

## Additional Resources: Radionuclides Rule, Waste Disposal Regulations, Treatment, and Residual Disposal

Title	Author(s)	Reference	Available On-line
<b>General Resources</b>			
EPA's Radionuclides Rule Web cast Training Presentations	N/A	June 29 & August 4, 2004	<a href="http://www.epa.gov/safewater/dwa/rules.html">http://www.epa.gov/safewater/dwa/rules.html</a>
<i>Final Implementation Guidance for Radionuclides</i>	N/A	EPA 816-F-00-002, March 2002	<a href="http://www.epa.gov/safewater/radionuclides/pdfs/guide_radionuclides_stateimplementation.pdf">http://www.epa.gov/safewater/radionuclides/pdfs/guide_radionuclides_stateimplementation.pdf</a>
<i>Radionuclides</i>	N/A	National Drinking Water Clearinghouse (NDWC) Tech Brief 13, March 2000	<a href="http://www.nesc.wvu.edu/ndwc/pdf/OT/TB/TB13_radionuclides.pdf">http://www.nesc.wvu.edu/ndwc/pdf/OT/TB/TB13_radionuclides.pdf</a>
<i>Radionuclides in Drinking Water: A Small Entity Compliance Guide</i>	N/A	EPA 815-R-02-001, February 2002	<a href="http://www.epa.gov/safewater/radionuclides/pdfs/guide_radionuclides_smallsystems_compliance.pdf">http://www.epa.gov/safewater/radionuclides/pdfs/guide_radionuclides_smallsystems_compliance.pdf</a>
<i>Radionuclides Final Rule</i>	N/A	40 CFR 9, 141, and 142, <i>Federal Register</i> , Vol. 65, No. 236, p. 76708, December 7, 2000	<a href="http://www.epa.gov/fedrgstr/EPA-WATER/2000/December/Day-07/w30421.pdf">http://www.epa.gov/fedrgstr/EPA-WATER/2000/December/Day-07/w30421.pdf</a>
<i>Radionuclides Notice of Data Availability Technical Support Document</i>	N/A	EPA 815-R-00-007, March 2000	<a href="http://www.epa.gov/safewater/radionuclides/pdfs/regulation_radionuclides_rulemaking_techsupportdoc.pdf">http://www.epa.gov/safewater/radionuclides/pdfs/regulation_radionuclides_rulemaking_techsupportdoc.pdf</a>
<i>Radionuclides Rule: A Quick Reference Guide</i>	N/A	EPA 816-F-01-003, June 2001	<a href="http://www.epa.gov/safewater/radionuclides/pdfs/qrg_radionuclides.pdf">http://www.epa.gov/safewater/radionuclides/pdfs/qrg_radionuclides.pdf</a>
<i>Radon, Radium, and Uranium in Drinking Water</i>	C. Richard Cothorn & P. A. Rebers (Eds.)	CRC Press, 1990	<a href="http://www.crcpress.co.uk/">http://www.crcpress.co.uk/</a> (for purchase)
<i>A Regulator's Guide to the Management of Radioactive Residuals from Drinking Water Treatment Technologies</i>	N/A	EPA 816-R-05-004, July 2005	<a href="http://www.epa.gov/safewater/radionuclides/pdfs/guide_radionuclides_regulatorsguide.pdf">http://www.epa.gov/safewater/radionuclides/pdfs/guide_radionuclides_regulatorsguide.pdf</a>
<i>A Study of the Factors Affecting the Gross Alpha Measurement, and a Radiochemical Analysis of some Groundwater Samples from the State of Wisconsin Exhibiting an Elevated Gross Alpha Activity</i>	M. F. Arndt & L. West	Wisconsin State Laboratory of Hygiene, 2003	<a href="http://prodwbin99.dnr.state.wi.us/org/water/dwg/gw/research/summary/176summary.pdf">http://prodwbin99.dnr.state.wi.us/org/water/dwg/gw/research/summary/176summary.pdf</a>
<i>A System's Guide to the Management of Radioactive Residuals from Drinking Water Treatment Technologies</i>	N/A	EPA 816-F-06-012, August 2006	<a href="http://www.epa.gov/safewater/radionuclides/pdfs/guide_radionuclides_systemsguidetoradioactive.pdf">http://www.epa.gov/safewater/radionuclides/pdfs/guide_radionuclides_systemsguidetoradioactive.pdf</a>
