

**OHIO RIVER VALLEY  
WATER SANITATION COMMISSION**

**7<sup>th</sup>**

**ANNUAL REPORT  
1955**

**of interstate pollution control  
to the Governors of Illinois,  
Indiana, Kentucky, Ohio,  
New York, Pennsylvania,  
Virginia, West Virginia**



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## OHIO RIVER VALLEY WATER SANITATION COMMISSION

To the Chairman and  
Members of the Commission

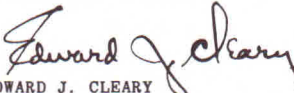
This annual summary of Commission activities is prepared for transmittal to your respective Governors and legislators to aid them in appraising our interstate campaign for water-pollution control.

There is satisfaction in noting that of the 9,600,000 sewered population in the Ohio Valley district, sewage-treatment facilities are now provided for 4,300,000. Within the next few months construction will be started on facilities to serve another 1,600,000 people. In large measure this reflects the success of Pittsburgh and sixty-six adjoining communities in securing a \$100 million loan to build a joint sewage treatment system.

Industrial-waste control commands major attention. This complex endeavor will be expedited because unanimous agreement on policy and procedure has been reached following two years of exchange of experiences among the eight states. Of the 1,424 industrial plants discharging effluents into streams some 36 percent now are provided with control facilities rated as adequate.

Substantial evidence is provided throughout this report that the pooling of efforts by the eight states has been productive in curbing the degradation of water resources. Much remains to be done to secure adequate safeguards. But the pattern of past performance augurs well for future accomplishment.

Respectfully submitted,

  
EDWARD J. CLEARY

December 1, 1955

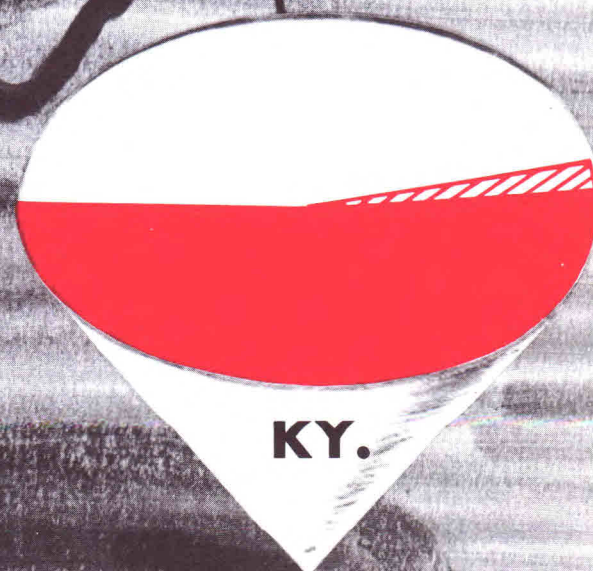
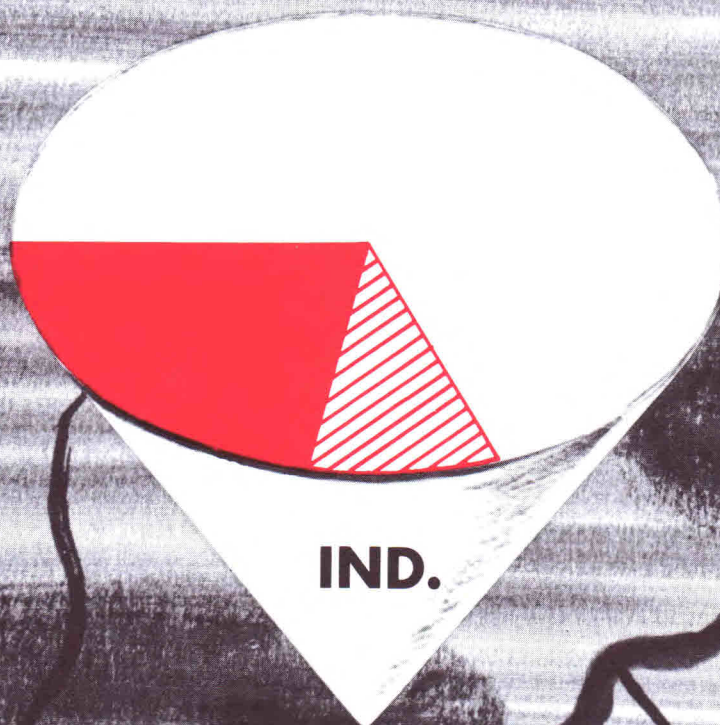
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## *Pollution Control Picture*

in the Ohio Valley shows relative population load and abatement progress in the eight-state drainage district. Sewage treatment facilities serving 45 percent of the 9,600,000 population are in operation; another 36 percent will be serviced by plants now being built or approved for construction. See page 4 for details.

