
6.0 References

Public Laws

Atomic Energy Act of 1954. As amended, Ch. 1073, 68 Stat. 919, 42 USC 2011 et seq.

Comprehensive Environmental Response, Compensation, and Liability Act. 1980. Public Law 96-510, as amended, 94 Stat. 2767, 42 USC 9601 et seq.

Resource Conservation and Recovery Act. 1976. Public Law 94-580, as amended, 90 Stat. 2795, 42 USC 6901 et seq.

Code of Federal Regulations

40 CFR 141. “National Primary Drinking Water Regulations; Radionuclides; Proposed Rule.” *Code of Federal Regulations*, U.S. Environmental Protection Agency.

40 CFR 143. “National Secondary Drinking Water Regulations.” *Code of Federal Regulations*, U.S. Environmental Protection Agency.

40 CFR 264, Appendix IX. “Ground-Water Monitoring List.” *Code of Federal Regulations*, U.S. Environmental Protection Agency.

40 CFR 265. “Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.” *Code of Federal Regulations*, U.S. Environmental Protection Agency.

40 CFR 265.93(b) and (d). “Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities; Preparation, Evaluation, and Response.” *Code of Federal Regulations*, U.S. Environmental Protection Agency.

Washington Administrative Code

WAC 173-160. “Minimum Standards for Construction and Maintenance of Wells.” *Washington Administrative Code*, Olympia, Washington.

WAC 173-200. “Water Quality Standards for Ground Waters of the State of Washington.” *Washington Administrative Code*, Olympia, Washington.

WAC 173-200-40. “Water Quality Standards for Ground Waters of the State of Washington; Criteria.” *Washington Administrative Code*, Olympia, Washington.

WAC 173-216. “Waste Discharge Permit Program.” *Washington Administrative Code*, Olympia, Washington.

WAC 173-303-400. “Dangerous Waste Regulations; Interim Status Facility Standards.” *Washington Administrative Code*, Olympia, Washington.

WAC 173-303-645. “Dangerous Waste Regulations; Releases from Regulated Units.” *Washington Administrative Code*, Olympia, Washington.

WAC 173-303-645(11)(g). “Dangerous Waste Regulations; Releases from Regulated Units.” *Washington Administrative Code*, Olympia, Washington.

WAC 173-304. “Minimum Functional Standards for Solid Waste Handling.” *Washington Administrative Code*, Olympia, Washington.

WAC 173-304-490. “Minimum Functional Standards for Solid Waste Handling; Ground Water Monitoring Requirements.” *Washington Administrative Code*, Olympia, Washington.

- WAC 173-340. "Model Toxics Control Act–Cleanup." *Washington Administrative Code*, Olympia, Washington.
- WAC 246-290. "Group A Public Water Supplies." *Washington Administrative Code*, Olympia, Washington.
- WAC 246-290-310. "Maximum Contaminant Levels (MCLs) and Maximum Residual Disinfectant Levels (MRDLs)." *Washington Administrative Code*, Olympia, Washington.
- Arya LM and JF Paris. 1981. "A Physicoempirical Model to Predict the Soil Moisture Characteristic from Particle-Size Distribution and Bulk Density Data." *Soil Science Society of America Journal* 45:1023-1030.
- BHI-00184, Rev. 0. 1995. *Miocene- to Pliocene-Aged Suprabasalt Sediments of the Hanford Site, South-Central Washington*. KA Lindsey, Bechtel Hanford, Inc., Richland, Washington.
- BHI-00720, Rev. 6. 2002. *Performance Evaluation Report for Soil Vapor Extraction Operations at the Carbon Tetrachloride Site, February 1992 - September 2001/June 2002*. VJ Rohay, Bechtel Hanford, Inc., Richland, Washington.
- BHI-00725. 1996. *100-N Pilot Project: Proposed Consolidated Groundwater Monitoring Program*. JV Borghese, MJ Hartman, SP Luttrell, CJ Perkins, JP Zoric, and SC Tindall, Bechtel Hanford, Inc., Richland, Washington.
- BHI-00873. 1996. *Description of Work for Routine Groundwater Sampling at the Environmental Restoration Disposal Facility*. BH Ford, Bechtel Hanford, Inc., Richland, Washington.
- BHI-00952-01, Rev. 0. 1996. *200-ZP-1 Phase II Interim Remedial Measure Quarterly Report, August - October 1996*. JR Freeman-Pollard, ID Jacques, WJ McMahon, KM Singleton, SA Strobe, LC Swanson, and CR Windmueller, Bechtel Hanford, Inc., Richland, Washington.
- BHI-01121. 1997. *Decommissioning Report for Well 299-W-15-5*. Prepared by JE Auten and KD Reynolds, CH2M HILL Hanford, Inc. and Waste Management Federal Services, Inc., Northwest Operations for Bechtel Hanford, Inc., Richland, Washington.
- BHI-01311, Rev. 0. 1999. *Hydrogeologic Conceptual Model for the Carbon Tetrachloride and Uranium/Technetium Plumes in the 200 West Area: 1994 Through 1999 Update*. LC Swanson, VJ Rohay, and JM Faurote, Bechtel Hanford, Inc., Richland, Washington.
- BHI-01365. 2000. *Groundwater Vadose Zone Integration Project System Assessment Capability: Assessment Description Requirements Software Design and Test*. RL Aaberg, Bechtel Hanford, Inc., Richland, Washington.
- BHI-01496, Rev. 0. 2001. *Hanford Soil Inventory Model*. BC Simpson (CH2M HILL Hanford Group, Inc.), RA Corbin (Los Alamos National Laboratory), and SF Agnew (Archimedes Technology) for Bechtel Hanford, Inc., Richland, Washington.
- BHI-01651, Rev. 0. 2002. *200-CS-1 Operable Unit Test Pit Summary Report for Fiscal Year 2002*. CS Cearlock and DL Bowers, Bechtel Hanford, Inc., Richland, Washington.
- BHI-01738, Rev. 0. 2004. *Groundwater and Leachate Monitoring and Sampling at the Environmental Restoration Disposal Facility, Calendar Year 2003*. DA St. John and RL Weiss, Bechtel Hanford, Inc., Richland, Washington.
- BNWL-B-360. 1974. *Selected Water Table Contour Maps and Well Hydrographs for the Hanford Reservation, 1944-1973*. KL Kipp and RD Mudd, Pacific Northwest Laboratories, Richland, Washington.
- Christensen JN, PE Dresel, ME Conrad, K Maher, and DJ Depaolo. 2004. "Identifying the Sources of Subsurface Contamination at the Hanford Site in Washington using High-Precision Uranium Isotopic Measurements." *Environmental Science and Technology* 38(12):3330-3337.
- City of Richland. 2004a. *Horn Rapids Landfill Environmental Monitoring Report Calendar Year 2003*. City of Richland, Public Works.