<i>Update of: Technologies and Costs for the Removal of Radionuclides from Potable Water Supplies</i>	N/A	EPA, 1999	Not available

<b>Title</b>	<b>Author(s)</b>	<b>Reference</b>	<b>Available On-line</b>
<i>Upgrading Existing or Designing New Drinking Water Treatment Facilities</i>	J. Smith Jr., R. Renner, B. Hegg, & J. Bender	Pollution Technology Review, No. 198, Noyes Data Corporation 1991	<a href="http://books.google.com/books?id=1qajb8wWbeUC&amp;pg=PA139&amp;lpg=PA139&amp;dq=radionuclide+reverse+osmosis+cost&amp;source=web&amp;ots=PhD-mJIGRg&amp;sig=I31VYD3jvtcn4KRS6jOaw7ct6g8#PPR7,M1">http://books.google.com/books?id=1qajb8wWbeUC&amp;pg=PA139&amp;lpg=PA139&amp;dq=radionuclide+reverse+osmosis+cost&amp;source=web&amp;ots=PhD-mJIGRg&amp;sig=I31VYD3jvtcn4KRS6jOaw7ct6g8#PPR7,M1</a>
<b>Treatment Technologies</b>			
<i>General</i>			
<i>Drinking Water Treatment for Small Communities</i>	N/A	EPA/640/K-94/003, May 1994	<a href="http://www.p2pays.org/ref/02/01998.pdf">http://www.p2pays.org/ref/02/01998.pdf</a>
<i>Jar Testing</i>	Z. Satterfield, P.E	National Environmental Services Center (NESC)	<a href="http://www.nesc.wvu.edu/ndwc/articles/ot/SP05/TB_jarrest.pdf">http://www.nesc.wvu.edu/ndwc/articles/ot/SP05/TB_jarrest.pdf</a>
<i>Radionuclides</i>	N/A	NDWC Tech Brief 13, March 2000	<a href="http://www.owr.ehnr.state.nc.us/ref/16/15376.pdf">http://www.owr.ehnr.state.nc.us/ref/16/15376.pdf</a>
<i>Residual Management from Removal of Radionuclides in Drinking Water: A New Jersey and Federal Perspective</i>	N/A	Presented at the Conference of Radiation Control Program Directors' 38 <sup>th</sup> National Conference on Radiation Control, May 10, 2006	<a href="http://www.crcpd.org/AnnualMeeting-06/PowerPoints/05-10-06_1029-Gardner.ppt#256,2,The Radionuclides Rule">http://www.crcpd.org/AnnualMeeting-06/PowerPoints/05-10-06_1029-Gardner.ppt#256,2,The Radionuclides Rule</a>
<i>Safe Water From Every Tap: Improving Water Service to Small Communities</i>	N/A	Commission on Geosciences, Environment and Resources, National Research Council, National Academy Press, Washington, D.C., 1997	<a href="http://books.nap.edu/openbook.php?record_id=5291">http://books.nap.edu/openbook.php?record_id=5291</a>
<i>Study of possible economical ways of removing radium from drinking water</i>	R. Valentine, et al	EPA-600/S2-88/009, April 1988	<a href="http://oaspub.epa.gov/eims/eimsapi.dispdetail?deid=34504">http://oaspub.epa.gov/eims/eimsapi.dispdetail?deid=34504</a> (for purchase)
<i>Water Quality and Treatment</i>	N/A	AWWA. 1999. McGraw Hill, Inc. New York, NY	<a href="http://www.awwa.org/bookstore/product.cfm?id=10008">http://www.awwa.org/bookstore/product.cfm?id=10008</a> (for purchase)
<i>Radium Treatment</i>			
<i>Barium and Radium Removal from Groundwater by Ion Exchange</i>	V. Snoeyink, J. Pfeffer, D. Snyder, & C. Chambers	EPA/600/2-84/093 (NTIS PB84189810), 1984	<a href="https://cfint.rtpnc.epa.gov/si/ntislink.cfm?dirEntryID=47583">https://cfint.rtpnc.epa.gov/si/ntislink.cfm?dirEntryID=47583</a> (for purchase)
