THE OHIO RIVER VALLEY WATER SANITATION COMMISSION

ILLINOIS INDIANA KENTUCKY NEW YORK
OHIO PENNSYLVANIA VIRGINIA WEST VIRGINIA
and the
UNITED STATES

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Jean M. Barren Joseph D. Cloud Jack E. Ravan, Regional Administrator, U.S. EPA Region IV

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LEGAL COUNSEL Leonard A. Weakley, Taft, Stettinius and Hollister

*As of April 1, 1986



THE HONORABLE JAMES R. THOMPSON Governor of Illinois

THE HONORABLE ROBERT D. ORR Governor of Indiana

THE HONORABLE MARTHA LAYNE COLLINS Governor of Kentucky

THE HONORABLE MARIO M. CUOMO Governor of New York

THE HONORABLE RICHARD F. CELESTE Governor of Ohio

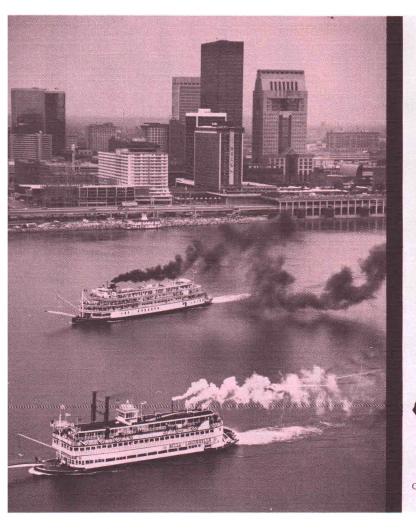
THE HONORABLE RICHARD L. THORNBURGH Governor of Pennsylvania

THE HONORABLE GERALD L. BALILES Governor of Virginia

THE HONORABLE ARCH A. MOORE, JR. Governor of West Virginia

and

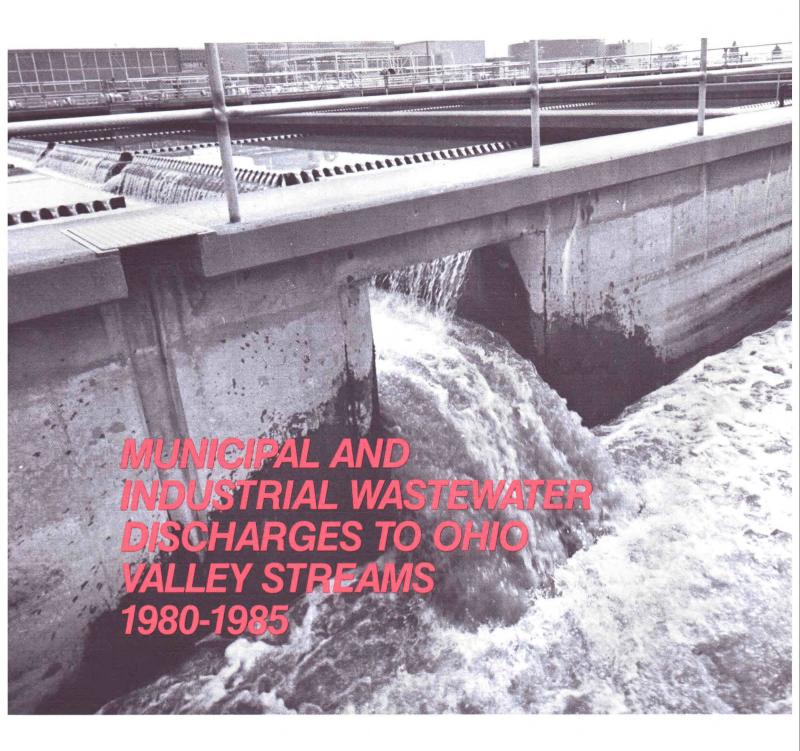
THE HONORABLE RONALD W. REAGAN President of the United States



The Commissioners of the Ohio River Valley Water Sanitation Commission (ORSANCO) — an interstate compact agency created jointly in 1948 by the State of Illinois, the State of Indiana, the Commonwealth of Kentucky, the State of New York, the State of Ohio, the Commonwealth of Pennsylvania, the Commonwealth of Virginia and the State of West Virginia with the approval of the Congress of the United States — respectfully submit a review of the Commission's activities in 1985.