-
- City of Richland. 2004b. *Horn Rapids Landfill Environmental Monitoring Report First Quarter 2004*. City of Richland, Public Works.
- City of Richland. 2004c. *Horn Rapids Landfill Environmental Monitoring Report Second Quarter 2004*. City of Richland, Public Works.
- CP-12134, Rev. 0. 2002. *Borehole Summary Report of Borehole C3808 in the 216-Z-11 Ditch, 200-CW-5 U Pond/Z-Ditches Cooling Water Group Operable Unit*. Prepared by RG Bauer (Fluor Hanford, Inc.) and ID Jacques (CH2M HILL Hanford, Inc.) for the U.S. Department of Energy, Richland, Washington.
- CP-14265, Rev. 0. 2003. *Calendar Year 2002 RCRA and CERCLA Groundwater Monitoring Well Summary Report*. Prepared by CR Martinez (Fluor Hanford, Inc.) for the U.S. Department of Energy, Richland, Washington.
- CP-15329, Rev. 0. 2003. *Data Quality Objective Summary Report for Establishing a RCRA/CERCLA/AEA Integrated 200 West and 200 East Area Groundwater Monitoring Network*. Prepared by ME Byrnes (Fluor Hanford, Inc.) and BA Williams (Pacific Northwest National Laboratory) for the U.S. Department of Energy, Richland, Washington.
- CP-18666, Rev. 0. 2004. *200-PW-2 and 200-PW-4 Operable Units Borehole Summary Report*. Prepared by LC Hulstrom (CH2M HILL Hanford Group, Inc.) for the U.S. Department of Energy, Richland, Washington.
- DOE Order 5400.5. "Radiation Protection of the Public and the Environment."
- DOE/RL-91-32, Draft B. 1991. *Expedited Response Action Proposal (EE/CA & EA) for 200 West Area Carbon Tetrachloride Plume, Appendix B*. VJ Rohay and VG Johnson for the U.S. Department of Energy, Richland, Washington.
- DOE/RL-92-23, Rev. 0. 1992. *Hanford Site Groundwater Background*. U.S. Department of Energy, Richland, Washington.
- DOE/RL-92-24, Rev. 3. 1995. *Hanford Site Background: Part 1, Soil Background for Inorganics*. U.S. Department of Energy, Richland, Washington.
- DOE/RL-92-67, Draft B. 1992. *Final Remedial Investigation Study-Environmental Assessment Report for the 1100-EM-1 Operable Unit, Hanford*. U.S. Department of Energy, Richland, Washington.
- DOE/RL-92-76, Rev. 1, Draft A. 2003. *Remedial Investigation/Feasibility Study Work Plan for the 200-UP-1 Groundwater Operable Unit*. Prepared by ME Byrnes (Fluor Hanford, Inc.) and MS Miller (Environmental Quality Management) for the U.S. Department of Energy, Richland, Washington.
- DOE/RL-92-76, Rev. 1, Draft B. 2004. *Remedial Investigation/Feasibility Study Work Plan for the 200-UP-1 Groundwater Operable Unit*. Prepared by ME Byrnes (Fluor Hanford, Inc.) and MS Miller (Environmental Quality Management) for the U.S. Department of Energy, Richland, Washington.
- DOE/RL-93-73, Rev. 2. 1997. *300 Area Process Trenches Modified Closure/Postclosure Plan*. U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-93-88. 1994. *Annual Report for RCRA Groundwater Monitoring Projects at Hanford Site Facilities for 1993*. Prepared by Geosciences Group, Westinghouse Hanford Company, Environmental Division for U.S. Department of Energy, Richland, Washington.
- DOE/RL-94-85. 1995. *Remedial Investigation/Feasibility Study Report for the 300-FF-5 Operable Unit*. U.S. Department of Energy, Richland, Washington.
- DOE/RL-94-95, Rev. 1. 1995. *Hanford Site Groundwater Remediation Strategy*. U.S. Department of Energy, Richland, Washington.

DOE/RL-95-13, Rev. 0. 1995. *Limited Field Investigation for the 200-UP-2 Operable Unit*. U.S. Department of Energy, Richland, Washington.

DOE/RL-95-50. 1995. *Additional Monitoring Well Installation and Field Sampling Plan for Continued Groundwater Monitoring at the Horn Rapids Landfill*. U.S. Department of Energy, Richland, Washington.

DOE/RL-95-73, Rev. 1. 1996. *Operation and Maintenance Plan for the 300-FF-5 Operable Unit*. Prepared by CH2M HILL Hanford, Inc. for the U.S. Department of Energy, Richland, Washington.

DOE/RL-95-83. 1995. *The Pilot-Scale Treatability Test Summary for the 100-HR-3 Operable Unit*. U.S. Department of Energy, Richland, Washington.

DOE/RL-95-110. 1996. *The N-Springs Expedited Response Action Performance Evaluation Report*. U.S. Department of Energy, Richland, Washington.

DOE/RL-95-111. 1997. *Corrective Measures Study for the 100-NR-1 and 100-NR-2 Operable Units*. U.S. Department of Energy, Richland, Washington.

DOE/RL-96-12, Rev. 0. 1996. *Hanford Site Background: Part 2, Soil Background for Radionuclides*. U.S. Department of Energy, Richland, Washington.

DOE/RL-96-39, Rev. 0. 1998. *100-NR-1 Treatment, Storage, and Disposal Units Corrective Measures Study/Closure Plan*. U.S. Department of Energy, Richland, Washington.

DOE/RL-96-61. 1997. *Hanford Site Background: Part 3, Groundwater Background*. U.S. Department of Energy, Richland, Washington.

DOE/RL-96-81, Rev. 0. 1997. *Waste Site Grouping for 200 Areas Soil Investigations*. U.S. Department of Energy, Richland, Washington.

DOE/RL-96-84, Rev. 0. 1996. *Remedial Design Report and Remedial Action Work Plan for the 100-HR-3 and 100-KR-4 Groundwater Operable Units' Interim Action*. U.S. Department of Energy, Richland, Washington.

DOE/RL-96-90, Rev. 0. 1997. *Interim Action Monitoring Plan for the 100-HR-3 and 100-KR-4 Operable Units*. U.S. Department of Energy, Richland, Washington.

DOE/RL-96-105, Rev. 1. 1997. *Richland Environmental Restoration Project Baseline, Multi-Year Work Plan*. U.S. Department of Energy, Richland, Washington.

DOE/RL-98-28, Rev. 0. 1999. *200 Areas Remedial Investigation/Feasibility Study Implementation Plan - Environmental Restoration Program*. U.S. Department of Energy, Richland, Washington.

DOE/RL-99-51. 2000. *Remedial Design Report and Remedial Action Work Plan for the 100-HR-3 Groundwater Operable Unit In Situ Redox Manipulation*. U.S. Department of Energy, Richland, Washington.

DOE/RL-99-79. 2000. *Fiscal Year 1999 Annual Summary Report for the 200-UP-1, 200-ZP-1, and 100-NR-2 Pump-and-Treat Operations and Operable Units*. U.S. Department of Energy, Richland, Washington.

DOE/RL-2000-11, Rev. 1. 2000. *Recommendations for Selection of a Site-Wide Groundwater Flow and Transport Model*. U.S. Department of Energy, Richland, Washington.

DOE/RL-2000-59, Rev. 0. 2000. *Sampling and Analysis Plan for Aquifer Sampling Tubes*. U.S. Department of Energy, Richland, Washington.

DOE/RL-2000-72, Rev. 0. 2000. *Performance Assessment Monitoring Plan for the Hanford Site Low-Level Burial Grounds*. U.S. Department of Energy, Richland, Washington.

