

Analytical Methods Approved for Drinking Water Compliance Monitoring of Radionuclides

Analysis for the following contaminants shall be conducted in accordance with the methods in the following table, or their equivalent as determined by EPA. The methods for these contaminants are specified in 40 CFR 141.25. Additional methods are listed in Appendix A to Subpart C of Part 141. Monitoring requirements for these contaminants are specified in 40 CFR 141.26.

The CFR is the legal reference for approved methods and takes precedence over this table. The table should accurately reflect the analytical methods information published in 40 CFR 141.

Naturally Occurring Radionuclides:

Gross Alpha

Natural uranium and thorium-230 are approved as gross alpha calibration standards for gross alpha with co-precipitation and evaporation methods; americium-241 is approved with co-precipitation methods.

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
EPA 00-02	EPA	In Radiochemistry Procedures Manual: Radiochemical Determination of Gross Alpha Particle Activity in Drinking Water by Co-precipitation	June 1984	EPA 520/5-84-006	EPA 520/5-84-006
7110 C	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 18 th Edition	1992		Standard Methods
7110 C	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods
7110 C	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
7110 C	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
7110 C	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 22 nd Edition	2012		Standard Methods

Office of Water (MS – 4606 M) EPA 815-B-24-004 January 2024

7110 C	Standard	Standard Methods for the	2017	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 23 rd Edition		
7110 C	Standard	Standard Methods for the	2023	Standard Methods
	Methods	Examination of Water and		
		<i>Wastewater,</i> 24 th Edition		
7110 C-00	Standard	Online version. Approval year is	2000	Standard Methods
	Methods Online	designated by the last 2 digits.		
		Only online versions cited in the		
		regulations or in Appendix A to		
		Subpart C of Part 141 are		
		approved.		

Gross Alpha and Beta

Natural uranium and thorium-230 are approved as gross alpha calibration standards for gross alpha with co-precipitation and evaporation methods; americium-241 is approved with co-precipitation methods.

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
D7283-17	ASTM International	Alpha and Beta Activity in Water by Liquid Scintillation Counting	2017		ASTM International
EPA 00-01	EPA	In Radiochemistry Procedures Manual: Radiochemical Determination of Gross Alpha and Gross Beta Particle Activity in Water	June 1984	EPA 520/5-84-006	EPA 520/5-84-006
EPA 900.0	EPA	In Prescribed Procedures for Measurement of Radioactivity in Drinking Water: Gross Alpha and Gross Beta Radioactivity	August 1980	EPA 600/4/80-032	EPA 600/4/80-032
EPA 900.0, Rev. 1.0	EPA	Gross Alpha and Gross Beta Radioactivity in Drinking Water	February 2017	EPA 815-B-18-002	EPA 815-B-18-002
Page 1 in EMSL LV 053917	EPA	In Radiochemical Analytical Procedures for Analysis of Environmental Samples: Determination of Gross Alpha and Beta in Water	March 1979	EMSLLV053917	EMSL LV 053917
Page 1 in EPA 600/4- 75-008	ЕРА	In Interim Radiochemical Methodology for Drinking Water: Gross Alpha and Beta Radioactivity in Drinking Water	Revised March 1976	EPA 600/4-75-008	600/4-75-008

302	Standard	Standard Methods for the	1971	Standard Methods
552	Methods	Examination of Water and		<u>standard Wethous</u>
		Wastewater, 13 th Edition		
7110 B	Standard	Standard Methods for the	1989	Standard Methods
	Methods	Examination of Water and		
		<i>Wastewater,</i> 17 th Edition		
7110 B	Standard	Standard Methods for the	1992	Standard Methods
	Methods	Examination of Water and		
		<i>Wastewater,</i> 18 th Edition		
7110 B	Standard	Standard Methods for the	1995	Standard Methods
	Methods	Examination of Water and		
		<i>Wastewater,</i> 19 th Edition		
7110 B	Standard	Standard Methods for the	1998	Standard Methods
	Methods	Examination of Water and		
		<i>Wastewater,</i> 20 th Edition		
7110 B	Standard	Standard Methods for the	2005	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 21 st Edition		
7110 B	Standard	Standard Methods for the	2012	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 22 nd Edition		
7110 B	Standard	Standard Methods for the	2017	Standard Methods
	Methods	Examination of Water and		
		<i>Wastewater,</i> 23 rd Edition		
7110 B	Standard	Standard Methods for the	2023	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 24 th Edition		
7110 D	Standard	Standard Methods for the	2023	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 24 th Edition		
7110 B-00	Standard	Online version. Approval year is	2000	Standard Methods
	Methods Online	designated by the last 2 digits.		
		Only online versions cited in the		
		regulations or in Appendix A to		
		Subpart C of Part 141 are		
7440 5 45	Chara I	approved.	2017	
7110 D-17	Standard	Online version. Approval year is	2017	<u>Standard Methods</u>
	Methods Online	designated by the last 2 digits.		
		Only online versions cited in the		
		regulations or in Appendix A to		

		Subpart C of Part 141 are		
		approved.		
R-1120-76	U.S. Geological	In Methods for the Determination	1977	<u>USGS</u>
	Survey	of Radioactive Substances in		
		Water and Fluvial Sediments,		
		USGS Series: Techniques of Water-		
		Resource Investigation. Report		
		Number: 05-A5; by Thatcher, L.L.,		
		Janzer, V.J., and Edwards, K.W.		

Radium-226

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
D2460-97	ASTM International	Standard Test Method for Alpha- Particle-Emitting Isotopes of Radium in Water	1997		ASTM International
D2460-07	ASTM International	Standard Test Method for Alpha- Particle-Emitting Isotopes of Radium in Water	2007		ASTM International
D3454-97	ASTM International	Standard Test Method for Radium- 226 in Water	1997		ASTM International
D3454-05	ASTM International	Standard Test Method for Radium- 226 in Water	2005		ASTM International
D3454-18	ASTM International	Standard Test Method for Radium- 226 in Water	2018		ASTM International
D3454-21	ASTM International	Standard Test Method for Radium- 226 in Water	2021		ASTM International
Ra-04	Dept. of Homeland Security	In EML Procedures Manual, 28 th Edition, Vol. I, Department of Energy Report, HASL-300	1997		<u>HASL-300</u>
Ra-05 (Ra- 04 see Note)	Dept. of Homeland Security	In EML Procedures Manual, 27 th Edition, Vol. I, Department of Energy Report, HASL-300-ED.27-Vol. I Note: See footnote 8 in the table at 40 CFR 141.25(a)(25); in the 27 th Edition 'Ra-04' is listed as 'Ra-05'	1990		<u>HASL-300-Ed. 27</u>
EPA 903.0	EPA	In Prescribed Procedures for Measurement of Radioactivity in	August 1980	EPA 600/4/80-032	EPA 600/4/80-032

