Printed from: Interstate Technology & Regulatory Council (ITRC). 2017. *Remediation Management of Complex Sites*. RMCS-1. Washington, D.C.: Interstate Technology & Regulatory Council, Remediation Management of Complex Sites Team. http://rmcs-1.itrcweb.org.

References

Adamson, D.T., T.M. McGuire, C.J. Newell, and H. Stroo. 2011. "Sustained Treatment: Implications for Treatment Timescales Associated with Source-Depletion Technologies." *Remediation Journal* 21 (2):27-50.

Adamson, D.T., and C.J. Newell. 2009. "Support of Source Zone Bioremediation through Endogenous Biomass Decay and Electron Donor Recycling." *Bioremediation Journal* 13 (1):29-40.

Adamson, D.T., and C.J. Newell. 2014. Frequently Asked Questions about MNA in Groundwater. Arlington, Virginia.

Agency for Toxic Substances and Disease Registry. 2016. "Glossary of Terms." Last Modified January 26. https://www.atsdr.cdc.gov/glossary.html.

Air Force Center for Environmental Excellence and Defense Logistics Agency. 2001. Remedial Process Optimization Handbook. Brooks Air Force Base, Texas.

Alaska Department of Environmental Conservation. 2015. Frequently Asked Questions, Flint Hills' North Pole Refinery Contaminated Site. May 31, 2013 to June 9, 2015.

Alvarez, P., C.J. Newell, and D. Adamson. 2016. "Natural Attenuation of Groundwater Contaminants: New Paradigms, Technologies, and Applications." Coursera platform. https://www.coursera.org/learn/natural-attenuation-of-groundwater-contaminants.

Amonette, J.E., P.M. Jeffers, O. Qafoku, C.K. Russell, D.R. Humphrys, T.W. Wietsma, and M.J. Truex. 2012. Abiotic Degradation Rates for Carbon Tetrachloride and Chloroform: Final Report.

Annable, M.D., E.B. Goodwin, Y. Chai, D. Wandor, M. Manefield, M. Lee, D. Ogles, B. Patterson, and T. Weaver. 2014. "Mass Discharge Evaluation of Combined Remedial Technologies in a DNAPL Source Zone in Fractured Basalt." 9th International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Battelle, Monterey.

ASTM. 2008. Standard Guide for Developing Conceptual Site Models for Contaminated Sites. Method E 1989-95.

Baldwin, B.R., D. Taggart, Y. Chai, D. Wandor, A. Biernacki, K.L. Sublette, J.T Wilson, C. Walecka-Hutchison, C. Coladonato, and B. Goodwin. 2017. "Bioremediation Management Reduces Mass Discharge at a Chlorinated DNAPL Site." *Groundwater Monitoring & Remediation* 37 (2):58-70.

United States Senate. 2006. *Statement of Susan Parker Bodine, Assistant Administrator Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, Before the Subcommittee on Superfund and Waste Management*. June 15.

California State Water Board. 2012. Low-Threat Underground Storage Tank Case Closure Policy. In *2012-0016*, edited by State Water Resources Control Board.

CDPHE. 1980. Scanned photograph provided by Susan Newton.

CDPHE. 1990. Scanned photograph provided by Susan Newton.

CDPHE. 2000. Photograph taken by CDPHE consultant during cover construction.

CDPHE. 2010. Photograph taken by CDPHE personnel during field work oversight.

CDPHE. 2014a. Closure Criteria Guidance.

CDPHE. 2014b. Guidance for Conditional Closure of Low-Threat Sites with Residual Ground Water Contamination.

Chapelle, F. 2003. Methodology for Estimating Times of Remediation Associated with MNA. Naval Facilities Engineering Service Center (Port Hueneme, California).

Charsky, M., K. Davies, C. Nadolski, and D. Turner. 2012. Technical Impracticability Waiver for Groundwater ARARs.

CH2M Hill. 2009. 200 West Pump and Treat Operations and Maintenance Plan. Prepared for the U.S. Department of Energy. DOE/RL-2009-124, Revision 2. http://pdw.hanford.gov/arpir/index.cfm/viewDoc?accession=0085737.

Confidential source. 2017. Unpublished figures provided by confidential source. Contact publisher for further information under confidentiality agreement.: ITRC.

Congress, 102nd. 1992. Rocky Mountain Arsenal National Wildlife Refuge Act of 1992. In *H.R. 1435*.

CPEO. 2010. "Cleanup Technology Descriptions." Center for Public Environmental Oversight. http://www.cpeo.org/techtree/ttdescript/index.html.

CPEO. 2014. *Photograph taken by Lenny Siegel at USEPA Open House Meeting*.

CPEO. 2016a. A Stakeholder's Guide to Long-Term Management at Vapor Intrusion Sites.

CPEO. 2016b. A Stakeholder's Guide to New Construction at Vapor Intrusion Sites.

