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Marc Lorenzen, Ph.D.
Senior Business Advisor

PROFESSIONAL PROFILE

Dr. Marc Lorenzen is an environmental engineer who specializes in waste management and water pollution control issues. During his 37 years of professional experience, Dr. Lorenzen has served as corporate representative or program manager on major multidisciplinary waste site, water quality, and hazardous materials investigations. He has directly managed more than $35 million worth of completed contracts and has been responsible for contract negotiations, project planning, schedules, technical performance, budgets, and subcontractor performance. Dr. Lorenzen has special expertise in the areas of water quality modeling and analysis of the effects of waste load allocation and nutrient inputs to river and lake systems.

CREDENTIALS AND PROFESSIONAL HONORS

Ph.D., Engineering and Applied Physics, Harvard University, 1973
M.S., Engineering and Applied Physics, Harvard University, 1971
M.S., Sanitary Engineering, University of California-Berkeley, 1967
B.S. (with honors), Civil Engineering, University of California-Berkeley, 1966

Science Council and Foundation Associate, Pacific Science Center
American Water Works Association Best Thesis Competition (prize winner)
Past Chairman, Hydrologic Transport Committee, American Society of Civil Engineers
Invited Speaker at Environmental Business Conference (numerous times)
"Emerging Entrepreneur of the Year" Northwest Region—1992 *Inc.* magazine, Ernst & Young

RELEVANT EXPERIENCE

Business Management

Tetra Tech, Inc., Lafayette, California—Office Manager, 1974–1979

Tetra Tech, Inc., Seattle, Washington—Vice President, 1979–1987

PTI Environmental Services, Bellevue, Washington—President, 1987–1997

Exponent (Failure Analysis Associates), Bellevue, Washington—Group Vice President 1997–2000

Integral Consulting Inc., Seattle, Washington—President, 2002–2006; Senior Business Advisor 2007–present

Water Quality

Lake Destratification Analysis, New York—Provided analysis of effects of aeration and destratification related to natural resource damages in Onondaga Lake, New York.

Limnological Modeling, New York—Provided expertise and supervision of limnological modeling activities for AlliedSignal Inc.

Detergent Phosphorus Ban, Montana—Provided expert testimony to a committee of Montana State legislators regarding phosphorus loading to Flathead Lake.

Waste Load Allocation, New York—Managed areawide 208 studies for the Nassau-Suffolk County Regional Planning Board, including the use of models to assess nonpoint source control options.

Lake Aeration Circulation, Nationwide—Developed the EPA guidance manual for the use of aeration/circulation techniques for eutrophication control.

Phosphorus Control, Nationwide—Conducted an analysis of phosphorus control options on National Eutrophication Survey lakes throughout the United States for EPA.

Environmental Assessment and Remediation

Anaconda Smelter RI/FS, Montana—Supported the program manager for the Anaconda Smelter RI/FS. Work involved 14 investigations, including hydrogeological sampling and analysis, surface soils, air emissions, and NRDAs.

Emergency Response, Nationwide—Acted as corporate representative for an EPA Technical Assistance Team contract. Coordinated with prime contractor, and supervised 38-person staff in 7 locations.

Remedial Action, Washington—Managed the Washington State Department of Ecology and Oregon Department of Environmental Quality remedial action support contracts.

Commencement Bay RI/FS, Washington—Served as principal-in-charge for the intensive Commencement Bay (Washington) Superfund studies for Washington State DEQ. Responsible for the quality of performance in providing management and investigative support services.

Marine Waste Disposal, Nationwide—Served as program manager providing technical support for Clean Water Act Section 301(h) waste discharge evaluations under three separate contracts with EPA with a multidisciplinary staff in seven office locations.

PUBLICATIONS

Lorenzen, M.W. 1981. Comment on: Chlorophyll-phosphorus relations in individual lakes. *Environ. Sci. Technol.* 15(12).

Grieb, T.M., D.B. Porcella, T.C. Ginn, and M.W. Lorenzen. 1981. Classification and analysis of cooling impoundments: an assessment methodology using fish standing crop data. In:

Proc. of the Symposium on Surface Water Impoundments, pp. 482–494. ASCE, New York, NY.