The steamboat race between the Belle of Louisville and the Delta Queen is an annual event on the Ohio River.

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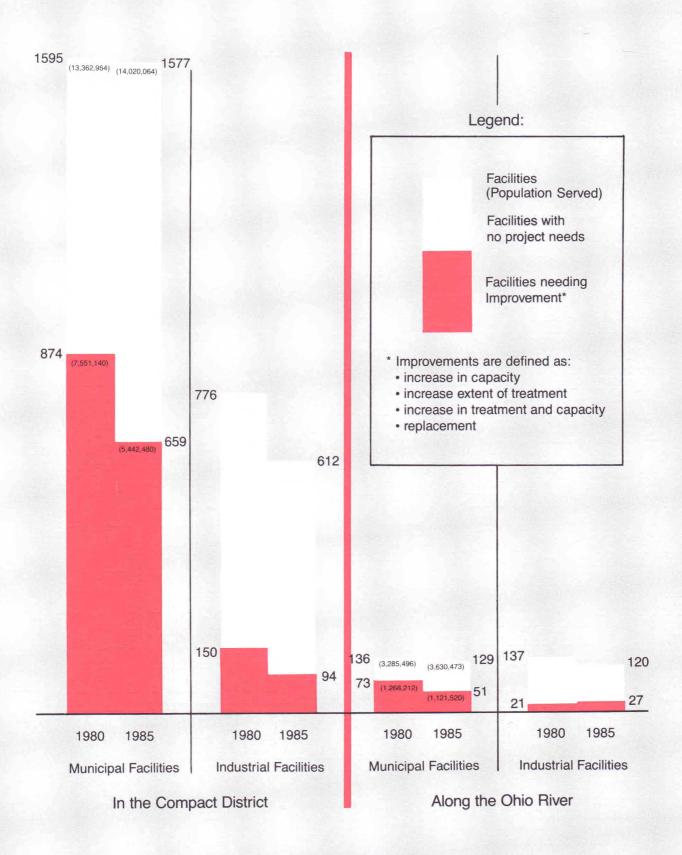
ATALOG MPROVEMEN

Great strides have been made in improving the quality of the streams in the Ohio River Valley. Fundamentally, the construction and proper operation of wastewater treatment plants have made the difference.

The signatory states to the Ohio River Valley Water Sanitation Compact were well

aware of the relationship of adequate wastewater treatment to clean streams when the Commission was created in 1948. Accordingly, the Commission was vested with the responsibility to study the needs for wastewater treatment in the Valley and authorized to adopt and enforce rules for treatment for discharges to its interstate streams.

STATUS OF MUNICIPAL AND INDUSTRIAL WASTEWATER FACILITIES* 1980-1985



 Facilities treating domestic sewage and privately owned facilities of 40,000 gal/day or less
 Industrial facilities of 40,000 gal/day or less
 Industrial facilities requiring temperature adjustment only
 Coal-related industrial facilities *Does not include:

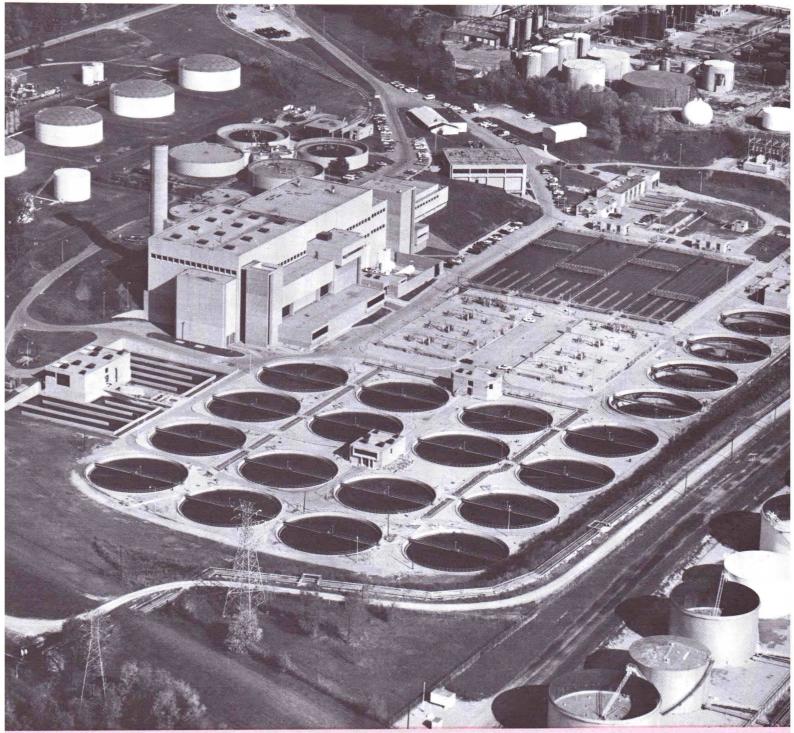
The Commission performs periodic surveys of wastewater treatment plants in the Compact District to catalog accomplishments and needs for the construction and improvement of municipal and industrial facilities. Shown on page 7 are comparative data from surveys conducted in 1980 and 1985 indicating the number of wastewater treatment plants in the Compact District and along the Ohio River determined to be providing adequate treatment and those facilities which need major improvements.

