

23/6/805

Environmental Studies

Water Resources Center

Research Reports, 1966-

Box 1:

Research Report No. 1, Occurrence of Nitrate in Well Waters by Thurston E. Larson and Laurel Henley, Illinois State Water Survey, June 1966

Research Report No. 3, The Spectrophotometric Determination of Nitrate in Water Using 2-Nitroso-1-Naphthol-4-Sulfonic Acid by Albert L. Caskey and Frank N. Abercrombie, Department of Chemistry Southern Illinois University, July 1966

Research Report No. 7, Further Study of Aquifer Performance by Walter Rose, Department of Mining, Metallurgy & Petroleum Engineering, University of Illinois, Urbana, January 1967

Research Report No. 8, Subsurface Flow in a Southern Illinois Fragipan Soil by W.R. Boggess and Elon S. Verry, Jr., Department of Forestry, University of Illinois, Urbana, February 1967

Research Report No. 10, Basic Study of Jet Flow Patterns Related to Stream and Reservoir Behavior by W. Hall C. Maxwell and Hormoz Pazwash, Department of Civil Engineering, University of Illinois, Urbana, July 1967

Research Report No. 12, An Annotated Bibliography of Observations on Illinois Water Resources 1673-1850 by T.P. Schlunz, Department of History, R.M. Sutton, Department of History and Illinois Historical Survey, G.W. White, Department of Geology, University of Illinois, Urbana, August 1967

Research Report No. 13, Microscopic Determination of Boundary Shear and Sublayer Turbulence Characteristics in an Open Channel by Harry G. Wenzel and Michael J. Mathews, Department of Civil Engineering, University of Illinois, Urbana, January 1968

Research Report No. 14, Probabilistic Analysis of Wastewater Treatment and Disposal Systems by Veerasamy Kothandaraman, Department of Civil Engineering, June 1968

Research Report No. 15, Hydraulic Geometry of Illinois Streams by John B. Stall and Yu-Si Fok, Illinois State Water Survey, July 1968

Research Report No. 16, Non-Darcy Flow Characteristics of Water as Influenced by Clay Concentration by Raymond J. Miller, Allen R. Overman, and John H. Peverly, Department of Agronomy, University of Illinois, Urbana, June 1968

Research Report No. 17, Statistical Porous Media Hydrodynamics by A.E. Scheidegger, Professor of Petrophysics, Department of Mining, Metallurgy, and Petroleum Engineering, University of Illinois, Urbana, July 1968

Research Report No. 18, Intergovernmental Relationships in the Administration of Water Resources by Norman G.P. Krausz, Department of Agricultural Economics Agricultural Law Program, University of Illinois, Urbana, September 1968

Research Report No. 19, Development of Drainage Assessment Procedures Based on Physical Features in Illinois by Benjamin A. Jones, Jr. and Carroll J.W. Drablos, Department of Agricultural Engineering, University of Illinois, Urbana, May 1969

Box 2:

Research Report No. 21, Some Data on Diffusion and Turbulence in Relation to Reaeration, E.R. Holley, Jr., Department of Civil Engineering, University of Illinois, Urbana, July 1969

Research Report No. 22, Hydraulic Resistance in Alluvial Channels by Ben Chie Yen and Ying-Chang Liou, Department of Civil Engineering, University of Illinois, Urbana, July 1969

Research Report No. 23, The Identification and Critical Analysis of Selected Literature Dealing with the Recreational Aspects of Water Resources Use, Planning, and Development by Robert B. Ditton, Department of Recreation and Park Administration, University of Illinois, June 1969

Research Report No. 24, Use of Endocommensal Molluscan Ciliated Protozoa as Indicators of Water Quality and Pollution in Illinois Waters by Eugene B. Small and Gregory A. Antipa, Department of Zoology, University of Illinois, Urbana-Champaign Campus, July 1969

Research Report No. 25, Virus Removal by Chemical Coagulation by R.S. Engelbrecht and Mala Chaudhuri, Department of Civil Engineering, University of Illinois, Urbana-Champaign Campus, November 1969