Pastorok, R.A., M.W. Lorenzen, and T.C. Ginn. 1981. Aeration/circulation as a control of algal production. In: Proc. of a Workshop on Algal Management and Control, pp. 57–97. Technical Report E-817. U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS.

Pastorok, R.A., T.C. Ginn, and M.W. Lorenzen. 1981. Evaluation of aeration/circulation as a lake restoration technique. Ecological Research Series, EPA-600/3-81/014. U.S. Environmental Protection Agency, Corvallis, OR.

Lorenzen, M.W. 1980. Use of chlorophyll-secchi disc relationships. *Limnol. Oceanogr.* 25(2):371–372.

Lorenzen, M.W. 1977. Control of algal blooms by aeration/circulation. Water and Wastes Engineering. Parts I and II. (Oct.–Nov.) 14(11):69 and 88.

Fast, A.W., and M.W. Lorenzen. 1976. Hypolimnetic aeration-oxygenation: a comparative study with costs. pp. 1175–1187. *J. Environ. Eng. Div.*, ASCE, New York, NY.

Fast, A.W., and M.W. Lorenzen. 1976. Synoptic survey of hypolimnetic aeration. pp. 1161−1173. In: *J. Environ. Eng. Div.*, ASCE, New York, NY.

Lorenzen, M.W., and C.W. Chen. 1976. A conceptual model for evaluation of ecological effects of power plant cooling systems. In: Proc. of the U.S. Environmental Protection Agency Conference on Environmental Modeling and Simulation. U.S. Environmental Protection Agency, Washington, DC.

Lorenzen, M.W., and R. Mitchell. 1975. An evaluation of artificial mixing for control of algal blooms. *J. Amer. Water Works Assoc.* 67:7.

Lorenzen, M.W., and R. Mitchell. 1973. Theoretical effects of artificial mixing on algal production in impoundments. *Environ. Sci. Technol.* 7(10).

Reports

Lorenzen, M.W. 1986. Role of the response action contractor. RCRA/CERCLA: Practical Report. Govt. Inst. Inc.

Pastorok, R.A., M.W. Lorenzen, and T.C. Ginn. 1982. Environmental aspects of artificial aeration and oxygenation of reservoirs: A review of theory, techniques, and experiences. Technical Report E-83-3. U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS.

Lorenzen, M.W., and A.W. Fast. 1977. A guide to aeration/circulation techniques for lake management. EPA-600/3-77/004. U.S. Environmental Protection Agency, Washington, DC.

Book Chapters

Pastorok, R.A., T.C. Ginn, and M.W. Lorenzen. 1980. Review of aeration/circulation for lake management. In: Restoration of Lakes and Inland Waters, pp. 124–133. EPA-440/5-81/010. U.S. Environmental Protection Agency, Washington, DC.

Fast, A.W., and M.W. Lorenzen. 1978. Effects of aeration/mixing on lake biology. In: Water Pollution Microbiology, II. R. Mitchell (ed). John Wiley & Sons, New York, NY.

Lorenzen, M.W. 1978. Phosphorus models and eutrophication. *In:* Water Pollution Microbiology, II. R. Mitchell (ed). John Wiley & Sons, New York, NY.

Lorenzen, M.W., D.J. Smith, and L.V. Kimmel. 1976. A long-term phosphorus model for lakes. Application to Lake Washington. In: Modeling Biochemical Processes in Aquatic Ecosystems. R. Canale (ed). Ann Arbor Science, Ann Arbor, MI.

Lorenzen, M.W., and R. Mitchell. 1975. An evaluation of artificial mixing for control of algal blooms. *J. Amer. Water Works Assoc.* 67:7.

Lorenzen, M.W. 1974. Predicting the effects of nutrient diversion on lake recovery. In: Modeling the eutrophication process. E.J. Middlebrooks, D.H. Falkenburg, T.E. Maloney (eds). Ann Arbor Science, Ann Arbor, MI.