

DENNIS R. NEUMAN

Affiliate Professor
Land Resources & Environmental Sciences

Principal Scientist
KC Harvey Environmental LLC
Bozeman, MT



For the past several decades, I have been involved in land reclamation/restoration research and policy issues on drastically disturbed sites in the West. These lands include semi-arid areas strip mined for coal, historic hard rock mines, abandoned mineral mines, transportation corridors, and some of the nation's largest Superfund sites. Emphasis has been of ameliorating plant limiting conditions (acidity, phytotoxicity, and fertility), plant species selection, and monitoring vegetation and soil response variables. Soil column studies, greenhouse investigations, and large scale field studies have been conducted. I have helped establish reclamation/restoration policy for state and federal land management (USFS, BLM) and risk management (USEPA) agencies. I was the chairman and co-convenor of the Billings Land Reclamation Symposia series, former chairman of the Western Coordinating Committee (USDA) on Revegetation and Stabilization of Deteriorated and Altered Lands. I am currently a Associate Editor of the Journal of the American Society of Mining and Reclamation, having served on the Society's National Executive Committee, and as President (2009-2011). From 1996-2006, I was director of the Reclamation Research Unit and Adjunct Assistant Professor within MSU's Land Resources and Environmental Sciences Department. I am continuing a land reclamation career as a principal in the environmental consultancy firm, KC Harvey Environmental LLC.

Education

<u>Degree</u>	<u>Year</u>	<u>Institution</u>	<u>Major</u>
M.S.	1972	Montana State Univ.	Analytical Chemistry
B.A.	1969	Carroll College	Chemistry

Professional and Honor Societies

American Society for Mining and Reclamation (ASMR)
 National Executive Committee, 2005-2007
 President Elect, 2008
 President, 2009
 Past President, 2010-2011
 Associate Editor, ASMR Journal
 Sigma Xi Scientific Research Society

Professional and Public Service Activities

National Association of State Universities and Land-Grant Colleges, Mineral Resources Section of the Board on Natural Resources , 2000 - 2006

USDA, WCC-21 Revegetation and Stabilization of Deteriorated and Altered Lands –Chair (2004-2005)

MSU University Grants & Contracts (1987-2006)

Total Extramural Funding: \$5,340,221

Teaching Activities

LRES 560 Reclamation Planning and Design – Team Teaching, 1996, 1998, 2000, 2002, 2004.

ENSC 460 Soil Remediation – 10 Guest Lectures in 2010, 7 Guest lectures in 2011, 1 Guest Lecture in 2012.

ENSC 407 Environmental Risk Assessment – Guest lectures in 2005–2007-2009-2011

Graduate Students Committee Member:

38 M.S. candidates (1986-2009)

Publications

Refereed:

Jones, C.A., W.P. Inskeep and **D.R. Neuman**. 1997. Arsenic Transport in Contaminated Mine Tailings Following Liming. J. of Environ. Qual. 26:433-439.

Neuman, D.R. 1995. Nonrenewable Resources, Vol. 4, No. 2. Book review: Eggert, R.G. (Ed.), Mining and the Environment - International Perspectives and Public Policy. Resources for the Future, 1994. Washington, DC. 172 p.

Neuman, D.R. and D.J. Dollhopf. 1992. Lead levels in blood from cattle residing near a lead smelter. J. of Environ. Qual., Vol. 21:181-184.

Neuman, D.R., J.L. Schroack and L.P. Gough. 1987. Copper and molybdenum, Chapter 10, p. 215-232 *In* Reclaiming Mine Soils and Overburden in the Western United States: Analytic Parameters and

Procedures, R.D. Williams and G.E. Schuman (eds.) Soil Cons. Soc. Amer., Ankeny, IA. ISBN: 0-935734-14-7.

Neuman, D.R. and F.F. Munshower. 1984. Copper and molybdenum uptake by legumes grown on topsoiled minesoils. J. Range Mgmt. 37(6):517-520.