		Drinking Water: Alpha-Emitting Radium Isotopes			
EPA 903.0, Rev. 1.0	EPA	Alpha-Emitting Radium Isotopes in Drinking Water	January 2021	EPA 815-B-21-002	EPA 815-B-21-002
EPA 903.1	EPA	In Prescribed Procedures for Measurement of Radioactivity in Drinking Water: Radium-226 – Radon Emanation Technique	August 1980	EPA 600/4/80-032	EPA 600/4/80-032
EPA 903.1, Rev. 1.0	EPA	Radium-226 in Drinking Water – Radon Emanation Technique	January 2021	EPA 815-B-21-003	EPA-815-B-21-003
EPA Ra-03	EPA	In Radiochemistry Procedures Manual: Radiochemical Determination of Radium-226 in Water Samples	June 1984	EPA 520/5-84-006	EPA 520/5-84-006
EPA Ra-04	EPA	In Radiochemistry Procedures Manual: Radiochemical Determination of Radium-226, De- emanation Procedure	June 1984	EPA 520/5-84-006	EPA 520/5-84-006
Page 13 in EPA 600/4- 75-008	EPA	In Interim Radiochemical Methodology for Drinking Water: Radium-226 in Drinking Water – Alpha-Emitting Radium Isotopes – Precipitation Method	Revised March 1976	EPA 600/4-75-008	600/4-75-008
Page 16 in EPA 600/4- 75-008	EPA	In Interim Radiochemical Methodology for Drinking Water: Radium-226 in Drinking Water – Radon Emanation Technique	Revised March 1976	EPA 600/4-75-008	600/4-75-008
Page 19 in EMSL LV 053917	EPA	In Radiochemical Analytical Procedures for Analysis of Environmental Samples: Determination of Radium-226 and Radium-228 in Water, Soil, Air and Biological Tissue	March 1979	EMSLLV053917	EMSL LV 053917
GA	Georgia Institute of Technology	The Determination of Radium-226 and Radium-228 in Drinking Water by Gamma-ray Spectrometry using HPGE or Ge(Li) Detectors, Revision 1.2	December 2004		<u>GA</u>
NY	NY Dept. of Health	Determination of Ra-226 and Ra- 228 (Ra-02)	January 1980, Revised June 1982		Radiological Sciences Institute for Laboratories and Research, NY State Department of Health, Albany, NY

304	Standard	Standard Methods for the	1971	Standard Methods
	Methods	Examination of Water and Wastewater, 13 th Edition		
305	Standard	Standard Methods for the	1971	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 13 th Edition		
7500-Ra B	Standard	Standard Methods for the	1989	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 17 th Edition		
7500-Ra B	Standard	Standard Methods for the	1992	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 18 th Edition		
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		Wastewater, 19 th Edition		
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		Wastewater, 20 th Edition		
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		Wastewater, 21 st Edition		
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	Methods	Examination of Water and		
7500 0 0	C. I. I.	Wastewater, 24 th Edition	4000	Ci. I INA II I
7500-Ra C	Standard	Standard Methods for the	1989	<u>Standard Methods</u>
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7500-Ra C	Standard	Standard Methods for the	1995	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 19 th Edition		

7500-Ra C	Standard	Standard Methods for the	1998	<u>Standard Methods</u>
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		Wastewater, 20 th Edition		
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7500-Ra C	Standard	Standard Methods for the	2012	Standard Methods
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		Wastewater, 22 nd Edition		
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	Methods	Examination of Water and		
		<i>Wastewater,</i> 23 rd Edition		
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7500-Ra E	Standard	Standard Methods for the	2012	Standard Methods
	Methods	Examination of Water and		
		<i>Wastewater,</i> 22 nd Edition		
7500-Ra E	Standard	Standard Methods for the	2017	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 23 rd Edition		
7500-Ra E	Standard	Standard Methods for the	2023	Standard Methods
	Methods	Examination of Water and		
		<i>Wastewater,</i> 24 th Edition		
7500-Ra B-	Standard	Online version. Approval year is	2001	Standard Methods
01	Methods Online	designated by the last 2 digits.		
		Only online versions cited in the		
		regulations or in Appendix A to		
		Subpart C of Part 141 are		
		approved.		
7500-Ra C-	Standard	Online version. Approval year is	2001	Standard Methods
01	Methods Online	designated by the last 2 digits.		
		Only online versions cited in the		
		regulations or in Appendix A to		
		Subpart C of Part 141 are		
		approved.		
7500-Ra E-	Standard	Online version. Approval year is	2007	Standard Methods
07	Methods Online	designated by the last 2 digits.		
		Only online versions cited in the		
		regulations or in Appendix A to		

		Subpart C of Part 141 are approved.		
R-1140-76	U.S. Geological Survey	In Methods for the Determination of Radioactive Substances in Water and Fluvial Sediments, USGS Series: Techniques of Water-Resource Investigation. Report Number: 05-A5; by Thatcher, L.L., Janzer, V.J., and Edwards, K.W.	1977	<u>USGS</u>
R-1141-76	U.S. Geological Survey	In Methods for the Determination of Radioactive Substances in Water and Fluvial Sediments, USGS Series: Techniques of Water-Resource Investigation. Report Number: 05-A5; by Thatcher, L.L., Janzer, V.J., and Edwards, K.W.	1977	<u>USGS</u>

Radium-228

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
EPA 904.0	EPA	In Prescribed Procedures for Measurement of Radioactivity in Drinking Water: <i>Radium-228</i>	August 1980	EPA 600/4/80-032	EPA 600/4/80-032
EPA 904.0, Rev. 1.0	EPA	Radium-228 in Drinking Water	March 2022	EPA 815-B-22-003	EPA 815-B-22-003
EPA Ra-05	EPA	In Radiochemistry Procedures Manual: Radiochemical Determination of Radium-228 in Water Samples	June 1984	EPA 520/5-84-006	EPA 520/5-84-006
Page 19 in EMSL LV 053917	EPA	In Radiochemical Analytical Procedures for Analysis of Environmental Samples: Determination of Radium-226 and Radium-228 in Water, Soil, Air and Biological Tissue	March 1979	EMSLLV053917	EMSL LV 053917
Page 24 in EPA 600/4- 75-008	EPA	In Interim Radiochemical Methodology for Drinking Water: Radium-228 in Drinking Water – Sequential Method Radium- 228/Radium-226	Revised March 1976	EPA 600/4-75-008	<u>600/4-75-008</u>