Darmendrail, D., O. Cerdan, A. Gobin, M. Bouzit, F. Blanchard, and B. Siegele. 2004. Assessing the Economic Impacts of Soil Degradation Final Report Volume II: Case Studies and Database Research Final Version. European Commission DG Environment Study Contract ENV.B.1/ETU/2003/0024.

Deeb, R., E. Hawley, L. Kell, and R. O'Laskey. 2011. Final Report – Assessing Alternative Endpoints for Groundwater Remediation at Contaminated Sites. Washington, D.C.

Denham, M., and K.M. Vangelas. 2008. "Biogeochemical Gradients as a Framework for Understanding Waste-Site Evolution." *Remediation Journal* 19 (1):5-17.

DOE-ID. 1995. Record of Decision for the Technical Support Facility Injection Well (TSF-05) and Surrounding Groundwater Contamination (TSF-23) and Miscellaneous No Action Sites Final Remedial Action.

DOE-ID. 2001. Record of Decision Amendment for the Technical Support Facility Injection Well (TSF-05) and Surrounding Groundwater Contamination (TSF-23) and Miscellaneous No Action Sites, Final Remedial Action.

DOE-ID. 2016. Annual Report for the Final Groundwater Remediation, Test Area North, Operable Unit 1-07B, Fiscal Year 2015. Prepared for the U.S. Department of Energy DOE Idaho Operations Office. March.

DOE. 1997. Solar Ponds Plume Remediation and Interceptor Trench System Water Treatment Study.

DOE. 1999. Final Solar Ponds Plume Decision Document.

DOE. 2002a. Enhanced In Situ Bioremediation. Innovative Technology Summary Report U.S. DOE Office of Environmental Management and Office of Science and Technology.

DOE. 2002b. Final Solar Ponds Plume Decision Document Modification and Response to Comments.

DOE. 2006. Remedial Investigation Report for the 200-ZP-1 Groundwater Operable Unit.

DOE. 2007. Feasibility Study Report for the 200-ZP-1 Groundwater Operable Unit.

DOE. 2007b. Review Report: Feasibility Study Strategies and Remedial System Performance Improvement for the 200-ZP-1/PW-1 Operable Units at the Hanford Site.

DOE. 2008a. Proposed Plan for the Remediation of the 200-ZP-1 Groundwater Operable Unit.

DOE. 2008b. Revised Geostatistical Analysis of the Inventory of Carbon Tetrachloride in the Unconfined Aquifer in the 200 West Area of the Hanford Site.

DOE. 2010a. Independent Technical Review of The C-400 Interim Remedial Project Phase Results, Paducah, Kentucky. Aiken, SC: Savannah River National Laboratory.

DOE. 2010b. Long-Range Deep Vadose Zone Program Plan. Richland Operations Office.

DOE. 2013. Hanford Site Groundwater Monitoring Report for 2012.

DOE. 2014. Hanford Site Groundwater Monitoring Report for 2013, Rev. 0. Richland, Washington: Richland Operations Office.

DOE. 2015a. Hanford Site Groundwater Monitoring Report for 2014.

DOE. 2015b. "Paducah Cleanup Progress." https://energy.gov/pppo/paducah-cleanup-progress.

DOE. 2015c. Paducah Gaseous Diffusion Plant Federal Facility Agreement Semiannual Progress Report for the First Half of Fiscal Year 2015.

DOE. 2017. "Rocky Flats Site, Colorado." Last Modified August 2. https://www.lm.doe.gov/rocky_flats/Sites.aspx.

DOE, USEPA, and CDPHE. 2003. Rocky Flats Cleanup Agreement.

DOE, USEPA, and CDPHE. 2012. "Rocky Flats Legacy Management Agreement."

E2 Inc. 2004. Recognizing the Past, Looking to the Future: Reuse Planning Report for the Velsicol Chemical Corporation Superfund Site.

Early, T., B. Borden, M. Heitkamp, B. Looney, D. Major, W.J. Waugh, G. Wein, T. Wein, K..M. Wiedemeier, K. Vangelas, M. Adams, and C.H. Sink. 2006. Enhanced Attenuation: A Reference Guide on Approaches to Increase the Natural Treatment Capacity of a System, Revision 1.

Eddy-Dilek, C., K. Kostelnik, and M.E. Denham. 2016. "The Challenge of Moving Science into Practice: Lessons Learned and New Approaches." Waste Management Symposium, Phoenix, Arizona, March 6-10.

Enviroforensics. 2014. "Enviroforensics." http://www.enviroforensics.com/.

ESTCP. 2010. Critical Evaluation of State-of-the-Art In Situ Thermal Treatment Technologies for DNAPL Source Zone

Treatment.

Falta, R.W., S.M. B., A.N.M. Ahsanuzzaman, M. Wang, and R.C. Earle. 2007. Remchlor: Remediation Evaluation Model for Chlorinated Solvents.

Farhat, S.K., C.J. Newell, T. Sale, D.S. Dandy, J.J. Wahlberg, M.A. Seyedabbasi, J.M. McDade, and N.T. Mahler. 2012. Matrix Diffusion Toolkit Users Manual, ESTCP Project ER-201126. Arlington, Virginia.

