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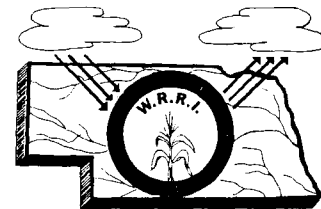
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WATER RESOURCES NEWS

NEBRASKA WATER RESOURCES RESEARCH INSTITUTE
212 AGRICULTURAL ENGINEERING BUILDING

THE UNIVERSITY OF NEBRASKA
LINCOLN, NEBRASKA 68503



Volume 1 Number 5

September, 1969

NEW OWRR DIRECTOR

The Department of the Interior has announced the appointment of Dr. H. Garland Hershey, former State Geologist for Iowa, as Director of the Office of Water Resources Research (OWRR).

In his new post, Dr. Hershey will supervise the work of OWRR in sponsoring and financially aiding water research projects carried out under the direction of State universities and other research groups.

The projects cover a wide range of water problems and are designed to meet the nation's growing demands for water resources, clean streams, and new water supplies. They also provide extensive on-the-job training in water resources for many college graduate students.

Dr. Hershey, of Iowa City, has over 30 years of experience with water problems. He was State Geologist for 22 years and represented Iowa in its relations with the U.S. Geological Survey.

Born in Quarryville, Pennsylvania in 1905, Dr. Hershey attended high school in Baltimore and obtained degrees in geology from Johns Hopkins University. Beginning his career as a geologist in Baltimore, he worked successively for the Baltimore and Ohio Railroad, the Maryland Geological Survey, and the Maryland State Highway Department.

In 1936, Dr. Hershey moved to Iowa where he worked as a geologist for the Iowa Geological Survey. He was Assistant and Associate State Geologist before his appointment in 1947 as State Geologist.

In 1954-1955, Dr. Hershey was a consultant to the Presidential Advisory Committee on Water Resources Policy, and from 1961 to 1967, he was State Disaster Coordinator for Iowa. He was also a member of a Special Advisory Panel for OWRR and Chairman of the Iowa Natural Resources Council.

The new Director of OWRR has served as Chairman of the Midwestern States Flood Control Conference and of the Interstate Conference on Water Problems. He was also Vice President of the National Water Conservation Conference and of the Rivers and Harbors Congress.

Dr. Hershey is married to the former Erna Eybs of Baltimore. They have two sons.

DATA BANK BILL PASSED

Legislative Bill 384 establishing a Data Bank has been passed by the Legislature. Approximately \$40,000 has been included in the supplemental budget for implementation. The bill provides for the establishment of a Technical Advisory Committee for the bank consisting of representatives of state and federal agencies concerned with the collection, interpretation and use of basic data. This bill was enacted to expand the data collection program in Nebraska and the coordination, processing and interpretation of this data on soil and water conservation.

NATURAL RESOURCES DISTRICTING

LB 1357 (Natural Resource Districting) was passed by a 29 to 9 vote of the Legislature on September 19. The bill is basically designed to enlarge and merge various districts which are now organized to cope with some type of soil or water problem. Soil and Water and Watershed Districts of all types will be included. This bill would extend present powers and authorities and vest the new districts with them.

PUBLICATION NO. 2 RELEASED

N.W.R.R.I. announces the availability of Publication No. 2 entitled "Water Resources Publications Related to the State of Nebraska". This bibliography is intended to facilitate the exchange of information between the various organizations interested in Nebraska's waters. Copies are available upon request.

THERMAL POLLUTION

Senator Tydings (d-Md) has introduced S.2768, which would require the Atomic Energy Commission to consider protection of the environment in granting licenses for construction and operation of nuclear power plants. This bill would supplement S. 7, the Water Quality Improvement Act of 1969, which will require certification by the state water pollution control agency that thermal discharges from a nuclear plant do not violate water quality standards.

WARREN HALL MOVES TO OFFICE OF SCIENCE AND TECHNOLOGY

Dr. Warren A. Hall, University of California at Riverside, has been selected as Chairman of the Committee on Water Resources of the President's Office of Science and Technology for the coming year. He will replace Bernard B. Berger, who will return to the University of Massachusetts.

INTERIOR DEPARTMENT ORGANIZES URBAN WATER RESOURCES RESEARCH PROGRAM

Secretary of the Interior Walter J. Hickel has asked the Office of Water Resources Research (OWRR) to give top priority to improving water resources management in the metropolitan areas.

"The major purposes of water resources research," Secretary Hickel said, "are the improvement of knowledge and understanding, and relating these meaningfully to decision-making and to technological improvements. In working toward these goals, OWRR will prepare a program to provide greater cooperation and coordination between Federal agencies, state and local governments, and academic and other research organization."

Assistant Secretary Klein said, "There is a particularly urgent need for research to improve planning, development and management of water resources in the metropolitan-urban environment. We must meet water-related requirements efficiently and economically if we are ever to succeed in improving our environment."