Neuman, D.R. and F.F. Munshower. 1981. Rapid determination of molybdenum in botanical material by electrothermal atomic absorption spectrometry. *Anal. Chim. Acta.* 123:325-328.

Munshower, F.F. and **D.R. Neuman**. 1980. Elemental concentrations in native plant species growing on minesoils and native range. *Reclam. Rev.* 3:41-46.

Munshower, F.F. and **D.R. Neuman**. 1980. Heavy metal transport through food chains. *Bull. Ecol. Soc. of Am.* 61:117.

Munshower, F.F. and **D.R. Neuman**. 1979. Metals in soft tissue of mule deer and antelope. *Bull. of Environ. Contam. and Toxicol.* 22:827-832.

Munshower, F.F. and **D.R. Neuman**. 1979. Trace element concentrations in plants from revegetated strip mined lands and native range in southeastern Montana, p. 887-891 *In Ecology and Coal Resource Development, Vol. 2, M.K. Wali (ed).* Pergamon Press, Elmsford, NY. 1091 p.

Munshower, F.F. and **D.R. Neuman**. 1978. Trace element concentration in native range grasses from the Northern Plains of Montana. *J. Range Mgmt.* 3:145-148.

Munshower, F.F. and **D.R. Neuman**. 1977. Element concentrations in prairie plants of southeastern Montana. *Bull. of Ecol. Soc. of Am.* 58(2):55.

Neuman, D.R. 1975. Analysis of molybdenum in soil extracts by non-flame absorption spectroscopy *In Analytical Methods for Carbon Rod Atomizers.* B.R. Culver (ed.). Varian Techtron Pty. Ltd. Springvale, Vic. Australia.

Neuman, D.R. 1975. Cadmium, molybdenum, nickel and lead analysis of plant tissues using non-flame atomic absorption spectroscopy *In Analytical Methods for Carbon Rod Atomizers.* B.R. Culver (ed.). Varian Techtron Pty. Ltd. Springvale, Vic. Australia.

Pagenkopf, G.K. and **D.R. Neuman**. 1974. Lead concentrations in native trout. *Bull. of Environ. Contam. and Toxicol.* 12(1):70-74.

Pagenkopf, G.K., **D.R. Neuman** and R. Woodriff. 1972. Determination of lead in fish by furnace atomic absorption. *Anal. Chem.* 44(13):2248-2251.

Book Chapters:

Neuman, D.R., J.L. Schroack and L.P. Gough. 1987. Copper and molybdenum, Chapter 10, p. 215-232 *In Reclaiming Mine Soils and Overburden in the Western United States: Analytic Parameters and Procedures,* R.D. Williams and G.E. Schuman (eds.) Soil Cons. Soc. Amer., Ankeny, IA. ISBN: 0-935734-14-7.

Neuman, D.R., Peter J. Brown, and Stuart R. Jennings. 2013. Metals Associated with Acid Rock Drainage and Their Effect on Fish Health and Ecosystems. *In Acid Mine Drainage, Rock Drainage, and Acid Sulfate Soils: Causes, Assessment, Prediction, Prevention, and Remediation,* James A. Jacobs, Jay H. Lehr, and Stephen M. Testa (eds.) Wiley, ISBN: 978-0-470-48786-0.

Neuman, D. R., Stuart R. Jennings and James A. Jacobs. 2013 Acid Drainage and Aquatic Resources. *In Acid Mine Drainage, Rock Drainage, and Acid Sulfate Soils: Causes, Assessment, Prediction, Prevention, and Remediation*, James A. Jacobs, Jay H. Lehr, and Stephen M. Testa (eds.) Wiley, ISBN: 978-0-470-48786-0.

Pamela S. Blicher, **Dennis R. Neuman**, Stuart R. Jennings and James A. Jacobs. 2013. Systematic Land Reclamation Assessment at Acid Mine Drainage Sites. *In Acid Mine Drainage, Rock Drainage, and Acid Sulfate Soils: Causes, Assessment, Prediction, Prevention, and Remediation*, James A. Jacobs, Jay H. Lehr, and Stephen M. Testa (eds.) Wiley, ISBN: 978-0-470-48786-0.