"Evaluating Ion Exchange for Removing Radium From Groundwater"	S. Subramonian, D.A Clifford, & W. Vijjesworapu	Journal AWWA 82(5), May 1990, pp. 61-70	<a href="http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx">http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx</a> (for purchase)
"Ion Exchange: A Cost-Effective Alternative for Reducing Radium"	G. A. McKelvey, M. A. Thomspson, & M. J. Parrotta	Journal AWWA, 85(6), June 1993, pp. 61-66	<a href="http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx">http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx</a> (for purchase)
"Factors Affecting Radium Removal Using Mixed Iron-Manganese Oxides"	H. V. Mott, S. Singh, & V. R. Kondapally	Journal AWWA, 85(10), October 1993, pp. 114-121	<a href="http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx">http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx</a> (for purchase)
<i>How to Operate and Maintain Manganese Greensand Treatment Units</i>	Larry Rader	NDWC	<a href="http://www.nesc.wvu.edu/ndwc/pdf/OT/TB/OT_HowTo_w03.pdf">http://www.nesc.wvu.edu/ndwc/pdf/OT/TB/OT_HowTo_w03.pdf</a>

<b>Title</b>	<b>Author(s)</b>	<b>Reference</b>	<b>Available On-line</b>
"Ion Exchange: A Cost-Effective Alternative for Reducing Radium"	<i>G.A McKelvey, et al</i>	Journal AWWA, 85(6), June 1993, pp. 61-66	<a href="http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx">http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx</a> (for purchase)
<i>Iron and Manganese Removal</i>	N/A	NDWC Tech Brief 9, September 1998	<a href="http://www.nesc.wvu.edu/ndwc/pdf/OT/TB/TB9_iron.pdf">http://www.nesc.wvu.edu/ndwc/pdf/OT/TB/TB9_iron.pdf</a>
<i>Lime Softening</i>	N/A	NDWC Tech Brief 8, June 1998	<a href="http://www.nesc.wvu.edu/ndwc/pdf/OT/TB/TB8_lime_softening.pdf">http://www.nesc.wvu.edu/ndwc/pdf/OT/TB/TB8_lime_softening.pdf</a>
<i>Manganese Dioxide Coated Filters for Removing Radium from Drinking Water</i>	M. Menetrez, D. Anderson, & E. Stahel	EPA/600/2-88/057	<a href="http://oaspub.epa.gov/eims/eimsapi.dispdetail?deid=42335">http://oaspub.epa.gov/eims/eimsapi.dispdetail?deid=42335</a>
<i>Radionuclides Removal with Optimized Iron/Manganese Filtration</i>	K. Peterson, P.E.	Minnesota Department of Health	<a href="http://mnawwa.org/councils/research/radionuclidesremoval.pdf">http://mnawwa.org/councils/research/radionuclidesremoval.pdf</a>
<i>Radium Removal Using Addition of Preformed Hydrrous Manganese Oxides</i>	R.L. Valentine, et al	Prepared for AWWA Research Foundation; Denver, CO. 1992	Not available
"Removing and Disposing of Radium from Well Water"	K. A. Mangelson & R. P. Lauch	Journal AWWA, 82(6), June 1990, pp. 72-76	<a href="http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx">http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx</a> (for purchase)
<i>Removing Radium from Water by Plain and Treated Activated Alumina</i>	D. Garg & D. Clifford	EPA/600/R-92/048, April 1992	<a href="http://www.ntis.gov/search/product.asp?ABBR=PB92164789&amp;starDB=GRAHIST">http://www.ntis.gov/search/product.asp?ABBR=PB92164789&amp;starDB=GRAHIST</a>
<i>State-of-the-Art of Water Supply Practices</i>	N/A	Southern Wisconsin Regional Planning Commission, Technical Report No. 43 (preliminary draft)	<a href="http://www.sewrpc.org/watersupplystudy/chapters.aspx">http://www.sewrpc.org/watersupplystudy/chapters.aspx</a>