GA	Georgia	The Determination of Radium-226	December	GA
	Institute of	and Radium-228 in Drinking Water	2004	
	Technology	by Gamma-ray Spectrometry using		
		HPGE or Ge(Li) Detectors, Revision		
NII.	NI Dont of	1.2	A	Chata of Navy Javany, Danautwant of
NJ	NJ Dept. of Environmental	Determination of Ra-228 in	August 1980	State of New Jersey, Department of
	Protection	Drinking Water		Environmental Protection, Trenton, NJ
NY		Datarmination of Ba 226 and Ba	January 1000	Padialogical Sciences Institute for
INT	NY Dept. of Health	Determination of Ra-226 and Ra-	January 1980, Revised June	Radiological Sciences Institute for Laboratories and Research, NY State
	Пеанн	228 (Ra-02)	1982	Department of Health, Albany, NY
7500-Ra D	Standard	Standard Methods for the	1982	Standard Methods
7300-Na D	Methods	Examination of Water and	1909	<u>Standard Methods</u>
	Ivietilous	Wastewater, 17 th Edition		
7500-Ra D	Standard	Standard Methods for the	1992	Standard Methods
7500 Na D	Methods	Examination of Water and	1552	<u>Standard Wethods</u>
	Wittingas	Wastewater, 18 th Edition		
7500-Ra D	Standard	Standard Methods for the	1995	Standard Methods
7000 110 2	Methods	Examination of Water and		3.0.1.0.1.0.1.0.0.0
		Wastewater, 19 th Edition		
7500-Ra D	Standard	Standard Methods for the	1998	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 20 th Edition		
7500-Ra D	Standard	Standard Methods for the	2005	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 21st Edition		
7500-Ra D	Standard	Standard Methods for the	2012	Standard Methods
	Methods	Examination of Water and		
		<i>Wastewater,</i> 22 nd Edition		
7500-Ra D	Standard	Standard Methods for the	2017	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 23 rd Edition		
7500-Ra D	Standard	Standard Methods for the	2023	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 24 th Edition		
7500-Ra E	Standard	Standard Methods for the	2012	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 22 nd Edition		
7500-Ra E	Standard	Standard Methods for the	2017	<u>Standard Methods</u>
	Methods	Examination of Water and		
		Wastewater, 23 rd Edition		

7500-Ra E	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 24 th Edition	2023	<u>Standard Methods</u>
7500-Ra D- 01	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2001	Standard Methods
7500-Ra E- 07	Standard Methods Online	Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved.	2007	<u>Standard Methods</u>
R-1142-76	U.S. Geological Survey	In Methods for the Determination of Radioactive Substances in Water and Fluvial Sediments, USGS Series: Techniques of Water-Resource Investigation. Report Number: 05-A5; by Thatcher, L.L., Janzer, V.J., and Edwards, K.W.	1977	<u>USGS</u>

Uranium

If uranium (U) is determined by mass, a 0.67 pCi/µg conversion factor must be used. This conversion factor is based on 1:1 activity ratio of U-234 and U-238, characteristic of naturally occurring uranium.

Method	Organization	Reference Title	Date	EPA Publication	Source of Method
				Number	
D2907-97	ASTM	Standard Test Methods for	1997		ASTM International
	International	Microquantities of Uranium in			
		Water by Fluorometry			
D3972-97	ASTM	Standard Test Method for Isotopic	1997		ASTM International
	International	Uranium in Water by			
		Radiochemistry			
D3972-02	ASTM	Standard Test Method for Isotopic	2002		ASTM International
	International	Uranium in Water by			
		Radiochemistry			
D3972-09	ASTM	Standard Test Method for Isotopic	2009		ASTM International
	International	Uranium in Water by			
		Radiochemistry			

D5174-97	ASTM	Standard Test Method for Trace	1997	ASTM International
	International	Uranium by Pulsed Laser Phosphorimetry		
D5174-02	ASTM	Standard Test Method for Trace	2002	ASTM International
	International	Uranium by Pulsed Laser Phosphorimetry		
D5174-07	ASTM International	Standard Test Method for Trace Uranium by Pulsed Laser Phosphorimetry	2007	ASTM International
D5673-03	ASTM International	Standard Test Method for Elements in Water by Inductively Coupled Plasma-Mass Spectrometry	2003	ASTM International
D5673-05	ASTM International	Standard Test Method for Elements in Water by Inductively Coupled Plasma-Mass Spectrometry	2005	ASTM International
D5673-10	ASTM International	Standard Test Method for Elements in Water by Inductively Coupled Plasma-Mass Spectrometry	2010	ASTM International
D5673-16	ASTM International	Standard Test Method for Elements in Water by Inductively Coupled Plasma-Mass Spectrometry	2016	ASTM International
D6239-09	ASTM International	Standard Test Method for Uranium in Drinking Water by High- Resolution Alpha-Liquid Scintillation Spectrometry	2009	ASTM International
U-02	Dept. of Homeland Security	In EML Procedures Manual, 27 th Edition, Vol. I, Department of Energy Report, HASL-300-ED.27- Vol. I	1990	HASL-300-Ed. 27
U-02	Dept. of Homeland Security	In EML Procedures Manual, 28 th Edition, Vol. I, Department of Energy Report, HASL-300	1997	HASL-300
U-04	Dept. of Homeland Security	In EML Procedures Manual, 27 th Edition, Vol. I, Department of Energy Report, HASL-300-ED.27- Vol. I	1990	HASL-300-Ed. 27

U-04	Dept. of Homeland Security	In EML Procedures Manual, 28 th Edition, Vol. I, Department of Energy Report, HASL-300	1997		<u>HASL-300</u>
200.8, Rev. 5.4	EPA	In Methods for the Determination of Metals in Environmental Samples, Supplement I	May 1994	EPA/600/R-94/111	National Environmental Methods Index
EPA 00-07	EPA	In Radiochemistry Procedures Manual: Radiochemical Determination of Thorium and Uranium in Water	June 1984	EPA 520/5-84-006	EPA 520/5-84-006
EPA 908.0	EPA	In Prescribed Procedures for Measurement of Radioactivity in Drinking Water: <i>Uranium</i> – <i>Radiochemical Method</i>	August 1980	EPA 600/4/80-032	EPA 600/4/80-032
EPA 908.1	EPA	In Prescribed Procedures for Measurement of Radioactivity in Drinking Water: <i>Uranium</i> – Fluorometric Method	August 1980	EPA 600/4/80-032	EPA 600/4/80-032
Page 33 in EMSL LV 053917	EPA	In Radiochemical Analytical Procedures for Analysis of Environmental Samples: Isotopic Determination of Plutonium, Uranium, and Thorium in Water, Soil, Air and Biological Tissue	March 1979	EMSLLV053917	EMSL LV 053917
3125	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 20 th Edition	1998		Standard Methods
3125	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 21 st Edition	2005		Standard Methods
7500-U B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 17 th Edition	1989		Standard Methods
7500-U B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 18 th Edition	1992		Standard Methods
7500-U B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		<u>Standard Methods</u>