Reviewed:

Neuman, D.R., and P.S. Blicher, and L. Barber. 2009. Evaluating the Efficacy of Actosol as an Amendment for Improving Vegetation Growth on Treated Acid Metalliferous Mine Wastes.

Jennings, S.R., **Neuman, D.R.** and Blicher, P.S. (2008). "Acid Mine Drainage and Effects on Fish Health and Ecology: A Review". Reclamation Research Group Publication, Bozeman, MT.

Neuman, D.R., Brown, P., Jackson, D., and S.R. Jennings (2009). "Metals: Freshwater Fish Health and Ecology, A literature Review." Reclamation Research Group Publication, Bozeman, MT.

Reclamation Research Unit. 2005 Data Summary Report for Warm Springs Creek, Reaches 3a and 3b. Anaconda Regional Water, Waste & Soils Operable Unit. Prepared for Montana Department of Environmental Quality and U.S. EPA, March 23, 2005. 275 p.

Reclamation Research Unit. 2005 Data Summary Report for Willow Creek. Anaconda Regional Water, Waste & Soils Operable Unit. Prepared for Montana Department of Environmental Quality and U.S. EPA, March 23, 2005. 346 p.

Neuman, D.R. 2005. 2004 Annual Research Reports of the Western Coordinating Committee on Revegetation and Stabilization of Deteriorated and Altered Lands. Submitted to Thomas L. Thurow at the University of Wyoming Department of Renewable Resources and Compiled by Dennis Neuman, Secretary of WCC21. March 28, 2005.

Neuman, D.R. and P.S. Blicher. 2005. Addendum to Draft Sampling and Analysis Plan for Soil/Waste Sampling of the Warm Springs Creek at RDU 10 Warm Springs Creek Section 32 of the Anaconda Regional Water, Waste, and Soils Operable Unit. 26 p.

Neuman, D.R. 2005. Phytostabilization Studies at the Keating Tailings Site – 2005 Final Report. Prepared for U.S. Bureau of Land Management. October 5, 2005.

Neuman, D.R. 2005. Assessment of Effects of Amendments on Vegetation Performance at a Bentonite Minesite - 2005 Final Report. Prepared for U.S. Bureau of Land Management. October 20, 2005.

Neuman, D.R., S.R. Jennings, J.D. Goering, and P.S. Blicher. 2005. Warm Springs Creek, Section 32 Final Design Report: Remedial Polygons, Soils Characteristics, Streambank Classifications, and Recommended

Remedial Actions. Anaconda Regional Water, Waste, and Soils Operable Unit. Submitted December 8, 2005 to U.S. EPA and CDM Federal Programs Corporation, Helena, MT.

Aho, K., T. Weaver, P. Blicher, and **D.R. Neuman**. 2004. Categorization of Pre-mine Vegetation: Foundations and Preliminary Analysis of Three Sites, Draft Phase III Report. Submitted to MDEQ, Westmoreland Resources, Inc., Western Energy Co., and Kennecott Energy Co.

Dollhopf, D.J., J.D. Goering, G.S. Vandenberg and **D.R. Neuman**. 1999. Evaluation of Ferric Oxide for Adsorption of Arsenic Leaching from a Mine Waste Repository. Montana State Univ., Reclamation Research Unit Publ. No. 9901, 40 p.

Dollhopf, D.J., G.S. Vandenberg, **D.R. Neuman** and S.R. Jennings. 1998. Determination of Soil Amendments and Plant Species for Lands Adjacent to Repositories in the Old Works/East Anaconda Development Area. Montana State Univ., Reclamation Research Unit Publ. No. 9803, 173 p.

Reclamation Research Unit. 1997. Anaconda Revegetation Treatability Studies Final Report, Phase IV: Monitoring and Evaluation. Volumes I and II. Reclamation Research Unit Publ. No. 9703. Montana State Univ., Bozeman, MT.