"We will be seeking increased support for this type of research through the OWRR program," The Assistant Secretary added. "We feel OWRR is well qualified to do the job, since it has been designated the main government agency in this area by the Federal Council for Science and Technology."

The planned program will be reviewed and discussed at a national conference of experts to assure its technical and practical soundness.

NEW DIRECTOR OF OFFICE OF SALINE WATER

Dr. Chung-ming Wong, senior executive adviser and assistant to the chief engineer of Astronautics Company, has been appointed Director of the Office of Saline Water, Department of the Interior. Dr. Wong comes from the aerospace industry where he made several significant contributions to the Apollo program.

CHANGES IN THE WATER RESOURCES RESEARCH ACT

The Universities Council On Water Resources (UCOWR) is urging that the Water Resources Research Act be changed so to allow the development of educational programs for the interpretation and dissemination of water research findings.

In addition to suggesting needed changes in administrative details, U.C.O.W.R. also stated that it sees a need for the Annual Allotment Program to be increased from its present level of \$100,000 per year to \$250,000 per year.

SHORT COURSE - GROUND WATER HYDROLOGY

An intensive course in modern developments in the field of ground water hydrology as they apply to other fields of geology will be held January 29, 30, and 31, 1970, at New Mexico Institute of Mining and Technology. Course director William K. Summers, ground water geologist with the New Mexico Bureau of Mines and Mineral Resources, has announced that the course will involve actual instructional sessions for eleven and twelve hours a day. The staff of lecturers will consist of top professional experts, each of whom will speak on his own professional speciality.

RESEARCH REVIEW

Project Title: Utilization of the Storage
Potential of River Valley
Aquifers
Principal Investigator: Ralph R. Marlette
Dr. Leon S. Diracto
Dates: July 1966 to June 1970

This project is designed to determine the feasibility of recharging well fields in the vicinity of silt laden rivers by pumping river water into recharge pits. A second objective is to evaluate the impact of the recharging operations on the producing wells.

Phase I of the study consisted of a comprehensive river water quality survey of possible water supplies for the aquifer recharge tests. The waters of the Platte and Elkhorn rivers were sampled at four different sites during a one-year period.

The temperature of the water in both rivers varied from 32° to 78°. The only noticeable chemical change in the water was the absence of CO₂ alkalinity during the cold weather months. The pH dropped³ about 0.5 during the winter.

The chloride concentration of the rivers varied from 5 to 11 ppm but was generally in the 7 to 8 ppm range. The calcium content of the rivers varied from 40 to 66 ppm with an average value of 50 ppm. A magnesium concentration of 3 to 17 ppm was observed with a normal range of 8 to 10 ppm. Sulfate varied from 50 to 168 ppm and the iron concentration was less than 1.0 ppm and generally less than 0.5 ppm.

The MPN test showed that the Elkhorn had a high MPN and the Platte a low MPN above the confluence of the rivers. Below the confluence the Platte showed a marked increase in coliform count.

Phase II was a detailed evaluation of the Platte Valley Aquifer near Ashland, Nebraska. Thirteen observation wells were installed by a contract driller. At four of these locations, the aquifer was sampled at five-foot intervals to bedrock.

During August 1967, a recharge basin was constructed near production well 54-10. A 7000 gpm capacity pump and other facilities were installed for the sand-pit pumping tests. Results of these tests indicated that low recharge rates of about three feet per day could be attained.

Phase III of the project is a pilot study and operation of the recharge facilities. The increase in well production with recharge and the change in quality of water from the river to the production wells will be measured.

NEW PUBLICATIONS RECEIVED BY THE INSTITUTE

(A list of all water resources publications held by the Institute is available upon request. Any publication may be borrowed for a two week period upon request.)

- 1) "Research, Development, and Demonstration Projects" by Division of Applied Science and Technology Federal Water Pollution Control Administration, Volume 1, January 1969.
- 2) Annual Program Report F.Y. 1969, by Water Resources Research Center, State of Missouri, Department of the Interior.
- 3) Centennial Guidebook to the Geology of Southeastern Nebraska, by The University of Nebraska Conservation and Survey Division, Lincoln, Nebraska, Geological Survey, May 1967.
- 4) "Conservation Tillage in the Great Plains", Lincoln, Nebraska, Publication No. 32, February 27-29, 1968.
- 5) "Evaluating Sanitary Landfill Sites in Illinois" by Illinois State Geological Survey, Environmental, Geology Notes, No. 27, August 1969.
- 6) "Mathematical Simulation of Corn Drying - A New Model" by T.L. Thompson, R.M. Peart, and G.H. Foster.
- 7) "Comparison of Concurrent-flow, Crossflow, and Counterflow Grain Drying Methods" by Agricultural Research Service, Marketing Research Report No. 841.
- 8) Water Resources Institute - Annual Report by Texas A&M University, July 1969.
- 9) "Geohydrology of Henry and Weakley Counties, Tennessee" by the Department of Conservation, Division of Water Resources, State of Tennessee, 1969
- 10) "Water Resources Data for Nebraska", Surface Water Records, Part 1, 1968.
- 11) "Journal of Geophysical Research" by American Geophysical Union, Volumes 74, No. 6,8,10,12,13,15,17.
- 12) "Selected Water Resources Abstracts", Volume 2, No. 16, August 15, 1969
- 13) "Economic Evaluation of Water", Part VI, A Dynamic Interregional Input-Output Programming Model of the California and Western States Water Economy.
- 14) Fifth Annual Report by Water Resources Research Center, University of Tennessee, July 1969.
- 15) "Advective Contribution of Energy Utilized in Evapotranspiration by Alfalfa in the East Central Great Plains (U.S.A.) by N.J. Rosenberg, Department of Horticulture and Forestry, Nebraska Agricultural Experiment Station, Lincoln, Nebraska, July 20, 1968.
- 16) "Journal of Geophysical Research", Volume 74, No. 18, August 20, 1969.