-
- DOE/RL-2001-49. 2003. *Groundwater Sampling and Analysis Plan for the 200-BP-5 Operable Unit*. U.S. Department of Energy, Richland, Washington.
- DOE/RL-2002-05. 2001. *Calendar Year 2001 Annual Summary Report for the 100-HR-3, 100-KR-4, and 100-NR-2 Operable Units and Pump-and-Treat Operations*. U.S. Department of Energy, Richland, Washington.
- DOE/RL-2002-10. 2002. *Sampling and Analysis Plan for the 200-UP-1 Groundwater Monitoring Well Network*. U.S. Department of Energy, Richland, Washington.
- DOE/RL-2002-11, Rev. 0. 2002. *300-FF-5 Operable Unit Sampling and Analysis Plan*. Prepared by CH2M HILL Hanford, Inc. for the U.S. Department of Energy, Richland, Washington.
- DOE/RL-2002-59. 2003. *Hanford Site Groundwater Strategy: Protection, Monitoring, and Remediation*. U.S. Department of Energy, Richland, Washington.
- DOE/RL-2002-67. 2003. *Fiscal Year 2002 Annual Summary Report for 200-UP-1 and 200-ZP-1 Pump-and-Treat Operations*. Prepared by DB Erb, RS Edrington, GG Kelty, RF Raidl, and WJ McMahon for the U.S. Department of Energy, Richland, Washington.
- DOE/RL-2002-68. 2003. *Hanford's Groundwater Management Plan: Accelerated Cleanup and Protection*. U.S. Department of Energy, Richland, Washington.
- DOE/RL-2003-04, Rev. 0. 2003. *Sampling and Analysis Plan for the 200-PO-1 Groundwater Operable Unit*. MJ Hartman and JW Lindberg, Pacific Northwest National Laboratory, Richland, Washington.
- DOE/RL-2003-05, Rev. 0. 2003. *Fiscal Year 2002 Annual Summary Report for the In Situ Redox Manipulation Operations*. U.S. Department of Energy, Richland, Washington.
- DOE/RL-2003-11, Rev. 0. 2004. *Remedial Investigation Report for the 200-CW-5 U Pond/Z Ditches Cooling Waste Group, the 200-CW-2 S Pond and Ditches Cooling Water Group, the 200-CW-4 T Pond and Ditches Cooling Waster Group, and the 200-SC-1 Steam Condensate Group Operable Units*. U.S. Department of Energy, Richland, Washington.
- DOE/RL-2003-23. 2003. *Focused Feasibility Study for the U Plant Closure Area Waste Site*. RL Jackson, U.S. Department of Energy, Richland, Washington.
- DOE/RL-2003-24. 2003. *Proposed Plan for the U Plant Closure Area Waste Site*. RL Jackson, U.S. Department of Energy, Richland, Washington.
- DOE/RL-2003-38, Rev. 0. 2003. *100-BC-5 Operable Unit Sampling and Analysis Plan*. U.S. Department of Energy, Richland, Washington.
- DOE/RL-2003-38, Rev. 1. 2004. *100-BC-5 Operable Unit Sampling and Analysis Plan*. U.S. Department of Energy, Richland, Washington.
- DOE/RL-2003-49, Rev. 0. 2003. *100-FR-3 Operable Unit Sampling and Analysis Plan*. U.S. Department of Energy, Richland, Washington.
- DOE/RL-2003-49, Rev. 1. 2004. *100-FR-3 Operable Unit Sampling and Analysis Plan*. U.S. Department of Energy, Richland, Washington.
- DOE/RL-2003-55, Draft A. 2003. *Remedial Investigation/Feasibility Study Work Plan for the 200-ZP-1 Groundwater Operable Unit*. ME Byrnes (Fluor Hanford, Inc.) and MS Miller (EQM) for the U.S. Department of Energy, Richland, Washington.

DOE/RL-2003-58, Revision 0. 2004. *Fiscal Year 2003 Annual Summary Report for 200-UP-1 and 200-ZP-1 Pump-and-Treat Operations*. Prepared by DB Erb, RS Edrington, GG Kelty, and K Sathyanarayana (Fluor Hanford, Inc.) for the U.S. Department of Energy, Richland, Washington.

DOE/RL-2004-06, Revision 0. 2004. *Fiscal Year 2003 Annual Summary Report for the In Situ Redox Manipulation Operations*. Prepared by RF Raidl and GG Kelty (Fluor Hanford Inc.) for the U.S. Department of Energy, Richland, Washington.

DOE/RL-2004-17, Draft A. 2004. *Remedial Investigation Report for the 200-CS-1 Operable Unit*. U.S. Department of Energy, Richland, Washington.

DOE/RL-2004-21, Rev. 0. *Calendar Year 2003 Annual Summary Report for the 100-HR-3, 100-KR-4, and 100-NR-2 Operable Unit (OU) Pump & Treat Operations*. Prepared by GG Kelty, RS Edrington, VG Johnson, RF Raidl, and K Sathyanarayana (Fluor Hanford, Inc.) for the U.S. Department of Energy, Richland, Washington.

DOE/RL-2004-25, Draft A. 2004. *Remedial Investigation Report for the 200-PW-2 Uranium-Rich Process Waste Group and the 200-PW-4 General Process Condensate Group Operable Units*. U.S. Department of Energy, Richland, Washington.

DOE/RL-2004-72, Draft. 2004. *Fiscal Year 2004 Annual Summary Report for 200-UP-1 and 200-ZP-1 Pump-and-Treat Operations*. Prepared by JV Borghese, JD Isaacs, JA Winterhalder, LC Swanson, and ME Byrnes for the U.S. Department of Energy, Richland, Washington.

Ecology - Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy. 1989. *Hanford Federal Facility Agreement and Consent Order*. Document No. 89-10, as amended (The Tri-Party Agreement), Olympia, Washington.

Ecology. 1994a. *Dangerous Waste Portion of the Resource Conservation and Recovery Act Permit for the Treatment, Storage, and Disposal of Dangerous Waste*. Permit Number WA 7890008967, as revised. Washington State Department of Ecology, Olympia, Washington.

Ecology. 1994b. *Natural Background Soil Metals Concentrations in Washington State*. Publication No. 94-115, Washington State Department of Ecology Toxics Cleanup Program, Olympia, Washington.

Ecology. 2000. *State Waste Discharge Permit ST 4500*. Washington State Department of Ecology, Kennewick, Washington.

Ecology. 2001. *Cleanup Levels and Risk Calculations under the Model Toxics Control Act Cleanup Regulation (CLARC)*. Publication No. 94-145, Version 3.1, Washington State Department of Ecology, Olympia, Washington.

EMF-1865, Addenda 35. 2004. *Quarterly Groundwater Monitoring Summary Fourth Quarter 2003*. Framatome ANP Richland, Inc., Richland, Washington.

EMF-1865, Addenda 37. 2004. *Quarterly Groundwater Monitoring Summary – Second Quarter 2004*. AREVA, Richland, Washington.

EPA. 2000. "Explanation of Significant Difference for the 300-FF-5 Record of Decision" (see ROD 1996a). Issued by U.S. Environmental Protection Agency, Region 10, and U.S. Department of Energy, Richland, Washington.

EPA. 2001. *USDOE Hanford Site First Five Year Review Report*. U.S. Environmental Protection Agency, Region 10, Hanford Project Office, Seattle, Washington.

EPA 822-R-96-001. 1996. *Drinking Water Regulations and Health Advisories*. U.S. Environmental Protection Agency, Office of Water, Washington, D.C.

Gee GW and JW Bauder. 1986. "Particle-Size Analysis" in *Methods of Soil Analysis, Part 1*, 2nd edition, A Klute (ed.), pp. 383-411. American Society of Agronomy, Madison, Wisconsin.

