <td>3,4</td> </tr> </table> <p>3. Beta particle activity and photon activity</p> <table border="0"> <tr> <td>25-500</td> <td>501-3,300</td> <td>3,300-10,000</td> </tr> <tr> <td>1,2,3,4</td> <td>1,2,3,4</td> <td>1,2,3,4</td> </tr> </table> <p>4. Uranium</p> <table border="0"> <tr> <td>25-500</td> <td>501-3,300</td> <td>3,300-10,000</td> </tr> <tr> <td>1,2,4,10,11</td> <td>1,2,3,4,5,10,11</td> <td>1,2,3,4,5,10,11</td> </tr> </table>	25-500	501-3,300	3,300-10,000	1,2,3,4,5,6,7,8,9	1,2,3,4,5,6,7,8,9	1,2,3,4,5,6,7,8,9	25-500	501-3,300	3,300-10,000	3,4	3,4	3,4	25-500	501-3,300	3,300-10,000	1,2,3,4	1,2,3,4	1,2,3,4	25-500	501-3,300	3,300-10,000	1,2,4,10,11	1,2,3,4,5,10,11	1,2,3,4,5,10,11	<p>§ 141.66 (h) Table D</p>	<p>Adopted by reference. NAC 445A.4525</p>	
25-500	501-3,300	3,300-10,000																									
1,2,3,4,5,6,7,8,9	1,2,3,4,5,6,7,8,9	1,2,3,4,5,6,7,8,9																									
25-500	501-3,300	3,300-10,000																									
3,4	3,4	3,4																									
25-500	501-3,300	3,300-10,000																									
1,2,3,4	1,2,3,4	1,2,3,4																									
25-500	501-3,300	3,300-10,000																									
1,2,4,10,11	1,2,3,4,5,10,11	1,2,3,4,5,10,11																									
<p>Note: (1) Numbers correspond to those technologies found listed in the table C of 141.66(h).</p>	<p>§ 141.66 (h) Table D</p>	<p>Adopted by reference. NAC 445A.4525</p>																									

SUBPART O - CONSUMER CONFIDENCE REPORTS

APPENDIX A TO SUBPART O OF PART 141

Regulated Contaminants Table	Appendix A to Subpart O		See Note #1.
<p>Beta/photon emitters (mrem/yr) MCL in mg/L: 4 mrem/yr MCL in CCR units: 4 MCLG: 0 Major sources in drinking water: Decay of natural and man-made deposits Health effects: Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta particle and photon radioactivity in excess of the MCL over many years may have an increased risk of getting cancer.</p>			See Note #1.
<p>Alpha emitters (pCi/L) MCL in mg/L: 15 pCi/L MCL in CCR units: 15 MCLG: 0 Major sources in drinking water: Erosion of natural deposits Health effects: Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.</p>			See Note #1.

<p>Combined radium (pCi/L) MCL in mg/L: 5 pCi/L MCL in CCR units: 5 MCLG: 0 Major sources in drinking water: Erosion of natural deposits Health effects: Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.</p>			See Note #1.
<p>Uranium (pCi/L) MCL in mg/L: 30 μg/L MCL in CCR units: 30 MCLG: 0 Major sources in drinking water: Erosion of natural deposits Health effects: Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.</p>			See Note #1.

SUBPART Q - PUBLIC NOTIFICATION OF DRINKING WATER VIOLATIONS

APPENDIX A TO SUBPART Q OF PART 141 - NPDWR VIOLATIONS AND OTHER SITUATIONS REQUIRING PUBLIC NOTICE¹

<p>I. Violations of National Primary Drinking Water Regulations(NPDWR)³:</p>	<p>I</p>		<p>See Note #1.</p>
<p>1. Beta/photon emitters: MCL/MRDL/TT violations²</p> <p>Tier of Public Notice Required Citation 2 141.66 (d)</p> <p>Monitoring and testing procedure violations</p> <p>Tier of Public Notice Required Citation 3 141.25 (a), 141.26 (b)</p>	<p>I.F.1.</p>		<p>See Note #1.</p>
<p>2. Alpha emitters: MCL/MRDL/TT violations²</p> <p>Tier of Public Notice Required Citation 2 141.66 (c)</p> <p>Monitoring and testing procedure violations</p> <p>Tier of Public Notice Required Citation 3 141.25 (a), 141.26 (a)</p>	<p>I.F.2.</p>		<p>See Note #1.</p>
<p>3. Combined radium (226 & 228): MCL/MRDL/TT violations²</p> <p>Tier of Public Notice Required Citation 2 141.66 (b)</p> <p>Monitoring and testing procedure violations</p> <p>Tier of Public Notice Required Citation 3 141.25 (a), 141.26 (a)</p>	<p>I.F.3.</p>		<p>See Note #1.</p>