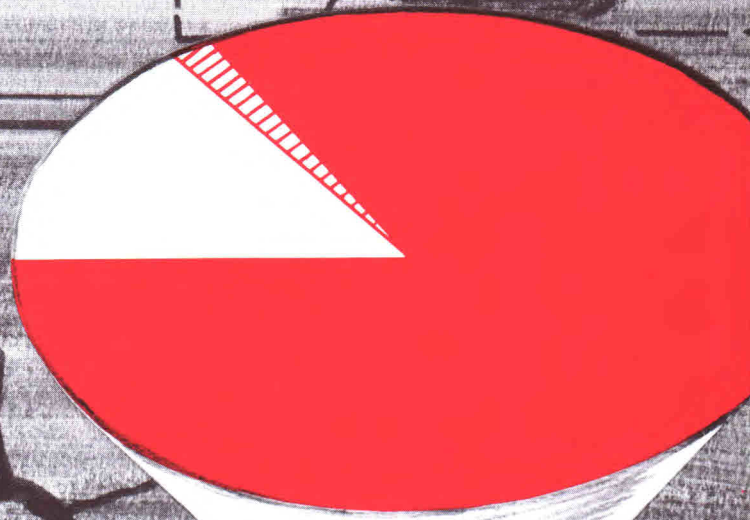




**Population Receiving Treatment**



**OHIO**



**PENNA.**



**N.Y.**



**W.VA.**



**VA.**



# **STATUS OF MUNICIPAL AND INSTITUTIONAL SEWAGE-TREATMENT FACILITIES—JULY 1, 1955** Number of communities (top number) and population served (bottom number)

STATUS	ILL.	IND.	KY.	N. Y.	OHIO	PA.	VA.	W. VA.	TOTAL	% OF TOTAL
Adequate treatment	38 243,773	88 455,650	93 378,444	6 38,818	143 740,708	62 305,675	29 56,129	15 38,812	474 2,258,009	33.5 23.6
Treatment provided, not adequate	5 12,337	20 111,054	19 132,081	5 11,580	29 218,105	20 67,882	16 24,640	10 28,646	124 606,325	8.7 6.4
Treatment provided, not adequate; improvements or additional plants under construction	0 0	9 585,175(a)	0 0	0 0	26 862,890(b)	1 1,553	0 0	2 2,725	38 1,452,343	2.7 15.1
New treatment works under construction	0 0	4 156,776	2 19,979	0 0	32 753,046	3 33,191	0 0	11 160,711	52 1,123,703	3.7 11.7
Final plans approved	3 9,411	25 170,656	15 114,495	1 1,492	22 173,623	158 1,603,290	2 4,536	17 203,957	243 2,281,460	17.2 23.8
Final plans in preparation	1 647	6 58,327	2 374,283	1 43,354	13 302,765	16 62,992	2 6,195	10 139,680	51 988,243	3.6 10.3
Preliminary plans or report approved or in preparation	1 1,440	5 8,940	5 12,437	0 0	39 127,511	28 98,028	13 37,645	26 66,610	117 352,611	8.3 3.7
Treatment program under discussion	0 0	13 19,939	2 5,254	1 8,861	1 1,652	4 3,237	1 1,568	30 55,396	52 95,907	3.7 1.0
Order, notice or recommendation for treatment issued by state	0 0	3 4,219	0 0	0 0	0 0	6 23,454	0 0	8 10,294	17 37,967	1.2 0.4
Sewage discharged to stream by permit or law	0 0	0 0	0 0	0 0	0 0	12* 43,244	0 0	0 0	12* 43,244	0.8 0.5
Pollution of minor significance	0 0	81 69,368	21 23,418	0 0	23 19,286	0 0	0 0	10 8,108	135 120,180	9.5 1.3
No action	9 33,438	14 53,335	17 52,165	0 0	19 16,567	0 0	12 18,320	30 35,880	101 209,705	7.1 2.2
TOTAL	57 301,046	268 1,693,439	176 1,112,556	14 104,105	347 3,216,153	310 2,242,546	75 149,033	169 750,819	1,416 9,569,697	100.0 100.0

(a) Includes 30,000 served by East Side plant at Evansville.