Research Report No. 26, Stochastic Analysis of Hydrologic Systems by Ven Te Chow, Department of Civil Engineering, University of Illinois at Urbana-Champaign, December 1969

Research Report No. 27, Studies on the Population Dynamics and Physiological Ecology of Four Species of Fresh-Water Isopods by Arthur J. Seidenberg, Department of Zoology, University of Illinois at Urbana-Champaign, January 1970

Research Report No. 28, Boundary Effects on Jet Flow Patterns Related to Water Quality and Pollution Problems by W. Hall C. Maxwell and Hormoz Pazwash, Department of Civil Engineering, University of Illinois at Urbana-Champaign, January 1970

Research Report No. 29, An Experimental Study of the Uptake of Water by Soybean Roots by Arnold Klute, Department of Agronomy, University of Illinois at Urbana-Champaign, January 1970

Research Report No. 30, The Mechanics of a Drop After Striking a Stagnant Water Layer by Harry G. Wenzel, Jr. and Raymond Chun-Tsung Wang, Department of Civil Engineering, January 1970

Research Report No. 31, Microscopic Open Channel Boundary Layer Velocity Measurement Using a Virtual Image Method by Harry G. Wenzel and Kuo C. Chang, Department of Civil Engineering, University of Illinois at Urbana-Champaign, April 1970

Research Report No. 32, Hydraulic Geometry of 12 Selected Stream Systems of the United States by John B. Stall and Chih Ted Yang, Illinois State Water Survey, Urbana, July 1970

Research Report No. 33, Water Quality Criteria for Selected Recreational Uses by Doyle W. Bishop and Robert Aukermann, Department of Recreation and Park Administration, University of Illinois at Urbana-Champaign, September 1970

Research Report No. 34, The Effect of Raindrop Impact and Surface Roughness on Sheet Flow by Harry G. Wenzel, Department of Civil Engineering, University of Illinois at Urbana-Champaign, October 1970

Box 3:

Research Report No. 35, Device for Field Determination of Heavy Metals in Natural Waters by Dr. Robert E. Van Atta, Department of Chemistry, Ball State University, Muncie, Indiana, December 1970

Research Report No. 36, Catalytic Oxidation of Organic Compounds in Waste Water by Gerard V. Smith, F. Patil, Yuri Pavlov, Department of Chemistry and Juh V. Chen, Department of Thermal and Environmental Engineering, Southern Illinois University, Carbondale, Illinois, January 1971

UILU-WRC-71-0037, Research Report No. 37, Urban Snow Hazard: Economic and Social Implications by Duane D. Baumann and Clifford Russell, Department of Geography, Southern Illinois University, Carbondale, Illinois, April 1971

Research Report No. 38, Economic Analysis of Water Use in Illinois Agriculture, Department of Agricultural Economics, University of Illinois at Urbana-Champaign, January 1971

Research Report No. 39, Optimal Plans for the Capacity Expansion of a Municipal Water Treatment-Distribution System by Hirohide Hinomoto, Department of Business Administration, University of Illinois at Urbana-Champaign, January 1971

Research Report No. 40, Transport Processes of Particles in Dilute Suspensions in Turbulent Water Flow – Phase I by Barclay G. Jones, James A. Beoletto, Charles C. Meek, Raymond J. Ostensen, and Roland Robin, Nuclear Engineering Program and Department of Mechanical Engineering, University of Illinois at Urbana-Champaign, March 1971

UILU-WRC-71—0041, Research Report No. 41, Distribution of Selected Metals in Bottom Sediments, Water, Clams, Tubificid Annelids, and Fishes of the Middle Illinois River by B.J. Mathis and T.F. Cummings, Bradley University, Peoria, Illinois, March 1971

UILU-WRC-71—0042, Research Report No. 42, Base-Flow Recession in Illinois by Robert N. Farvolden, Department of Geology, University of Illinois at Urbana-Champaign, August 1971

UILU-WRC-71—0043, Research Report No. 43, Economics of Wastewater Collection Networks by Jarir S. Dajani and Robert S. Gemmell, Northwestern University, Evanston, Illinois, July 1971