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Wostewater, 21 th Edition Standard Methods for the Examination of Water and Wastewater, 22 th Edition Standard Methods Standard Methods for the Examination of Water and Wastewater, 23 th Edition Standard Methods for the Examination of Water and Wastewater, 23 th Edition Standard Methods for the Examination of Water and Wastewater, 24 th Edition Standard Methods for the Examination of Water and Wastewater, 24 th Edition Standard Methods for the Examination of Water and Wastewater, 17 th Edition Standard Methods for the Examination of Water and Wastewater, 17 th Edition Standard Methods for the Examination of Water and Wastewater, 18 th Edition Standard Methods Standard Methods for the Examination of Water and Wastewater, 18 th Edition Standard Methods Standard Met	7500-U B	Standard	Standard Methods for the	2005	Standard Methods
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TSOO-U B Standard Methods Standard Methods for the Examination of Water and Wastewater, 24th Edition		Methods	Examination of Water and		
Methods Examination of Water and Wastewater, 24 th Edition 1989 Standard Methods			Wastewater, 23 rd Edition		
Wastewater, 24th Edition Standard Standard Methods for the 1989 Standard Methods Wastewater, 17th Edition Wastewater, 18th Edition Wastewater, 18th Edition Wastewater, 18th Edition Wastewater, 18th Edition Wastewater, 19th Edition Wastewater, 20th Edition Wastewater, 21th Edition Wastewater, 21th Edition Wastewater, 22th Edition Wastewater, 22th Edition Wastewater, 22th Edition Wastewater, 23th Edition Wastewater, 24th Edition Wastewate	7500-U B	Standard	Standard Methods for the	2023	Standard Methods
TSOO-U C Standard Methods for the Examination of Water and Wastewater, 17th Edition 1992 Standard Methods		Methods	Examination of Water and		
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Methods Examination of Water and Wastewater, 17th Edition	7500-U C	Standard	Standard Methods for the	1989	Standard Methods
T500-U C Standard Methods Examination of Water and Wastewater, 18th Edition		Methods	Examination of Water and		
Methods Examination of Water and Wastewater, 18th Edition 7500-U C Standard Methods for the Examination of Water and Wastewater, 19th Edition 7500-U C Standard Methods For the Examination of Water and Wastewater, 20th Edition 7500-U C Standard Standard Methods for the Methods Examination of Water and Wastewater, 20th Edition 7500-U C Standard Standard Methods for the Examination of Water and Wastewater, 21st Edition 7500-U C Standard Standard Methods for the Examination of Water and Wastewater, 22nd Edition 7500-U C Standard Standard Methods for the Methods Examination of Water and Wastewater, 22nd Edition 7500-U C Standard Standard Methods for the Examination of Water and Wastewater, 23nd Edition 7500-U C Standard Standard Methods for the Examination of Water and Wastewater, 23nd Edition 7500-U C Standard Standard Methods for the Examination of Water and Wastewater, 23nd Edition 7500-U C Standard Standard Methods for the Examination of Water and Wastewater, 23nd Edition 7500-U C Standard Standard Methods for the Examination of Water and Wastewater, 24th Edition 7500-U C Standard Standard Methods for the Examination of Water and Wastewater, 24th Edition 7500-U C Standard Online version. Approval year is 2000 Standard Methods			Wastewater, 17 th Edition		
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### Wastewater, 20th Edition 7500-U C Standard Standard Methods for the Methods Examination of Water and Wastewater, 21st Edition 7500-U C Standard Standard Methods for the Methods Examination of Water and Wastewater, 22nd Edition 7500-U C Standard Standard Methods for the Methods Examination of Water and Wastewater, 22nd Edition 7500-U C Standard Standard Methods for the Methods Examination of Water and Wastewater, 23nd Edition 7500-U C Standard Standard Methods for the Methods Examination of Water and Wastewater, 23nd Edition 7500-U C Standard Standard Methods for the Methods Examination of Water and Wastewater, 24nd Edition 7500-U B-00 Standard Online version. Approval year is 2000 Standard Methods	7500-U C	Standard	Standard Methods for the	1998	Standard Methods
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Methods Examination of Water and Wastewater, 24 th Edition 7500-U B-00 Standard Online version. Approval year is 2000 Standard Methods	7500-U C	Standard		2023	Standard Methods
Wastewater, 24 th Edition 7500-U B-00 Standard Online version. Approval year is 2000 Standard Methods		Methods	_		
7500-U B-00 Standard Online version. Approval year is 2000 <u>Standard Methods</u>					
	7500-U B-00	Standard		2000	Standard Methods
Methods Unline designated by the last 2 digits.		Methods Online	designated by the last 2 digits.		

7500-U C-00	Standard Methods Online	Only online versions cited in the regulations or in Appendix A to Subpart C of Part 141 are approved. Online version. Approval year is designated by the last 2 digits. Only online versions cited in the regulations or in Appendix A to	2000	<u>Standard Methods</u>
		Subpart C of Part 141 are approved.		
R-1180-76	U.S. Geological Survey	In Methods for the Determination of Radioactive Substances in Water and Fluvial Sediments, USGS Series: Techniques of Water-Resource Investigation. Report Number: 05-A5; by Thatcher, L.L., Janzer, V.J., and Edwards, K.W.	1977	<u>USGS</u>
R-1181-76	U.S. Geological Survey	In Methods for the Determination of Radioactive Substances in Water and Fluvial Sediments, USGS Series: Techniques of Water-Resource Investigation. Report Number: 05-A5; by Thatcher, L.L., Janzer, V.J., and Edwards, K.W.	1977	<u>USGS</u>
R-1182-76	U.S. Geological Survey	In Methods for the Determination of Radioactive Substances in Water and Fluvial Sediments, USGS Series: Techniques of Water-Resource Investigation. Report Number: 05-A5; by Thatcher, L.L., Janzer, V.J., and Edwards, K.W.	1977	<u>USGS</u>

Man-made Radionuclides:

Gamma Emitters

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
D3649-91	ASTM	Standard Practice for High	1991		ASTM International
	International	Resolution Gamma-Ray			
		Spectrometry of Water			

