

## Lands and Minerals Environmental Research Program publication list, pre-2012

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\* Only hardcopies are currently available for specified publications.

### **Taconite Mining Wastes: Taconite Tailing Vegetation**

<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
6122	<i>Eger, P., Antonson, D.</i>	2005. Use of Biosolids to Reclaim Coarse Taconite Tailings. Final Report, January 2005. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 37 p.
6121	<i>Eger, P., Antonson, D., Johnson, A., Folman, J.</i>	2004. Mined Land Reclamation with Dredge Material from Duluth-Superior Harbor. Final Report to U.S. Environmental Protection Agency, Great Lakes National Program Office, Project No. GL985985-01-0. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 41 p.
5296	<i>Eger, P., Johnson, A., Dewar, S. Anderson, B., Churak, P.</i>	2004. Thinking outside the box - new ways to close old tailings basins. Mining Engineering, 56 (January). p. 45-51.
6118	<i>MNDNR, Division of Lands and Minerals</i>	2004. Biosolids for Reclaiming Minelands. Minnesota Department of Natural Resources, Division of Lands and Minerals, Hibbing, MN. 25 p. plus appendices.
6058	<i>Eger, P., Johnson, A., Melchert, G., Crozier, M.</i>	2000. Use of organic amendments to reclaim coarse taconite tailing. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 38 p. plus appendix.
3740	<i>Adams, J., Maki, J.</i>	1999. Principles of mineland watershed reclamation. In Proceedings 72nd Annual Minnesota Section SME and 60th Annual University of Minnesota Mining Symposium, April 13-15, 1999, Duluth, MN. p. 207-221.
6079	<i>Eger, P., Melchert, G., Dewar, S.</i>	1999. Waste for wastelands - reclaiming taconite tailings basins with organic amendments. In Mining and Reclamation for the next Millennium. Vol. 1. Proc. 16th National Meeting ASSMR, Scottsdale, AZ, August 13-19, 1999. p. 132-145.
6076	<i>Dewar, S., Norland, M.</i>	1994. Growth and trace metal content of poplars planted tailing treated with municipal solid waste compost. In Proceedings 1994 National meeting of the American Society for Surface Mining and Reclamation, Pittsburgh, PA, April 1994. p. 203-211.
6081	<i>Melchert, G., Eger, P., Kassa, Z., Dewar, S.</i>	1994. Reclaiming coarse taconite tailings with municipal solid waste compost. In International Land Reclamation and Mine Drainage Conference/Third International Conference on the Abatement of Acidic Drainage, Pittsburgh, PA, April 25-29, 1994. p. 175-183.

ID #	Author(s)	Title
6173	<i>Norland, M., Veith, D., Dewar, S.</i>	1993. Standing Crop Biomass and Cover on Amended Coarse Taconite Iron Ore Tailing. In Proceedings of the 1993 National Meeting of the American Society for Surface Mining and Reclamation, Spokane, Washington, May 16-19, 1993. p. 385-415.
6082	<i>Norland, M., Veith, D., Dewar, S.</i>	1992. Vegetation response to organic soil amendments on coarse taconite tailing. In Proceedings of the 1992 National Meeting of the American Society of Surface Mining and Reclamation, Duluth, MN, June 1992. p. 341-360.
6077	<i>Dewar, S.</i>	1987. Taconite tailing basins as a site for growing vegetation. In Proceedings of the 1987 Society of American Foresters National Convention, Minneapolis, MN, Oct. 1987. p. 174-178.
6111	<i>Dewar, S.</i>	1985. Direct seeding of jack pine on waste rock dumps. Proc. 1985 Better Reclamation with Trees Conference, Carbondale, IL, June 5-7, 1985. 7 p.
6080	<i>Jordan, J., Dewar, S.</i>	1985. Vegetation characterization of a taconite tailing basin in Minnesota. In Proceedings, 1985 Symposium on Surface Mining Hydrology, Sedimentology and Reclamation, Lexington, KY, Dec. 1985. p. 249-254.
6078	<i>Dewar, S., Berglund, E.</i>	1983. First-year survival and growth of willow and poplar cuttings on taconite tailings in Minnesota. In Proceedings, 1983 Symposium on Surface Mining Hydrology, Sedimentology and Reclamation, Lexington, KY, Dec. 1983. p. 141-147.

#### **Taconite Mining Wastes: In-Pit Tailings Disposal**

ID #	Author(s)	Title
6099	<i>Berndt, M., Leibfried, B.</i>	2007. A Geochemical Tracer Study of Minnesota's First In-Pit Disposal Facility for Taconite Tailings. Minnesota Department of Natural Resources, Division of Lands and Minerals and Division of Waters, St. Paul, MN. 38 p.
6524	<i>Leopold, E., Lapakko, K.</i>	2001. In-Pit Disposal of Taconite Tailings - Laboratory Column Simulations. Final Sampling Summary - June 30, 2001. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 15 p.
3671	<i>Lapakko, K., Jakel, E.</i>	2000. Detailed Analysis of Potential Environmental Impacts of Taconite Tailings Disposal in the Minorca Pit on Water Quality in the Missabe Mountain Pit. Final Report, March 17, 2000. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 83 p. plus appendices.

<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
3527	<i>Berndt, M., Lapakko, K., Jakel, E.</i>	1999. In-pit disposal of taconite tailings: Geochemistry. Final Report. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 77 p. plus appendices.
4889	<i>Jakel, E., Lapakko, K.</i>	1999. In-pit disposal of taconite tailings: The Snively Pit at US Steel-Minntac, Mountain Iron, MN. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 31 p.
4890	<i>Jakel, E., Lapakko, K.</i>	1999. Taconite tailings in-pit disposal field tank experiments: Data Summary December 31, 1999. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 48 p. plus appendices.
4891	<i>Jakel, E., Lapakko, K.</i>	1999. In-pit disposal of taconite tailings: manganese oxidation experiments. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 23 p. plus appendix.
4888	<i>Lapakko, K., Jakel, E.</i>	1999. Summary of potential impacts of taconite tailings disposal in the Minorca Pit on water quality in Minnesota. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 32 p. plus appendix.
2857*	<i>Lapakko, K., Berndt, M., Jakel, E.</i>	1998. Predicted water quality in open pits into which taconite tailings are disposed. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 24 p.*
3090	<i>Berndt, M., Lapakko, K.</i>	1997. Mineral solubility and surface adsorption constraints on trace element mobility during in-pit disposal of taconite tailings. In Proceedings 70th Annual Meeting, Minnesota Section SME and 58th Annual University of Minnesota Mining Symposium. April 22-24, 1997, Duluth, MN. p. 151-176.
3154	<i>Berndt, M., Lapakko, K.</i>	1997. Chemistry of water associated with taconite processing and tailings reactions in the Mesabi Iron Range district, northeastern Minnesota. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 69 p. plus appendices.