UILU_WRC-71—0044, Research Report No. 44, Methodology for Synthesis and Optimization of Diffusion Patterns in Flow Systems by W. Hall C. Maxwell and Kuo-Cheng Chang, Department of Civil Engineering, University of Illinois at Urbana-Champaign, August 1971

UILU-WRC-72—0045, Research Report No. 45, Continuous Thickening of Non-Ideal Suspensions by Richard I. Dick and Ali R. Javaheri, Department of Civil Engineering, University of Illinois at Urbana-Champaign, March 1972

UILU-WRC-71—0046, Research Report No. 46, Effects of Oxygen Demand on Surface Reaeration by E.R. Holley, Thomas Micka, and Hormoz Pazwash, Department of Civil Engineering and F.W. Sollo, Illinois State Water Survey, University of Illinois at Urbana-Champaign, September 1970

UILU-WRC-71—0047, Research Report No. 47, Methodologies for Water Resources Planning: DDDP and MLOM(TLOM) by Ven Te Chow, Department of Civil Engineering, University of Illinois at Urbana-Champaign, November 1971

UILU-WRC-71—0048, Research Report No. 48, An Experimental Study of Eddy Diffusion Coefficients, Evapotranspiration and Water Use Efficiency by R.J. Millington and D.P. Peters Department of Agronomy, University of Illinois at Urbana-Champaign, December 1971

UILU-WRC-72—0049, Research Report No. 49, Reagents for Determinations of Trace Impurities in Water by Albert L. Caskey, Frank N. Abercrombie, Richard J. Antepencko, Gary D. Carlson, Raymond A. Cox, Peter C. Lindahl, Department of Chemistry, Southern Illinois University, Carbondale, Illinois, February 1972

UILU-WRC-72—0050, Research Report No. 50, The Role of Sediments I Eutrophication – A Preliminary Study by Charles A. Moore and Marshall L. Silver, Department of Materials Engineering, University of Illinois at Chicago Circle, January 1972

Box 4:

UILU-WRC-78-0135, Research Report No. 135, Geologic Studies to Identify the Source for High Levels of Radium and Barium in Illinois Ground-Water Supplies: A Preliminary Report by Robert H. Gilkeson, Susan A. Specht, Keros Cartwright, and Robert A. Griffin, Illinois State Geological Survey, Urbana, Illinois, Thurston E. Larson, Illinois State Water Survey, Urbana, August 1978

UILU-WRC-72-0051, Research Report No. 51, Spatially Varied Open-Channel Flow Equations by Ben Chie Yen, Department of Civil Engineering, University of Illinois at Urbana-Champaign, January 1972

UILU-WRC-72—0052, Research Report No. 52, Fate of Diquat in the Aquatic Environment by Robert C. Hiltibrant, Dennis L. Underwood, James S. Fickle, Department of Agronomy, University of Illinois at Urbana-Champaign, February 1972

UILU-WRC-72—0053, Research Report No. 53, Great Lakes Hydrology by Months, 1946-1965 by Douglas M.A. Jones, Illinois State Water Survey and Dale D. Meredith, Department of Civil Engineering, University of Illinois at Urbana-Champaign, April 1972

Research Report No. 54, Hydraulic Geometry and Low Streamflow Regimen by John B. Stall and Chih Ted Yang, Illinois State Water Survey, Urbana, July 1972

UILU-WRC-73—0055, Research Report No. 55, Daily and Seasonal Drift of Organisms in a Warmwater Stream by R. Weldon Larimore, Illinois Natural History Survey, University of Illinois at Urbana-Champaign, July 1972

UILU-WRC-73—0056, Research Report No. 56, Annotated Bibliography on Great Lakes Hydrology by Larry B. Buetikofer, Dale D. Meredith, Department of Civil Engineering, University of Illinois at Urbana-Champaign, September 1972

UILU-WRC-73--0057, Research Report No. 57, Microbial Modifications of Ground Water by Robert P. Gunsalus, J.G. Zeikus, and R.S. Wolfe, Department of Microbiology, University of Illinois at Urbana-Champaign, August 1972