<p>4. Uranium: MCL/MRDL/TT violations²</p> <p>Tier of Public Notice Required Citation 2⁹ 141.66 (e)</p> <p>Monitoring and testing procedure violations</p> <p>Tier of Public Notice Required Citation 3¹⁰ 141.25 (a), 141.26 (a)</p>	<p>I.F.4.</p>		<p>See Note #1.</p>
<p>1. Violations and other situations not listed in this table (e.g., reporting violations and failure to prepare Consumer Confidence Reports), do not require notice, unless otherwise determined by the primary agency. Primacy agencies may, at their option, also require a more stringent public notice tier (e.g., Tier 1 instead of Tier 2 or Tier 2 instead of Tier 3) for specific violations and situations listed in this Appendix, as authorized under Sec. 141.202(a) and Sec. 141.203(a).</p> <p>2. MCL--Maximum contaminant level, MRDL--Maximum residual disinfectant level, TT--Treatment technique</p>	<p>Appendix A, Endnotes</p>		<p>See Note #1.</p>
<p>3. The term Violations of National Primary Drinking Water Regulations (NPDWR) is used here to include violations of MCL, MRDL, treatment technique, monitoring, and testing procedure requirements.</p>	<p>Appendix A, Endnotes</p>		<p>See Note #1.</p>
<p>9. The uranium MCL Tier 2 violation citations are effective December 8, 2003 for all community water systems.</p> <p>10. The uranium Tier 3 violation citations are effective December 8, 2003 for all community water systems.</p>	<p>Appendix A, Endnotes</p>		<p>See Note #1.</p>

APPENDIX B TO SUBPART Q OF PART 141 - STANDARD HEALTH EFFECTS LANGUAGE FOR PUBLIC NOTIFICATION

<p>B. Standard Health Effects Language for Surface Water Treatment Rule (SWTR), Interim Enhanced Surface Water Treatment Rule (IESWTR) and Filter Backwash Recycling Rule (FBRR) violations:</p> <p>Contaminant MCLG¹ MCL² Standard Health Effects mg/L mg/L Language for PN</p> <p>79. Uranium¹⁶ Zero 30 µg/L Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.</p>	<p>G.79.</p>		<p>See Note #1.</p>
<p>1. MCLG- Maximum contaminant level goal 2. MCL- Maximum contaminant level 16. The uranium MCL is effective December 8, 2003 for all community water systems.</p>	<p>Appendix B Endnotes</p>		<p>See Note #1.</p>

PART 142-NATIONAL PRIMARY DRINKING WATER REGULATIONS IMPLEMENTATION

SUBPART B - PRIMARY ENFORCEMENT RESPONSIBILITY

<p>§ 142.16 SPECIAL PRIMACY REQUIREMENTS</p>			
<p>[reserved]</p>	<p>§ 142.16 (i)</p>		
<p>[reserved]</p>	<p>§ 142.16 (j)</p>		
<p>[reserved]</p>	<p>§ 142.16 (k)</p>		

An application for approval of a State program revision for Radionuclides which adopts the requirements specified in § 141.26(a)(2)(ii)(C) of this chapter must contain the following (in addition to the general primacy requirements enumerated in this part, including that State regulations be at least as stringent as the Federal requirements):	§ 142.16 (l)		
If a State chooses to use grandfathered data in the manner described in § 141.26(a)(2)(ii)(C) of this chapter, then the <u>State must describe the procedures and criteria which it will use to make these determinations</u> (whether distribution system or entry point sampling points are used).	§ 142.16 (l)(1) ???	Nevada intends to allow systems to grandfather data in accordance with 40 CFR § 141.26(a)(2)(ii)(C) and the attached plan.	
The decision criteria that the State will use to determine that data collected in the distribution system are representative of the drinking water supplied from each entry point to the distribution system. These determinations must consider:	§ 142.16 (l)(1)(i)	When making determinations that data collected in the distribution system are representative of the drinking water supplied from each entry point to the distribution system, Nevada will continue to evaluate:	
All previous monitoring data.	§ 142.16 (l)(1)(i)(A)	All previous monitoring data.	
The variation in reported activity levels.	§ 142.16 (l)(1)(i)(B)	The variation in reported activity levels.	
Other factors affecting the representativeness of the data (e.g. geology)	§ 142.16 (l)(1)(i)(C)	Other factors (e.g., geology).	
A monitoring plan by which the State will assure all systems complete the required monitoring within the regulatory deadlines. States may update their existing monitoring plan or use the same monitoring plan submitted for the requirements in § 142.16(e)(5) under the National Primary Drinking Water Regulations for the inorganic and organic contaminants (i.e. the Phase II/V Rules). States may note in their application any revision to an existing monitoring plan or note that the same monitoring plan will be used. The State must demonstrate that the monitoring plan is enforceable under State law.	§ 142.16 (l)(2) did this before presumably?	Nevada will continue to ensure that all systems complete the required monitoring within regulatory deadlines according to the previously approved monitoring plan for the inorganic and organic contaminants. Nevada will incorporate the monitoring requirements for uranium into this plan.	