Foster Wheeler. 1996. Record of Decision for the Rocky Mountain Arsenal On-Post Operable Unit.

FRTR. 2016. Remediation Optimization.

GAO. 2006. Nuclear Cleanup of Rocky Flats: DOE Can Use Lessons Learned to Improve Oversight of Other Site's Cleanup Activities. U.S. Government Accountability Office.

Geosyntec Consultants. 2015. Pilot Study Implementation Report – Evandale Avenue Sources, Middlefield-Ellis-Whisman Regional Groundwater Remediation Program, Mountain View, California.

Goodwin, E.B., D. Fales, D. Lam, and A. Moore. 2010. "Blast-Fracturing a 20-m Thick Basalt Aquifer for Remediation of Chlorinated Hydrocarbons by Air Sparge/Soil Vapour Extraction." 7th International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Battelle, Monterey, California.

GoogleMaps. 2017. "Rocky Mountain Arsenal National Wildlife Refuge." https://www.google.com/maps/place/Rocky+Mountain+Arsenal+National+Wildlife+Refuge/@39.8367085,-104.9951241,9.75z/data=!4m5!3m4!1s0x0:0xf2734391e16540c!8m2!3d39.8367085!4d-104.8372998.

Harding Lawson Associates. 1995. Record of Decision: Rocky Mountain Arsenal, Offpost Site.

Heidlauf, D. 2017. Aerial Photograph of Velsicol Chemical Corporation in 2002.

Hooker, B.S., R.S. Skeen, M.J. Truex, C.D. Johnson, B.M. Petyon, and D.B. Anderson. 1998. "In Situ Bioremediation of Carbon Tetrachloride: Field Test Results." *Bioremediation Journal* 3:181-193. doi: http://dx.doi.org/10.1080/10889869809351334.

United States Senate. 2002. *Statement of Marianne Lamont Horinko, Assistant Administrator Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency Before the Subcommittee on Superfund, Toxics, Risk and Waste Management*. July 31.

Hubbard, S. 2015. "Unpublished photo." February 3.

ICP. 2004. New Pump and Treat Facility Annual Operation Report, October 2002 through September 2003, Test Area North Final Groundwater Remedy, Operable Unit 1-07B, ICP/EXT-04-00148, Revision 0, Idaho Completion Project, February 2004.

International Atomic Energy Agency. 2002. Non-Technical Factors Impacting On The Decision Making Processes In Environmental Remediation. Austria.

Israel, B.D. 2006. "Natural Resource Damages." In *Environmental Law Practice Guide: State and Federal Law*. Matthew Bender & Co., Inc.

ITRC. 1999a. Natural Attenuation of Chlorinated Solvents in Groundwater: Principles and Practices.

ITRC. 1999b. Regulatory Guidance for Permeable Reactive Barriers Designed to Remediate Chlorinated Solvents.

ITRC. 1999c. Regulatory Guidance for Permeable Reactive Barriers Designed to Remediate Inorganic and Radionuclide Contamination.

ITRC. 2002. A Systematic Approach to In Situ Bioremediation in Groundwater.

ITRC. 2004. Remediation Process Optimization: Identifying Opportunities for Enhanced and More Efficient Site Remediation.

ITRC. 2005. Technical and Regulatory Guidance for In Situ Chemical Oxidation of Contaminated Soil and Groundwater.

ITRC. 2006a. Exit Strategy – Seeing the Forest Beyond the Trees. Washington, D.C.

ITRC. 2006b. Planning and Promoting Ecological Land Reuse of Remediated Sites.

ITRC. 2006c. Property Revitalization – Lessons Learned from BRAC and Brownfields.

ITRC. 2007a. Improving Environmental Site Remediation Through Performance-Based Environmental Management. Washington, D.C.

ITRC. 2007b. Vapor Intrusion Pathway: A Practical Guideline.

ITRC. 2007c. Vapor Intrusion Pathway: Investigative Approaches for Typical Scenarios (A Supplement to VI-1).

ITRC. 2008a. Enhanced Attenuation: Chlorinated Organics.

ITRC. 2008b. In Situ Bioremediation of Chlorinated Ethene: DNAPL Source Zones.

ITRC. 2008c. Use of Risk Assessment in Management of Contaminated Sites.

ITRC. 2009a. Evaluating LNAPL Remedial Technologies for Achieving Project Goals.

ITRC. 2009b. Evaluating Natural Source Zone Depletion at Sites with LNAPL.

ITRC. 2010a. A Decision Framework for Applying Monitored Natural Attenuation Processes to Metals and Radionuclides in Groundwater.

ITRC. 2010b. Use and Measurement of Mass Flux and Mass Discharge.

ITRC. 2011a. Green and Sustainable Remediation: A Practical Framework. Washington, D.C.

ITRC. 2011b. Integrated DNAPL Site Strategy.