(b) Includes 159,861 served by Little Miami plant at Cincinnati.

(\*) Acid stream law.



# The Story Thus Far

This is the continuation of a story that began seven years ago. On June 30, 1948, eight sovereign states in the Ohio River Valley signed a compact, approved by the Congress of the United States, wherein they pledged to pool their resources and their police powers for the control of interstate water pollution.

To carry out this purpose the states of Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, Virginia and West Virginia created the Ohio River Valley Water Sanitation Commission. The membership includes three representatives from each state appointed by the governor of the state, and three from the federal government appointed by the President of the United States. The role of the commissioners is to detail the manner by which the compact provisions are to be executed and to assert such powers as may be required for the enforcement of obligations. For the administration of its functions the Commission maintains a staff with headquarters in Cincinnati.

Operations of the Commission are designed to promote and coordinate pollution control on a regional basis. Guided by the principle that no sewage or industrial-waste discharge originating within a signatory state shall injuriously affect the uses of interstate waters, the Commission makes determinations regarding control measures. Securing compliance with these measures then becomes an obligation of each state. The Commission does not deal directly with any municipality or industry regarding compliance unless called upon by the state involved to supplement its efforts. Thus far there have been no circumstances wherein it has been found necessary to invoke the residual enforcement powers of the Commission.

This brief account of purpose and function establishes the background with which to view another chapter in the story of interstate action for safeguarding regional water resources. An important part of this chapter is an accounting of progress in the completion of pollution-control works and in the construction and planning of required facilities.

## MUNICIPAL SEWAGE CONTROL

The municipal sewage disposal situation as revealed from the status tabulation on the page opposite shows that the sewered population in the eight-state area is now almost 9,600,000—an increase in one year of about a quarter-million people. Of this total:

- 45% are provided with treatment facilities;
- 12% are constructing facilities; and
- 24% have final plans approved for construction.

Significant developments during the year may be summarized in this fashion: Twenty new sewage-treatment plants serving 131,000 were placed in operation; additions or improvements to existing plants were completed at nine places with a combined population of 47,000. Construction was started on twenty new plants that will serve 199,000; additions or improvements were undertaken at thirteen existing plants serving 90,000 people. Final plans have been approved for constructing facilities at 243 communities serving a population of 2,300,000.

Communities that placed new plants in operation this year include:

PLACE	POPULATION	WATERSHED
Hillsville, Va.	800	Kanawha
Pearisburg, Va.	2,000	Kanawha
Evansburg, Pa.	1,700	Beaver
Harmony, Pa.	1,000	Beaver
Mayview Hospital, Pa.	4,500	Ohio
Washington, Pa.	26,300	Ohio
East Washington, Pa.	2,300	Ohio
Hubbard, Ohio	4,600	Beaver
Coshocton, Ohio	11,700	Muskingum
Newcomerstown, Ohio	4,500	Muskingum
Shelby, Ohio	8,000	Muskingum
Ironton, Ohio	16,400	Ohio
Wheelersburg, Ohio	1,000	Ohio
Jeffersonville, Ind.	14,700	Ohio
Bedford, Ind.	12,600	Wabash
Brownstown, Ind.	2,000	Wabash
Chesterfield, Ind.	1,100	Wabash
Flora, Ind.	1,700	Wabash
Speedway, Ind.	5,500	Wabash
Mt. Carmel, Ill.	8,700	Wabash

Construction of sewage disposal facilities was started this year at the following communities:

PLACE	POPULATION	WATERSHED
Corry, Pa.	8,000	Allegheny
Fairmont, W. Va.	29,400	Monongahela
Morgantown, W. Va.	25,500	Monongahela
Glendale, W. Va.	1,500	Ohio
McMechen, W. Va.	3,500	Ohio
Point Pleasant, W. Va.	4,600	Ohio