§ 142.65 VARIANCES AND EXEMPTIONS FROM THE MAXIMUM CONTAMINANT LEVELS FOR RADIONUCLIDES
(OPTIONAL - STATES THAT PLAN TO ALLOW VARIANCES AND EXEMPTIONS MUST COMPLETE THIS SECTION)

Variations and exemptions from the maximum contaminant levels for Combined Radium-226 and Radium-228, Uranium, Gross alpha particle activity (Excluding Radon and Uranium), and Beta Particle and Photon Radioactivity.

The Administrator, pursuant to section 1415(a)(1)(A) of the Act, hereby identifies the following as the best available technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for the radionuclides listed in §141.66 (b), (c), (d), and (e) of this chapter, for the purposes of issuing variances and exemptions, as shown in § 141.66 (g) Table B.

In addition, the Administrator hereby identifies the following as the best available technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for the radionuclides listed in § 141.66 (b), (c), (d), and (e) of this chapter, for the purposes of issuing variances and exemptions to small drinking water systems, defined here as those serving 10,000 persons or fewer, as shown in § 141.66 (h) Table D.

§ 142.65(a)(1)

① seems problematical, (A) NU. Inc. by REP. Table A not clear authority to define other means haven't yet received yet 457(h) per se

A State shall require community water systems to install and/or use any treatment technology identified in Table A of this section, paragraph (1), or in the case of small water systems (those serving 10,000 persons or fewer), § 141.66 (h) Tables C and D, as a condition for granting a variance except as provided in paragraph (a)(3) of this section. If, after the system's installation of the treatment technology, the system cannot meet the MCL, that system shall be eligible for a variance under the provisions of section 1415(a)(1)(A) of the Act.

§ 142.65(a)(2)

445A.487(1) requires public water systems to install the best available technology, treatment techniques or other means acceptable to the Board, as a condition of securing a variance. The BATs for radionuclides listed in 40 CFR 141.66(h) and the SSCTs listed in Table A of 40 CFR 142.65(a)(2), paragraph (1), are incorporated by reference in NAC 445A.4525.

<p>If a community water system can demonstrate through comprehensive engineering assessments, which may include pilot plant studies, that the treatment technologies identified in this section would only achieve a <i>de minimus</i> reduction in the contaminant level, the State may issue a schedule of compliance that requires the system being granted the variance to examine other treatment technologies as a condition of obtaining the variance.</p>	<p>§ 142.65(a)(3)</p>	<p>Under NAC 445A.488, the Board will prescribe a schedule for compliance and additional control measures when it grants a variance. If a community water system demonstrates through comprehensive engineering assessments and/or pilot studies that the State approved treatment technologies will not achieve sufficient reduction in the contaminant level, Nevada will grant the variance under the condition that the system follow a State-issued schedule of compliance <u>that requires the system to examine other treatment technologies.</u></p>	<p>I did not see this in neg.</p>
<p>If the State determines that a treatment technology identified under paragraph (a)(3) of this section is technically feasible, the Administrator or primacy State may require the system to install and/or use that treatment technology in connection with a compliance schedule issued under the provisions of section 1415(a)(1)(A) of the Act. The State's determination shall be based upon studies by the system and other relevant information.</p>	<p>§ 142.65(a)(4)</p>	<p>If after examination of other treatment technologies, the Board determines (based upon studies by the system and other relevant information) that the technology is technically feasible, the Board will require a system to install and/or use a treatment technology in connection with a compliance schedule. The Board will set the schedule and impose additional control measures as allowed under NAC 445A.488.</p>	<p>see the</p>

<p>The State may require a community water system to use bottled water, point-of-use devices, point-of-entry devices or other means as a condition of granting a variance or an exemption from the requirements of §141.66 of this chapter, to avoid an unreasonable risk to health.</p>	<p>§ 142.65(a)(5)</p>	<p>Unless it determines that the issuance will not result in an unreasonable risk to health, the Board will not issue a variance (NAC 445A.487 1) or an exemption (NAC 445A.489 1(a)(2)). In addition, the Board can impose additional control measures as allowed under NAC 445A.488 and NAC 445A.490 including requiring a community water system to use bottled water, point-of-use devices, point-of-entry devices, or other means to avoid an unreasonable risk to health.</p>	
<p>Community water systems that use bottled water as a condition for receiving a variance or an exemption from the requirements of §141.66 of this chapter must meet the requirements specified in either paragraph (g)(1) or (g)(2) and (g)(3) of §142.62.</p>	<p>§ 142.65(a)(6)</p>	<p>The requirements of 40 CFR 141.66 are incorporated by reference in NAC 445A.4525.</p>	
<p>Community water systems that use point-of-use or point-of-entry devices as a condition for obtaining a variance or an exemption from the radionuclides NPDWRs must meet the conditions in §142.62 (h)(1) through (h)(6).</p>	<p>§ 142.65(a)(7)</p>	<p>The requirements of 40 CFR 141.62 are incorporated by reference in NAC 445A.4525.</p>	