The data pertaining to municipal facilities indicate that significant progress was recorded over the 5-year period. In the basin, while the population served by central treatment plants increased by over 650,000, the number of persons connected to treatment facilities requiring improvements was reduced by 2.11 million. Although municipalities are continuing to record achievements in construction of needed facilities, it is clear that much remains to be done in the Valley and along the Ohio River.

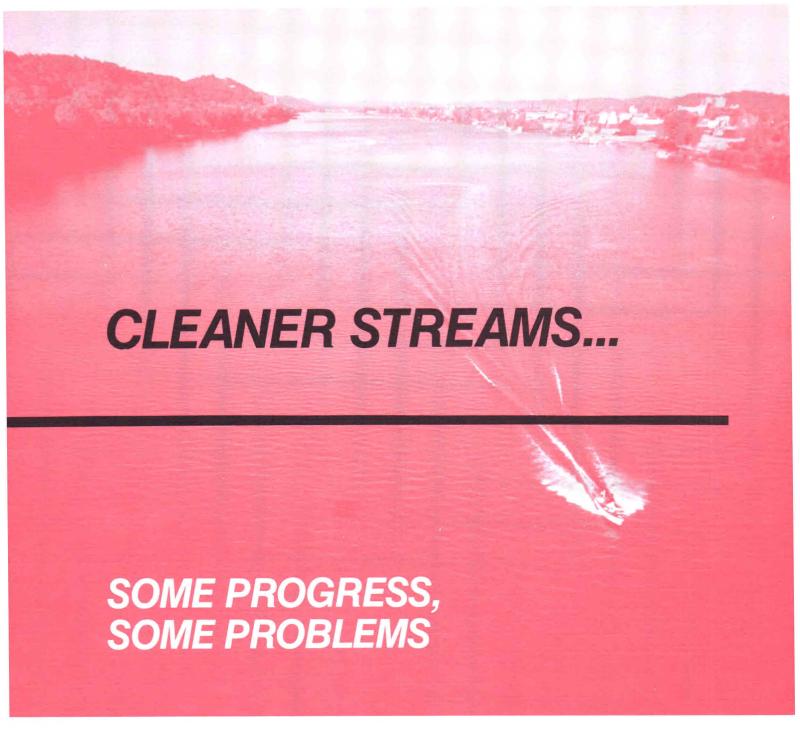
Two major wastewater treatment plants

along the Ohio River requiring improvements serve the cities of Cincinnati, Ohio and Louisville, Kentucky and account for about 1 million of the 1.12 million people served by facilities with needs. In 1985, these facilities achieved major milestones in their efforts to provide adequate treatment operations.

The Greater Cincinnati Metropolitan Sewer District entered into a Consent Order and Agreed Order with U.S. EPA, State of Ohio and the Commission in August, 1985. These agreements define a remedial project and associated schedule for the District's 130 million gallons per day Mill Creek Sewage Treatment Plant and certain interim levels of performance until the project completion date of July, 1988. The Louisville and Jefferson County Metropolitan Sewer District continues to pursue a Corrective Action Program for its 105 million gallons per day Morris Forman Wastewater Treatment Plant defined in 1981 by a Consent Decree. The District's efforts reached fruition in 1985 when the facility met the effluent requirements of the Commission, Commonwealth of Kentucky and U.S. EPA for the first time.