D3649-98a	ASTM	Standard Practice for High	1998		ASTM International
	International	Resolution Gamma-Ray Spectrometry of Water			
D3649-06	ASTM	Standard Practice for High	2006		ASTM International
	International	Resolution Gamma-Ray			
		Spectrometry of Water			
D4785-93	ASTM	Standard Test Method for Low-	1993		ASTM International
	International	Level Analysis of Iodine			
		Radioisotopes in Water			
D4785-00a	ASTM	Standard Test Method for Low-	2000		<u>ASTM International</u>
	International	Level Analysis of Iodine			
	4.074.4	Radioisotopes in Water	2000		
D4785-08	ASTM	Standard Test Method for Low-	2008		ASTM International
	International	Level Analysis of Iodine			
D4785-20	ASTM	Radioisotopes in Water Standard Test Method for Low-	2020		ACTM International
D4765-20	International	Level Analysis of Iodine	2020		ASTM International
	IIILEITIALIOIIAI	Radioisotopes in Water			
Ga-01-R	Dept. of	In EML Procedures Manual, 28 th	1997		HASL-300
GG 01 11	Homeland	Edition, Vol. I, Department of	1337		<u>117.52.500</u>
	Security	Energy Report, HASL-300			
EPA 901.0	EPA	In Prescribed Procedures for	August 1980	EPA 600/4/80-032	EPA 600/4/80-032
		Measurement of Radioactivity in			
		Drinking Water: Radioactive			
		Cesium			
EPA 901.1	EPA	In Prescribed Procedures for	August 1980	EPA 600/4/80-032	EPA 600/4/80-032
		Measurement of Radioactivity in			
		Drinking Water: Gamma Emitting			
		Radionuclides			
EPA 902.0	EPA	In Prescribed Procedures for	August 1980	EPA 600/4/80-032	EPA 600/4/80-032
		Measurement of Radioactivity in			
D 02 :	ED.A	Drinking Water: Radioactive Iodine	Manuels 4070	FN4CLLV/0F2047	EN461 17/052047
Page 92 in EMSL LV	EPA	In Radiochemical Analytical	March 1979	EMSLLV053917	EMSL LV 053917
053917		Procedures for Analysis of Environmental Samples: <i>Isotopic</i>			
022317		Analysis by Gamma Ray Spectra			
		using Lithium-Drifted Germanium			
		Detectors			
7120	Standard	Standard Methods for the	1995		Standard Methods
	Methods	Examination of Water and			
		Wastewater, 19 th Edition			

7120	Standard Methods	Standard Methods for the Examination of Water and	1998	Standard Methods	
	Wiethous	Wastewater, 20 th Edition			
7120	Standard	Standard Methods for the	2005	Standard Methods	
	Methods	Examination of Water and			
		Wastewater, 21st Edition			
7120	Standard	Standard Methods for the	2012	Standard Methods	
	Methods	Examination of Water and			
		Wastewater, 22 nd Edition			
7120	Standard	Standard Methods for the	2017	Standard Methods	
	Methods	Examination of Water and			
		Wastewater, 23 rd Edition			
7120	Standard	Standard Methods for the	2023	Standard Methods	
	Methods	Examination of Water and			
7500-Cs B	Standard	Wastewater, 24 th Edition	1989	Standard Mathods	
/500-CS B	Methods	Standard Methods for the Examination of Water and	1989	Standard Methods	
	Methous	Wastewater, 17 th Edition			
7500-Cs B	Standard	Standard Methods for the	1992	Standard Methods	
7500 65 5	Methods	Examination of Water and	1332	<u>standara Wethous</u>	
		Wastewater, 18 th Edition			
7500-Cs B	Standard	Standard Methods for the	1995	Standard Methods	
	Methods	Examination of Water and			
		Wastewater, 19 th Edition			
7500-Cs B	Standard	Standard Methods for the	1998	Standard Methods	
	Methods	Examination of Water and			
		<i>Wastewater,</i> 20 th Edition			
7500-Cs B	Standard	Standard Methods for the	2005	Standard Methods	
	Methods	Examination of Water and			
		Wastewater, 21 st Edition			
7500-Cs B	Standard	Standard Methods for the	2012	Standard Methods	
	Methods	Examination of Water and			
	- I I	Wastewater, 22 nd Edition	22/2		
7500-Cs B	Standard	Standard Methods for the	2017	Standard Methods	
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7500-Cs B	Standard	Standard Methods for the	2023	Standard Methods	
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7500-I B	Standard	Standard Methods for the	1989	Standard Method	<u>Is</u>
	Methods	Examination of Water and			
		Wastewater, 17 th Edition			
7500-I B	Standard	Standard Methods for the	1992	Standard Method	<u>ls</u>
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		Wastewater, 18 th Edition			
7500-I B	Standard	Standard Methods for the	1995	Standard Method	<u>ls</u>
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		<i>Wastewater,</i> 19 th Edition			
7500-I B	Standard	Standard Methods for the	1998	Standard Method	<u>ls</u>
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		Wastewater, 20 th Edition			
7500-I B	Standard	Standard Methods for the	2005	Standard Method	<u>ls</u>
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7500-I B	Standard	Standard Methods for the	2012	Standard Method	<u>ls</u>
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		Wastewater, 22 nd Edition			
7500-I B	Standard	Standard Methods for the	2017	Standard Method	<u>ls</u>
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		Wastewater, 23 rd Edition			
7500-I B	Standard	Standard Methods for the	2023	Standard Method	l <u>s</u>
	Methods	Examination of Water and			
		<i>Wastewater,</i> 24 th Edition			
7120-97	Standard	Online version. Approval year is	1997	Standard Method	l <u>s</u>
	Methods Online	designated by the last 2 digits.			
		Only online versions cited in the			
		regulations or in Appendix A to			
		Subpart C of Part 141 are			
		approved.			
7500-Cs B-	Standard	Online version. Approval year is	2000	Standard Method	ls
00	Methods Online	designated by the last 2 digits.			
		Only online versions cited in the			
		regulations or in Appendix A to			
		Subpart C of Part 141 are			
		approved.			
7500-I B-00	Standard	Online version. Approval year is	2000	Standard Method	l <u>s</u>
	Methods Online	designated by the last 2 digits.			
		Only online versions cited in the			
		regulations or in Appendix A to			

		Subpart C of Part 141 are approved.		
R-1110-76	U.S. Geological Survey	In Methods for the Determination of Radioactive Substances in Water and Fluvial Sediments, USGS Series: Techniques of Water-Resource Investigation. Report Number: 05-A5; by Thatcher, L.L., Janzer, V.J., and Edwards, K.W.	1977	<u>USGS</u>