UILU-WRC-73—0058, Research Report No. 58, Transport Processes of Particles in Dilute Suspensions in Turbulent Water Flow – Phase II by Barclay G. Jones, Charles C. Meek, Neil Howard, Kombiz Salehi, and Papa Rao Meka, Department of Nuclear Engineering, University of Illinois at Urbana-Champaign, September 1972

UILU-WRC-72—0059, Research Report No. 59, Physico-Chemical Limnology and Periphyton in a Warm-Water Stream Receiving Wastewater Treatment Plant Effluent by Allison Roeske Brigham and R. Weldon Larimore, Illinois Natural History Survey, University of Illinois at Urbana-Champaign, September 1972

UILU-WRC-72—0060, Relationship of Plant Moisture Status to Irrigation Need in Corn and Soybean Crops by J.S. Boyer, Department of Botany, University of Illinois at Urbana-Champaign, July 1972

UILU-WRC-72-0061, Research Report No. 61, An Electrochemical Method for the Determination of Phosphate in Natural Water by James A. Cox and Gary L. Lundquist, Department of Chemistry, Southern Illinois University, Carbondale, Illinois, November 1972

UILU-WRC-73—0062, Research Report No. 62, Economic Evaluation of Alternative Farm Water Sources in the Claypan Area of Illinois by C.L. Moore, E.R. Swanson, and W.D. Seitz, Department of Agricultural Economics, University of Illinois at Urbana-Champaign, February 1973

UILU-WRC-73--0063, Research Report No. 63, A Critical Test of Methods for Isolation of Viruses for Use in Control of Nuisance Algae by Helene N. Guttman, Department of Biological Sciences, University of Illinois at Chicago Circle, April 1973

UILU-WRC-73—0064, Research Report No. 64, Nitrate Reduction in the Vicinity of Tile Drains by Lynn A. Davenport, Walter D. Lembke, and Benjamin A. Jones, Jr., Department of Agricultural Engineering, University of Illinois at Urbana-Champaign, March 1973

UILU-WRC-73—0065, Research Report No. 65, Nutrient Transport by Sediment-Water Interaction by Charles A. Moore and Marshall L. Silver, Department of Materials Engineering, University of Illinois at Chicago Circle, April 1973

UILU-WRC-73—0066, Research Report No. 66, Sulfur Budget of Lake Shelbyville, Illinois, and the Effects of Sulfides Upon Chaoborus by Warren U. Brigham and Sarah R. Gnillka, Illinois Natural History Survey, University of Illinois at Urbana-Champaign, June 1973

UILU-WRC—0067, Research Report No. 67, Analysis of Multiple-Input Stochastic Hydrologic Systems by Ven Te Chow, Department of Civil Engineering, University of Illinois at Urbana-Champaign, July 1973

UILU-WRC-73—0068, Research Report No. 68, Complexes Affecting the Solubility of Calcium Carbonate in Water by Thurston E. Larson, F.W. Sollo, Jr., and Florence F. McGurk, Illinois State Water Survey, University of Illinois at Urbana-Champaign, July 1973

UILU-WRC—0069, Research Report No. 69, Environmental Distribution and Metabolic Fate of Key Industrial Pollutants and Pesticides in a Model Ecosystem by Robert L. Metcalf and Po-Yung Lu, Departments of Entomology and Zoology, University of Illinois at Urbana-Champaign, July 1973

Box 5:

UILU-WRC—070, Research Report No. 70, Water Quality Evaluation of Regionalized Wastewater Systems by Barry J. Adams and Robert S. Gemmell, Department of Civil Engineering, Northwestern University, Evanston, Illinois, August 1973

UILU-WRC—071, Research Report No. 71, Bibliography on Optimization of Irrigation Systems by Dale D. Meredith, Department of Civil Engineering, University of Illinois at Urbana-Champaign, September 1973