- Gee GW and D Hillel. 1988. "Groundwater Recharge in Arid Regions: Review and Critique of Estimation Methods." *Hydrology Process* 2:255-266.
- Gee GW and AL Ward. 2002. "Predicting Deep Drainage Using Soil Hydraulic Properties and Soil Texture Data" in *Transactions of the 17th World Congress of Soil Science*, Bangkok, Thailand, August 2002.
- Gee GW, AL Ward, and MJ Fayer. 1997. "Surface Barrier Research at the Hanford Site." *Land Contamination and Reclamation* 5(3):233-238.
- Gee GW, ZF Zhang, and AL Ward. 2003. "A Modified Water Fluxmeter with Solution Collection Capability." *Vadose Zone J.* 2:627-633.
- Gee GW, MJ Fayer, ML Rockhold, and MD Campbell. 1992. "Variations in Recharge at the Hanford Site." *Northwest Sci.* 66:237-250.
- Gee GW, PJ Wierenga, BJ Andraski, MH Young, MJ Fayer and ML Rockhold. 1994. "Variations in Water Balance and Recharge Potential at Three Western Desert Sites." *Soil Science Society of America Journal* 58:63-72.
- GJO-HGLP 1.7.1, Rev. 0. 2003. *200 Areas Spectral Gamma Vadose Zone Characterization Project, Hanford 200 Areas Vadose Zone Characterization Plan*, prepared by S.M. Stoller Corp. for the U.S. Department of Energy, Grand Junction Office, Grand Junction, Colorado.
- GJO-HGLP 1.8.1, Revision 0. 2003. *Hanford Tank Farms Vadose Zone Monitoring Project, Baseline Monitoring Plan*. Prepared by S.M. Stoller Corp. for the U.S. Department of Energy, Grand Junction Office, Grand Junction, Colorado.
- Hausenbuiller RL. 1972. *Soil Science: Principles and Practices*. Wm. C. Brown Company Publishers, Dubuque, Iowa.
- Hazen TC, B Baybishenko, D Joyner, S Borglin, E Brodie, S Hubbard, K Williams, J Peterson, J Wan, T Tokunaga, M Firestone (Lawrence Berkeley National Laboratory, University of California-Berkeley), PE Long (Pacific Northwest National Laboratory), S Koenigsberg, and A Willet (Regenesis, Ltd.). 2004. *Field Investigations of HRC-Stimulated Bioreduction of Cr(VI) at Hanford 100-H*. Presented at the Fourth International Conference on Remediation of Chlorinated and Recalcitrant Compounds at Monterey, California, May 2004.
- HEIS. 1994. *Hanford Environmental Information System*. Environmental Information Systems Department, Fluor Hanford, Inc., Richland, Washington.
- HNF-7173, Rev. 03. 2000. *Hanford Solid Waste Landfill Closure Plan*. DynCorp Tri-Cities Services, Inc., Richland, Washington.
- HNF-SD-WM-TI-740, Rev. 0. 1990. *Standard Inventories of Chemicals and Radionuclides in Hanford Site Tank Wastes*. Prepared by MJ Kupfer, AL Boldt, BA Higley, KM Hodgson, LW Shelton, BC Simpson, RA Watrous, MD. LeClair, GL Borsheim, RT Winward, RM Orme, NG Colton, SL Lambert, DE Place, and WW Schulz for Lockheed Martin Hanford Corporation, Richland, Washington.
- Jolly ID, PG Cook, GB Allison, and MW Hughes. 1989. "Simultaneous Water and Solute Movement through an Unsaturated Soil Following an Increase in Recharge." *Journal of Hydrology* 111:391-396.
- Klute A and C Dirksen. 1986. "Hydraulic Conductivity and Diffusivity" in *Methods of Soil Analysis, Part 1*, 2nd edition. A Klute (ed.), pp. 687-734, American Society of Agronomy, Madison, Wisconsin.
- Lacombe P, B Baroux, and G Beranger. 1993. *Stainless Steels*. Les Editions de Physique Les Ulis, Paris.
- Murphy EM, TR Ginn, and JL Phillips. 1996. "Geochemical Estimates of Recharge in the Pasco Basin: Evaluation of the Chloride Mass Balance Technique." *Water Resource Res.* 32:2853-2868.

Narbutovskih SM, JP McDonald, R Schalla, and MD Sweeney. 2002. "Application of an In-Well Flowmeter to Determine a Complex Groundwater Flow Pattern." *Symposium on Environmental Evaluation and Remediation of Low Permeability and Dual Porosity Environments*, ASTM STP 1415, MN Sara and LG Everett (eds.), American Society for Testing and Materials, West Conshohocken, Pennsylvania.

NAVD88. 1988. North American Vertical Datum of 1988.

Nimmo JR, DA Stonestrom, and KC Akstin. 1994. "The Feasibility of Recharge Rate Determinations using the Steady-State Centrifuge Method." *Soil Science Society of America Journal* 58:49-56.

NUREG/CR-6805. 2002. *A Comprehensive Strategy of Hydrogeologic Modeling and Uncertainty Analysis for Nuclear Facilities and Sites*. SP Neuman and PJ Wierenga, U.S. Nuclear Regulatory Commission, Office of Nuclear Regulatory Research, Washington, D.C.

Parkhurst DL and CAJ Appelo. 1999. *User's Guide to PHREEQC (Version 2) – A Computer Program for Speciation, Batch-Reaction, One-Dimensional Transport, and Inverse Geochemical Calculations*. Water Resources Investigations Report 99-4259, U.S. Department of the Interior, U.S. Geological Survey, Denver, Colorado.

Peterson JM, MM MacDonell, LA Haroun, FA Monette, and RD Hildebrand. 2002. *Summary Fact Sheets for Selected Environmental Contaminants to Support Health Risk Analysis*. Environmental Assessment Division, Argonne National Laboratory, Chicago, Illinois. Available at: <http://www.ead.anl.gov>

PNL-3304. 1980. *Monitoring and Physical Characterization of Unsaturated Zone Transport-Laboratory Analysis*. GW Gee and AC Campbell, Pacific Northwest National Laboratory, Richland, Washington.

PNL-6403. 1987. *Recharge at the Hanford Site: Status Report*. GW Gee, Pacific Northwest Laboratory, Richland, Washington.

PNL-6488. 1988. *Characterization of Unsaturated Hydraulic Conductivity at the Hanford Site*. ML Rockhold, MJ Fayer, and GW Gee, Pacific Northwest Laboratory, Richland, Washington.

PNL-6820. 1989. *Hydrogeology of the 200 Areas Low-Level Burial Grounds – An Interim Report*, 2 Volumes. GV Last, BN Bjornstad, MP Bergeron, DW Wallace, DR Newcomer, JA Schramke, MA Chamness, CS Cline, SP Airhart, and JS Wilbur, Pacific Northwest Laboratory, Richland, Washington.

PNL-7147. 1989. *Final Report: Soil Gas Survey at the Solid Waste Landfill*. JC Evans, RM Freeland, DW Glover, and C Veverka, Pacific Northwest Laboratory, Richland, Washington.

PNL-8122. 1992. *Water-Table Elevations on the Hanford Site and Outlying Areas, 1991*. DR Newcomer, KD Pohlod, and JP McDonald, Pacific Northwest Laboratory, Richland, Washington.

PNL-8580. 1993. *Water Level Measurements for Modeling Hydraulic Properties in the 300-FF-5 and 100 Aggregate Area Operable Units*. MD Campbell, WJ McMahon, and KR Simpson, Pacific Northwest Laboratory, Richland, Washington.

PNL-8869. 1993. *Preliminary Potentiometric Map and Flow Dynamic Characteristics for the Upper-Basalt Confined Aquifer System*. FA Spane, Jr. and RG Raymond, Pacific Northwest Laboratory, Richland, Washington.

PNL-10817. 1995. *Hydrochemistry and Hydrogeologic Conditions Within the Hanford Upper Basalt Confined Aquifer System*. FA Spane, Jr. and WD Webber, Pacific Northwest Laboratory, Richland, Washington.

PNNL-11141. 1996. *Hanford Site Ground-Water Monitoring for 1995*. PE Dresel, JT Rieger, WD Webber, PD Thorne, BM Gillespie, SP Luttrell, SK Wurstner, and TL Liikala, Pacific Northwest National Laboratory, Richland, Washington.