Radioactive Cesium

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
D2459-72	ASTM International	Standard Test Method for Gamma Spectrometry of Water	1972		ASTM International
D3649-91	ASTM International	Standard Practice for High Resolution Gamma-Ray Spectrometry of Water	1991		ASTM International
D3649-98a	ASTM International	Standard Practice for High Resolution Gamma-Ray Spectrometry of Water	1998		ASTM International
D3649-06	ASTM International	Standard Practice for High Resolution Gamma-Ray Spectrometry of Water	2006		ASTM International
4.5.2.3	Dept. of Homeland Security	In EML Procedures Manual, 27 th Edition, Vol. I, Department of Energy Report, HASL-300-ED.27- Vol. I	1990		<u>HASL-300-Ed. 27</u>
EPA 901.0	EPA	In Prescribed Procedures for Measurement of Radioactivity in Drinking Water: Radioactive Cesium	August 1980	EPA 600/4/80-032	EPA 600/4/80-032
EPA 901.1	EPA	In Prescribed Procedures for Measurement of Radioactivity in Drinking Water: Gamma Emitting Radionuclides	August 1980	EPA 600/4/80-032	EPA 600/4/80-032
Page 4 in EPA 600/4- 75-008	EPA	In Interim Radiochemical Methodology for Drinking Water: Radioactive Cesium in Drinking Water	Revised March 1976	EPA 600/4-75-008	600/4-75-008

Page 92 in EMSL LV	EPA	In Radiochemical Analytical Procedures for Analysis of	March 1979	EMSLLV053917	EMSL LV 053917
053917		Environmental Samples: Isotopic			
		Analysis by Gamma Ray Spectra			
		using Lithium-Drifted Germanium			
		Detectors			
7120	Standard	Standard Methods for the	1995		Standard Methods
	Methods	Examination of Water and			
		Wastewater, 19 th Edition			
7120	Standard	Standard Methods for the	1998		<u>Standard Methods</u>
	Methods	Examination of Water and			
		Wastewater, 20 th Edition			
7120	Standard	Standard Methods for the	2005		<u>Standard Methods</u>
	Methods	Examination of Water and			
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7120	Standard	Standard Methods for the	2012		Standard Methods
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7120	Standard	Standard Methods for the	2017		Standard Methods
/120	Methods	Examination of Water and	2017		<u>Standard Wethods</u>
	Methous	Wastewater, 23 rd Edition			
7120	Standard	Standard Methods for the	2023		Standard Methods
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7500-Cs B	Standard	Standard Methods for the	1989		Standard Methods
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		Wastewater, 17 th Edition			
7500-Cs B	Standard	Standard Methods for the	1992		Standard Methods
	Methods	Examination of Water and			
		<i>Wastewater,</i> 18 th Edition			
7500-Cs B	Standard	Standard Methods for the	1995		Standard Methods
	Methods	Examination of Water and			
		<i>Wastewater,</i> 19 th Edition			
7500-Cs B	Standard	Standard Methods for the	1998		Standard Methods
	Methods	Examination of Water and			
		Wastewater, 20 th Edition			
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		Wastewater, 21 st Edition			

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		<i>Wastewater,</i> 22 nd Edition		
7500-Cs B	Standard	Standard Methods for the	2017	Standard Methods
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		Wastewater, 23 rd Edition		
7500-Cs B	Standard	Standard Methods for the	2023	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 24 th Edition		
7120-97	Standard	Online version. Approval year is	1997	Standard Methods
	Methods Online	designated by the last 2 digits.		
		Only online versions cited in the		
		regulations or in Appendix A to		
		Subpart C of Part 141 are		
		approved.		
7500-Cs B-	Standard	Online version. Approval year is	2000	Standard Methods
00	Methods Online	designated by the last 2 digits.		
		Only online versions cited in the		
		regulations or in Appendix A to		
		Subpart C of Part 141 are		
		approved.		
R-1110-76	U.S. Geological	In Methods for the Determination	1977	USGS
	Survey	of Radioactive Substances in		<u></u>
	,	Water and Fluvial Sediments,		
		USGS Series: Techniques of Water-		
		Resource Investigation. Report		
		Number: 05-A5; by Thatcher, L.L.,		
		Janzer, V.J., and Edwards, K.W.		
R-1111-76	U.S. Geological	In Methods for the Determination	1977	USGS
	Survey	of Radioactive Substances in		3333
		Water and Fluvial Sediments,		
		USGS Series: Techniques of Water-		
		Resource Investigation. Report		
		Number: 05-A5; by Thatcher, L.L.,		
		Janzer, V.J., and Edwards, K.W.		
		Janizer, v.J., and Edwards, K.VV.		

Radioactive Iodine

Method	Organization	Reference Title	Date	EPA Publication	Source of Method
				Number	

D3649-91	ASTM	Standard Practice for High	1991		ASTM International
D3049-91	International	Resolution Gamma-Ray	1991		ASTW International
	IIICEITIACIONAI	Spectrometry of Water			
D3649-98a	ASTM	Standard Practice for High	1998		ASTM International
D3049-38a	International	Resolution Gamma-Ray	1998		ASTW International
	IIICEITIACIONAI	Spectrometry of Water			
D3649-06	ASTM	Standard Practice for High	2006		ASTM International
D3049-00	International	Resolution Gamma-Ray	2000		ASTW International
	IIICEITIACIONAI	Spectrometry of Water			
D4785-93	ASTM	Standard Test Method for Low-	1993		ASTM International
D4765-35	International	Level Analysis of Iodine	1995		ASTM International
	IIILEITIALIOIIAI	Radioisotopes in Water			
D4785-00a	ASTM	Standard Test Method for Low-	2000		ASTM International
D4783-008	International	Level Analysis of Iodine	2000		ASTW International
	IIICEITIACIONAI	Radioisotopes in Water			
D4785-08	ASTM	Standard Test Method for Low-	2008		ASTM International
D4703-00	International	Level Analysis of Iodine	2008		ASTW International
	international	Radioisotopes in Water			
D4785-20	ASTM	Standard Test Method for Low-	2020		ASTM International
D4703 20	International	Level Analysis of Iodine	2020		ASTWI III CITICIDA
	International	Radioisotopes in Water			
4.5.2.3	Dept. of	In EML Procedures Manual, 27 th	1990		HASL-300-Ed. 27
	Homeland	Edition, Vol. I, Department of	1330		111 OC 300 Ed. E7
	Security	Energy Report, HASL-300-ED.27-			
	0000,	Vol. I			
EPA 901.1	EPA	In Prescribed Procedures for	August 1980	EPA 600/4/80-032	EPA 600/4/80-032
		Measurement of Radioactivity in			=
		Drinking Water: Gamma Emitting			
		Radionuclides			
EPA 902.0	EPA	In Prescribed Procedures for	August 1980	EPA 600/4/80-032	EPA 600/4/80-032
		Measurement of Radioactivity in		, ,	
		Drinking Water: Radioactive Iodine			
Page 6 in	EPA	In Interim Radiochemical	Revised	EPA 600/4-75-008	600/4-75-008
EPA 600/4-		Methodology for Drinking Water:	March 1976		
75-008		Radioactive Iodine in Drinking			
		Water – Precipitation Method			
Page 9 in	EPA	In Interim Radiochemical	Revised	EPA 600/4-75-008	600/4-75-008
EPA 600/4-		Methodology for Drinking Water:	March 1976		
75-008		Radioactive Iodine in Drinking			
		Water – Distillation Method			