**Taconite Mining Wastes: Wetland Creation in Taconite Tailings Basins**

<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
6057	<i>Eger, P., Johnson, A., Melchert, G., Antonson, D., Dewar, S.</i>	2000. The use of dredge material as an organic substrate to create wetlands in taconite tailings basins. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 54 p. plus appendices.
6061	<i>Melchert, G., Eger, P.</i>	1996. Creating wetlands on taconite tailings basins in Northeastern Minnesota: First year progress report, U.S. Steel Tailings Basin study. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 63 p.

**Taconite Mining Wastes: Mitigating Mercury Release from Taconite Plants**

<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
6100	<i>Berndt, M.</i>	2008. On the Measurement of Stack Emissions at Taconite Processing Plants: A progress report submitted to MPCA. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 23 p.
6066	<i>Berndt, M., Engesser, J.</i>	2007. Mercury Transport in Taconite Processing Facilities: (III) Control Method Test Results. Minnesota Department of Natural Resources, Division of Lands and Minerals, Hibbing, MN. 48 p.
6046	<i>Berndt, M., Engesser, J.</i>	2005. Mercury Transport in Taconite Processing Facilities: (II) Fate of Mercury Captured by Wet Scrubbers. Report prepared for EPA-Great Lakes National Program Office. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 32 p.
6065	<i>Berndt, M., Engesser, J.</i>	2005. Mercury Transport in Taconite Processing Facilities: (I) Release and Capture During Induration. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 31 p. plus appendices.
6069	<i>Berndt, M., Engesser, J., Berquo, T.</i>	2005. Mercury Chemistry and Mossbauer Spectroscopy of Iron Oxides During Taconite Processing on Minnesota's Iron Range. In Proceedings Air Quality V, International Conference on Mercury, Trace Elements, SO <sub>3</sub> , and Particulate Matter. Washington, DC, Sept. 2005. 15 p.
6068	<i>Berndt, M., Engesser, J., Johnson, A.</i>	2003. On the distribution of mercury in taconite plant scrubber systems. Technical report submitted to the MPCA. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 30 p.

### **Taconite Mining Wastes: Taconite Plant Chemical Balance**

<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
3086	<i>Engesser, J.</i>	1998. The removal of sulfate and fluoride from process water - The effect of water chemistry on filtering and flotation. Natural Resources Research Institute, Coleraine, MN. 20 p. plus tables and appendices.
6031	<i>Lapakko, K., Jagunich, A.</i>	1991. Sulfate release from the USX tailings basin and quantification of sulfate sources. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 34 p. plus appendices.
2998	<i>Lapakko, K., Leibfried, R., Melchert, G.</i>	1988. Sulfate sampling in waters receiving seepage from the USX tailings basin: Status report. (March 1, 1988) Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 11 p. plus appendices.

### **Mercury in the Environment**

<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
6176	<i>Bavin, T., Berndt, M.</i>	2008. Sources and Fate of Sulfate in NE Minnesota Watersheds: A Minerals Coordinating Committee Progress Report. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 55 p.
6067	<i>Berndt, M.</i>	2003. Mercury and Mining in Minnesota: Minerals Coordinating Committee, Final Report. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 58 p.

### **Fibers**

<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
6175	<i>Berndt, M., Brice, W.</i>	2007. The origins of public concern with taconite and human health: Reserve Mining and the asbestos case. Regulatory Toxicology and Pharmacology 52, p. 32-39.

### **Peat and Industrial Minerals/Organic Amendments**

<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
6056	<i>Wagner, J., Eger, P.</i>	2001. The use of N-Viro Soil and municipal solid waste compost to establish vegetation at sand and gravel operations: Final report. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 43 p. plus appendices.

### **Peat and Industrial Minerals/Peat Mining**

<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
6135	<i>Buttleman, C., Jordan, J.</i>	1986. Minnesota Rules Relating to the Reclamation of Mined Peatlands. In: Proc. Advances in Peatlands Engineering, Carleton University, August 25-26, 1986 ed. National Research Council of Canada, Carleton University, Ottawa. 5 p.
784	<i>Lapakko, K., Eger, P., Johnson, B., Loiselle, A.</i>	1986. Suspended solids removal from sod peat mine drainage. In Proc. Advances in Peatlands Engineering. National Research Council of Canada, Carleton University, Ontario, August 1986. p. 259-269.
6137	<i>Leibfried, R., Berglund, E.</i>	1986. Groundwater Hydrology of a Fuel Peat Mining Operation. In: Proc. Advances in Peatlands Engineering, Carleton University, August 25-26, 1986. National Research Council of Canada, Carleton University, Ottawa (ed.). p. 192-199.
6138	<i>Loiselle, A.</i>	1986. Development of a Technique for Sampling Interstitial Waters in Peatlands. In: Proc. Advances in Peatlands Engineering, National Research Council of Canada, Carleton University, Ottawa, August 25-26, 1986, 174-183.
5989	<i>Berglund, E., Leibfried, R., Eger, P., Lapakko, K., Loiselle, A., Johnson, B.</i>	1985. Hydrologic and Water Quality Monitoring of a Fuel Peat Mine near Cotton, Minnesota: First Year Progress Report. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 109 p.
787	<i>Eger, P., Lapakko, K., Johnson, B., Loiselle, A.</i>	1985. Drainage quality from a sod peat mine, first year results. In: Proc. Peat and the Environment 1985 International Peat Society Symposium, Jonkoping, Sweden, 317-329.
6022	<i>Jordan, J.</i>	1984. The Effect of Ditching on Surrounding Peatland Vegetation. Minnesota Department of Natural Resources, Division of Minerals, Hibbing, MN. 17 p.



<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
4435	<i>MNDNR</i>	1984. Recommendations for the Protection of Ecologically Significant Peatlands in Minnesota. Minnesota Department of Natural Resources, St. Paul, MN. 55 p. plus appendices.
6160	<i>MNDNR, Division of Minerals</i>	1984. Peatland Reclamation Research and Demonstration Projects. Minnesota Department of Natural Resources, Division of Minerals, Hibbing, MN. 18 p.
3066	<i>MNDNR, Division of Minerals</i>	1981. Minnesota Peat Program: Policy Recommendations. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 37 p.