17) "Manpower Requirements for Pollution Control and Water Resources in Indiana and a Related Pollution Control Technology Curriculum" by Purdue University, March 1969.

18) "Analysis of Ground Water Use, Replenishment, and Aquifer Characteristics in Bartholomew County, Indiana" by Purdue University, Technical Report No. 3, June 1969.

19) "Nebraska Water Resource Districts: Characteristics and Alternatives" by College of Agriculture and Home Economics, University of Nebraska, Report No. 49, June 1969.

20) "Generalized Participation of Voluntary Leaders in Local Watershed Projects" by K.P. Wilkinson and R.N. Singh, Social Science Research Center, Mississippi State University, 1969.

21) "Jurisdictional Problems: A Barrier to the Implementation and Coordination of Water Policy" by J. Blass, Mississippi State University, May 1969.

22) "Forest Site Amelioration in the Coastal Flatwoods of Mississippi" by W.F. Miller, School of Forest Resources and Agricultural Experiment Station, Mississippi State University, 1969.

23) "A Non-Dimensional Approach to the Flow of Water in Flumes and Canals" by B.P. Verma and J.C. McWhorter, Department of Agricultural and Biological Engineering, Mississippi State University, July 1969.

24) "The Decomposition of Petroleum Products in Our Natural Waters" by L.R. Brown and R.G. Tischer, Mississippi State University, 1969.

25) "A Long Run Financial Planning Model for Small Water Service Utilities in Mississippi" by A.A. Armenakis and G.T. Peden, Jr., Bureau of Business and Economic Research, Mississippi State University, 1969.

26) "Hearings Before the Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs House of Representatives", Eighty-Ninth Congress, second session on H.R. 3606 and S.22 and Related Bills, U.S. Government Printing Office, February 14, 15, and 18, 1966.

27) "Guidelines for Research on Hydrology of Small Watersheds" by W.C. Ackermann, U.S. Department of the Interior, Office of Water Resources Research, February 1966.

28) "Guidelines for Investigations into the Quality Aspects of Water Resources Research" by J.E. McKee, W.M. Keck, Laboratory of Environmental Health Engineering, California Institute of Technology, January 1966.

29) Thirty-Seventh Biennial Report by the Department of Water Resources to the Governor of Nebraska, Lincoln, Nebraska, 1967-1968.

30) "Use of Endocommensal Molluscan Ciliated Protozoa as Indicators of Water Quality and Pollution in Illinois Waters" by E.B. Small and G.A. Antipa, Department of Zoology, University of Illinois, July 1969.

31) "Selected Courses Offered by Colorado State University in Water Resources" by Colorado State University.

32) "A Stochastic Model for the Response of Permanent Offshore Structures Subject to Soil Restraints and Wave Forces" by B.L. Edge and P.G. Mayer, Georgia Institute of Technology, April 1969.

33) "A Statistical Study of the Depth of Precipitable Water in Western Texas and Eastern New Mexico" by S.E. Baker, Texas Water Development Board, June 1969,

34) "Report of the University of Kentucky Water Resources Institute for F.Y. 1969" by R.A. Lauderdale, July 1969.

35) "State University Water Resources Center - Annual Report", Syracuse, New York, August 1969.

36) "Supplementary Lesson Catalog" by Nebraska Educational Television Council for Higher Education, Inc. Volume 1, 1969-1970.

37) Thesis, "Desalination of Brackish Water by Electrodialysis - An Economic Study for Several Nebraska Wells" by M.E. Yost.

38) "WRRI - A Technique for Long Range Prediction of Streamflow" by A.G. Law and R.M. Greening, Clemson University, May 1969.

39) "WRRI - Fifth Annual Report" by South Carolina Water Resources Commission, July 5, 1969.

40) "Annual Report" by C.L. Dodson, West Virginia University, July 1969.

41) "Criteria for Federal Evaluation of Resource Investments" by Cornell University, August 1969.

NEWSLETTER ITEMS

Newsletter items and inquiries should be sent to:
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East Campus.