ITRC. 2011c. Permeable Reactive Barrier: Technology Update.

ITRC. 2011d. Project Risk Management for Site Remediation.

ITRC. 2012. Using Remediation Risk Management to Address Groundwater Cleanup Challenges at Complex Sites.

ITRC. 2013a. Biochemical reactors for mining-influenced water. Interstate Technology and Regulatory Council.

ITRC. 2013b. Environmental Molecular Diagnostics – New Site Characterization and Remediation Enhancement Tools.

ITRC. 2013c. Groundwater Statistics and Monitoring Compliance. Statistical Tools for the Project Life Cycle.

ITRC. 2015a. Decision Making at Contaminated Sites.

ITRC. 2015b. Integrated DNAPL Site Characterization and Tools Selection.

ITRC. 2016a. Geospatial Analysis for Optimization at Environmental Sites.

ITRC. 2016b. Long Term Contaminant Management Using Institutional Controls.

ITRC. 2017a. Characterization and Remediation of Fractured Bedrock Guidance.

ITRC. 2017b. Key Information Needed to Develop Strategies to Address Environmental Releases of Per- And Polyfluoroalkyl Substances (PFASs).

Jansen, John, et al. 2014. An Overview of Geophysical Methods to Characterize Deep Aquifers. West Bend, Wisconsin.

JOAAP Project Delivery Team. 2008. From War to Peace Joliet Army Ammunition Plant.

Kansas Geological Survey. 2001. “Lead and Zinc Mining in Kansas, Public Information Circular 17.” accessed June 4. http://www.kgs.ku.edu/Publications/pic17/pic17_1.html.

Kia, S.F., S.H. Fogler, M.G. Reed, and R.N. Vaidva. 1987. Effect of Salt Composition on Clay Release in Berea Sandstones. SPE Production Engineering.

Killian, T.H., N.L. Kolb, P. Corbo, and I.W. Marine. 1987. F-Area Seepage Basins: Environmental Information Document. Aiken, SC: Savannah River National Laboratory.

KMGH-TV. 1988. Denver Channel 7 Newsreel.

Looney, B. 2012. “Large and Dilute Plumes of Chlorinated Solvents – Challenges and Opportunities.” Federal Remediation Technologies Roundtable, Washington, D.C., June.

Looney, B., F. Chapelle, T. Early, K. Vangelas, K. Adams, and C.H. Sink. 2006. Mass Balance: A Key to Advancing Monitored and Enhanced Attenuation for Chlorinated Solvents. Savannah River Site, Aiken, South Carolina: Washington Savannah River Company.

McCarty, P. 2010. “Groundwater Contamination by Chlorinated Solvents: History, Remediation Technologies and Strategies.” In *In Situ Remediation of Chlorinated Solvent Plumes*, edited by H.F. Stroo, Ward, C.H., 28 pp. .

McGuire, T.M., J.M. McDade, and C.J. Newell. 2006. “Performance of DNAPL Source Depletion Technologies at 59 Chlorinated Solvent-Impact Sites.” *Ground Water Monitoring and Remediation* 26 (1):73-84.

Means, Bruce. 2001. The Mega Sites Issue. United States Environmental Protection Agency (USEPA).

Millings, M.R., M.B. Amidon, M.E. Denham, and B. Looney. 2013. Preliminary Data Report: Humate Injection as an Enhanced Attentuation Method at the F-Area Seepage Basins, Savannah River Site.

Missouri Department of Health. 2002. Jasper County, Missouri Superfund Site Childhood 2000 Lead Exposure Study.

Missouri Department of Natural Resources. 2017.

Murray, C.J., Y.J. Bott, and M.J. Truex. 2007. Persistence and Inventory of Carbon Tetrachloride in the 200 West Area of the Hanford Site. Richland, WA: Pacific Northwest National Laboratory.

Navarro Research and Engineering Inc. 2013. Land Use Control Plan for Rocky Mountain Arsenal.

Navarro Research and Engineering Inc. 2017. Figure, Walnut Creek Drainage with Monitoring Locations.

NAVFAC. Optimization.

NAVFAC. 2010a. Guidance for Optimizing Remedy Evaluation, Selection and Design.

NAVFAC. 2010b. Guidance for Optimizing Remedy Evaluation, Selection, and Design.

NAVFAC. 2012. Guidance for Optimizing Remedial Action Operation. Battelle Memorial Institute.

NAVFAC SE. 2016. Unpublished photographs provided to ITRC by Naval Facilities Engineering Command Southeast.

National Oil and Hazardous Substances Pollution Contingency Plan: Final Rule Preamble. March 8.

Newell, C.J., H.S. Rifai, J.T. Wilson, J.A. Connor, J.J. Aziz, and M.P. Suarez. 2002. Calculation and Use of First-Order Rate Constants for MNA Studies.

NJDEP. 2013. Technical Impracticability Guidance for Ground Water.