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The Ohio River supported the uses of water supply source and aquatic life habitat either wholly or partially throughout its 981 mile length during 1985. Water contact recreation was not supported in the 27 mile stretch below the Cincinnati metropolitan area, but was supported either wholly or partially on the rest of the river.

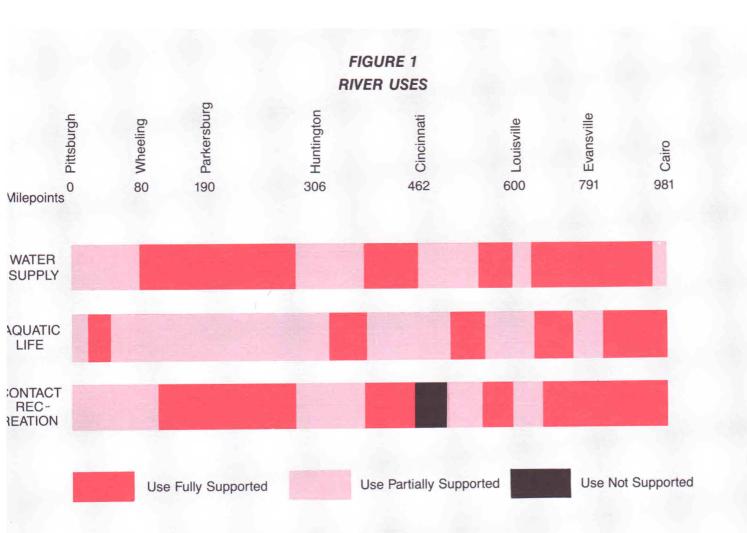
Support of the three use categories in 1986 is portrayed in Figure 1. Specific problems encountered which led to the ratings of non-support and partial support were fecal coliform bacteria levels (contact recreation), certain metals and organic compounds (public water supply), and temperature, dissolved oxygen,

Polychlorinated Biphenyls (PCB's), copper, and zinc (aquatic life).

Detailed evaluations of water quality conditions are carried out by the Commission every two years. Using the same measurement base for the 1982-83 and 1984-85 surveys, improved conditions were noted for 562 miles of the Ohio River while poorer conditions were observed for 76 miles and no change was seen for 343 miles. However, the inclusion of more stringent limits for PCB's in fish as adopted by the Food and Drug Administration in

1985 resulted in improved conditions for 463 miles; poorer conditions for 376 miles; no change for 142 miles.

Specific parameters which showed improvement were cyanide, phenolics, and fecal coliform bacteria. Levels of suspended solids and dissolved oxygen indicated poorer conditions. More stringent stream criteria for temperature, copper, and zinc were adopted by the Commission in 1984; application of these to the 1984-85 data indicated problems which were not identified in 1982-83.



ORGANIC CHEMICALS

The manufacture and transportation of organic chemicals and other hazardous substances in the Ohio Valley, together with the use of the river as a source of water supply, raise special concerns over the potential impacts on drinking water.

The Commission established the Organics Detection System in 1978 to detect spills of organic substances and to provide an advanced warning to downstream users. The system currently consists of 13 stations operated in cooperation with water utilities and industries which collect daily samples and analyze them for 16 halogenated

compounds. The 13th station went into operation during 1985 and is located at Paducah. (KY) Water Works.

Results from this reporting period show that Chloroform continued to be the compound most frequently detected, appearing in about 60 percent of the 3200 samples collected. Methylene Chloride and 1,1,1-Trichloroethane were each found in about 25 percent of the samples analyzed; the other 13 compounds were detected less frequently. Levels of all the compounds detected were usually below 1.0 ug/1 (one part per billion), but did at times exceed criteria adopted by U.S. EPA for lifetime

ORSANCO staff member collects samples on the Ohio.



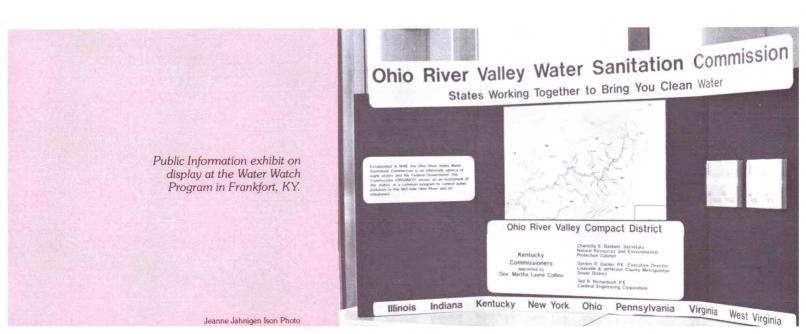
DETECTION SYSTEM

exposure to prevent one additional cancer per one million people.