Reclamation Research Unit. 1996. Anaconda Revegetation Treatability Studies Final Report, Phase III: Implementability of Field Demonstrations. Reclamation Research Unit Publ. No. 9609. Montana State Univ., Bozeman, MT. 278 p.

Reclamation Research Unit. 1996. Anaconda Revegetation Treatability Studies Final Report, Phase II: Laboratory and Greenhouse Investigations. Reclamation Research Unit Publ. No. 9606. Montana State Univ., Bozeman, MT. 112 p.

Reclamation Research Unit. 1994. Anaconda Revegetation Treatability Studies (ARTS). Final Phase IV Work Plan: Monitoring and Evaluation. Anaconda Smelter Superfund Site. Document No.: ASSS-ARTS-IV-WP-F-R1-032394.

Reclamation Research Unit. 1993. Anaconda Revegetation Treatability Studies (ARTS). Final Phase II Work Plan - Greenhouse Investigation. Anaconda Smelter Superfund Site. Document No.: ASSS-ARTS-II-WP-F-R1-042093.

Reclamation Research Unit. 1993. Anaconda Revegetation Treatability Studies (ARTS). Final Phase II Study Operations Plan (SOP) - Greenhouse Investigation. Anaconda Smelter Superfund Site. Document No.: ASSS-ARTS-II-SOP-F-R1-061193.

Reclamation Research Unit. 1993. Anaconda Revegetation Treatability Studies (ARTS). Final Phase I Report: Literature Review, Reclamation Assessments, and Demonstration Site Selection. Anaconda Smelter Superfund Site. Document No.: ASSS-ARTS-I-FR-R1-102293.

Reclamation Research Unit. 1992. Anaconda Reclamation Treatability Studies (ARTS). Draft Statement of Work. Prepared for Montana Dept. of Health and Environ. Sci., Helena, MT. Document No.: ASSS-ARTS-SOW-D-R0-010392.

Reclamation Research Unit. 1992. Anaconda Revegetation Treatability Studies (ARTS). Final Phase I Work Plan. Anaconda Smelter Superfund Site. Document No.: ASSS-ARTS-I-WP-R1-112792.

Reclamation Research Unit. 1992. Anaconda Revegetation Treatability Studies (ARTS) - Phase I. Sampling and Analysis Plan for Bulk Samples. Document No.: ASSS-ARTS-I-SAP-F-R1-121892.

Reclamation Research Unit and Schafer and Associates. 1991. Narrative Report - 1991. Prepared for Montana Dept. of Health and Environ. Sci., Helena, MT.

Reclamation Research Unit and Schafer and Associates. 1991. Final STARS Phase III Work Plan Addendum: Silver Bow Creek RI/FS. Prepared for Montana Dept. of Health and Environ. Sci., Helena, MT. Document No.: SBC-STARS-Phase III-WPA-F-R1-091291.

Reclamation Research Unit. 1991. Draft Statement of Work for East Helena Soils Removal. Prepared for CH2M Hill, Inc., Helena, MT.

CH2M HILL, Chen-Northern and Reclamation Research Unit. 1991. Clark Fork River Site Screening Study (Draft Final), Volumes I, II and III. Prepared for Montana Dept. of Health and Environ. Sci. Document No.: SBC-CFR-SST-D-R1-022891.

CH2M HILL, Inc., Chen-Northern, Inc. and Reclamation Research Unit. 1990. Data Summary Report: Upper Clark Fork River Screening Study. Volumes I and II. Prepared for Montana Dept. of Health and Environ. Sciences, Helena, MT. Doc. No.: SBC-CFR-SST-D-R0-022690. 400 p.

Reclamation Research Unit and Schafer and Associates. 1990. Activity Report for STARS Phase III. Silver Bow Creek RI/FS. Prepared for CH2M Hill, Inc., Helena, MT.

Reclamation Research Unit, Schafer and Associates and CH2M HILL. 1989. Silver Bow Creek RI/FS. Streambank Tailings and Revegetation Study - STARS Phase I: Bench-scale soil column and greenhouse treatability studies and tailings ranking system. Document No.: SBC-STARS-PhaseI-F-R0-102589.