NJDEP. 2016. Characterization of Contaminated Ground Water Discharge to Surface Water Technical Guidance.

NRC. 1996. Understanding Risk: Informing Decision in a Democratic Society. National Academies Press.

NRC. 2001. A risk management strategy for PCB-contaminated sediments. Washington, D.C.: National Research Council.

NRC. 2003. Environmental Cleanup at Navy Facilities: Adaptive Site Management. Washington, D.C.: National Academies Press.

NRC. 2005. Contaminants in the Subsurface: Source Zone Assessment and Remediation. Washington, D.C.: National Academies Press.

NRC. 2007. Sediment Dredging at Superfund Megasites, Assessing the Effectiveness. National Research Council. Washington, D.C.: National Academies Press.

NRC. 2013. *Alternatives for Managing the Nation's Complex Contaminated Groundwater Sites*. Washington, D.C.: The National Academies of Sciences, Engineering, and Medicine.

NRC. 2014. Best Practices for Risk-Informed Decision Making Regarding Contaminated Sites. National Academies Press.

NRC. 2015. Characterization, Modeling, Monitoring, and Remediation of Fractured Rock. Washington, D.C.: The National Academies Press.

NYSDEC. 2005. Record of Decision: Onondaga Lake Bottom Subiste of the Onondaga Lake Superfund Site.

NYSDEC. 2010. "Onondaga Lake Superfund Site, Onondaga Lake cleanup." https://cumulis.epa.gov/supercpad/SiteProfiles/index.cfm?fuseaction=second.Cleanup&id=0203382#bkground.

NYSDEC. 2017. "Onondaga Lake Areas of Concern." http://www.dec.ny.gov/lands/72949.html.

Ogles, D., A. Biernacki, B. Baldwin, K. Sublette, M. Manefield, Y. Chai, D. Wandor, P. van Riet, M. Lee, and E.B. Goodwin. 2014. "Integrated Performance Monitoring Demonstrates Enhanced Bioremediation at a Site Impacted by Mixtures of Chlorinated Compounds." Proceedings, Battelle 9th International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, California.

Ogles, D., E.B. Goodwin, B. Baldwin, Y. Chai, A. Biernacki, D. Wandor, K. Sublette, M. Manefield, M. Lee, and J.T Wilson. 2015. "Overcoming Inhibition to Enhance Bioremediation in a Source Zone of a Fractured Bedrock Aquifer Impacted by Mixtures of Chlorinated Compounds." Battelle 3rd International Symposium on Bioremediation and Sustainable Environmental Technologies, Florida.

Ohio EPA. 2010. Guidance on Evaluating Sediment Contaminant Results.

ODEQ. 2008. Photograph of weathered chat piles at the Tar Creek Superfund Site, Ottawa County, Oklahoma. March. Photograph taken by the Oklahoma Department of Environmental Quality.

ODEQ. 2015. Fifth five-year review report for the Tar Creek Superfund Site, Ottawa County, Oklahoma. September.

Parsons. 2004. Principles and Practices of Enhanced Anaerobic Bioremediation of Chlorinated Solvents. Final.

Participedia. 2017. "Redesigning Onondaga Lake (Syracuse, New York)." http://participedia.net/en/cases/syracuse-new-york-redesigning-onondaga-lake-0.

Phillips, P.E., R.G. Evans, D.W. Roberts, A.D. Moehr, S.E. Stewart, A. Murgueytio, and W.F. Schramm. 1995. Jasper County, Missouri Superfund Site, Lead and Cadmium Exposure Study, Final Report. Missouri Department of Health.

Pine River Citizen Task Force. 2017. "Community Action Group Website." http://pinerivercag.org/about.

Prakash, D., P. Gabani, A.K. Chandel, Z. Ronen, and O.V. Singh. 2013. "Bioremediation: A Genuine Technology to Remediate Radionuclides from the Environment." *Microb. Biotechnol.* 6 (4):249-360.

Rasa, E., S. Champan, B. Bekins, G. Fogg, K. Scow, and D. Mackay. 2011. "Role of Back Diffusion and Biogeochemical Reactions in Sustaining an MTBE/TBA Plume in Alluvial Media." *Journal of Contaminant Hydrology* 126:235-247.

Sale, T., S. Kiaalhosseini, M. Olson, R. Johnson, and R. Rogers. 2016. Final Report: Third-Generation (3G) Site Characterization: Cryogenic Core Collection and High-Throughput Core Analysis – An Addendum to Basic Research

Addressing Contaminants in Low Permeability Zones – A State of the Science Review. SERDP Project ER-1740.

Sale, T., and C.J. Newell. 2011. Decision Guide: A Guide for Selecting Remedies for Subsurface Releases of Chlorinated Solvent Sites. Washington, D.C.

Sale, T., C.J. Newell, H. Stroo, R. Hinchee, and P. Johnson. 2008. Frequently Asked Questions Regarding Management of Chlorinated Solvent in Soils and Groundwater.