<b>Uranium Treatment</b>			
<i>Background on EPA's 2000 Drinking Water Regulations for Radionuclides</i>	N/A	Nuclear Regulatory Commission, SECY-06-0050, March 2, 2006	<a href="http://www.nrc.gov/reading-rm/doc-collections/commission/secys/2006/secy2006-0050/2006-0049scy.pdf">http://www.nrc.gov/reading-rm/doc-collections/commission/secys/2006/secy2006-0050/2006-0049scy.pdf</a>
<i>Ion Exchange Technology in the Remediation of Uranium Contaminated Groundwater at Fernald</i>	C. Sutton, C. Glassmeyer, & S. Bozich	Fluor Fernald, Inc., Presented at the Spectrum 2000 Conference, September 2000, Chattanooga, TN	<a href="http://www.osti.gov/bridge/servlets/purl/770689-Z3B1D3/webviewable/770689.pdf">http://www.osti.gov/bridge/servlets/purl/770689-Z3B1D3/webviewable/770689.pdf</a>
"Methods for Removing Uranium from Drinking Water"	T. Sorg	Journal AWWA 80(7)	<a href="http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx">http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx</a> (for purchase)
"Operating a Small Full-Scale Ion Exchange System for Uranium Removal"	R.T. Jelinek & T. Sorg,	Journal AWWA, July 1988, pp. 79-83.	<a href="http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx">http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx</a> (for purchase)
"Radium Removal by HMO and Manganese Greensand"	N. Oureshi & S. Nelson	Journal AWWA, 95(3), March 2003, pp. 101-108	<a href="http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx">http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx</a> (for purchase)
<i>Removal of Uranium from Drinking Water by Ion Exchange and Chemical Clarification</i>	N/A	EPA/600/2-87/076, 1987	<a href="http://oaspub.epa.gov/eims/eimsapi.dispdetail?deid=46230">http://oaspub.epa.gov/eims/eimsapi.dispdetail?deid=46230</a> (for purchase)
"Removing Uranium by Current Municipal Water Treatment Processes,"	S.K. White & E.A. Bondietti	Journal AWWA, 75(7), July 1983, pp. 374-380.	<a href="http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx">http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx</a> (for purchase)

<b>Title</b>	<b>Author(s)</b>	<b>Reference</b>	<b>Available On-line</b>
"Removing Uranium From Drinking Water by Metal Hydroxides and Anion-Exchange Resin"	S. Y. Lee & E. A. Bondietti	Journal AWWA, 75(10), October 1983, pp.536-540	<a href="http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx">http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx</a> (for purchase)
<i>Uranium and Radon Removal at a Site with No Sewers</i>	J. Civardi, C. DeWitt, & R. Zanhov	Presented at the American Water Works Association Water Quality Technology Conference, November 2006	<a href="http://www.hatchmott.com/documents/adobe/Uranium%20Paper.pdf">http://www.hatchmott.com/documents/adobe/Uranium%20Paper.pdf</a>
<b>Uranium and Radium Treatment</b>			