PLACE	POPULATION	WATERSHED
Nelsonville, Ohio	5,300	Hocking
Batavia, Ohio	1,500	Little Miami
Urbana, Ohio	9,400	Miami
Dalton, Ohio	1,000	Muskingum
Killbuck, Ohio	800	Muskingum
Marietta, Ohio	16,000	Ohio
Portsmouth, Ohio	36,800	Ohio
Shadyside, Ohio	4,500	Ohio
Lisbon, Ohio	3,300	Ohio
Kenton, Ohio	8,500	Scioto
Connorsville, Ind.	15,600	Miami
Rising Sun, Ind.	2,000	Ohio
Bonnville, Ind.	5,100	Ohio
Henderson, Ky.	16,900	Ohio

This picture of progress is further enhanced by noting these developments: The Allegheny County Sanitary Authority, which represents Pittsburgh and 66 satellite communities, expects to call for construction bids early in 1956. Estimated to cost about \$100 million, this sewage disposal project will treat the wastes from more than a million people and scores of industrial operations. It is the largest project in the Ohio River Valley. (Financing of the project was completed as this report was going to press.)

Meantime, Parkersburg, W. Va., started construction on its plant in July and Wheeling, W. Va., has

sold a \$2,500,000 bond issue, representing one-third the cost of its project. At Charleston, W. Va., construction has advanced to the point where partial operation of the plant is expected early next year. The City of South Charleston is under final order of the State Water Commission to proceed and has adopted a rate ordinance. Huntington, where a service charge has been initiated to yield \$800,000 yearly, is expected to submit a construction schedule to the State Water Commission before the year-end. Ravenswood and Wellsburg, both on the Ohio River, have authorized consulting engineers to prepare preliminary plans.

Steubenville, Ohio, has had a plant under construction for almost two years. At the big Mill Creek Valley plant for Cincinnati some 35 percent of the construction work is now under contract; a year ago Cincinnati placed its first treatment plant in operation.

Evansville, Ind., has completed one of its new sewage-treatment plants and the second plant, almost four times larger than the first, is nearing completion.

At Henderson, Ky., construction is underway. Louisville, with almost a half-million people, is likewise reported to be approaching the construction stage, as is Paducah, Ky.

Gallipolis, in that section of the Ohio River where the Commission established Treatment Standard No. 3 on April 2, 1952, has thus far failed to take action. On June 13, 1955, the Attorney General of Ohio filed suit at the request of the Ohio Water Pollution Control Board to secure compliance.

## PARKERSBURG SEWAGE TREATMENT PLANT

CONSULTING ENGINEER  
MORRIS KNOWLE  
PARKERSBURG, W. VA.  
GENERAL CONTRACTOR  
JAMES H. CAMPBELL  
PARKERSBURG, W. VA.

An expert in groundbreaking for new sewage treatment plants in his state, Chairman Dan Fleming of the West Virginia Water Commission takes his stance at Parkersburg. From left to right: Robert K. Horton, treasurer of ORSANCO; Mr. Fleming; John Ankrow, member of the Parkersburg Sanitary Board; and Mayor William G. Brown, chairman of the board.

*Parkersburg Sentinel photo*





The new sewage-treatment works of the Northern Kentucky Sanitation District that discharges into the Cincinnati Pool of the Ohio River near Bromley was required temporarily to cease operations in June under a court order obtained by nearby residents who complained of odor conditions. Consulting engineers have been retained to make recommendations for correcting this condition.

## INDUSTRIAL WASTE CONTROL

This year's round-up on industrial-waste control shows that of the 1,424 plants discharging effluents directly in the streams of the district:

- 508 — or 36% — have control facilities rated as adequate;
- 487 — or 34% — provide some form of control but more will be required;
- 40 new installations are under construction; and
- 132 have plans completed or in preparation.

Details of the number and status of installations for each of the eight states are given in an accompanying tabulation. Also shown is a classification of the type of industries. Coal mining and processing, with 296 installations, represents the largest group. Metal-finishing installations, numbering 195, are second. Chemical plants, in third place, total 140. Dairy-products plants totaling 126 installations are next, followed by steel works, which number 113.

This listing should not be construed as an inventory of all the industrial plants in the Ohio River Valley district — it represents a classification of those plants that are under the direct surveillance of state pollution-control agencies. Many additional thousands of industrial establishments are connected with municipal sewer systems. The treatment and control of these waste discharges is the obligation of the municipality, which in turn is responsible to the state agency for the production of a satisfactory effluent.