Page 92 in EMSL LV	EPA	In Radiochemical Analytical Procedures for Analysis of	March 1979	EMSLLV053917	EMSL LV 053917
053917		Environmental Samples: Isotopic			
		Analysis by Gamma Ray Spectra			
		using Lithium-Drifted Germanium			
		Detectors			
7120	Standard	Standard Methods for the	1995		Standard Methods
	Methods	Examination of Water and			
		Wastewater, 19 th Edition			
7120	Standard	Standard Methods for the	1998		<u>Standard Methods</u>
	Methods	Examination of Water and			
		Wastewater, 20 th Edition			
7120	Standard	Standard Methods for the	2005		<u>Standard Methods</u>
	Methods	Examination of Water and			
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7120	Standard	Standard Methods for the	2012		Standard Methods
	Methods	Examination of Water and Wastewater, 22 nd Edition			
7120	Standard	Standard Methods for the	2017		Standard Methods
/120	Methods	Examination of Water and	2017		<u>Standard Methods</u>
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7120	Standard	Standard Methods for the	2023		Standard Methods
,	Methods	Examination of Water and	2023		<u>standard Wethods</u>
		Wastewater, 24 th Edition			
7500-I B	Standard	Standard Methods for the	1989		Standard Methods
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		Wastewater, 17 th Edition			
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	Methods	Examination of Water and			
		Wastewater, 18 th Edition			
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	Methods	Examination of Water and			
		<i>Wastewater,</i> 19 th Edition			
7500-I B	Standard	Standard Methods for the	1998		Standard Methods
	Methods	Examination of Water and			
		Wastewater, 20 th Edition			
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	Methods	Examination of Water and			
		Wastewater, 21st Edition			

7500-I B	Standard	Standard Methods for the	2012	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 22 nd Edition		
7500-I B	Standard	Standard Methods for the	2017	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 23 rd Edition		
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	Methods	Examination of Water and		
		Wastewater, 24 th Edition		
7500-I C	Standard	Standard Methods for the	1989	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 17 th Edition		
7500-I C	Standard	Standard Methods for the	1992	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 18 th Edition		
7500-I C	Standard	Standard Methods for the	1995	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 19 th Edition		
7500-I C	Standard	Standard Methods for the	1998	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 20 th Edition		
7500-I C	Standard	Standard Methods for the	2005	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 21 st Edition		
7500-I C	Standard	Standard Methods for the	2012	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 22 nd Edition		
7500-I C	Standard	Standard Methods for the	2017	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 23 rd Edition		
7500-I C	Standard	Standard Methods for the	2023	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 24 th Edition		
7500-I D	Standard	Standard Methods for the	1989	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 17 th Edition		
7500-I D	Standard	Standard Methods for the	1992	Standard Methods
	Methods	Examination of Water and		
		<i>Wastewater,</i> 18 th Edition		

7500-I D	Standard	Standard Methods for the	1995	Standard Methods
750015	Methods	Examination of Water and	1333	<u>standard Wicthous</u>
	IVICTIOUS	Wastewater, 19 th Edition		
7500-I D	Standard	Standard Methods for the	1998	Standard Methods
750015	Methods	Examination of Water and	1550	<u>standard Wethods</u>
	IVICTIOUS	Wastewater, 20 th Edition		
7500-I D	Standard	Standard Methods for the	2005	Standard Methods
730015	Methods	Examination of Water and	2003	<u>standard Wethods</u>
	Wiethous	Wastewater, 21 st Edition		
7500-I D	Standard	Standard Methods for the	2012	Standard Methods
7300-1 D	Methods	Examination of Water and	2012	Standard Wethous
	Wiethous	Wastewater, 22 nd Edition		
7500-I D	Standard	Standard Methods for the	2017	Standard Methods
750015	Methods	Examination of Water and	2017	<u>standard Wethods</u>
	ivietilous	Wastewater, 23 rd Edition		
7500-I D	Standard	Standard Methods for the	2023	Standard Methods
750015	Methods	Examination of Water and	2025	<u>standard Wethods</u>
	Wictious	Wastewater, 24 th Edition		
7120-97	Standard	Online version. Approval year is	1997	Standard Methods
7 1 2 3 7	Methods Online	designated by the last 2 digits.	1337	<u>standard Westloas</u>
		Only online versions cited in the		
		regulations or in Appendix A to		
		Subpart C of Part 141 are		
		approved.		
7500-I B-00	Standard	Online version. Approval year is	2000	Standard Methods
	Methods Online	designated by the last 2 digits.		
		Only online versions cited in the		
		regulations or in Appendix A to		
		Subpart C of Part 141 are		
		approved.		
7500-I C-00	Standard	Online version. Approval year is	2000	Standard Methods
	Methods Online	designated by the last 2 digits.		
		Only online versions cited in the		
		regulations or in Appendix A to		
		Subpart C of Part 141 are		
		approved.		
7500-I D-00	Standard	Online version. Approval year is	2000	Standard Methods
	Methods Online	designated by the last 2 digits.		
		Only online versions cited in the		
		regulations or in Appendix A to		

Subpart C of Part 141 are		
approved.		