UILU-WRC—072, Research Report No. 72, Methodologies for Flow Prediction in Urban Storm Drainage Systems by Ben Chie Yen, Department of Civil Engineering, University of Illinois at Urbana-Champaign, September 1973

UILU-WRC—73—0073, Research Report No. 73, Illinois Storm Sewer System Simulation Model: User's Manual by A. Suha Sevuk, Ben Chie Yen,, and Gordon E. Peterson, Departments of Civil Engineering and Computer Science, University of Illinois at Urbana-Champaign, October 1973

UILU-WRC-73—074, Research Report No. 74, Development of a Meter for Measurement of Sewer Flow by Harry G. Wenzel, Jr., Department of Civil Engineering, University of Illinois at Urbana-Champaign, November 1973

UILU-WRC-73—0075, Research Report No. 75, Ecology of Floodplain pools in the Kaskaskia River Basin of Illinois by R. Weldon Larimore, Edward C. Doyle and Allison R. Brigham, Illinois Natural History Survey, University of Illinois at Urbana-Champaign, December 1973

UILU-WRC—74—0076, Research Report No. 76, Network Analysis of Conjunctively Operated Ground Water-Surface Water Systems by Abdullatif S. Hamdan and Dale D. Meredith, Department of Civil Engineering, University of Illinois at Urbana-Champaign, January 1974

UILU-WRC—74—0077, Research Report No. 77, Analysis of Liquid-Waste Injection Wells in Illinois by Mathematical Models by Manoutchehr Heidari, Keros Cartwright, and Paul E. Saylor, Illinois State Geological Survey and Department of Computer Science, University of Illinois at Urbana-Champaign, January 1974

UILU-WRC—74—0078, Research Report No. 78, Application of DDDP in Water Resources Planning by Ven Te Chow and Gonzalo Cortes-Rivera, Department of Civil Engineering, University of Illinois at Urbana-Champaign, January 1974

UILU-WRC—74—0079, Research Report No. 79, Economic Evaluation of the Effect of Selected Crop Practices on Nonagricultural Uses of Water by H. Onishi, A.S. Narayanan, T. Takayama, and E.R. Swanson, Department of Agricultural Economics, University of Illinois at Urbana-Champaign, March 1974

UILU-WRC—74—0080, Research Report No. 80, Determination of the Fate of Polynuclear Aromatic Hydrocarbons in Natural Water Systems by Paul R. McGinnes and Vernon L.

Snoeyink, Department of Civil Engineering, University of Illinois at Urbana-Champaign, March 1974

UILU-WRC-74—0090, Research Report No. 90, History of Drainage Channel of Improvement in the Vermilion River Watershed, Wabash Basin by Ralph C. Hay and John B. Stall, Illinois State Water Survey, Urbana, Illinois, September 1974

Box 6:

UILU-WRC—74—0081, Research Report No. 81, Hydrologic Models of Great Lakes by Dale D. Meredith, Department of Civil Engineering, University of Illinois at Urbana-Champaign, April 1974

UILU-WRC—74—82, Research Report no. 82, Fidelity of Information Transmission in Local Campaigns on Water Issues by Frederick C. Fliegel and Joseph E. Kivlin, Department of Agricultural Economics and Sociology, University of Illinois at Urbana-Champaign, April 1974

UILU-WRC—74-0083, Research Report No. 83, Metropolitan Water Supply Allocation and Operation by Donald I. Hey and Robert S. Gemmell, Department of Civil Engineering, Northwestern University, Evanston, Illinois, April 1974

UILU-WRC—74-0084, Research Report No. 84, Distribution of Selected Trace Metals in Southern Lake Michigan and Lower Green Bay by Harry V. Leland and Neil F. Shimp, Department of Civil Engineering and Illinois State Geological Survey, University of Illinois at Urbana-Champaign, Urbana, Illinois, April 1974

UILU-WRC—74-0085, Research Report No. 85, Large-Scale Mass Balance for Lead in Southern Lake Michigan by Allen C. Cogley, Department of Energy Engineering, University of Illinois, Chicago Circle, Chicago, Illinois, May 1974