#### **Peat and Industrial Minerals/Industrial Minerals**

<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
6538	<i>Antonson, D., Ruhanen, R., Berndt, M., Lapakko, K., Wielhelm, H.</i>	2005. Water Quality Associated with Pegmatites of the Northwest Angle, Minnesota. Minnesota Department of Natural Resources, Division of Lands and Minerals, Hibbing, MN. 19 p.
6084	<i>Brice, W., Buttleman, C.</i>	2000. Reclaiming aggregate mining sites in Minnesota using private/public partnerships. 2000 Society of Mining Engineers Annual Meeting, Salt Lake City, UT, March 2000. Preprint 100-103. 4 p.
4864	<i>Lapakko, K., Oberhelman, M.</i>	1993. Water quality at potential dimension stone quarry sites in northern Minnesota. Minnesota Department of Natural Resources, Division of Minerals, Hibbing, MN. 11 p. plus appendices.
6085	<i>Buttleman, C.</i>	1992. A Handbook for Reclaiming Sand and Gravel Pits in Minnesota: A guide to the procedures for reclaiming abandoned sand and gravel pits. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 90 p.
6115	<i>MNDNR, Division of Minerals</i>	1989. A review of regulations regarding the reclamation of sand and gravel pits on Minnesota: Final report by the task force on sand and gravel pit reclamation to the governor. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 77 p.

### **Environmental Management of Sulfide Mine Wastes: Research Summary**

<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
6045	<i>Johnson, A.</i>	2002. Reclamation research: Environmental Mine Waste Management Database. Minnesota Department of Natural Resources, Division of Lands and Minerals, Hibbing, MN. 16 p. plus appendices.
6009	<i>Lapakko, K., Antonson, Jakel, E., Berndt, M.</i>	2001. Mine waste characterization and drainage mitigation: Research summary 2001. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 58 p.
6052	<i>Lapakko, K.</i>	1992. Nonferrous Metal Mining: Waste Characterization and Drainage Mitigation with Alkaline Solids: Research Summary, December 1992. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 28 p.
6053	<i>MNDNR, Division of Minerals, Reclamation Section</i>	1990. Nonferrous Metal Mining Impact, Mitigation, and Prediction Research, August 1990. Minnesota Department of Natural Resources, Division of Minerals, Reclamation Section, St. Paul, MN. 32 p.

### **Environmental Management of Sulfide Mine Wastes: Approaches to Drainage Quality Prediction**

<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
2802	<i>Lapakko, K.</i>	1994. Exploration geology and mine waste characterization. The Minnesota Prospector, Vol. 2, no. 2. Minnesota Exploration Association. p. 8-9.
2801	<i>Lapakko, K.</i>	1993. Pollution prevention in the world of mining. U.S. Water News, February, 1993, vol. 9, no. 8. p. 22.
779	<i>Lapakko, K.</i>	1990. Regulatory mine waste characterization: A parallel to economic resource evaluation. In Proc. Western Regional Symposium on Mining and Mineral Processing Wastes, F. Doyle (ed.), Soc. for Mining, Metallurgy, and Exploration, Inc., Littleton, CO. p. 31-39.
1260	<i>Lapakko, K.</i>	1988. Preoperational projection of metallic mine waste drainage quality. In Proc. International conference on Control of Problems from Metal Mines. June 20-24, 1988, Roros, Norway. Federation of Norwegian Industries and State Pollution Control Authority of Norway. 10 p.

**Environmental Management of Sulfide Mine Wastes: Methods of Characterization and Prediction/Solid-phase Analysis**

ID #	Author(s)	Title
4426	<i>Lapakko, K.</i>	2003. Solid phase characterization for metal mine waste drainage quality prediction. In: Proceedings 2003 SME Annual Meeting. Preprint 03-93, February 24-27, 2003, Cincinnati, OH. Society for Mining, Metallurgy, and Exploration, Inc., Littleton, CO. 11 p.
6001	<i>Lapakko, K.</i>	2001. Metal Mine Rock and Waste Characterization Tools: an Overview. Posted on the Acid Drainage Technology Initiative - Metal Mining Sector web page. 29 p.
3089	<i>White, W., Lapakko, K., Cox, R.</i>	1999. Static-test methods most commonly used to predict acid-mine drainage: Practical guidelines for use and interpretation. In: Reviews in economic geology: The environmental geochemistry of mineral deposits, Part A: Processes, techniques and health issues. Vol. 6A. GS. Plumlee, M. Logsdon (ed.). Society of Economic Geologists, Littleton, CO. p. 325-338.
4837	<i>White, W., Lapakko, K., Cox, R.</i>	1997. Effects of protocol variables and sample mineralogy on static-test NP. In Proc. Eleventh Annual Conference of the Society of Mineral Analysts. Elko, NV, April 7-10, 1997. p. 188-233.
3768	<i>Lapakko, K.</i>	1994. Evaluation of neutralization potential determinations for metal mine waste and a proposed alternative. In Proc. Third International Conference on the Abatement of Acidic Drainage, April 25-29, 1994, Pittsburgh, PA. Vol. 1. p. 129-137.
1410	<i>Lapakko, K., Lawrence, R.</i>	1993. Modification of the Net Acid Production (NAP) Test. In Proc. B.C. Mine Reclamation Symposium, Port Hardy, B.C. May 4-7, 1993. p. 145-159.
1554	<i>Lapakko, K.</i>	1992. Characterization and static testing of ten gold mine tailings. In Achieving land use potential through reclamation. Proc. 9th National Meeting ASSMR, Duluth, MN, June 14-18, 1992. p. 370-384.
1657	<i>Lapakko, K.</i>	1992. Recent literature on static predictive tests. In Emerging Process Technologies for a Cleaner Environment. S. Chander (ed.). Soc. for Mining, Metallurgy, and Exploration, Inc., Littleton, CO. p. 109-119.
3766	<i>Lapakko, K.</i>	1991. Mine Waste Drainage Quality Prediction: A Literature Review. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 50 p.

ID #	Author(s)	Title
6037	<i>Pignolet-Brandom, S., Lapakko, K.</i>	1990. Characterization of mine waste by QEM*SEM automated scanning microscopy. Presented at the 1990 Annual Meeting and Exhibit 119th AIME Annual Meeting and WAAIME 74th Annual Meeting, February 26-March 1, 1990, Salt Lake City, UT. 6 p.