Reclamation Research Unit and CH2M HILL. 1989. Comparison of ASARCO Laboratory data to EPA Contract Laboratory data. East Helena Site (ASARCO), East Helena, Montana. Prepared for U.S. EPA, Montana Office.

Schafer and Associates, Reclamation Research Unit and CH2M HILL. 1989. Silver Bow Creek RI/FS. Streambank Tailings and Revegetation Study - STARS Phase II: Field-scale treatability study plot construction. Document No.: SBC-STARS-PhaseII-F-R1-051789.

Rennick, R.B., D.J. Dollhopf and **D.R. Neuman**. 1988. Clark Fork River Screening Study: Contaminated Soils. Prepared for CH2M HILL, Inc. and U.S. EPA, Helena, MT. 94 p.

Reclamation Research Unit and CH2M HILL. 1987. Toxicity properties and criteria for lead, arsenic, cadmium and zinc in livestock, soils, plants and water. Prepared for U.S. EPA, Montana Office.

Reclamation Research Unit and CH2M HILL. 1987. Assessment of the toxicity of copper, mercury, selenium, silver and thallium in soil and plants in the Helena Valley of Montana for East Helena Site (ASARCO), East Helena, Montana. Prepared for U.S. EPA, Montana Office.

Reclamation Research Unit and CH2M HILL. 1987. Remedial Investigation of Soils, Vegetation and Livestock for East Helena Site (ASARCO), East Helena, Montana. Prepared for U.S. EPA, Montana Office.

Munshower, F.F., **D.R. Neuman** and R.B. Rennick. 1987. Effects of stack emissions on the range resources in the vicinity of Colstrip, Montana: After two years of operation of Colstrip Units 3 and 4. Reclamation Res. Unit Publ. 8703, Mont. State Univ., Bozeman, MT. 175 p.

Munshower, F.F. and **D.R. Neuman**. 1983. Effects of stack emission on the range resource in the vicinity of Colstrip, Montana: Preoperational description of the range ecosystem. Montana Agric. Exp. Sta. Res. Rep. 121, Montana State Univ., Bozeman, MT. 196 p.

Munshower, F.F. and **D.R. Neuman**. 1980. Nutritional value of native plant species growing on old and new minesoils. USDA, Science and Educational Admin., Washington, DC.

Munshower, F.F., E.J. DePuit and **D.R. Neuman**. 1978. The effects of stack emissions on the range resource in the vicinity of Colstrip, Montana. Pre-operational description of the range ecosystem. MT Agric. Exp. Sta. Res. Rep. No. 162, Montana State University, Bozeman, MT. 196 p.

Additional documents prepared for Remedial Investigation/Feasibility Studies at the Silver Bow Creek site and East Helena site have included numerous RI/FS Work Plans, Sampling and Analysis Plans, Laboratory Analytical Protocols, Quality Assurance Project Plans, Field Sampling Plans, and Data Evaluation and Validation documents.

Papers Presented:

Neuman, D.R., Frank Hons, Terry Moore, Hamid Shahandeh, Richard Loeppert, and Courage Bangira. 2013. REMEDIATION OF THE MILLTOWN SEDIMENTS IN MONTANA . paper presented at the 2013 National Meeting of the American Society of Mining and Reclamation, Laramie, WY. **Reclamation Across Industries**, June 1 – 6, 2013. R.I. Barnhisel (Ed). Published by ASMR, 3134 Montavesta Rd., Lexington, KY 40502.

Dennis R. Neuman, Kristine Edwards, and P. Dennis Smith. 2010. METAL AND ARSENIC LEVELS IN DRINKING WATER AT TWO MONTANA SUPERFUND SITES. Paper was presented at the 2010 National Meeting of the American Society of Mining and Reclamation, Pittsburgh, PA *Bridging Reclamation, Science and the Community* June 5 - 11, 2010. R.I. Barnhisel (Ed.) Published by ASMR, 3134 Montavesta Rd., Lexington, KY 40502.