-
- PNNL-11523. 1997. *Combination RCRA Groundwater Monitoring Plan for the 216-A-10, 216-A-36B, and 216-A-37-1 PUREX Cribs*. JW Lindberg, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-11574. 1997. *Results of RCRA Groundwater Quality Assessment Program at the 216-U-12 Crib*. BA Williams and CJ Chou, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-11633. 1997. *Origin of Increased Sulfate in Groundwater at the ETF Disposal Site*. EC Thornton, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-11665. 1997. *Tritium Monitoring in Groundwater and Evaluation of Model Predictions for the Hanford Site 200 Area Effluent Treatment Facility*. DB Barnett, MP Bergeron, CR Cole, MD Freshley, and SK Wurstner, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-11665.1 ICN. 1998. *Summary of Tritium Tracking and Groundwater Monitoring at the Hanford Site 200 Area SALDS - FY 1998*. DB Barnett, MP Bergeron, CR Cole, MD Freshley, and SK Wurstner, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-11793. 1998. *Hanford Site Groundwater Monitoring for Fiscal Year 1997*. MJ Hartman and PE Dresel, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-11800. 1998. *Composite Analysis for Low-Level Waste Disposal in the 200-Area Plateau of the Hanford Site*. CT Kincaid, MP Bergeron, CR Cole, MD Freshley, N Hassig, VG Johnson, DI Kaplan, RJ Serne, GP Steile, DL Strenge, PD Thorne, LW Vail, GA Whyatt, and SK Wurstner, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-11801. 1997. *Three-Dimensional Analysis of Future Groundwater Flow Conditions and Contaminant Plume Transport in the Hanford Site Unconfined Aquifer System: FY 1996 and 1997 Status Report*. CR Cole, SK Wurstner, MP Bergeron, MD Williams, and PD Thorne, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-11809. 1998. *Results of Phase I Groundwater Quality Assessment for Single-Shell Tank Waste Management Areas T and TX-TY at the Hanford Site*. FN Hodges, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-11810. 1998. *Results of Phase I Groundwater Quality Assessment for Single-Shell Tank Waste Management Area S-SX at the Hanford Site*. VG Johnson and CJ Chou, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-11826. 1998. *Results of Phase I Groundwater Quality Assessment for Single-Shell Tank Waste Management Areas B-BX-BY at the Hanford Site*. SM Narbutovskih, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-12023. 1998. *Groundwater Monitoring for the 100-K Area Fuel-Storage Basins: July 1996 through April 1998*. VG Johnson, CJ Chou, MJ Hartman, and WD Webber, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-12057. 2001. *RCRA Assessment Plan for Single-Shell Tank Waste Management Area T at the Hanford Site*. FN Hodges and CJ Chou, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-12057-ICN-1. 2002. *RCRA Assessment Plan for Single-Shell Tank Waste Management Area T at the Hanford Site, Interim Change Notice 1*. DG Horton, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-12072. 2001. *RCRA Assessment Plan for Single-Shell Tank Waste Management Area TX-TY at the Hanford Site*. FN Hodges and CJ Chou, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-12072-ICN-1. 2002. *RCRA Assessment Plan for Single-Shell Tank Waste Management Area TX-TY at the Hanford Site, Interim Change Notice 1*. DG Horton, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-12086. 1999. *Hanford Site Groundwater Monitoring for Fiscal Year 1998*. MJ Hartman (ed.), Pacific Northwest National Laboratory, Richland, Washington.

-
- PNNL-12114. 1999. *RCRA Assessment Plan for Single-Shell Tank Waste Management Area S-SX at the Hanford Site*. VG Johnson and CJ Chou, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-12114-ICN-1. 2000. *RCRA Assessment Plan for Single-Shell Tank Waste Management Area S-SX at the Hanford Site, Interim Change Notice 1*. VG Johnson and CJ Chou, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-12114-ICN-2. 2002. *RCRA Assessment Plan for Single-Shell Tank Waste Management Area S-SX at the Hanford Site, Interim Change Notice 2*. RM Smith, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-12220. 1999. *Sampling and Analysis Plan Update for Groundwater Monitoring - 1100-EM-1 Operable Unit*. DR Newcomer, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-12261. 2000. *Revised Hydrogeology for the Suprabasalt Upper Aquifer System, 200 East Area and Vicinity, Hanford Site Washington*. BA Williams, BN Bjornstad, R Schalla, and WD Webber, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13014. 2000. *Groundwater Monitoring Plan for the Solid Waste Landfill*. JW Lindberg and CJ Chou, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13021. 1999. *Water-Level Monitoring Plan for the Hanford Groundwater Monitoring Project*. JP McDonald, MA Chamness, and DR Newcomer, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13022. 2000. *Groundwater Quality Assessment Plan for Single-Shell Waste Management Area B-BX-BY at the Hanford Site*. SM Narbutovskih, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13023. 2001. *RCRA Groundwater Monitoring Plan for Single-Shell Tank Waste Management Area A-AX at the Hanford Site*. SM Narbutovskih, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13023-ICN-1. 2002. *RCRA Groundwater Monitoring Plan for Single-Shell Tank Waste Management Area A-AX at the Hanford Site, Interim Change Notice 1*. SM Narbutovskih, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13024. 2001. *RCRA Groundwater Monitoring Plan for Single-Shell Tank Waste Management Area C at the Hanford Site*. DG Horton and SM Narbutovskih, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13032. 2000. *Groundwater Monitoring Plan for the Hanford Site 200 Area Treated Effluent Disposal Facility*. DB Barnett, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13033. 1999. *Recharge Data Package for the Immobilized Low-Activity Waste 2001 Performance Assessment*. MJ Fayer, EM Murphy, JL Downs, FO Khan, CW Lindenmeier, and BN Bjornstad., Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13047. 1999. *Groundwater Monitoring Plan for the 216-A-29 Ditch*. MD Sweeney, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13078. 1999. *Effects of Barometric Fluctuations on Well Water-Level Measurements and Aquifer Test Data*. FA Spane, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13080. 1999. *Hanford Site Groundwater: Settings, Sources, and Methods*. MJ Hartman (ed.), Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13116. 2000. *Hanford Site Groundwater Monitoring for Fiscal Year 1999*. MJ Hartman, LF Morasch, and WD Webber (eds.), Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13121. 2000. *Groundwater Monitoring and Tritium-Tracking Plan for the 200 Area State-Approved Land Disposal Site*. DB Barnett, Pacific Northwest National Laboratory, Richland, Washington.