**Environmental Management of Sulfide Mine Wastes: Methods of Characterization and Prediction/Dissolution Tests**

ID #	Author(s)	Title
5993	<i>Lapakko, K., Engstrom, J., Antonson, D.</i>	2004. Long term dissolution testing of mine waste. Report on Contract No. DACW45-02-P-0205 to US Army Corps of Engineers. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 154 p. plus appendices.
4423	<i>Lapakko, K.</i>	2003. Developments in humidity-cell tests and their application. Chap. 7. In: Environmental Aspects of Mine Wastes, Vancouver, British Columbia. J.L. Jambor, D.W. Blowes, A.I.M. Ritchie (ed.). Series Ed: Raeside, Robert. Short Course Series, 31. Mineralogical Association of Canada, Ontario, Canada. p. 147-164.
6003*	<i>Lapakko, K., Antonson, D., Folman, J., Johnson, A.</i>	2002. Laboratory drainage quality from Duluth Complex rock and assessment of test methods for waste rock dissolution. Final report on Contract BLM JSP012002 to the U.S. Bureau of Land Management, Salt Lake City Office. 63 p. plus appendices.*
3633	<i>Lapakko, K., White, W.</i>	2000. Modification of the ASTM 5744-96 kinetic test. In Proceedings from the Fifth International Conference on Acid Rock Drainage, Denver, CO. Volume I. Society for Mining, Metallurgy, and Exploration, Inc., Littleton, CO. p. 631-639.
3632	<i>White, W., Lapakko, K.</i>	2000. Preliminary indications of repeatability and reproducibility of the ASTM 5744-96 kinetic test for drainage pH and sulfate release rate. In Proceedings from the Fifth International Conference on Acid Rock Drainage, Denver, CO. Volume I. Society for Mining, Metallurgy, and Exploration, Inc, Littleton, CO. p. 621-630.
6017	<i>Lapakko, K.</i>	1999. Laboratory drainage quality from Duluth Complex rock and assessment of test methods for waste rock dissolution. Report on Contract BLM J910C82009 to the U.S. Bureau of Land Management Salt Lake City Office, 30 June 1999. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 32 p. plus appendices.

**Environmental Management of Sulfide Mine Wastes: Methods of Characterization and Prediction/Solid-phase Analysis + Dissolution Testing**

ID #	Author(s)	Title
3767	<i>Lapakko, K.</i>	1993. Evaluation of Tests for Predicting Mine Waste Drainage pH: Report to the Western Governors' Association. 1993. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 76 p. plus appendices.
2803	<i>Lapakko, K.</i>	1992. Projection of the time required for neutralization potential depletion. In: Mining, Exploration and the Environment '92. Sponsored by the Society for Mining, Metallurgy, and Exploration, Bellevue, Washington, April 6-10, 1992. 1 p.

**Environmental Management of Sulfide Mine Wastes: Methods of Characterization and Prediction/Dissolution Testing + Modeling**

ID #	Author(s)	Title
4290	<i>White, W., Lapakko, K., Trujillo, E.</i>	2002. Progress of BLM-funded acid mine drainage research. In: Proceedings of Conference on National Association of Abandoned Mine Lands Programs, Park City, Utah, September 15-18, 2002. 32 p.

**Environmental Management of Sulfide Mine Wastes: Geochemistry of Mine Waste Dissolution/Mineral Dissolution Literature**

ID #	Author(s)	Title
6145	<i>Doctor, D.</i>	2001. Experiments in Mineral Dissolution Kinetics: A guide to their design and interpretation. Minnesota Department of Natural Resources, Division of Lands and Minerals, Reclamation Section, St. Paul, MN. 17 p.
6007	<i>Doctor, D., Leopold, E., Lapakko, K.</i>	2001. Carbonate mineral dissolution: Reaction rates and mechanisms. Literature summary funded by Minnesota Legislature Appropriations for Environmental Cooperative Research. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 18 p. plus appendices.
5299	<i>Lapakko, K., Leopold, E.</i>	2001. Pyrrhotite oxidative dissolution: Reaction rates and mechanisms. Minnesota Department of Natural Resources, Division of Lands and Minerals, St Paul, MN. 11 p.
5300	<i>Lapakko, K., Leopold, E.</i>	2001. Pyrite oxidative dissolution: Reaction rates and mechanisms. Minnesota Department of Natural Resources, Division of Lands and Minerals, St Paul, MN. 63 p.

ID #	Author(s)	Title
5301	<i>Phillips, E., Doctor, D., Leopold, E., Lapakko, K.</i>	2001. Dissolution of silicate minerals present in Duluth Complex and Archean Greenstone formations. Minnesota Department of Natural Resources, Division of Lands and Minerals, St Paul, MN. 14 p.
4233	<i>Lapakko, K.</i>	1982. Dissolution of silicate minerals. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 19 p.

**Environmental Management of Sulfide Mine Wastes: Geochemistry of Mine Waste  
Dissolution/Duluth Complex Rock/Laboratory**

ID #	Author(s)	Title
6049	<i>Lapakko, K., Antonson, D.</i>	2006. Laboratory dissolution of Duluth Complex rock from the Babbitt and Dunka Road prospects: Status Report. Minnesota Department of Natural Resources, Division of Lands and Minerals, Hibbing, MN. 35 p. plus appendices.
5433	<i>Lapakko, K., Engstrom, J., Antonson, D.</i>	2006. Effects of particle size on drainage quality from three lithologies. In: 7th Annual International Conference on Acid Rock Drainage (ICARD), St. Louis, Missouri, March 26-30, 2006. p. 1026-1050.
5996	<i>Lapakko, K., Antonson, D.</i>	2003. Duluth Complex tailings dissolution experiment: Status Report. Minnesota Department of Natural Resources, Division Lands and Minerals, St. Paul, MN. 24 p. plus appendices.
3051	<i>Lapakko, K., Haub, J., Antonson, D.</i>	1998. Effect of dissolution time and particle size on kinetic test results. SME Annual Meeting, Orlando, FL, March 9-11, 1998. Preprint 98-114. 9 p.
1717	<i>Lapakko, K., Antonson, D.</i>	1994. Oxidation of sulfide minerals present in Duluth Complex rock. In Environmental Geochemistry of Sulfide Oxidation; ACS Symposium Series No. 550. American Chemical Society, Washington, DC, 1993. p. 593-607.
6024	<i>Lapakko, K.</i>	1993. Laboratory dissolution of drill core samples of Duluth Complex rock. Report to the US Bureau of Mines, Salt Lake City Research Center. Cooperative Agreement No. C0219003. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 28 p. plus appendices.
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Dissolution/Duluth Complex Rock/Field Studies**