Sale, T., B. Parker, C.J. Newell, J.F. Devlin, D.T. Adamson, S. Chapman, and K. Saller. 2014. Management of Contaminants Stored in Low Permeability Zones, A State-of-the-Science Review. Arlington, Virginia.

Smith, R.F., and R. Stanley. 1992. Action Memorandum: Expedited Response Action Proposal for 200 West Area Carbon Tetrachloride Plume. . Washington State Department of Ecology, Lacey, Washington.

SRNL. 2017. Unpublished figure provided to ITRC by Savannah River National Laboratory.

Stroo, H.F., A. Leeson, J.A. Marqusee, P.C. Johnson, C.H. Ward, M.C. Kavanaugh, T.C. Sale, C.J. Newell, K.D. Pennell, C.A. Lebron, and M. Unger. 2012. "Chlorinated Ethene Source Remediation: Lessons Learned." *Environmental Science and Technology* 46:6438-6447.

Suchomel, E.J., M.C. Kavanaugh, J.W. Mercer, and P.C. Johnson. 2014. "The Source Zone Remediation Challenge." In *Chlorinated Solvent Source Zone Remediation*, edited by B.H. Kueper, Stroo, H.F., Vogel, C.M. and Ward, C.H.

TAMS Consultants Inc., and NYSDEC. 2002. Onondaga Lake Remedial Investigation Report.

Tetra Tech, Inc. 2008. Final Site 26 Technical Memorandum (Optimization Evaluation).

Tetra Tech. 2015. Remedial Investigation Addendum for Operable Unit 3. Naval Air Station Jacksonville, Jacksonville, Florida. Naval Facilities Engineering Command Southeast, Jacksonville, Florida. November.

The Presidential/Congressional Commission on Risk Assessment and Risk Management. 1997a. Framework for Environmental Health Risk Management.

The Presidential/Congressional Commission on Risk Assessment and Risk Management. 1997b. Risk Assessment and Risk Management in Regulatory Decision-Making.

Truex, M.J., P. Brady, C.J. Newell, M. Rysz, and K. Vangelas. 2011. The Scenarios Approach to Attenuation-Based Remedies for Inorganic and Radionuclide Contaminants. Savannah River National Laboratory.

Truex, M.J., C.J. Murray, C.R. Cole, R.J. Cameron, M.D. Johnson, R.S. Skeen, and C.D. Johnson. 2001. Assessment of Carbon Tetrachloride Groundwater Transport in Support of the Hanford Carbon Tetrachloride Innovative Technology Demonstration Program. Richland, WA: Pacific Northwest National Laboratory.

Truex, M.J., C.J. Newell, B. Looney, and K. Vangelas. 2006. Scenarios Evaluation Tool for Chlorinated Solvent MNA. Aiken, South Carolina: Savannah River National Laboratory.

United States Army. 2002. Guidance to Site Managers at Army Installations: Groundwater Evaluation and Development of Remediation Strategies Where Aquifer Restoration May Be Technically Impracticable.

USACE. 1999. Remediation System Evaluation Checklist.

USACE. 2012. Environmental Quality – Conceptual Site Models.

USACE. 2014. Design: In Situ Thermal Remediation Engineer Manual. Environmental Quality.

USEPA. 1988. Development of Maximum Contaminant Levels Under the Safe Drinking Water Act.

USEPA. 1989a. Overview of ARARs Focus on ARAR Waivers.

USEPA. 1989b. Risk Assessment Guidance for Superfund, Volume I, Part A: Human Health Evaluation Manual.

USEPA. 1990. Suggested ROD Language for Various Ground Water Remediation Options. Washington, D.C.

USEPA. 1991. ARAR Qs and As: The Fund-Balancing Waiver.

USEPA. 1992. General Methods for Remedial Operation Performance Evaluations.

USEPA. 1993. Technical Impracticability: Guidance for Evaluating Technical Impracticability of Ground-Water Restoration.

USEPA. 1994. Natural Attenuation of Hexavalent Chromium in Groundwater and Soils.

USEPA. 1996. Pump-and-Treat Ground Water Remediation. A Guide for Decision Makers and Practitioners.

USEPA. 1997a. Design Guidelines for Conventional Pump-and-Treat Systems. In *EPA Ground Water Issue*

USEPA. 1997b. Rules of Thumb for Superfund Remedy Selection.

USEPA. 1998a. Superfund Record of Decision: Joliet Army Ammunition Plant (Load-Assembly-Packing Area) and Joliet Army Ammunition Plant (Manufacturing Area), USEPA ID: IL0210090049 and IL7213820460 OU(s) 01, 02 & 01, 02.

USEPA. 1998b. Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water.

USEPA. 1999a. A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection

Decision Documents. Washington, D.C.

USEPA. 1999b. Use of MNA at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites.

USEPA. 2000. Proceedings of the Ground-Water/Surface-Water Interactions Workshop. Washington, D.C.

USEPA. 2001a. Framework Document for MNA of Inorganic Contaminants in Ground Water.