Some significant developments toward more effective control of industrial wastes are highlighted in the following notes:

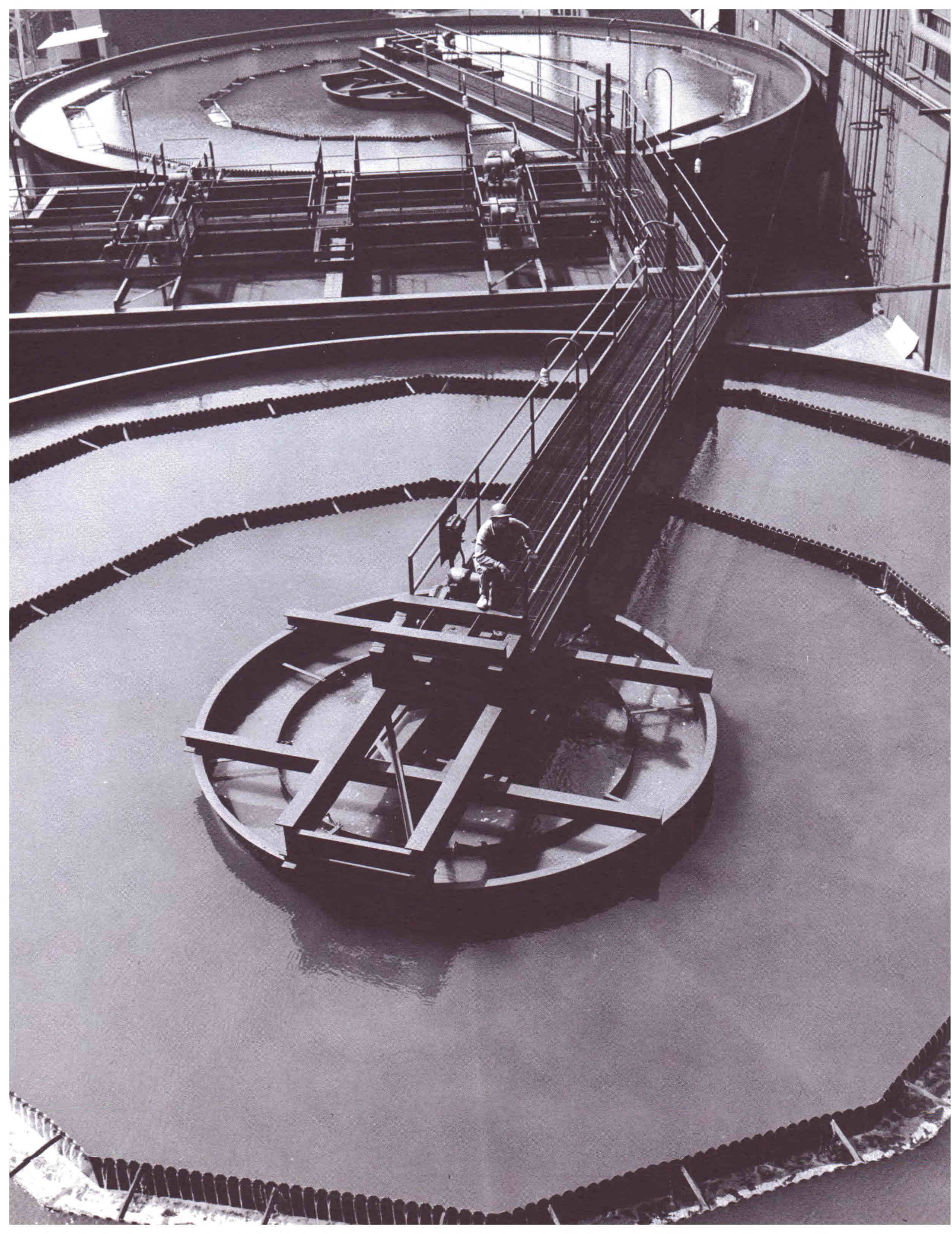
Indiana's unique cyanide-control program, reports B. A. Poole, ORSANCO Commissioner and technical secretary of the Indiana Stream Pollution Control Board, has revealed 270 industrial plants handling 600,000 gallons of cyanide solutions. In developing compliance with the requirement that all cyanide-solution facilities be safeguarded from possible accidental spills into sewers or watercourses, a number of potentially dangerous situations were discovered and eliminated. Says Mr. Poole: "The significance of this program in terms of protection to the public health bears no relation to the relatively modest expenditures for corrective measures, which were \$90,000 last year."