<i>Basic Ion Exchange for Residential Water Treatment, Parts 1-3</i>	Michael C. Keller	<i>Water Conditioning &amp; Purification</i> , February, March, and July 2005	<a href="http://www.wcponline.com/PDF/0205%20Basic%20Ion%20Exchange%201.pdf">http://www.wcponline.com/PDF/0205%20Basic%20Ion%20Exchange%201.pdf</a> ; <a href="http://www.wcponline.com/PDF/0305%20ion.pdf">http://www.wcponline.com/PDF/0305%20ion.pdf</a> ; <a href="http://www.wcponline.com/PDF/0705%20ion%20exchange%20pt%203.pdf">http://www.wcponline.com/PDF/0705%20ion%20exchange%20pt%203.pdf</a>
<i>Evaluation of Electrodialysis Reversal Process for Radium and Uranium Removal</i>	D. Clifford & Z. Zhang	University of Texas, 1991	Not available
"Exhausting and Regenerating Resin for Uranium Removal"	Z. Zhang & D. Clifford	Journal AWWA, 86(4), April 1994, pp. 228-241	<a href="http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx">http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx</a> (for purchase)
<i>Ion Exchange and Demineralization</i>	N/A	NDWC Tech Brief 4 May 1997	<a href="http://www.nesc.wvu.edu/ndwc/pdf/OT/TB/TB4_IonExchange.pdf">http://www.nesc.wvu.edu/ndwc/pdf/OT/TB/TB4_IonExchange.pdf</a>
<i>Ion Exchange Technology: Advances in Pollution Control</i>	A. K. Sengupta (Ed.)	CRC Press, June 1995	<a href="http://www.crcpress.co.uk/">http://www.crcpress.co.uk/</a> (for purchase)
"Modifying Ion Exchange for Combined Removal of Uranium and Radium"	Z. Zhang & D. Clifford	Journal AWWA, 86(4), April 1994, pp. 214-227	<a href="http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx">http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx</a> (for purchase)
<i>Package Plants</i>	N/A	NDWC Tech Brief 6, November 1997	<a href="http://www.nesc.wvu.edu/ndwc/pdf/OT/TB/TB6_package_plants.pdf">http://www.nesc.wvu.edu/ndwc/pdf/OT/TB/TB6_package_plants.pdf</a>
<i>Point-of-Use/Point-of-Entry Systems (POU/POE)</i>	Z. Michael Lalou, Ph.D.	NDWC, Spring 2003	<a href="http://www.nesc.wvu.edu/ndwc/pdf/OT/TB/TB_Sp03_point.pdf">http://www.nesc.wvu.edu/ndwc/pdf/OT/TB/TB_Sp03_point.pdf</a>
"Removing Uranium and Radium from a Natural Water"	A. Baeza, M. Fernández, M. Herranz, F. Legarda, C. Miró, & A. Salas	<i>Water, Air, &amp; Soil Pollution</i> , Volume 173, Numbers 1-4, June 2006, pp. 57-69	<a href="http://www.springerlink.com/content/xx8qu70125577131/">http://www.springerlink.com/content/xx8qu70125577131/</a> (for purchase)
<b>Treatment Residual Disposal</b>			
"Disposal of Radium Removed from Drinking Water"	N. A. Hahn, Jr.	Journal AWWA, 80(7), July 1988, pp. 71-78	<a href="http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx">http://www.awwa.org/AWWA/waterlibrary/JournalArchive.aspx</a> (for purchase)
<i>The Evaluation of Radioactive Contamination at Leach Fields Resulting From the Disposal of Small Water System Treatment Byproducts</i>	T. P. Ballestero	Environmental Research Group, University of New Hampshire, February 5, 2007	Not available
<i>Guidance for Handling Waste Residuals Resulting from Drinking Water Treatment</i>	N/A	Idaho Department of Environmental Quality, February 2007	<a href="http://www.deq.state.id.us/water/assist_business/pws/residuals_guidance.pdf">http://www.deq.state.id.us/water/assist_business/pws/residuals_guidance.pdf</a>

<b>Title</b>	<b>Author(s)</b>	<b>Reference</b>	<b>Available On-line</b>
General Information: Hazardous Waste Manifest System	N/A	EPA	<a href="http://www.epa.gov/epaoswer/hazwaste/gener/manifest/">http://www.epa.gov/epaoswer/hazwaste/gener/manifest/</a>