A comparison of the percent of purgeable halogenated compounds detected in samples collected in 1982-83 with samples collected in 1984-85 at the same locations reveals the following: 1) Carbon Tetrachloride has been reduced from 12 percent to less than 2 percent, and at Huntington, it has been reduced from over 50 percent to less than 3 percent of the samples; 2) other organic compounds which are primarily used by the steel industry for degreasing have been substantially reduced at all locations; 3) overall, the detections by the system have

been reduced by about 5 percent.

In December, 1984 and January 1985, incidents involving Benzene and Toluene were detected at tributary sites on the Monongahela and Kanawha Rivers. The Monongahela spill was tracked to downstream locations on the Ohio River for almost 600 miles. In all these instances, state agency personnel conducted investigations to locate the sources while Commission staff provided water utilities with updates on the concentrations of the compounds and estimated times of arrival. State personnel were able to locate the sources of Benzene and Toluene in the incidents and take appropriate action.



NON-POINT SOURCE POLLUTION

Most of the efforts towards water pollution control in the Commission's 37-year history have addressed discharges of sewage and industrial wastes. These wastes are referred to as "point sources." The category of "non-point sources" includes runoff from streets, farms, abandoned mines, and solid waste disposal sites which may be contaminated when it reaches a waterbody. With most point sources now receiving adequate treatment, attention has turned to non-point sources as the next problem to be solved.

A 1985 report prepared by the Association of State and Interstate Water Pollution Control Administrators, with participation by the states and support by the U.S. Environmental Protection Agency, provided a nationwide assessment of non-point source pollution. The most widespread non-point source problems reported were sediment in rivers and

nutrients in lakes, both of which were caused primarily by agricultural runoff. Reports prepared by the Commission's member states as part of the national effort indicated that these are also the most extensive non-point problems in the Ohio Valley. Other such problems indentified in the valley include urban runoff, abandoned mine drainage, and runoff from solid waste disposal sites.

Water quality studies conducted by the Commission have shown that non-point sources affect Ohio River concentrations of suspended solids, nutrients, and certain heavy metals. These sources reach the river through the tributaries; less than 5 percent of the Ohio River Basin drains directly to the main stem. Non-point source control program's on each of the tributary streams will therefore determine the level of improvement for Ohio River water quality problems caused by these sources.

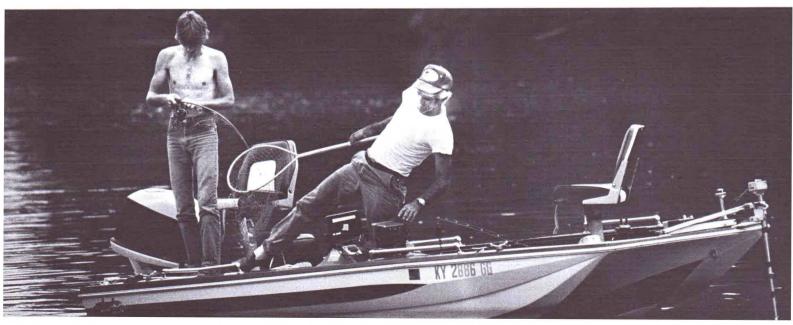
HYDROPOWER DEVELOPMENT

An emerging concern in the Compact District is the development of hydroelectric power at each of the navigation dams on the Ohio River and its major tributaries. This concern results from the effects these developments may have on the dissolved oxygen concentrations in the river and its ability to meet the stream criteria. Adequate monitoring and proper planning are needed to minimize any adverse effects.