Radioactive Strontium 89 and 90

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
Sr-01	Dept. of Homeland Security	In EML Procedures Manual, 27 th Edition, Vol. I, Department of Energy Report, HASL-300-ED.27-Vol. I	1990		<u>HASL-300-Ed. 27</u>
Sr-01	Dept. of Homeland Security	In EML Procedures Manual, 28 th Edition, Vol. I, Department of Energy Report, HASL-300	1997		<u>HASL-300</u>
Sr-02	Dept. of Homeland Security	In EML Procedures Manual, 27 th Edition, Vol. I, Department of Energy Report, HASL-300-ED.27- Vol. I	1990		<u>HASL-300-Ed. 27</u>
Sr-02	Dept. of Homeland Security	In EML Procedures Manual, 28 th Edition, Vol. I, Department of Energy Report, HASL-300	1997		<u>HASL-300</u>
EPA 905.0	EPA	In Prescribed Procedures for Measurement of Radioactivity in Drinking Water: Radioactive Strontium	August 1980	EPA 600/4/80-032	EPA 600/4/80-032
EPA Sr-04	EPA	In Radiochemistry Procedures Manual: Radiochemical Determination of Radiostrontium in Water, Sea Water, and other Aqueous Media	June 1984	EPA 520/5-84-006	EPA 520/5-84-006
Page 29 in EPA 600/4- 75-008	EPA	In Interim Radiochemical Methodology for Drinking Water: Radioactive Strontium in Drinking Water	Revised March 1976	EPA 600/4-75-008	600/4-75-008
Page 65 in EMSL LV 053917	EPA	In Radiochemical Analytical Procedures for Analysis of Environmental Samples: Determination of Strontium-89 and Strontium-90 in Water, Vegetation, Soil, and Biological Tissue	March 1979	EMSLLV053917	<u>EMSL LV 053917</u>

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303	Standard	Standard Methods for the	1971	<u>Standard Methods</u>
	Methods	Examination of Water and		
		Wastewater, 13 th Edition		
7500-Sr B	Standard	Standard Methods for the	1989	<u>Standard Methods</u>
	Methods	Examination of Water and		
		Wastewater, 17 th Edition		
7500-Sr B	Standard	Standard Methods for the	1992	<u>Standard Methods</u>
	Methods	Examination of Water and		
		Wastewater, 18 th Edition		
7500-Sr B	Standard	Standard Methods for the	1995	<u>Standard Methods</u>
	Methods	Examination of Water and		
		Wastewater, 19 th Edition		
7500-Sr B	Standard	Standard Methods for the	1998	<u>Standard Methods</u>
	Methods	Examination of Water and		
		Wastewater, 20 th Edition		
7500-Sr B	Standard	Standard Methods for the	2005	<u>Standard Methods</u>
	Methods	Examination of Water and		
		Wastewater, 21 st Edition		
7500-Sr B	Standard	Standard Methods for the	2012	<u>Standard Methods</u>
	Methods	Examination of Water and		
	0. 1. 1	Wastewater, 22 nd Edition	2017	
7500-Sr B	Standard	Standard Methods for the	2017	<u>Standard Methods</u>
	Methods	Examination of Water and		
7500 6 0	6, 1, 1	Wastewater, 23 rd Edition	2022	Ci l late il l
7500-Sr B	Standard	Standard Methods for the	2023	<u>Standard Methods</u>
	Methods	Examination of Water and		
	0. 1. 1	Wastewater, 24 th Edition	2004	
7500-Sr B-	Standard	Online version. Approval year is	2001	<u>Standard Methods</u>
01	Methods Online	designated by the last 2 digits.		
		Only online versions cited in the		
		regulations or in Appendix A to		
		Subpart C of Part 141 are		
D 4450 75	II.C. Caalaaiaal	approved.	4077	LICCC
R-1160-76	U.S. Geological	In Methods for the Determination	1977	<u>USGS</u>
	Survey	of Radioactive Substances in		
		Water and Fluvial Sediments,		
		USGS Series: Techniques of Water-		
		Resource Investigation. Report		
		Number: 05-A5; by Thatcher, L.L.,		
		Janzer, V.J., and Edwards, K.W.		

Tritium

Method	Organization	Reference Title	Date	EPA Publication Number	Source of Method
D4107-91	ASTM International	Standard Test Method for Tritium in Drinking Water	1991		ASTM International
D4107-98	ASTM International	Standard Test Method for Tritium in Drinking Water	1998		ASTM International
D4107-08	ASTM International	Standard Test Method for Tritium in Drinking Water	2008		ASTM International
D4107-20	ASTM International	Standard Test Method for Tritium in Drinking Water	2020		ASTM International
EPA 906.0	EPA	In Prescribed Procedures for Measurement of Radioactivity in Drinking Water: <i>Tritium</i>	August 1980	EPA 600/4/80-032	EPA 600/4/80-032
EPA H-02	EPA	In Radiochemistry Procedures Manual: Radiochemical Determination of Tritium in Water: Dioxane Method	June 1984	EPA 520/5-84-006	EPA 520/5-84-006
Page 34 in EPA 600/4- 75-008	EPA	In Interim Radiochemical Methodology for Drinking Water: Tritium in Drinking Water	Revised March 1976	EPA 600/4-75-008	600/4-75-008
Page 87 in EMSL LV 053917	EPA	In Radiochemical Analytical Procedures for Analysis of Environmental Samples: Determination of Tritium in Water and Biological Tissue (Direct Method)	March 1979	EMSLLV053917	EMSL LV 053917
306	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 13 th Edition	1971		<u>Standard Methods</u>
7500- ³ H B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 17 th Edition	1989		Standard Methods
7500- ³ H B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 18 th Edition	1992		Standard Methods
7500- ³ H B	Standard Methods	Standard Methods for the Examination of Water and Wastewater, 19 th Edition	1995		Standard Methods

7500- ³ H B	Standard	Standard Methods for the	1998	Standard Methods
7500- H B	Methods	Examination of Water and	1990	<u>Standard Wethods</u>
	ivietilous	Wastewater, 20 th Edition		
7500- ³ H B	Standard		2005	Chandand Mathada
/500-°H B		Standard Methods for the	2005	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 21 st Edition		
7500- ³ H B	Standard	Standard Methods for the	2012	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 22 nd Edition		
7500- ³ H B	Standard	Standard Methods for the	2017	Standard Methods
	Methods	Examination of Water and		
		Wastewater, 23 rd Edition		
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	Methods	Examination of Water and		
		Wastewater, 24 th Edition		
7500- ³ H B-	Standard	Online version. Approval year is	2000	Standard Methods
00	Methods Online	designated by the last 2 digits.		
		Only online versions cited in the		
		regulations or in Appendix A to		
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		approved.		
R-1171-76	U.S. Geological	In Methods for the Determination	1977	USGS
	Survey	of Radioactive Substances in		<u>5555</u>
	34.10,	Water and Fluvial Sediments,		
		USGS Series: Techniques of Water-		
		Resource Investigation. Report		
		Number: 05-A5; by Thatcher, L.L.,		
		Janzer, V.J., and Edwards, K.W.		