<i>Hazardous Materials Regulations; Compatibility With the Regulations of the International Atomic Energy Agency; Final Rule</i>	N/A	49 CFR Parts 171, 172, et al., <i>Federal Register</i> , Vol. 69, No. 16, p. 3632, January 2004	<a href="http://www.tgainc.com/pdf/69fr-3631.pdf">http://www.tgainc.com/pdf/69fr-3631.pdf</a>
<i>ISCORS Assessment of Radioactivity in Sewage Sludge: Recommendations on Management of Radioactive Materials in Sewage Sludge and Ash at Publicly Owned Treatment Works</i>	N/A	Interagency Steering Committee on Radiation Standards, DOE/EH-0668, EPA 832-R-03-002B	<a href="http://www.iscors.org/pdf/FinalRecommendations.pdf">http://www.iscors.org/pdf/FinalRecommendations.pdf</a>
<i>Low-Level Radioactive Waste From Cradle to Grave</i>	E. L. Gershey, et al	New York, NY: Van Nostrand Reinhold, 1990	<a href="http://www.abebooks.com/servlet/SearchResults?isbn=0442239580&amp;nsa=1">http://www.abebooks.com/servlet/SearchResults?isbn=0442239580&amp;nsa=1</a> (for purchase)
<i>Management of the Disposal of Radioactive Residuals in Drinking Water Treatment</i>	R. Narasimhan, J. Lowry, J. Culley, & N. Young-Pong	AwwaRF Project 2695, 2005	<a href="http://www.awwarf.org/research/TopicsAndProjects/execSum/2695.aspx">http://www.awwarf.org/research/TopicsAndProjects/execSum/2695.aspx</a> (for purchase)
<i>Method 1311: Toxicity Characteristic Leaching Procedure</i>	N/A	EPA	<a href="http://www.epa.gov/sw-846/pdfs/1311.pdf">http://www.epa.gov/sw-846/pdfs/1311.pdf</a>
<i>Method 9095B: Paint Filter Liquids Test</i>	N/A	EPA	<a href="http://www.epa.gov/sw-846/pdfs/9095b.pdf">http://www.epa.gov/sw-846/pdfs/9095b.pdf</a>
<i>Methods to Reduce the Concentration of Radionuclides in Drinking Water and Radionuclide Waste Disposal Criteria</i>	N/A	New Hampshire Department of Environmental Services, Water Supply Bureau, Environmental Fact Sheet WD-WSEB-22-21, 2006	<a href="http://www.des.state.nh.us/factsheets/ws/ws-22-21.htm">http://www.des.state.nh.us/factsheets/ws/ws-22-21.htm</a>
<i>Notification of Regulated Waste Activity Instructions and Form Booklet</i>	N/A	EPA Form 8700-12, July 2006	<a href="http://www.epa.gov/epaoswer/hazwaste/data/form8700/forms.htm#waste">http://www.epa.gov/epaoswer/hazwaste/data/form8700/forms.htm#waste</a>
<i>Radioactive Waste Management</i>	R. Berlin & C. Stanton	New York, NY, John Wiley & Sons, 1989	<a href="http://www.wiley.com/WileyCDA/WileyTitle/productCd-0471857920.html">http://www.wiley.com/WileyCDA/WileyTitle/productCd-0471857920.html</a> (for purchase)
<i>RCRA Orientation Manual 2006</i>	N/A	EPA 530-R-06-003, March 2006	<a href="http://www.epa.gov/epaoswer/general/orientat/">http://www.epa.gov/epaoswer/general/orientat/</a>
<i>Residual radioactivity from the treatment of water for urban domestic applications</i>	R. Kleinschmidt	WIT Press, 2005 (Australia)	<a href="http://library.witpress.com/pages/PaperInfo.asp?PaperID=15696">http://library.witpress.com/pages/PaperInfo.asp?PaperID=15696</a> (for purchase)
<i>Water Treatment Plant Residuals Management</i>	N/A	NDWC Tech Brief 7, March 1998	<a href="http://www.ndwc.wvu.edu/ndwc/pdf/OT/TB/TB7_water_treatment.pdf">http://www.ndwc.wvu.edu/ndwc/pdf/OT/TB/TB7_water_treatment.pdf</a>