The Commission requested the assistance of the Federal Energy Regulatory Commission (FERC), in assuring that there will be appropriate study and evaluation of the potential cumulative water quality impact of the construction and operation of

the hydropower plants. In November, during a meeting of the Commissionsponsored Energy Roundtable, FERC announced that it would conduct a Cluster Impact Assessment Procedure (CIAP) in the Ohio River Basin. The CIAP is a method of assessing the cumulative environmental impacts of proposed multiple hydropower projects that could adversely affect the resource. Implementation of the CIAP will allow the Commission, its member states. and the public sector to assess the potential cumulative impact of the clustered projects on target resources, such as water quality, fish, wildlife, recreation and river navigation. The Ohio River Basin is the fourth river basin to undergo a CIAP.

Photo courtesy of the Kentucky Post



THE COMMISSION'S ROLE

The ongoing role of the Commission is one of coordination and communication to assure that the states' efforts achieve the objectives of the Ohio River Valley Water Sanitation Compact. The compact provides enforcement powers to the Commission as the agency charged to carry out its provisions.

In September, 1984, the Commission adopted revised Pollution Control Standards, completing an intensive review effort of several years. The revised standards incorporate stream criteria in addition to effluent standards for municipal and industrial discharges for the Ohio River.

The Commission's standards are implemented through the National Pollutant Discharge Elimination System (NPDES), administration of which has been delegated by the U.S. Environmental Protection Agency to the member states. Copies of all draft permits for Ohio River discharges are sent by the states to the Commission for review and comment. In this review, it is determined whether or not each permit complies with Commission standards as well as water quality standards of adjacent or downstream states. Comments are provided to the permitting agency. In addition, the adjacent and downstream states are informed of the permitting action.

Every other year, the Commission conducts a survey of the status of wastewater discharges within the compact district and produces a summary report. Information collected includes the degree of treatment needed, treatment provided, types of improvements needed, and status of improvements. Comparison of the current information with the previous report allows an overall picture of progress in providing necessary wastewater treatment.

The tracking of a selected list of discharges to the Ohio River for effluent quality was initiated in 1984-85. This allows the Commission to concentrate limited staff resources on those discharges which could have significant impacts on Ohio River water quality or which present compliance problems. The list is reviewed and revised each September. In 1984-85, 45 discharges were tracked. A revised list including 35 discharges was adopted for 1985-86.

A special concern in 1985 was the development of facilities for communities which currently provide primary or no treatment. It was found that progress is being made in providing secondary treatment for the larger communities (the largest of which is constructing a 5.7 MGD secondary treatment plant), but that problems remain in providing facilities in the smaller communities. These communities receive very low priorities for federal grant funds because their present discharges do not have major impacts on water quality.

A program of Water Quality Management Investigations was initiated by the Commission in 1983 to further develop information on specific water quality problems in the river.

The first such investigation was of recreational use on the river. The investigation led to decisions by the Commission to increase stream monitoring for fecal coliform at certain critical locations and for the states to increase efforts to obtain adequate disinfection of certain effluents.

An investigation of cyanide and phenolics levels in the upper Ohio River was completed in December, 1985. The results indicate that excessive loads from permitted discharges were the major cause of high concentrations of these compounds in the recent past. Many of the discharges are from steel mills which are currently not operating or are at decreased production. Should these facilities return to full production, compliance with discharge permits will protect water quality.

THE YEAR IN BRIEF

The Commission

Paul Emler, Jr., of Pennsylvania was elected chairman of the Commission for the period of July 1, 1985 to June 30, 1986. Joseph H. Harrison of Indiana and Thomas A. Storch of New York were elected vice chairman and secretary/treasurer, respectively.

Indiana Governor Robert D. Orr appointed Woodrow A. Myers, Jr., M.D. ex officio Commissioner from that state by virtue of Dr. Myers' position as State Health Commissioner of the Indiana Board of Health. West Virginia Governor Arch A. Moore appointed David K. Heydinger, M.D. to the Commission by virtue of his office as State Director of Health. Ohio Governor Richard F. Celeste appointed Pasquale V.

Scarpino, professor of environmental engineering at the University of Cincinnati, to the Commission.

Three representatives from each of the member states and three representatives of the federal government are appointed to serve on the Commission. Commissioners participate as a public service and receive only reimbursement for their expenses in performing Commission-related duties.

During 1985, resolutions were passed by the Commission to recognize the contribution of three Commissioners whose service ended: Lloyd N. Clausing (Ohio); Augusta A. Prince (Ohio); and Charles R. Jeter (Federal).