USEPA. 2001b. Superfund Post Construction Completion Activites.

USEPA. 2002a. Elements for Effective Management of Operating Pump-and-Treat Systems.

USEPA. 2002b. Role of Background in the CERCLA Cleanup Program.

USEPA. 2002c. USEPA Superfund Record of Decision: Sangamo Electric Dump/Crab Orchard National Wildlife Refuge (USDOI). Carterville, Illinois.

USEPA. 2002d. USEPA Superfund Record of Decision: Upper Tenmile Creek Mining Area. Helena, Montana.

USEPA. 2003. "Site Types Work Group." National Advisory Council for Environmental Policy and Technology Superfund Subcommittee, March 10-12.

USEPA. 2004a. First Five-Year Review, Middlefield-Ellis-Whisman Superfund Study Area.

USEPA. 2004b. Handbook of Groundwater Protection and Cleanup Policies for RCRA Corrective Action for Facilities Subject to Corrective Action Under Subtitle C of the Resource Conservation And Recovery Act.

USEPA. 2004c. How to Evaluate Alternative Cleanup Technologies for Underground Storage Tank Sites: A Guide for Corrective Action Plan Reviewers.

USEPA. 2004d. In Situ Thermal Treatment of Chlorinated Solvents: Fundamentals and Field Applications.

USEPA. 2004e. Site Characterization Technology for DNAPL Investigation.

USEPA. 2005a. Contaminated Sediment Remediation Guidance for Hazardous Waste Sites.

USEPA. 2005b. Use of Alternate Concentration Limits in Superfund Cleanups.

USEPA. 2006a. Guidance on Systematic Planning Using the Data Quality Objectives Process.

USEPA. 2006b. Value Engineering (for Fund-Financed Superfund Remedial Design/Remedial Action Projects).

USEPA. 2007a. MNA of Inorganic Contaminants in Groundwater, Vol. 1: Technical Basis for Assessment

USEPA. 2007b. MNA of Inorganic Contaminants in Groundwater, Vol. 2: Assessment for Non-Radionuclides Including Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Nitrate, Perchlorate, and Selenium.

USEPA. 2007c. Record of Decision for the UGI Columbia Gas Plant Superfund Site.

USEPA. 2007d. REMChlor.

USEPA. 2008a. Record of Decision, Operable Unit 4, Chat Piles, Other Mine and Mill Waste, and Smelter Waste, Tar Creek Superfund Site, Ottawa County, Oklahoma.

USEPA. 2008b. Third Five-Year Review Report for Koppers Co., Inc., Superfund Site.

USEPA. 2009a. Final Supplemental Remedial Investigation for Vapor Intrusion Pathway, Middlefield-Ellis-Whisman Study Area.

USEPA. 2009b. Summary of Key Existing USEPA CERCLA Policies for Groundwater Restoration, Memorandum. Washington, D.C.

USEPA. 2010a. Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites. Washington, D.C.

USEPA. 2010b. MNA of Inorganic Contaminants in Groundwater, Vol. 3: Assessment for Radionuclides Including Tritium, Radon, Strontium, Technetium, Uranium, Iodine, Radium, Thorium, Cesium, and Plutonium-Americium.

USEPA. 2010c. "Notice of U.S. Environmental Protection Agency's Determination to Not Take Superfund Action at LCP Bridge Street Operable Unit 2 and Wastebeds 9 to15 Onondaga Lake Areas of Concern." http://onondagalake.info/index.php?/news_story/epa_determination_not_take_superfund_action_at_wb13_and_others_comment_due_by_113010.html.

USEPA. 2010d. Record of Decision Amendment for the Vapor Intrusion Pathway, Middlefield-Ellis-Whisman Superfund Study Area.

USEPA. 2011a. Cleanup Best Management Practices: Effective Use of the Project Life Cycle Conceptual Site Model.

USEPA. 2011b. Close Out Procedures for National Priorities List Sites.

USEPA. 2011c. Groundwater Road Map: Recommended Process for Restoring Contaminated Groundwater at Superfund Sites.

USEPA. 2011d. Recommended Evaluation of ICs: Supplement to the Comprehensive Five-Year Review Guidance.

USEPA. 2012a. ICs: A Guide to Planning, Implementing, Maintaining, and Enforcing ICs at Contaminated Sites.

USEPA. 2012b. ICs: A Guide to Preparing IC Implementation and Assurance Plans at Contaminated Sites.

USEPA. 2012c. National Strategy to Expand Superfund Optimization Practices from Site Assessment to Site Completion.

USEPA. 2012d. Remfuel.

USEPA. 2012e. Summary of Technical Impracticability Waivers at National Priorities List Sites.

USEPA. 2012f. Supplemental Sitewide Feasibility Study, Middlefield-Ellis-Whisman Superfund Study Area. USEPA Region 9.

USEPA. 2013a. Fourth Five-Year Review Report for Koppers Co., Inc., Superfund Site.