Also in Indiana, at Lafayette, the **Aluminum Company of America** completed a combination sewage and wastes treatment plant. The wastes include ingot-etch sludge and soluble oils. Cost of the treatment

Classification of type and number of industries with effluent discharge directly into streams — July 1, 1955.

TYPE	ILL.	IND.	KY.	N. Y.	OHIO	PA.	VA.	W. VA.	TOTAL
Brewery	0	3	0	0	1	5	0	0	9
Cannery	3	56	0	1	24	1	3	0	88
Chemicals	2	22	11	0	45	31	7	22	140
Coal Mining	2	11	61	0	21	1	10	190	296
Coke	0	0	0	0	8	2	0	2	12
Dairy Products	1	25	10	15	53	18	2	2	126
Distillery	0	2	36	0	1	4	0	0	43
Meat Packing	0	25	5	1	31	8	2	3	75
Metal-Finishing	0	22	6	18	44	89	1	15	195
Oil Fields	0	10	0	3	0	0	0	0	13
Oil Refinery	2	5	6	0	4	23	0	2	42
Paper and Pulp	0	11	0	0	32	2	0	1	46
Steel Works	0	2	2	1	68	30	0	10	113
Tannery	0	1	1	0	3	5	1	2	13
Textile	1	1	2	1	2	1	4	1	13
Miscellaneous	3	20	11	14	50	66	13	23	200
TOTAL	14	216	151	54	387	286	43	273	1,424







works was \$275,000; however, the segregation of sewers and construction of an outfall made the total expenditure about \$1,000,000.

At Speedway, near Indianapolis, Ind., where the **Allison Division of the General Motors Corporation** is constructing an industrial-wastes treatment plant, the control facilities include soluble oils recovery, chromium wastes recovery by ion exchange and alkaline chlorination for cyanide destruction. Cost of the project is \$400,000. Last year the Allison Division spent \$850,000 for a similar industrial waste installation at their Indianapolis plant No. 5.

At Madison, Ind., on the Ohio River, the **Indiana-Kentucky Electric Corporation** is completing construction of the largest power plant in the world (1,200,000 kilowatts). Earth-levee retention basins are being installed to handle a flow of 8.3 million gallons per day for storage of bottom ash and fly ash. Cost of these works will be \$400,000.

In Ohio, where industries are compiling a distinguished record of performance in supporting the state's clean streams program, the progress made by the **Armco Steel Corporation** at Middletown captured a certificate of merit from the Ohio Conservation Congress. Completed this year was a \$1,000,000 coagulation and clarification system to improve finely divided iron scale from waste waters. This treatment facility supplements clarification devices previously installed for removal of heavy mill scale and for flue dust recovery from blast furnaces. In addition, a new phenol recovery system was installed. This program of waste control carried out over a three-year period is estimated to have cost almost \$2,000,000.

At Rittman a half-million dollar pollution-abatement program begun in 1949 by the **Ohio Boxboard Company** has been virtually completed. An 80-ft. diameter settling tank was placed in operation in April to supplement previously built settling units and thus achieve an overall reduction of 91 percent in solids from the mill effluent. The first of four lagoons now under construction, and totaling 50 acres in area, has gone into operation to provide further reduction of solids before the effluent reaches the River Styx, a tributary of Chippewa Creek.

At Warren, Ohio, the **Copperweld Steel Company** placed into operation a \$32,000 lagoon system for the neutralization of spent acid pickle liquor. Some 490,000 gallons of waste acid is neutralized with 75 tons of lime each week.