<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
6119	<i>MNDNR, Division of Lands and Minerals</i>	2007. Birch Lake Water Quality Sampling Program. Minnesota Department of Natural Resources, Division of Lands and Minerals, Hibbing, MN. 15 p. plus appendices.
5990	<i>Lapakko, K., Antonson, D., Engstrom, J.</i>	2004. Analytical screening of abandoned waste rock piles. Report on Contract No. DACW45-02-P-0212 to US Army Corps of Engineers. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 91 p. plus appendices.
4387	<i>Kelsey, P., Klusman, R., Lapakko, K.</i>	1996. Equilibrium modeling of trace metal transport from Duluth-Complex rockpile. In Proc. 13th Annual National Meeting of ASSMR. Successes and Failures: Applying Research Results to Insure Reclamation Success, Knoxville, TN, May 18-23, 1996. Eds. Daniels, W., Burger, J., Zipper, C. p. 671-680.
4986	<i>MNDNR, Division of Minerals</i>	1996. Dunka data summary: 1976-1993 - Draft, March 15, 1996. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 46 p.
3079	<i>Wildeman, T., Kelsey, P., Lapakko, K.</i>	1995. Relating sulfate generation to a model of physical flow through waste rock piles: Attempts and consequences. In Proc. 1995 National Meeting of the American Society for Surface Mining and Reclamation, Gillette, WY, June 5-8, 1995. p. 539-546.
4985	<i>MNDNR, Division of Minerals</i>	1994. Department of Natural Resources sampling at the Dunka mine in 1993. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 34 p.
4357	<i>Lapakko, K.</i>	1993. Field Dissolution of Test Piles of Duluth Complex Rock. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 41 p. plus appendices.
4356	<i>Eger, P., Lapakko, K.</i>	1985. Heavy Metals Study: Progress Report on the Field Leaching and Reclamation Program: 1977-1983. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 53 p. plus appendices.
2117	<i>Strudell, J., Lapakko, K., Eger, P.</i>	1984. Bob bay study, 1983. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 36 p. plus appendices.

<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
2128	<i>Eger, P., Lapakko, K.</i>	1981. The leaching and reclamation of low-grade mineralized stockpiles. In Proc. 1981 Symposium on Surface Mining Hydrology, Sedimentology and Reclamation, Lexington, KY. p. 157-166.
2110	<i>Eger, P., Lapakko, K., Weir, A.</i>	1981. Heavy metals study: 1980 progress report on the field leaching and reclamation program. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 31 p.
2122	<i>Eger, P., Lapakko, K., Weir, A.</i>	1981. The environmental leaching of stockpiles containing copper-nickel sulfide minerals. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 63 p. plus appendices.
2108	<i>Eger, P., Lapakko, K., Wier, A.</i>	1981. 1980 Progress report on the field leaching and reclamation program. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 31 p. plus appendices.
2115	<i>Lapakko, K., Eger, P.</i>	1981. Transport of trace metals and other chemical components in mining runoff through a shallow bay. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 38 p. plus appendices.
2121	<i>Eger, P., Lapakko, K.</i>	1980. Stockpile leaching and chemical transport at the Erie Mining Company Dunka Site: A data summary for 1976-1979. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 117 p. plus appendices.
2119	<i>Eger, P., Lapakko, K.</i>	1980. Transport of chemical constituents present in mining runoff through a creek system. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 47 p. plus appendices.
778	<i>Eger, P., Sturgess, J., Lapakko, K.</i>	1980. The leaching and revegetation of low-grade mineralized stockpiles, a status report. Presented at AIME-SME National Conference, Las Vegas, Nevada. Feb. 24-28, 1980. Preprint 80-80. 11 p.
2114	<i>Eger, P., Johnson, B., Otterson, P.</i>	1977. Regional copper-nickel study. Field studies: leaching, metal transport and metal pathways. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 148 p.



**Environmental Management of Sulfide Mine Wastes: Geochemistry of Mine Waste  
Dissolution/Duluth Complex Rock/Laboratory + Field Studies**

<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
4874	<i>MNDNR, Division of Lands and Minerals</i>	2004. Duluth Complex Mine Waste Drainage. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 9 p.
3769	<i>Lapakko, K.</i>	1994. Comparison of Duluth Complex rock dissolution in the laboratory and field. In Proc. Third International Conference on the Abatement of Acidic Drainage, April 25-29, 1994, Pittsburgh, PA. Vol 1. p. 419-428.
1259	<i>Lapakko, K.</i>	1988. Prediction of acid mine drainage from Duluth Complex mining wastes in northeastern Minnesota. In Proc. 1988 Mine Drainage and Surface Mine Reclamation Conference, April 19-21, 1988, Pittsburgh, PA. Vol. 1. Mine Water and Mine Waste. U.S.D.I. Bureau of Mines IC9183. p. 180-190.
2124	<i>Eger, P., Lapakko, K.</i>	1980. Environmental leaching of Duluth Gabbro under laboratory and field conditions: Oxidative dissolution of metal sulfide and silicate minerals. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 340 p.
2262	<i>Lapakko, K., Eger, P.</i>	1980. Mechanisms and rates of leaching from Duluth Gabbro waste rock. Presented at SME-AIME Fall Meeting and Exhibit, Minneapolis, MN, Oct. 22-24, 1980. Preprint 80-367. 14 p.
776	<i>Lapakko, K., Eger, P.</i>	1980. Environmental leaching of trace metals from waste rock and lean ore stockpiles. Presented at 53rd Annual Meeting Minnesota Section AIME and 41st Annual Mining Symposium, Duluth, MN, January 16-18, 1980. 14 p.

**Environmental Management of Sulfide Mine Wastes: Geochemistry of Mine Waste  
Dissolution/Archean Greenstone/Laboratory**

<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
5432	<i>Lapakko, K., Antonson, D.</i>	2006. Pyrite oxidation rates from humidity cell testing of greenstone rock. In: 7th Annual International Conference on Acid Rock Drainage (ICARD), St. Louis, Missouri, March 26-30, 2006. p. 1007-1026.
5992	<i>Lapakko, K., Antonson, D., Folman, J., Engstrom, J.</i>	2004. Archean greenstone laboratory dissolution experiment. Final Report on Contract JSP012018 to U.S. Bureau of Land Management, Salt Lake City Office, September 30, 2004. Minnesota Department of Natural Resources, Division of Lands and Minerals. 93 p. plus appendices.