Advisory Committees

The Commission has a number of advisory committees which provide advice and counsel in their specialized areas on matters of public interest. These include: The Water Users Advisory Committee representing companies or agencies which operate water treatment plants; the Publicly Owned Wastewater Treatment Works Advisory Committee representing wastewater treatment departments or districts or other public agencies; the Public

Interest Advisory Committee which is composed of citizens residing in the member states; Industry Action Committees, such as those representing the chemical and power industries, provide for industrial participation. All advisory committee members serve on a voluntary basis and with the exception of the members of the Industry Action Committees, receive reimbursement for committee meeting expenses.

New Commission Headquarters

The Commission headquarters moved to 49 East Fourth Street, Suite 815, in the Dixie Terminal Building, Cincinnati, Ohio,

July 1, 1985. For more than 30 years the headquarters had been located at 414 Walnut Street, Cincinnati.

PUBLICATIONS

Publications are developed to provide information regarding findings from the Commission's water pollution control programs. Charges for publications are levied to cover production costs. These charges are waived when requests are received from government agencies and non-profit organizations and institutions (single copies only). In 1985, the following publications were produced.

Annual Report 1985

The Commission's review of activities during 1985 (20 pages, no charge).

Quality Monitor

A quarterly publication of data summaries from electronic monitors along with quarterly summaries of monthly manual sampling data (no charge).

River Register

A semi-annual publication that reports results from the ORSANCO monitoring systems (2 pages, no charge).

Transporting Hazardous Material on the Ohio River

A six-page pamphlet that reports on the safety factors involved in transporting hazardous materials (no charge).

Groundwater Resources, A Primer for the Compact District of the Ohio River Basin

Compiles the latest information from local, state and federal agencies on Groundwater Resources, and includes an extensive bibliography and detailed map of major aquifers (83 pages, \$5.00).*

Report and Notification of Spills and Accidental Discharges, revised, 1985

A compilation of instructions on the appropriate agencies to notify when a spill or accidental discharge occurs on the Ohio River or a tributary (8 pages, no charge).

STAFF

Leo Weaver, P.E., Executive Director and Chief Engineer William L. Klein, Assistant Executive Director Jeanne Jahnigen Ison, Information Specialist Marilyn P. Kavanaugh, Administrative Assistant

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Glenn E. Moore, Manager Ali Sodeifi, Electronics Engineer Ronald J. Henderson, Chemist Robert D. Timmerman, Jr., Surveillance Specialist (Evansville, IN) Wade C. Dawson, Surveillance Specialist (Parkersburg, WV) Nancy L. Armstrong, Secretary

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Alan H. Vicory, Jr., P.E., Manager Peter A. Tennant, P.E., Senior Environmental Engineer Valerie J. Brinker, Environmental Engineer John L. Keyes, Biologist Barbara A. Horton, Secretary

Support Services

Richard L. Herd, Jr., Accountant/Office Manager Betty Ann Robinson, Accounting Technician Donna M. Carroll, Computer Operations Specialist II Katherine A. Dreger, Data Processing Operator/Programmer

Art: Ray Loos

FINANCIAL REPORT

The following information relative to revenues, expenses, and statement of resources was extracted from the Annual Auditor's Report of Hall & Associates, Certified Public Accountants, for the year ended June 30, 1985.

STATEMENT OF REVENUES, EXPENSES AND AVAILABLE RESOURCES YEAR ENDING JUNE 30, 1985

Revenues:				
Signatory States: State of Illinois	\$	32.100		
State of Indiana	Ψ	119,730		
Commonwealth of Kentucky		137,580		
State of New York		6,680		
State of Ohio		162,750 89,490		
Commonwealth of Virginia		23.180		
State of West Virginia		70,490		
Total — Signatory States			\$	642,000
U.S. Environmental Protection Agency:				272 215
Water Pollution Control Grant				373,315
Electronic Monitoring Support	\$	67,500		
Allegheny and Pittsburgh District Support		51,550		
Total — U.S. Corps of Engineers				119,050
Other Revenues				18,795 46,054
Available Resources at beginning of year				
Total — Resources				,199,214
Expenses:			1	,179,236
Available Resources at end of year			\$	19,978

Complete copies of the Annual Audit by Hall & Associates are available from the Commission office upon request.

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OHIO RIVER VALLEY WATER SANITATION COMMISSION

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