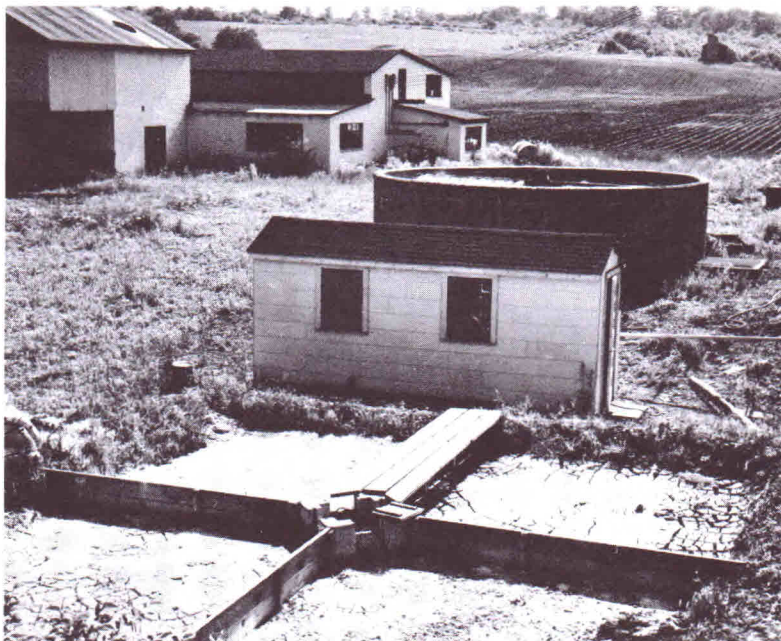
At Steubenville, Ohio, the **Weirton Steel Company** began the construction of sewers for the segregation of sanitary sewage from industrial wastes. This will permit treatment of all sanitary sewage from the plant in the municipal treatment works now under construction.

← Final step in the treatment of industrial wastes at the Armco Steel Corporation mill in Middletown, Ohio, is provided by these settling basins. The water goes back to the river in a cleaner condition than when taken into the mill.



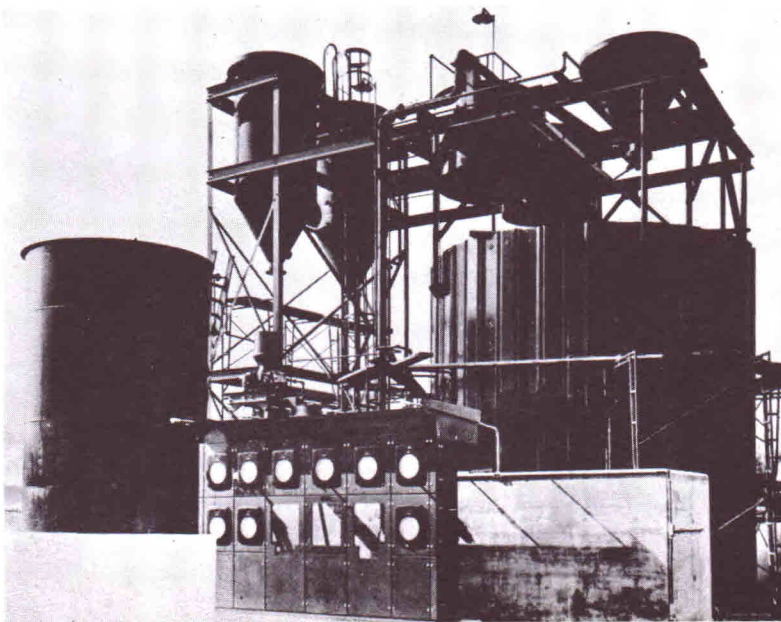
Kids are swimming today a short distance below a coal-mine preparation plant on Spruce Laurel, where a short time back the water was not fit to wade, reports the Conservation Commission of West Virginia. This is one of the results from an intensive campaign to curb coal-silt pollution.

Conservation Commission of West Virginia photo



Waste-treatment facilities for a milk plant operated by the Erie-Crawford Dairy Co-op Association at Saegertown, Pa. This trickling filter installation handles 7,500 gallons of waste water that formerly polluted French Creek.

To secure design data for treatment of a complex chemical waste the Carbide and Carbon Chemicals Co. at South Charleston, West Va., has been operating this pilot unit. It includes two primary settling tanks as well as a secondary and final clarifier unit. In addition, it features a 20-foot diameter, 14-foot deep trickling filter as well as activated-sludge process facilities.





At Youngstown, Ohio, **The Youngstown Sheet and Tube Co.** reports a reduction of 86 percent in phenol losses achieved through a "good housekeeping" campaign conducted jointly by the company's engineering, chemical and operating departments. Elimination of unsuspected leaks followed by changes in operating procedure and adoption of a preventive maintenance schedule produced the improvement.