UILU-WRC—74-0086, Research Report No. 86, Investigation of the Chemical Identity of Soluble Organophosphorus Compounds Found in Natural Waters by Roger A. Minear and Kenneth A. Walanski, Department of Environmental Engineering, Illinois Institute of Technology, Chicago, Illinois, May 1974

UILU-WRC—74-0087, Research Report No. 87, Determination of Investment Cost Functions of Water Treatment Plants by Hirohide Hinomoto, Department of Business Administration, University of Illinois at Urbana-Champaign, May 1974

UILU-WRC—74-0088, Research Report No. 88, Unit Stream Power for Sediment Transport in Natural Rivers by Chih Ted Yang and John B. Stall, Illinois State Water Survey, Urbana, Illinois, July 1974

UILU-WRC—74-0089, Research Report No. 89, Optimal Regionalization of Wastewater Treatment for Water Quality Management by Lewis A. Rossman and Jon C. Liebman, Department of Civil Engineering, University of Illinois at Urbana-Champaign, July 1974

UILU-WRC—74-0091, Research Report No. 91, Transport Processes of Particles in Dilute Suspensions in Turbulent Water Flow – Phase III by Barclay G. Jones, Neil M. Howard, Charles C. Meek and James Tomkins, Department of Nuclear Engineering, University of Illinois at Urbana-Champaign, December 1974

UILU-WRC—74-0092, Research Report No. 92, Sources of Phosphorus Inputs From the Atmosphere and their Significance to Oligotrophic Lakes by Thomas J. Murphy, Department of Chemistry, De Paul University, Chicago, Illinois, November 1974

UILU-WRC-74-0093, Research Report No. 93, Proceedings of the Workshop on Research Needs Related to Water for Energy, November 1974

UILU-WRC—74-0094, Research Report No. 94, Gas Chromatography of Volatile Metal Chelates: Application of a New Technique to Metal Analysis in Natural Waters by Roger A. Minear and Steve Schneiderman, Department of Environmental Engineering, Illinois Institute of Technology, Chicago, Illinois, November 1974

UILU-WRC—74-0095, Research Report no. 95, Comparative Biochemistry, Biodegradability, and Toxicity of DDT and Carbofuran Analogues, by Robert I. Metcalf, Keturah A. Reinbold, James R. Sanborn, W.F. Childers, W.N. Bruce, and Joel Coats, Illinois Natural History Survey, University of Illinois at Urbana-Champaign, December 1974

UILU-WRC—74-0096, Research Report No. 96, The Development of Toxicity Indices for Assessing the Quality of the Illinois River by Kenneth S. Lubinski and Richard E. Sparks, Illinois Natural History Survey, Urbana, Illinois and Lawrence A. Jahn, Department of Biology, Western Illinois University, Macomb, December 1974

UILU-WRC—75-0097, Research Report No. 97, Modeling Episodes in Pollutant Dispersion in Lake Michigan by Philip L. Katz and Gary M. Schwab, Department of Information Engineering, University of Illinois at Chicago Circle, January 1975

UILU-WRC—75-0098, Research Report No. 98, Study of Stratified Overflows and Underflows by W. Hall C. Maxwell, Edward R. Holly, Chi-Yu Lin and Sahim Tekeli, Department of Civil Engineering, University of Illinois at Urbana-Champaign, February 1975

UILU-WRC—75-0099, Research Report No. 99, Evaluation of Agricultural Policy Alternatives to Control Sedimentation by Wesley D. Seitz, Michael B. Sands and Robert G.F. Spitze, Department of Agricultural Economics, University of Illinois at Urbana-Champaign, February 1975

Box 7:

UILU-WRC—75-0100, Research Report No. 100, Reagents for Determinations of Trace Impurities in Water, Phase II by Albert L. Caskey, Richard J. Antepencko, and Jean C. Lewis Swan, Department of Chemistry and Biochemistry, Southern Illinois University, Carbondale, Illinois, April 1975

UILU-WRC—75-101, Research Report No. 101, Relationship of Crop Metabolism and Water Status to Irrigation Need by S. Jurgens, R.R. Johnson and J.S. Boyer, Departments of Botany and Agronomy, University of Illinois at Urbana-Champaign, July 1975