USEPA. 2013b. Optimizing Site Cleanups.

USEPA. 2013c. Proposed Plan, Lower Duwamish Waterway Superfund Site.

USEPA. 2013d. RCRA Corrective Action: Case Studies Report.

USEPA. 2013e. Remediation Optimization: Definition, Scope, and Approach.

USEPA. 2014a. Emerging Contaminants – Perfluorooctane Sulfonate (PFOS) And Perfluorooctanoic Acid (PFOA).

USEPA. 2014b. Groundwater Remedy Completion Strategy: Moving Forward with the End in Mind. Washington, D.C.

USEPA. 2014c. Resource Conservation and Recovery Act (RCRA) Orientation Manual 2014, Glossary.

USEPA. 2014d. Third Five-Year Review Report for Middlefield-Ellis-Whisman Superfund Study Area.

USEPA. 2015a. Applicable or Relevant and Appropriate Requirements (ARARs).

USEPA. 2015b. EPA Update: TCE Hot Spot Areas Source Investigation Findings. In *Presentation at the EPA Neighborhood Meeting*.

USEPA. 2015c. First Five-Year Review Report for Onondaga Lake Superfund Site.

USEPA. 2015d. Overview: What is Optimization. Accessed September 23.

USEPA. 2016a. Application of Advanced Stratigraphic Concepts to Contaminated Groundwater Sites: A Practical Guide to Environmental Sequence Stratigraphy and Facies Models.

USEPA. 2016b. Brownfields Program Accomplishments and Benefits.

USEPA. 2016c. First Five-Year Review Report for UGI Columbia Gas Plant Superfund Site.

USEPA. 2016d. "Public Participation Guide: Glossary of Guide Terms." Last Modified August 22. https://www.epa.gov/international-cooperation/public-participation-guide-glossary-guide-terms.

USEPA. 2016e. "Superfund: National Priorities List (NPL)." Last Modified May 6. http://www.epa.gov/superfund/superfund-national-priorities-list-npl.

USEPA. 2017a. "Closure and Post-Closure Care Requirements for Hazardous Waste Treatment, Storage and Disposal Facilities." Last Modified January 4. https://www.epa.gov/hwpermitting/closure-and-post-closure-care-requirements-hazardous-waste-treatment-storage-and.

USEPA. 2017b. "Contaminated Site Clean-Up Information (CLU-IN) Website." https://clu-in.org/.

USEPA, and United States Department of Energy and Ecology. 2008. Record of Decision, Hanford 200 Area 200-ZP-1 Superfund Site.

USEPA, and United States Department of Energy and Ecology. 2011. Record of Decision, Hanford 200 Area Superfund Site 200-CW-5 and 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units.

USEPA, and USACE. 2007. Optimization Strategies for Long-Term Groundwater Remediation.

USEPA, et al. 1989c. Federal Facility Agreement for Rocky Mountain Arsenal.

USGS. 2006. Ground-Water Flow Model of the Boone Formation at the Tar Creek Superfund Site, Oklahoma and Kansas. Scientific Investigations Report 2006-5097

Virginia Department of Environmental Quality. 2011. Storage Tank Program Technical Manual.

Virginia Department of Environmental Quality. 2012. Memorandum Re: Case Closure Evaluation of Sites With Free Product.

Vogel, Cathy M. 2015. *Defense Environmental Restoration Program (DERP) Study*. Presentation to the Interstate Technology & Regulatory Council Remediation Management of Complex Sites (RMCS) Team.

Washington Department of Ecology. 2017. Complex Cleanup Sites – Information by County. Toxics Cleanup Program.

Weston Solutions. 2006. Remedial Investigation Report for Operable Unit One, Velsicol Chemical Corporation Superfund Site.

Weston Solutions. 2008. Phase IV Remedial Investigation Activities and Preliminary Findings.

Widdowson, M.A., E. Mendez, F. Chapelle, and C.C. Casey. 2005. Natural Attenuation Software (NAS), User's Manual Version 2.0.

Wiedemeier, T.H., H.S. Rifai, C.J. Newell, and J.T Wilson. 1999. *Natural Attenuation of Fuels and Chlorinated Solvents in the Subsurface*. New York: John Wiley & Sons, Inc.

Wilson, J.T. 2011. An Approach for Evaluating the Progress of Natural Attenuation in Groundwater. United States Environmental Protection Agency (USEPA).

Winter, T.C., J.W. Harvey, O.L. Franke, and W.M. Alley. 1998. "Ground Water and Surface Water, A Single Resource." *United States Geological Survey* (1139).

Wright Water Engineers Inc. 2015. Evaluation of Water Quality Variability for Uranium and Other Selected Parameters in Walnut Creek at the Rocky Flats Site.

Zhou, J., X. Zheng, M. Flury, and L. Guoqing. 2009. "Permeability Changes During Remediation of an Aquifer Affected By Sea-Water Intrusion: A Laboratory Column Study." *Journal of Hydrology* 376 (2-3):557-563.