Sandra King, Michael King, Stuart Jennings, and **Dennis Neuman**. 2009. USING PLANT TISSUE CULTURE TO DEVELOP PLANTS WITH ACID SOIL, HEAVY METAL TOLERANCE (AHMT), POTENTIALLY USEFUL FOR HARD-ROCK MINE LAND RECLAMATION. Paper was presented at the 2009 National Meeting of the American Society of Mining and Reclamation, Billings, MT, *Revitalizing the Environment: Proven*

Solutions and Innovative Approaches May 30 – June 5, 2009. R.I. Barnhisel (Ed.) Published by ASMR, 3134 Montavesta Rd., Lexington, KY 40502.

Pamela S. Blicher, **Dennis R. Neuman**, and Stuart R. Jennings. 2009. A QUALITATIVE RECLAMATION ASSESSMENT HANDBOOK FOR ABANDONED HARDROCK MINE LANDS. Paper was presented at the 2009 National Meeting of the American Society of Mining and Reclamation, Billings, MT, *Revitalizing the Environment: Proven Solutions and Innovative Approaches* May 30 – June 5, 2009. R.I. Barnhisel (Ed.) Published by ASMR, 3134 Montavesta Rd., Lexington, KY 40502.

Dennis R. Neuman. 2009. METAL LEVELS IN VEGETATION GROWING ON *IN SITU* TREATED ACID METALLIFEROUS MINE WASTES IN MONTANA. Paper was presented at the 2009 National Meeting of the American Society of Mining and Reclamation, Billings, MT, *Revitalizing the Environment: Proven Solutions and Innovative Approaches* May 30 – June 5, 2009. R.I. Barnhisel (Ed.) Published by ASMR, 3134 Montavesta Rd., Lexington, KY 40502.

D. Neuman, P. Hansen, D. Smith, K. Knutson, and S. Brown. 2008. DEVELOPMENT AND APPLICATION OF PRE-REMEDIAL DESIGN TOOL FOR THE CLARK FORK RIVER SUPERFUND SITE. Paper was presented at the 2008 National Meeting of the American Society of Mining and Reclamation, Richmond, VA, *New Opportunities to Apply Our Science* June 14-19, 2008. R.I. Barnhisel (Ed.) Published by ASMR, 3134 Montavesta Rd., Lexington, KY 40502

F.F. Munshower, **D.R. Neuman** and M.J. Spry. 2006. RELATIVE BORON TOLERANCE OF SOME WESTERN REVEGETATION SPECIES. Paper was presented at the 2006 Billings Land Reclamation Symposium, June 4-8, 2006, Billings MT and jointly published by BLRS and ASMR, R.I. Barnhisel (ed.) 3134 Montavesta Rd., Lexington, KY 40502.

Neuman, D. R. P. S. Blicher, J. D. Goering, and R. Pigors. 2006. ASSESSMENT OF EFFECTS OF AMENDMENTS ON VEGETATION PERFORMANCE AT A BENTONITE MINESITE AFTER 25 YEARS. Paper was presented at the 2006 Billings Land Reclamation Symposium, June 4-8, 2006, Billings MT and jointly published by BLRS and ASMR, R.I. Barnhisel (ed.) 3134 Montavesta Rd., Lexington, KY 40502.

Neuman, D.R., G.S. Vandeberg, P.S. Blicher, J.D. Goering, S.R. Jennings, and K. Ford. 2005. Phytostabilization of Acid Metalliferous Mine Tailings at the Keating Site in Montana, In: Proc. of 2005 National Meeting of the Amer. Soc. of Mining and Reclamation, Breckenridge, CO. Published by ASMR, 3134 Montavesta Road, Lexington, KY 40502.

Ford, K. and **D.R. Neuman**. 2004. Phytostabilization of Abandoned Mine Sites. Presented at 26th Annual National Association of Abandoned Mine Land Programs Conference, Sept. 25-29, 2004 in Flagstaff, AZ.