-
- PNNL-13143. 2002. *The Hanford Site 1000-Year Cap Design Test*. GW Gee, AL Ward, and CD Wittreich, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13185. 2000. *Groundwater Quality Assessment Plan for Single-Shell Tank Waste Management Area U at the Hanford Site*. FN Hodges and CJ Chou, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13228. 2000. *Evaluation of Elevated Tritium Levels in Groundwater Downgradient from the 618-11 Burial Ground Phase I Investigations*. PE Dresel, BA Williams, JC Evans, RM Smith, CJ Thompson, and LC Hulstrom, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13282. 2000. *Groundwater Quality Assessment for Waste Management Area U; First Determination*. FN Hodges and CJ Chou, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13367. 2000. *Groundwater Monitoring Plan for the Hanford Site 216-B-3 Pond RCRA Facility*. DB Barnett, RM Smith, and CJ Chou, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13367-ICN-1. 2002. *Groundwater Monitoring Plan for the Hanford Site 216-B-3 Pond RCRA Facility, Interim Change Notice 1*. DB Barnett, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13378. 2001. *Results of Detailed Hydrologic Characterization Tests - Fiscal Year 1999*. FA Spane, Jr., PD Thorne, and DR Newcomer, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13400. 2000. *Groundwater Flow and Transport Calculations Supporting the Immobilized Low-Activity Waste Disposal Facility Performance Assessment*. MP Bergeron and SK Wurstner, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13404. 2001. *Hanford Site Groundwater Monitoring for Fiscal Year 2000*. MJ Hartman, LF Morasch, and WD Webber (eds.), Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13441. 2000. *RCRA Groundwater Quality Assessment Report for Waste Management Area S-SX (November 1997 through April 2000)*. VG Johnson and CJ Chou, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13447. 2001. *Hanford Site-Wide Groundwater Model Calibration Using Inverse Methodology*. CR Cole, MP Bergeron, SK Wurstner, PD Thorne, S Orr, and MI McKinley, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13560. 2001. *Assessment of Carbon Tetrachloride Groundwater Transport in Support of the Hanford Carbon Tetrachloride Innovative Technology Demonstration Program*. MJ Truex, CJ Murray, CR Cole, RJ Cameron, MD Johnson, RS Skeen, and CD Johnson, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13612. 2001. *Groundwater Quality Assessment Plan for Single-Shell Tank Waste Management Area U*. RM Smith, FN Hodges, and BA Williams, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13612-ICN-1. 2003. *Groundwater Quality Assessment Plan for Single-Shell Tank Waste Management Area U, Interim Change Notice 1*. RM Smith, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13623. 2001. *Transient Inverse Calibration of Site-Wide Groundwater Model to Hanford Operational Impacts from 1943 to 1996 – Alternative Conceptual Model Considering Interaction with Uppermost Basalt Confined Aquifer*. VR Vermeul, CR Cole, MP Bergeron, PD Thorne, and SK Wurstner, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13641. 2001. *Uncertainty Analysis Framework – Hanford Site-Wide Groundwater Flow and Transport Model*. CR Cole, MP Bergeron, CJ Murray, PD Thorne, SK Wurstner, and P Rogers, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-13675. 2001. *Measurement of Helium-3/Helium-4 Ratios in Soil Gas at the 618-11 Burial Ground*. KB Olsen, PE Dresel, and JC Evans, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-13692. 2002. *Survey of Radiological and Chemical Contaminants in the Near-Shore Environment at the Hanford Site 300 Area*. A Cooperative Environmental Monitoring Project involving the Hanford Site Public Safety and Resource Protection Program (PSRPP) and Washington State Department of Health. GW Patton, BL Tiller, EJ Antonio, TM Poston, and SP Van Verst, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-13757-2. 2002. *Characterization of Vadose Zone Sediment: Borehole 299-W23-19 [SX-115] in the S-SX Waste Management Area*. RJ Serne, HT Schaef, BN Bjornstad, DC Lanigan, GW Gee, CW Lindenmeier, RE Clayton, VL LeGore, MJ O'Hara, CF Brown, RD Orr, G.V Last, IV Kutnyakov, DS Burke, TC Wilson, and BA Williams, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-13757-4. 2002. *Characterization of Vadose Zone Sediment, Part 4: Slant Borehole SX-108 in the S-SX Waste Management Area*. RJ Serne, GV Last, HT Schaef, DC Lanigan, CW Lindenmeier, CC Ainsworth, RE Clayton, VL LeGore, MJ O'Hara, CF Brown, RD Orr, IV Kutnyakov, TC Wilson, KB Wagnon, BA Williams, and DB Burke, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-13788. 2002. *Hanford Site Groundwater Monitoring for Fiscal Year 2001*. MJ Hartman, LF Morasch, and WD Webber (eds.), Pacific Northwest National Laboratory, Richland, Washington.

PNNL-13801. 2002. *Groundwater Quality Assessment Report for Waste Management Area S-SX: (April 2000 through December 2001)*. VG Johnson and CJ Chou, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-13914. 2002. *Groundwater Monitoring Plan for the 1301-N, 1324-N/NA, and 1325-N RCRA Facilities*. MJ Hartman, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-14022. 2002. *300 Area Uranium Leach and Adsorption Project*. RJ Serne, CF Brown, HT Schaef, EM Price, MJ Lindberg, Z Wang, PL Gassman, and JG Catalano, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-14027. 2002. *An Initial Assessment of Hanford Impact Performed with the System Assessment Capability*. RW Bryce, CT Kincaid, PW Eslinger, and LF Morasch (eds.), Pacific Northwest National Laboratory, Richland, Washington.

PNNL-14031. 2002. *Evaluation of Potential Sources for Tritium Detected in Groundwater at Well 199-K-111A, 100-K Area*. RE Peterson, FA Spane, KB Olsen, and MD Williams, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-14033. 2002. *Groundwater Monitoring and Assessment Plan for the 100-K Area Fuel Storage Basins*. RE Peterson, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-14038. 2002. *Results of Tritium Tracking and Groundwater Monitoring at the Hanford Site 200 Area State-Approved Land Disposal Site – Fiscal Year 2002*. DB Barnett and JT Rieger, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-14049. 2002. *Data Quality Objectives Summary Report – Designing a Groundwater Monitoring Network for the 200-BP-5 and 200-PO-1 Operable Units*. EC Thornton and JW Lindberg, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-14070. 2002. *Groundwater Monitoring Plan for the 216-S-10 Pond and Ditch*. BA Williams and CJ Chou, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-14083. 2002. *Characterization of Vadose Zone Sediment: Borehole 299-E33-45 Near BX-102 in the B-BX-BY Waste Management Area*. RJ Serne, GV Last, GW Gee, HT Schaef, DC Lanigan, CW Lindenmeier, MJ Lindberg, RE Clayton, VL LeGore, RD Orr, IV Kutnyakov, SR Baum, KN Geiszler, CF Brown, MM Valenta, and TS Vickerman, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-14098. 2002. *Results of Groundwater Monitoring at the Hanford Site 200 Area Treated Effluent Disposal Site–1999 through FY 2002*. JT Rieger, Pacific Northwest National Laboratory, Richland, Washington.