UILU-WRC—75-102, Research Report No. 102, A Study of the Treatment of Lake Michigan Water Using Direct Filtration by Raymond D. Letterman, Department of Environmental Engineering, Illinois Institute of Technology, Chicago, Illinois, June 1975

UILU-WRC-75—0103, Research Report No. 103, Reduction of Aqueous Free Chlorine with Granular Activated Carbon by Makram T. Suidan and Vernon L. Snoeyink, Department of Civil Engineering, University of Illinois at Urbana-Champaign, August 1975

UILU-WRC-75—0104, Research Report no. 104, Heat Assimilative Capacity of the Sangamon River by Chih Ted Yang and John B. Stall, Illinois State Water Survey, University of Illinois at Urbana-Champaign, September 1975

UILU-WRC-75—0105, Research Report No. 105, A Scheme for Stochastic State Variable Water Resources Systems Optimization by Ven Te Chow, Dong Hee Kim, David R. Maidment and Taylan A. Ula, Department of Civil Engineering, University of Illinois at Urbana-Champaign, October 1975

UILU-WRC-75—106, Research Report No. 106, A Comparison of Decision Making and Administrative Organization for Municipal Water Supplies in Medium-Sized and Small Illinois Municipalities by J.C. van Es, Robert H. Orr and Richard J. Quigley, Department of Agricultural Economics, University of Illinois at Urbana-Champaign, October 1975

UILU-WRC-76—0107, Research Report no. 107, Development of Criteria for Shore Protection Against Wind-Generated Waves for Lake and Ponds in Illinois by Nani G. Bhowmik, Illinois State Water Survey, Urbana, Illinois, January 1976

UILU-WRC-76—0108, Research Report No. 108, Complexes Affecting the Solubility of Calcium Carbonate in Water – Phase II by Thurston E. Larson, F.W. Sollo, Jr. and Florence F. McGurk, Illinois State Water Survey, Urbana, Illinois, February 1976

UILU-WRC-76—0109, Research Report No. 109, Regional Distribution of the Major Dissolved Solids in the Streams of Illinois by Monte M. Nienkerk and Ronald C. Flemal, Department of Geology, Northern Illinois University, De Kalb, Illinois, February 1976

UILU-WRC-76—0110, Research Report no. 110, Experimental Studies of Wing-Wall Mixing Control by W. Hall C. Maxwell and Misganaw Demissie, Department of Civil Engineering, University of Illinois at Urbana-Champaign, February 1976

UILU-WRC-76-0111, Research Report No. 111, Currents and Pollutant Dispersion in Lake Michigan, Modeled with Emphasis on the Calumet Region by Philip L. Katz and Gary M. Schwab, University of Illinois at Chicago Circle, Chicago, Illinois, March 1976

UILU-WRC-76—0112, Research Report No. 112, Advanced Methodologies for Design of Storm Sewer Systems by Ben Chie Yen, Harry G. Wenzel, Jr., Larry W. Mays and Wilson H. Tang, Department of Civil Engineering, University of Illinois at Urbana-Champaign, August 1976

UILU-WRC-76—0113, Research Report No. 113, Biodegradation of Polynuclear Aromatic Hydrocarbon pollutants by Soil and Water Microorganisms by Eva J. McKenna and R.D. Heath, Department of Microbiology, University of Illinois at Urbana-Champaign, April 1976

UILU-WRC-76—0114, Research Report No. 114, Reform of Illinois Water Resource Laws with Particular Reference to the Drainage Code and Closely Related Laws by Donald L. Uchtman and Norman G.P. Krausz, Department of Agricultural Economics, University of Illinois at Urbana-Champaign, June 1976

UILU-WRC-76—0115, Research Report No. 115, A Feasibility/Development Study for the Removal of Ammonia from Wastewater Using Biologically Regenerated Clinoptilolite by Michael J. Semmens, Department of Civil Engineering, University of Illinois at Urbana-Champaign, August 1976