ID #	Author(s)	Title
4288	<i>Lapakko, K., Antonson, D.</i>	2002. Drainage pH, acid production, and neutralization for Archean greenstone rock. Soc. for Mining, Metallurgy, and Exploration, Inc., Littleton, CO. 8 p.
4021	<i>Lapakko, K., Antonson, D.</i>	2001. Laboratory drainage pH and sulfate release rates from Archean greenstone rock. In: Securing the Future, International Conference on Mining and the Environment, Skelleftea, Sweden, June 25-July 1, 2001. 10 p.

**Environmental Management of Sulfide Mine Wastes: Geochemistry of Mine Waste  
Dissolution/Archean Greenstone/Field Studies**

ID #	Author(s)	Title
5997	<i>Lapakko, K., Antonson, D., Folman, J., Johnson, A.</i>	2003. Controlling mine drainage problems - New approaches for waste rock stockpiles: A final report to the Minerals Coordinating Committee. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 77 p. plus appendices.
6004	<i>Lapakko, K., Antonson, D., Johnson, A.</i>	2002. Archean greenstone field dissolution and mitigation experiments: Controlling mine drainage problems - New approaches for waste rock stockpiles. First year progress report to the Minnesota Minerals Coordinating Committee, 30 June 2002. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 67 p. plus appendices.
6010	<i>Lapakko, K., Antonson, D., Johnson, A.</i>	2001. Archean greenstone laboratory and field dissolution experiments. Controlling mine drainage problems - New approaches for waste rock stockpiles. Final report to Minerals Coordinating Committee. 30 June 2001. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 79 p. plus appendices.

**Environmental Management of Sulfide Mine Wastes: Geochemistry of Mine Waste Dissolution/Hydrothermal Quartz-Carbonate Gold Tailings**

<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
3392	<i>Lapakko, K., Engstrom, J., Antonson, D.</i>	1999. Non-ferrous mine waste characterization project: Project extension status. June 1999. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 105 p. plus appendices.
3770	<i>Lapakko, K., Wessels, J.</i>	1995. Release of acid from hydrothermal quartz-carbonate hosted gold-mine tailings. In Sudbury '95, Conference on Mining and the Environment, Sudbury, Ontario, May 28 - June 1, 1995. p. 139-148.
6044	<i>Lapakko, K.</i>	1993. Non-ferrous mine waste characterization project. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 98 p. plus appendices.
6028	<i>Lapakko, K., Wessels, J.</i>	1993. Dissolution of tailings from hydrothermal gold deposits. Presented at 1993 Current Activities Forum, Chisolm, MN, Oct. 14, 1993. 2 p.
3765	<i>Lapakko, K.</i>	1991. Non-ferrous mine waste characterization project. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 68 p. plus appendices.

**Environmental Management of Sulfide Mine Wastes: Geochemistry of Mine Waste Dissolution/Other Mine Waste Dissolution**

<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
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5991	<i>Lapakko, K., Antonson, D., Folman, J.</i>	2004. Laboratory drainage quality from mafic-intrusive, tuffaceous-sedimentary, and weathered waste rocks. Final Report on Contract JSP012002 to U.S. Bureau of Land Management, Salt Lake City Office. 30 November 2004. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 89 p. plus appendices.

<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
5999	<i>Diehl, S., Smith, K., Desborough, G., White, W., Lapakko, K., Goldhaber, M., Fey, D.</i>	2003. Trace-metal sources and their release from mine wastes: Examples from Warrior Basin Coal and from humidity cell tests of hard-rock mine waste. In Proc. Joint Conference of the Billings Land Reclamation Symposium and the Annual Meeting of the American Society of Mining and Reclamation, Billings, Montana, June 3-6, 2003. 18 p.
4425	<i>Lapakko, K., Berndt, M.</i>	2003. Comparison of acid production from pyrite and jarosite. In: Sixth International Conference on Acid Rock Drainage, July 12-18, 2003. 7 p.
3646	<i>Lapakko, K.</i>	1999. Laboratory drainage quality from mafic-intrusive, tuffaceous-sedimentary, and weathered waste rocks. Final Report on Contract J910C82009 to the US Bureau of Land Management, Salt Lake City. June 30, 1999. Minnesota Department of Natural Resources, Division of Minerals. St. Paul, MN. 32 p. plus appendices.
6016	<i>Lapakko, K.</i>	1999. Laboratory drainage quality from siltite-argillite rock. Final appendices for Contract BLM J910C82009 to the U.S. Bureau of Land Management Salt Lake City Office, March 1, 1999. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. Data updated in final appendices in 2000.
3069	<i>Lapakko, K.</i>	1998. Laboratory drainage quality from siltite-argillite and Duluth Complex rocks. Progress Report on Contract to BLM J910P72015. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 41 p. plus appendices.

#### **Environmental Management of Sulfide Mine Wastes: Mitigative Techniques**

<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
6783	<i>Leopold, E., Lapakko, K.</i>	2001. Environmental mine waste management: Strategies for the prevention, control, and treatment of problematic drainages. Minnesota Department of Natural Resources, Division of Lands and Minerals, St Paul, MN. 132 p.

**Environmental Management of Sulfide Mine Wastes: Mitigative Techniques/Dry Covers**

ID #	Author(s)	Title
6781	<i>Lapakko, K., Jakel, E.</i>	1999. Dry cover systems for mine waste mitigation. Status Report. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 27 p. plus appendix.
1620	<i>Eger, P., Antonson, D., Udoh, F.</i>	1990. The use of low permeability covers to reduce infiltration into mining stockpiles. Presented at Western Regional Symposium on Mining and Mineral Processing Wastes, May 30 - June 1, 1990, Berkeley, California. 9 p.
781	<i>Eger, P., Antonson, D., Udoh, F.</i>	1990. Stockpile capping report. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 47 p.

**Environmental Management of Sulfide Mine Wastes: Mitigative Techniques/Wet Covers**

ID #	Author(s)	Title
6059	<i>Eger, P., Antonson, D., Folman, J., Wagner, J., Melchert, G.</i>	2000. Creating wetlands on acid-generating tailings: An alternative to encapsulation. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 33 p. plus appendix.
6087	<i>Eger, P., Melchert, G., Antonson, D., Wagner, J., Folman, J.</i>	2000. Creating wetlands on acid-generating tailings: Maintenance-free reclamation? In Proceedings from the Fifth International Conference on Acid Rock Drainage, Denver, CO. Society for Mining, Metallurgy, and Exploration, Inc, Littleton, CO. Vol 2. p. 1149-1158.
2719	<i>Lapakko, K.</i>	1994. Subaqueous disposal of mine waste: A laboratory investigation. In Proc. Third International Conference on the Abatement of Acidic Drainage, April 25-29, 1994, Pittsburgh, PA. Vol. 1. p. 270-278.