-
- PNNL-14107. 2002. *Groundwater Chemistry and Hydrogeology of the Upper Saddle Mountains Basalt-Confined Aquifer South and Southeast of the Hanford Site*. DR Newcomer, EC Thornton, and TL Liikala, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-14112. 2002. *Groundwater Monitoring Plan for the 216-B-63 Trench on the Hanford Site*. MD Sweeney, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-14113. 2002. *Results of Detailed Hydrologic Characterization Tests – Fiscal Year 2001*. FA Spane, Jr., PD Thorne, and DR Newcomer, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-14186. 2003. *Results of Detailed Hydrologic Characterization Tests – Fiscal Year 2002*. FA Spane, DR Newcomer, and PD Thorne, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-14187. 2003. *Hanford Site Groundwater Monitoring for Fiscal Year 2002*. MJ Hartman, LF Morasch, and WD Webber (eds.), Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-14286. 2003. *STOMP Subsurface Transport Over Multiple Phases Version 3.0 User's Guide*. MD White and M Oostrom, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-14287. 2003. *Data Quality Objectives Summary Report - Designing a Groundwater Monitoring and Assessment Network for the 100-BC-5 and 100-FR-3 Operable Units*. MD Sweeney and CJ Chou, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-14301. 2003. *Monitoring Plan for RCRA Groundwater Assessment at the 216-U-12 Crib*. BA Williams and CJ Chou, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-14320. 2003. *Soil Gas Survey and Well Installation at the 618-10 Burial Ground, 300-FF-5 Operable Unit, Hanford Site, Washington*. BA Williams, RE Peterson, and KB Olsen, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-14398. 2003. *Transient Inverse Calibration of the Site-Wide Groundwater Flow Model (ACM-2): FY03 Progress Report*. VR Vermeul, MP Bergeron, CR Cole, CJ Murray, WE Nichols, TD Scheibe, PD Thorne, SR Waichler, and Y Xie, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-14444. 2003. *Aquifer Sampling Tube Results for Fiscal Year 2003*. MJ Hartman and RE Peterson, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-14521. 2004. *Evaluation of an Alternative Statistical Method for Analysis of RCRA Groundwater Monitoring Data at the Hanford Site*. CJ Chou, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-14548. 2004. *Hanford Site Groundwater Monitoring for Fiscal Year 2003*. MJ Hartman, LF Morasch, and WD Webber (eds.), Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-14586. 2004. *Geologic Data Package for 2005 Integrated Disposal Facility Waste Performance Assessment*. SP Reidel, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-14616. 2004. *Hanford Site Climatological Data Summary 2003 with Historical Data*. DJ Hoitink, KW Burk, JV Ramsdell, III, and WJ Shaw, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-14687. 2004. *Hanford Site Environmental Report for Calendar Year 2003*. TM Poston, RW Hanf, RL Dirkes, and LF Morasch (eds.), Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-14702, Rev. 0. 2004. *Vadose Zone Hydrogeology Data Package for the 2004 Composite Analysis*. GV Last, EJ Freeman, KJ Cantrell, MJ Fayer, GW Gee, WE Nichols, BN Bjornstad, and DG Horton, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-14725, Rev. 0. 2004. *Geographic and Operational Site Parameters List (GOSPL) for the 2004 Composite Analysis*. GV Last, WE Nichols, and CT Kincaid, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-14744. 2004. *Recharge Data Package for the 2005 Integrated Disposal Facility Performance Assessment*. MJ Fayer and JE Szecsody, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-14849. *Characterization of Vadose Zone Sediments Below the T Tank Farm: Boreholes C4104, C4105, 299-W10-196, and RCRA Borehole 299-W11-39*. RJ Serne, BN Bjornstad, DG Horton, DC Lanigan, CW Lindenmeier, MJ Lindberg, RE Clayton, VL LeGore, KN Geiszler, SR Baum, MM Valenta, IV Kutnyakov, TS Vickerman, RD Orr, and CF Brown, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-14852, Volume 1. 2004. *User Instructions for the Systems Assessment Capability, Rev. 1, Computer Codes Volume 1: Inventory, Release, and Transport Modules*. PW Eslinger, TB Miley, DW Engel, WE Nichols, LH Gerhardstein, DL Streng, CA Lopresti, and SK Wurstner, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-14852, Volume 2. 2004. *User Instructions for the Systems Assessment Capability, Rev. 1, Computer Codes Volume 2: Impact Modules*. PW Eslinger, TB Miley, C Arimescu, and BA Kanyid, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-14852, Volume 3. 2004. *User Instructions for the Systems Assessment Capability, Rev. 1, Computer Codes Volume 3: Utility Codes*. PW Eslinger, RL Aaberg, CA Lopresti, TB Miley, WE Nichols, and DL Streng, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-14855. 2004. *Recent Site-Wide Transport Modeling Related to the Carbon Tetrachloride Plume at the Hanford Site*. MP Bergeron and CR Cole, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-14898. 2004. *Results of Groundwater Modeling for Tritium Tracking at the Hanford Site 200 Area State-Approved Land Disposal Site – 2004*. DB Barnett, MP Bergeron, and EJ Freeman, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-14891. 2005. *Estimating Groundwater Concentrations from Mass Releases to the Aquifer at the Integrated Disposal Facility and Tank Farms in the Hanford Central Plateau*. MP Bergeron and EP Freeman, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-14895. 2004. *Three-Dimensional Modeling of DNAPL in the Subsurface of the 216-Z-9 Trench at the Hanford Site*. M Ostrom, ML Rockhold, PD Thorne, GV Last, and MJ Truex, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-14948. 2004. *Plume Delineation in the BC Cribs and Trenches Area*. DF Rucker and MD Sweeney, Pacific Northwest National Laboratory, Richland, Washington.

PNNL-SA-33304. 2000. "Aquifer-Columbia River Interaction and Groundwater Contamination at the 300 Area of the Hanford Site." JW Lindberg, oral presentation at the 3rd *Symposium on the Hydrogeology of Washington State*, October 16-18, 2000, Landmark Convention Center, Tacoma, Washington. Organized by the Washington State Department of Ecology, Washington Hydrologic Society, and U.S. Geological Survey.

PNNL-SA-39825. 2003. *A Groundwater Quality Assessment at Single-Shell Tank Farms at the DOE Hanford Site*. Presented by SM Narbutovskih at Geologic Society of America, Seattle, Washington.

PNNL-SA-43003. 2004. *Development of an Integrated Borehole Geologic Information System for the Hanford Site*. GV Last, RR Saripalli, DA Bush, and RD Mackley, Pacific Northwest National Laboratory, Richland, Washington.

Prych EA. 1995. *Using Chloride and Chlorine-36 as Soil-Water Tracers to Estimate Deep Percolation at Selected Locations on the U. S. Department of Energy Hanford Site, Washington*. U.S. Geological Survey Open-File Report 94-514, Tacoma, Washington.

Reynolds WD and DE Elrick. 1985. "In-Situ Measurement of Field-Saturated Hydraulic Conductivity, Sorptivity and the Alpha Parameter using the Guelph Permeameter." *Soil Science* 140:292-302.

RHO-BWI-LD-5. 1978. *Geology of Gable Mountain - Gable Butte Area*. KR Fecht, Rockwell Hanford Operations, Richland, Washington.

RHO-BWI-ST-5. 1979. "Pasco Basin Hydrology." In *Hydrologic Studies Within the Columbia Plateau, Washington: An Integration of Current Knowledge*. RE Gephart, FA Spane, Jr., LS Leonhart, DA Palombo, and SR Strait, Rockwell Hanford Operations, Richland, Washington.

RHO-CD-673. 1979. *Handbook 200 Areas Waste Sites. Vols. 1 and 3*. HL Maxfield, Rockwell Hanford Operations, Richland, Washington.

RHO-RE-ST-12 P. 1984. *An Assessment of Aquifer Intercommunication in the B Pond-Gable Mountain Pond Area of the Hanford Site*. MJ Graham, GV Last, and KR Fecht, Rockwell Hanford Operations, Richland, Washington.

ROD. 1993. *Record of Decision, USDOE Hanford 1100 Area, Hanford Site, Richland, Washington (1100-EM-1, 1100-EM-2, 1100-EM-3, and 1100-IU-1 Operable Units)*. State of Washington Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

ROD. 1995a. *Declaration of the Record of Decision for the 200-ZP-1 Operable Unit*. State of Washington Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

ROD. 1995b. *Declaration of the Record of Decision for the USDOE Hanford Environmental Restoration Disposal Facility*. State of Washington Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

ROD. 1996a. *Declaration of the Record of Decision for the 100-HR-3 and 100-KR-4 Operable Units*. State of Washington Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

ROD. 1996b. *Record of Decision for the 300-FF-1 and 300-FF-5 Operable Units*. State of Washington Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

ROD. 1997. *Declaration of the Record of Decision for the 200-UP-1 Operable Unit*. State of Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

ROD. 1999a. *Amended Record of Decision, Decision Summary and Responsiveness Summary for the 100-HR-3 Operable Unit*. U.S. Environmental Protection Agency, Region 10, Seattle, Washington.

ROD. 1999b. *Interim Remedial Action Record of Decision for the 100-NR-1 and -NR-2 Operable Units of the Hanford 100-N Area*. Washington State Department of Ecology, Olympia, Washington.

RPP-7218, Rev 0. 2000. *Preliminary Inventory Estimates for Single-Shell Tank Leaks in T, TX, and TY Tank Farms*. Prepared by TE Jones and BC Simpson (CH2M HILL Hanford Group, Inc.) MI Wood (Fluor Daniel Hanford) and RA Corbin (Los Alamos National Laboratory) for the U.S. Department of Energy, Richland, Washington.

RPP-9937, Rev. 1. 2005. *Single-Shell Tank Leak Detection and Monitoring Functions and Requirements Document*. CH2M HILL Hanford Group, Inc., Richland, Washington.

RPP-10098, Rev. 0. 2003. *Field Investigation Report for Waste Management Area B-BX-BY*. AJ Knepp, CH2M HILL Hanford Group, Inc., Richland, Washington.