Neuman, D.R. and C. Zabinski. 2004. The 2003 Annual Progress Report for the Western Coordinating Committee – 21, Revegetation and Stabilization of Deteriorated and Altered Lands. Presented in Salt Lake City, UT on January 28-30, 2004.

Rennick, R.B., M.W. Hills, D.T. Shanight, **D.R. Neuman**, S.R. Jennings, and P.S. Blicher. 2003. Land Evaluation Methods for Use in Mining- and Smelting-Contaminated Environments. Proc. of 10th Annual

Conf. on Tailings and Mine Waste, Colorado State Univ., Dept. of Civil Engr., Vail, CO, October 12-15, 2003.

Neuman, D.R. 2003. Land Reclamation at the Clark Fork River Basin Superfund Sites: An Overview from Butte to the Clark Fork River (abstract only). Presented at 20th Annual Meeting of American Water Resources Association Conf., Butte, MT, October 2-3, 2003.

Neuman, D.R., P.L. Hansen, S.R. Jennings, and W.H. Thompson. 2003. Riparian Evaluation System (RIPES): A Remedial Decision Tool for the Cleanup of the Clark Fork River Superfund Site - Poster. First Annual Conf. of the Center for Riverine Science and Stream Renaturalization, Univ. of Montana, Missoula, MT, September 2003.

Blicker, P.S., M.K. Reeves, D.T. Shanight, M.W. Hills, and **D.R. Neuman**. 2003. Butte Reclamation Evaluation System (BRES), pp. 18-34 *In Proc. 2003 Joint Conference of the 9th Billings Land Reclamation Symposium and the 20th Annual Meeting of the Amer. Soc. Mining and Reclamation - Working Together for Innovative Reclamation, Billings, MT, June 3-6, 2003. CD-Rom Proceedings.*

Hansen, P.L., **D.R. Neuman**, S.R. Jennings, and W.H. Thompson. 2003. Development of a Riparian Evaluation System (RIPES) for the Clark Fork River Superfund Site, pp. 325 (abstract only) *In Proc. 2003 Joint Conference of the 9th Billings Land Reclamation Symposium and the 20th Annual Meeting of the Amer. Soc. Mining and Reclamation - Working Together for Innovative Reclamation, Billings, MT, June 3-6, 2003. CD-Rom Proceedings.*

Jennings, S.R., R.B. Rennick, and **D.R. Neuman**. 2003. Application of the Land Reclamation Evaluation System to Disturbed Lands at the Anaconda Smelter NPL Site, pp. 532 (abstract only) *In Proc. 2003 Joint Conference of the 9th Billings Land Reclamation Symposium and the 20th Annual Meeting of the Amer. Soc. Mining and Reclamation - Working Together for Innovative Reclamation, Billings, MT, June 3-6, 2003. CD-Rom Proceedings.*

Munshower, F.F., **D.R. Neuman** and S.R. Jennings. 2003. Assessment of the Permanence of Phytostabilization at Six Sites in Southwest Montana, pp. 817-848 *In Proc. 2003 Joint Conference of the 9th Billings Land Reclamation Symposium and the 20th Annual Meeting of the Amer. Soc. Mining and Reclamation - Working Together for Innovative Reclamation, Billings, MT, June 3-6, 2003. CD-Rom Proceedings.*

Neuman, D.R. and C. Zabinski. 2003. The 2002 Annual Progress Report for the Western Coordinating Committee – 21, Revegetation and Stabilization of Deteriorated and Altered Lands. Presented in Fairbanks, AK, July 8 – 10, 2003.

Neuman, D.R., S.R. Jennings, and M.K. Reeves. 2002. Plant Growth and Soil Metal Concentrations: A Spatial Effects Model, pp. 194-211 *In 2002 American Society of Mining and Reclamation Conf. Proc. - Reclamation With a Purpose. June 9-13, 2002, Lexington, KY.*

Neuman, D.R. 2001. Phytostabilization effects on the Clark Fork River. Presented to the U.S. EPA's National Remedy Review Board, Fairmont, MT. May 2001.