**Environmental Management of Sulfide Mine Wastes: Mitigative Techniques/Mixing Alkaline Solids**

ID #	Author(s)	Title
3634	<i>Lapakko, K., Antonson, D., Wagner, J.</i>	2000. Mixing of rotary fines with fine-grained acid-producing rock. In Proceedings from the Fifth International Conference on Acid Rock Drainage, Denver, CO. Volume II. Society for Mining, Metallurgy, and Exploration, Inc, Littleton, CO. p. 901-910.

ID #	Author(s)	Title
6021	<i>Lapakko, K., Antonson, D., Wagner, J.</i>	1997. Mixing of limestone with finely-crushed acid-producing rock. In Proceedings Fourth International Conference on Acid Rock Drainage. Vol. 3, Vancouver, British Columbia, Canada, May 31 - June 6, 1997. p. 1345-1360.
1355	<i>Lapakko, K., Antonson, D.</i>	1991. Mixing of limestone with acid producing rock. In Proceedings of the Second International Conference on the Abatement of Acidic Drainage, September 16-18, 1991, Montreal, Quebec. p. 343-358.
6034	<i>Lapakko, K., Antonson, D.</i>	1990. Laboratory experiments on the mixture of alkaline solids with sulfide bearing rock. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 37 p. plus appendices.
6123	<i>Lapakko, K., Antonson, D.</i>	1988. Progress Report on the Alkaline Addition Reactor Experiments. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 28 p. plus appendices.

**Environmental Management of Sulfide Mine Wastes: Mitigative Techniques/Limestone Beds**

ID #	Author(s)	Title
4289	<i>Lapakko, K., Wagner, J., Antonson, D.</i>	2002. Laboratory treatment of three acidic stockpile drainages by limestone columns. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 57 p. plus appendices.
6019	<i>Lapakko, K., Antonson, D., Wagner, J., Jakel, E.</i>	1998. Pilot scale limestone bed treatment of the Seep 1 waste rock drainage: 1990 status report. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 23 p. plus appendices.
6033	<i>Lapakko, K.</i>	1990. Recommendations for alkaline treatment at the Dunka site. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 14 pages.
1501	<i>Lapakko, K., Antonson, D.</i>	1990. Treatment of waste rock drainage with limestone beds. In Proceedings of the Geological Association of Canada - Mineralogical Association of Canada Annual Meeting, Acid Mine Drainage Conference, May 16-18, 1990, Vancouver, British Columbia, Canada. p. 273-283.

**Environmental Management of Sulfide Mine Wastes: Mitigative Techniques/Passivation**

ID #	Author(s)	Title
6525	<i>Eger, P., Antonson, D.</i>	2004. Use of Microencapsulation to Prevent Acid Rock Drainage. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 70 p.

**Environmental Management of Sulfide Mine Wastes: Mitigative Techniques/Passive Treatments/Wetlands**

ID #	Author(s)	Title
6529	<i>Eger, P., Eger, P.</i>	2005. Controlling Mine Drainage Problems in Minnesota - Are All the Wetland Treatment Systems Really Above Average? In: 2005 National Meeting of the American Society of Mining and Reclamation, Gillette, WY, June 19-23, 2005. ASMR, Lexington, KY (ed.). 22 p.
6143	<i>Eger, P., Wagner, J.</i>	2002. The Use of Wetlands to Remove Nickel from Mine Drainage - Is Perpetual Treatment Really Possible? Paper presented at the 2002 National Meeting of the American Society of Mining and Reclamation, Lexington, KY, June 9-13, 2002. 18 p.
6120	<i>Eger, P., Wagner, J., Melchert, G., Antonson, D., Johnson, A.</i>	2000. Long Term Wetland Treatment of Mine Drainage at LTV Steel Mining Company's Dunka Mine. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 54 p.
6088	<i>Eger, P., Wagner, J., Melchert, G.</i>	1996. Wetland treatment of mine drainage. In Successes and Failures: Applying Research Results to Insure Reclamation Success. Proc. 13th National Meeting, Knoxville, TN, May 18-23, 1996. p. 580-589.
4008	<i>Eger, P.</i>	1994. Wetland treatment for trace metal removal from mine drainage: the importance of aerobic and anaerobic processes. In Wat. Sci. Tech., Vol. 29, No. 4. p. 249-256.
2883	<i>Eger, P., Wagner, J., Kassa, Z., Melchert, G.</i>	1994. Metal removal in wetland treatment systems. Proc. International Land Reclamation and Mine Drainage Conference/Third International Conference on the Abatement of Acidic Drainage, Pittsburgh, PA, April 25-29, 1994. p. 80-88.
1541	<i>Eger, P., Melchert, G.</i>	1992. The design of a wetland treatment system to remove trace metals from mine drainage. In: Achieving land use potential through reclamation. (ASSMR9-92) American Society for Surface Mining and Reclamation, WV (ed.). p. 98-107.

ID #	Author(s)	Title
6106	<i>Eger, P., Melchert, G., Antonson, D., Wagner, J.</i>	1991. The use of wetland treatment to remove trace metals from mine drainage at LTV's Dunka Mine. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 94 p. plus appendices.
785	<i>Eger, P., Lapakko, K.</i>	1989. The use of wetlands to remove nickel and copper from mine drainage. In <i>Constructed Wetlands for Wastewater Treatment</i> , June 13-17, 1988, Chattanooga, Tennessee. Hammer, D. (Ed). Lewis Publishers, Chelsea, MI. p. 780-787.
1452	<i>Eger, P., Lapakko, K.</i>	1988. Nickel and copper removal from mine drainage by a natural wetland. In <i>Proc. 1988 Mine Drainage and Surface Mine Reclamation Conference</i> , April 19-21, 1988, Pittsburgh, PA. Vol. 1. Mine Water and Mine Waste. U.S.D.I. Bureau of Mines IC9183. p. 301-309.
1451	<i>Lapakko, K., Eger, P.</i>	1988. Trace metal removal from stockpile drainage by peat. In <i>Proc. 1988 Mine Drainage and Surface Mine Reclamation Conference</i> , April 19-21, 1988, Pittsburgh, PA. Vol. 1. Mine Water and Mine Waste. U.S.D.I. Bureau of Mines IC9183. p. 291-300.
777	<i>Eger, P., Lapakko, K., Otterson, P.</i>	1980. Trace metal uptake by peat: Interaction of a white cedar bog and mining stockpile leachate. In <i>Proc. of the 6th International Peat Congress</i> , Duluth, MN, August 17-23, 1980. p. 542-547.