RPP-16340, Rev. 0. 2003. *Completion Report for Probe Hole C4105 (T-106 T Tank Farm Drilling and Sampling)*. Prepared by KD Reynolds, Duratek Federal Services, Inc., Northwest Operations, for the Office of River Protection, CH2M HILL Hanford Group, Inc., Richland, Washington.

RPP-17275, Rev. 0. 2003. *Completion Report for Probe Hole C4104 (T-106 T Tank Farm Drilling and Sampling)*. Prepared by KD Reynolds, Duratek Federal Services, Inc., Northwest Operations, for the Office of River Protection, CH2M HILL Hanford Group, Inc., Richland, Washington.

Sakamoto Y, M Ishiguro, and G Kitagawa. 1986. *Akaike Information Criterion Statistics*, KTK Science Publication, Tokyo, Japan. pp. 164-201.

Sedriks AJ. 1996. *Corrosion of Stainless Steel*. John Wiley & Sons, Inc., New York.

Sisson JB, GW Gee, JM Hubbell, WL Bratton, JC Ritter, AL Ward, and TG Caldwell. 2002. "Advances in Tensiometry for Long-Term Monitoring of Soil Water Pressures." *Vadose Zone Journal* 1:310-315.

Toride N, FJ Leij, and MTh van Genuchten. 1995. *The CXTFIT Code for Estimating Transport Parameters from Laboratory or Field Tracer Experiments*. Research Report 137, U.S. Salinity Laboratory. Riverside, California.

U.S. Department of Commerce. 1959, as amended 1963. "Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure." In *National Bureau of Standards Handbook 69*, National Bureau of Standards, Washington, D.C. (This document is available from the Hilton M. Briggs Library, South Dakota State University, Brookings, South Dakota.)

van Genuchten MTh and RJ Wagenet. 1989. "Two-Site/Two Region Models for Pesticide Transport and Degradation: Theoretical Development and Analytic Solutions." *Soil Science Society of America Journal* 53:1303-1310.

Ward AL and GW Gee. 2000. "Hanford Site Surface Barrier Technology" in *Vadose Zone Science and Technology Solutions*, BB Looney and RW Falta (eds.). Battelle Press, Columbus, Ohio. pp. 1414-1423.

Watson KK. 1966. "An Instantaneous Profile Method for Determining the Hydraulic Conductivity of Unsaturated Porous Materials." *Water Resource Res.* 1:577-586.

WHC-EP-0587. 1992. *Groundwater Impact Assessment Report for the 400 Area Ponds*. DK Tyler, Westinghouse Hanford Company, Richland, Washington.

WHC-EP-0595. 1993. *Westinghouse Hanford Company Operational Groundwater Status Report 1990-1992*. VG Johnson, Westinghouse Hanford Company, Richland, Washington.

WHC-SA-1674-VA. 1992. *Characterization of a Chromium Plume in Groundwater Along the Columbia River Shoreline, Hanford Site, Washington*. RE Peterson and MP Connelly, Westinghouse Hanford Company, Richland, Washington. (Presented at 1992 Fall Meeting, American Geophysical Union, San Francisco, December 7-11, 1992.)

WHC-SD-EN-AP-015, Rev. 0. 1989. *Revised Ground-Water Monitoring Plan for the 200 Areas Low-Level Burial Grounds*. Prepared by GV Last and BN Bjornstad for Westinghouse Hanford Company, Richland, Washington.

WHC-SD-EN-AP-024, Rev. 1. 1991. *Interim Status Ground Water Monitoring Plan for the 200 East Area Liquid Effluent Treatment Facility*. JS Schmid, Westinghouse Hanford Company, Richland, Washington.

WHC-SD-EN-AP-132, Rev. 0. 1993. *Interim-Status Groundwater Quality Assessment Plan for the Single-Shell Tank Waste Management Areas T and TX-TY*. JA Caggiano and CJ Chou, Westinghouse Hanford Company, Richland, Washington.

WHC-SD-EN-AP-185. 1995. *Groundwater Monitoring Plan for the 300 Area Process Trenches*. JW Lindberg, CJ Chou, and VG Johnson, Westinghouse Hanford Company, Richland, Washington.

-
- WHC-SD-EN-AP-191, Rev. 0. 1996. *Assessment Groundwater Monitoring Plan for Single Shell Tank Waste Management Area S-SX*. JA Caggiano, Westinghouse Hanford Company, Richland, Washington.
- WHC-SD-EN-EV-003, Rev. 1. 1992. *Results of Groundwater Quality Assessment Monitoring at the 1301-N and 1324-N/NA Facilities*. MJ Hartman, Westinghouse Hanford Company, Richland, Washington.
- WHC-SD-EN-EV-032, Rev. 0. 1995. *Results of Groundwater Quality Assessment Program at the 216-A-29 Ditch RCRA Facility*. JM Votava, Westinghouse Hanford Company, Richland, Washington.
- WHC-SD-EN-TI-023. 1992. *Hydrologic Information Summary for the Northern Hanford Site*. MJ Hartman and RE Peterson, Westinghouse Hanford Company, Richland, Washington.
- WHC-SD-EN-TI-101. 1993. *Carbon Tetrachloride Evaporative Losses and Residual Inventory Beneath 200 West Area at the Hanford Site*. Prepared by Ebasco Services for Westinghouse Hanford Company, Richland, Washington.
- WHC-SD-EN-TI-199. 1993. *Nonradioactive Dangerous Waste Landfill Soil-Gas Survey: Final Data Report*. ID Jacques, Westinghouse Hanford Company, Richland, Washington.
- WHC-SD-EN-TI-239, Rev. 0. 1994. *100-K Area Technical Baseline Report*. RW Carpenter and SL Cotè, Westinghouse Hanford Company, Richland, Washington.
- WHC-SD-EN-TI-290, Rev. 0. 1994. *Geologic Setting of the Low-Level Burial Grounds*. KA Lindsey, JL Slate, GK Jaeger, KJ Swett, and RB Mercer, Westinghouse Hanford Company, Richland, Washington.
- WHC-SD-EN-TI-302. 1995. *Speciation and Transport Characteristics of Chromium in the 100D/H Areas of the Hanford Site*. EC Thornton, JE Amonette, JA Olivier, and DL Huang, Westinghouse Hanford Company, Richland, Washington.
- WMP-17755, Rev. 0. 2004. *200-CS-1 Operable Unit Field Summary Report for Fiscal Year 2003*. Fluor Hanford, Inc., Richland, Washington.
- WMP-17869, Rev. 0. 2003. *Calendar Year 2003 Semiannual Technical Memorandum for 100-HR-3, 100-KR-4, and 100-NR-2 Pump-and-Treat Operations*. RS Edrington and GG Kelty, Fluor Hanford, Inc., Richland, Washington.
- WMP-21327, Rev. 0. 2004. *Performance Evaluation Report for Soil Vapor Extraction Operations at the 200-PW-1 Carbon Tetrachloride Site, Fiscal Year 2003*. PM Gent, Fluor Hanford, Inc., Richland, Washington.
- WMP-22329. 2004. *Results of Tritium Tracking and Groundwater Monitoring at the Hanford Site 200 Area State-Approved Land Disposal Site - Fiscal Year 2004*. RF Raidl, Fluor Hanford, Inc., Richland, Washington.
- WMP-22817, Rev. 0. 2004. *Geologic Contacts Database for the 200 Areas of the Hanford Site*. BN Bjornstad, Fluor Hanford, Inc., Richland, Washington.
- Yu C, AW Warrick, MH Conklin, MH Young, and M Zreda. 1997. "Two- and Three-Parameter Calibrations of Time Domain Reflectometry for Soil Moisture Measurement." *Water Resource. Res.* 33(10):2417-2421.