Neuman, D.R., S.R. Jennings, D.J. Dollhopf, W. Schafer, and P. Hansen. 2001. Phytostabilization of the Clark Fork River Operable Unit, Milltown Sediments Superfund Site – Responses to Issues Posed by the EPA National Remedy Review Board. Prepared for U.S. EPA, Montana Office, Region VIII, Helena, MT. December 2001.

Neuman, D.R. 2001. Remedial Strategies to Reduce Impacts on a Western United States Western United States Watershed from Metal Mine Wastes. Invited Speaker. Forum on Global Environmental Issues - A Multi-Regional Project sponsored by U.S. Department of State's International Visitor Program and organized by Montana Center for International Visitors, Montana State University, August 16.

Neuman, D.R. 2001. Land reclamation evaluation system for the Anaconda smelter superfund site. Poster presented At Annual WCC-21 meeting held concurrently with Society for Range Management 54th Annual Meeting, Kailua-Kona, HI, 17-23 Feb. 2001.

Neuman, D. R., S. R. Jennings, and R. B. Rennick. 2000. Land reclamation evaluation system for Anaconda Smelter Superfund Site. Proc. of Clark Fork River Symposium, University of Montana, Missoula, MT.

Neuman, D.R. 2000. Remedial strategies to reduce impacts from metal mine wastes on a western United States watershed. Proc. of 5th International Symposium on Fish Physiology, Toxicology, and Water Quality, Hong Kong. U.S. Environmental Protection Agency, Office of Research and Development, Washington, DC. EPA/600/R-00/015.

Dollhopf, D.J., J.D. Goering, G.S. Vandeberg and **D.R. Neuman.** 2000. Evaluation of Ferric Oxide for Adsorption of Arsenic Leaching From a Mine Waste Repository. Proc. of Billings Land Reclamation 2000, Reclamation Research Unit, Montana State University, Bozeman, MT. CD-ROM.

LeCain, R., P. Hook, R. Sheley, and **D. Neuman.** 2000. Effects of Riparian Resource Gradients on the Establishment of Native and Invasive Plants. Proc. of Billings Land Reclamation 2000, Reclamation Research Unit, Montana State University, Bozeman, MT. CD-ROM.

Neuman, D.R. 1999. Remedial strategies for metal mine wastes in the Clark Fork River Basin, Montana. Poster presented at 11th Annual International Conference for Society for Ecological Restoration, The Presidio of San Francisco, 1999, September 23-25, 1999.

Neuman, D.R., S.R. Jennings, M.J. Hooper, G.P. Cobb, S.T. McMurry, B.M. Adair, K. Reynolds and D.J. Hoff. 1999. Metal and arsenic availability in small mammals inhabiting smelter-associated tailings and aerial deposition areas following different remediation treatments. Poster presented at Hazardous Waste Research Conference, GP/RM - HSRC, Kansas State University, Manhattan, KS.

Reynolds, K.D., B.M. Adair, S.T. McMurry, G.P. Cobb, **D.R. Neuman,** S.R. Jennings, D.J. Hoff, W. Olsen and M.J. Hooper. 1999. Heavy metal and arsenic residues in small mammals inhabiting differentially remediated test plots at the Anaconda Smelter Superfund Site, Deer Lodge County, Montana. Poster presented at Wildlife Applications to Remediation Decision-Making Conference, August 17-19, 1999, Denver, CO.

Neuman, D.R., F.F. Munshower, S.R. Jennings and D.J. Dollhopf. 1997. Phytostabilization of copper smelter tailings near Anaconda, Montana, p. 26 *In* Abstract Book for 12th Annual Conf. on Hazardous Waste Research, Kansas City, MO. May 19-22, 1997.

Neuman, D.R. 1997. Developing Partnerships among universities, industry, and the state, p. 58 *In* Abstract Book for 12th Annual Conf. on Hazardous Waste Research, Kansas City, MO. May 19-22, 1997.

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