Box 8:

UILU-WRC-76—0116, Research Report No. 116, Mathematical Models for Use in Planning Regional Water Resources and Energy Systems by E. Downey Brill, Jr., Department of Civil Engineering and Institute for Environmental Studies, University of Illinois at Urbana-Champaign, S. Giray Velioglu and Robert W. Fuessle, Department of Civil Engineering, University of Illinois at Urbana-Champaign, November 1976

UILU-WRC-76—0117, Research Report No. 117, Flood Plain Management Through Allocation of Land Uses – A Dynamic Programming Model by Lewis D. Hopkins, E. Downey Brill, Jr., Jon C. Liebman, Harry G. Wenzel, Jr., Institute for Environmental Studies and Departments of Landscape Architecture and Civil Engineering, University of Illinois at Urbana-Champaign, December 1976

UILU-WRC-77—0118, Research Report No. 118, Asbestos in Portable Water by William H. Hallenback, Carolyn S. Hesse, Edwin H. Chen, Kusum Patel-Mandlik, Arthur H. Wolff, School of Public Health, University of Illinois at the Medical Center, January 1977

UILU-WRC-77—0119, Research Report No. 119, Recycling Agricultural Runoff by Paul N. Walker and Walter D. Lembke, Department of Agricultural Engineering, University of Illinois at Urbana-Champaign, January 1977

UILU-WRC-77—0120, Research Report No. 120, Cycling of Dissolved Organic Phosphorous Compounds in Natural Waters by Herbert E. Allen, Thomas D. Brisbin, Kurt O. Thomsen, Pritzker Department of Environmental Engineering, Illinois Institute of Technology, Chicago, Illinois, March 1977

UILU-WRC-77-0121, Research Report No. 121, Optimal Expansion of Flood Control Systems by Thomas L. Morin and Young Soo Shin, Department of Industrial Engineering and Management Sciences, Northwestern University, Evanston, Illinois, March 1977

UILU-WRC-77-0122, Research Report No. 122, Optimal Operation of Flood Control Systems by Ching-Ju Feng and Thomas L. Morin, Department of Industrial Engineering and Management Sciences, Northwestern University, Evanston, Illinois, March 1977

UILU-WRC-77-0123, Research Report No. 123, Improved Local Planning for Reservoir-Oriented Recreation Opportunities by John F. Dwyer and Robert D. Espeseth, Departments of Forestry and Leisure Studies, Office of Recreation and Park Resources, University of Illinois at Urbana-Champaign, June 1977

UILU-WRC-77-0124, Research Report No. 124, Buoyant Surface Jets Discharged into a Strong Crossflow by Chi-Yu Lin, Edward R. Holley, and W. Hall C. Maxwell, Department of Civil Engineering, University of Illinois at Urbana-Champaign, April 1977

UILU-WRC-77-0125, Research Report No. 125, Dynamics of Manganese, Cadmium, and Lead in Experimental Power Plant Ponds by B.J. Mathis, T.F. Cummings, Mary Gower, Michael Taylor, Christine King, Departments of Biology and Chemistry, Bradley University, Peoria, Illinois, June 1977

UILU-WRC-77-0126, Research Report No. 126, A Linear Programming Model for Assessing the Regional Impacts of Energy Development on Water Resources by George Provenzano, Institute for Environmental Studies, University of Illinois at Urbana-Champaign, July 1977

UILU-WRC-77-0127, Research Report No. 127, Use of Iron Salts for Control of Activated Sludge Bulking Caused by Sphaerotilus by John T. Pfeffer and Yueh Chang, Department of Civil Engineering, University of Illinois at Urbana-Champaign, July 1977

WRC Research Report No., Improved Procedures for Valuation of the Contribution of Recreation to National Economic Development, John F. Dwyer, John R. Kelly, Michael D. Bowes, Department of Forestry, Department of Leisure Studies, Department of Economics, Final Report Project No. C-7525, This project is funded by Office of Water Research and Technology, U.S. Department of the Interior, Water Resources Research Act of 1964, PL 88-379, Title II,

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