**Environmental Management of Sulfide Mine Wastes: Mitigative Techniques/Passive Treatments/Sulfate Reduction**

ID #	Author(s)	Title
6418	<i>Eger, P., Moe, T., Engesser, J.</i>	2004. The use of sulfate reducing bacteria to remove sulfate from iron mining tailings water. <i>Proceedings from 21st Annual Meeting ASMR</i> , Morgantown, WV, April 19-22, 2004. 22 p.
6419	<i>Moe, T., Johnson, M., Eger, P.</i>	2004. Development of a novel packed-bed reactor to remove sulfate from taconite process water. <i>Tailings and Mine Waste Management</i> , Vail, Colorado, October 10-13, 2004. 14 p.
4059	<i>Eger, P., Wagner, J.</i>	2001. Sulfate-reduction - Designing systems for long term treatment. In: <i>2001 SME Annual Meeting</i> . Preprint 01-115, Denver, Colorado, February 26-28, 2001. The Society for Mining Metallurgy and Exploration Inc. (ed.). The Society for Mining, Metallurgy, and Exploration, Inc, Littleton, CO. p. 1-10.



ID #	Author(s)	Title
2879	<i>Eger, P., Wagner, J.</i>	1995. Sulfate reduction for the treatment of acid mine drainage: Long term solution or short term fix? In Proceedings of Sudbury '95 - Mining and the Environment, May 28-June 1, 1995, Sudbury, Ontario, Canada. p. 515-524.
2571	<i>Eger, P.</i>	1992. The use of sulfate reduction to remove metals from acid mine drainage. In Proc. 9th National Meeting ASSMR, Duluth, MN, June 14-18, 1992. p. 563-575.

**Environmental Management of Sulfide Mine Wastes: Mitigative Techniques/Passive Treatments/Additional Passive Treatments**

ID #	Author(s)	Title
6090	<i>Eger, P., Melchert, G., Wagner, J.</i>	1999. Using passive systems for mine closure—a good approach or a risky alternative. In Mining in a New Era. Society of Mining Engineers Annual Meeting, Denver, CO, March 1-3, 1999. Preprint 99-38.
3217	<i>Eger, P., Melchert, G., Wagner, J.</i>	1998. Mine closure - can passive treatment be successful? In Mining—Gateway to the Future. Proc. 15th National Meeting ASSMR, St. Louis, MO, May 16-21, 1998. p. 263-271.
4445	<i>Eger, P., Melchert, G., Wagner, J.</i>	1997. The use of a peat/limestone system to treat acid rock drainage. Proc. Fourth International Conference on Acid Rock Drainage. Vancouver, B.C., Canada, May 31-June 6, 1997. p.1195-1209.
2849	<i>Lapakko, K., Eger, P., Strudell, J.</i>	1986. Low-cost removal of trace metals from copper-nickel mine stockpile drainage. Volume 1, Laboratory and field investigations. Report on Contract J0205047 to the Bureau of Mines, US Dept. of the Interior. Minnesota Department of Natural Resources, Division of Minerals, St. Paul, MN. 103 p.
2838	<i>Lapakko, K., Strudell, J., Eger, P.</i>	1986. Trace metal sequestration by peat, other organics, tailings, and soils: A literature review. (Final Report BuMines Contract J0205047). U.S.D.I. Bureau of Mines NTIS # PB 87-186144. 45 p.
3890	<i>Eger, P., Lapakko, K., Chamberlain, P.</i>	1984. Mixed disposal of waste rock and tailings to reduce trace metal release from waste rock. In Proc. 1984 Symposium on Surface Mining Hydrology, Sedimentology and Reclamation, Lexington, KY. p. 49-56.
2923	<i>Lapakko, K., Eger, P.</i>	1983. Passive treatment of sulfide stockpile runoff. In Proc. 1983 National Conference on Environmental Engineering, Medine, A., Anderson, M. (ed.), ASCE, New York. p. 643-651.

ID #	Author(s)	Title
3889	<i>Lapakko, K., Strudell, J., Eger, P.</i>	1983. Sulfide stockpile leachate flow through a tailing bed: Trace metal removal and flow modeling for a low maintenance treatment system. In: 1983 Symposium on Surface Mining Hydrology, Sedimentology, and Reclamation. University of Kentucky, Lexington, KY, Nov 27 - Dec 2, 1983. p. 321-327.
3888	<i>Lapakko, K., Eger, P.</i>	1981. Trace metal removal from mining stockpile runoff using peat, wood chips, tailings, till, and zeolite. In Proc. 1981 Symposium on Surface Mining Hydrology, Sedimentology and Reclamation, Lexington, KY. p. 105-116.

**Environmental Management of Sulfide Mine Wastes: Mitigative Techniques/Active Treatments**

ID #	Author(s)	Title
6541	<i>Eger, P., Olson, M., Peterson, L., Essig, J., Lunz, G., Sobania, D.</i>	2009. Alternative Technologies for Treating Mine Water Discharge at Soudan State Park. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 4 p.
6542	<i>Eger, P., Olson, M., Peterson, L., Essig, J., Lunz, G., Sobania, D.</i>	2009. Evaluation of the Rotating Cylinder Treatment System to Remove Copper and Cobalt from Mine Discharge at Soudan State Park. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 5 p.
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### **Cooperative Research Opportunities**

<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
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3635	<i>Hornberger, R., Lapakko, K., Krueger, G., Bucknam, C., Ziemkiewicz, P., Van Zyl, D., Posey, H.</i>	2000. The Acid Drainage Technology Initiative. In Proceedings from the Fifth International Conference on Acid Rock Drainage, Denver, CO. Volume I. Society for Mining, Metallurgy, and Exploration, Inc, Littleton, CO. p. 41-50.
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6117	<i>MNDNR, Division of Lands and Minerals</i>	2004. Drainage from Copper-Nickel Tailings: Summary of a Three-Year Field Study. Minnesota Department of Natural Resources, Division of Lands and Minerals, St. Paul, MN. 21 p.

### **Reclamation Related Documents**

<b>ID #</b>	<b>Author(s)</b>	<b>Title</b>
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