At Huntington, W. Va., the **Standard Ultramarine Company** completed research on a complex sulfide waste and is building control facilities. Sulfides are to be recovered by scrubbing devices for subsequent aeration and incineration.

At South Charleston, W. Va., the **Carbide and Carbon Chemicals Company** has completed a red-wood flume 3,800 feet long and varying in size from 24 to 42 in. around the plant periphery for the interception of polluting effluents. Meantime investigations are continuing in a pilot treatment plant with a 20 ft. diameter and 14 ft. deep trickling filter. Performance data from this unit is being used for the design of the works for the treatment of a complex variety of organic wastes. Fly ash disposal facilities, requiring the installation of almost two miles of 10-in. cast-iron pipe, are now in operation.

At Weirton, W. Va., the **Weirton Steel Company** has virtually completed a \$1,000,000 recovery system that will eliminate from the Ohio River the discharge

of 200 tons daily of blast furnace flue dust. In addition, contracts will be let this year for the installation of a new phenol recovery system for the by-product coke plant. Meantime, a joint study has been completed with the City of Weirton pointing toward design of a sewage treatment plant to serve both the municipality and the steel company.

In Virginia, the development in recent years of manganese mines brought with it the problem of disposing of silt-laden washwater. On the New River all such operations are now provided with lagoons for clarification of the water prior to discharge.

In Pennsylvania, at Warren on the Allegheny River, **Sylvania Electric Products, Inc.**, has installed neutralizing facilities for chromium-plating wastes, spent pickling liquors, rinse and cyanide-bearing waters. Sludges are vacuum-filtered and disposed of in a manner to prevent them reaching the stream.

At Bradford, Pa., the **Zippo Manufacturing Company** is providing treatment for wastes containing copper, chromium, nickel, acids and alkalis. Chemical precipitation and settling tank facilities have been installed. Provision has been made for removing cyanide compounds when they are used.

At Taylor Township, Va., the **Universal-Rundle Corporation** has installed chemical flocculation equipment for wastes containing clay in fine suspensions.

### STATUS OF INDUSTRIAL WASTE-CONTROL FACILITIES—JULY 1, 1955 for industries discharging effluents directly into streams

STATUS	ILL.	IND.	KY.	N. Y.	OHIO	PA.	VA.	W. VA.	TOTAL	% OF TOTAL
Adequate control facilities	10	124	80	2	145	74	19	54	508	35.7
Control provided, not adequate	4	65	65	21	223	48	5	56	487	34.2
Control facilities inadequate; improvements under construction	0	0	2	0	9	1	0	4	16	1.1
New control facilities under construction	0	5	0	0	4	20	0	11	40	2.8
Plans for facilities completed or in preparation	0	10	3	3	4	92	2	18	132	9.3
No action by company	0	12	1	28	2	51	17	130	241	16.9
Total number of industries reported	14	216	151	54	387	286	43	273	1,424	100.0



## POLICY AND PROCEDURE

One of the most satisfying accomplishments of the Commission was the unanimous adoption on April 6, 1955, of a statement on policy and procedure for industrial-waste control. Formulation of this statement followed two years of study and exchange of experiences among the eight states. Throughout this period the industry-action committees were informed of all proposals under discussion and they participated intimately in their evaluation.

The importance of this undertaking may best be understood by noting that industrial-waste control practice is distinguished by the widest variations in philosophy and administration. This situation was recognized by the drafters of the Ohio River Valley Water Sanitation Compact. They expressed their intent in very broad terms, thus providing opportunity for the members of the Commission to deliberate on and develop specific procedures for carrying out this complex assignment.

The intent, stated in Article VI of the compact, is as follows: "All industrial wastes discharged or permitted to flow into the aforesaid waters (interstate waters) shall be modified or treated . . . in order to protect the public health or to preserve the waters for other legitimate purposes . . . to such a degree as may be determined by the Commission after investigation, due notice and hearing."

The manner in which this requirement was to be furthered called for an enunciation of and agreement among the eight states on basic principles. Recognizing that a stream has many uses, it was agreed that protection of those uses serving the public interest in the most beneficial manner would govern design of restrictions on the discharge of waste effluents. It was further agreed that each industrial plant discharge, and the conditions relating to it — notably the water uses in the area and the flow and self-purification capacity of the receiving stream — were to be separately evaluated and control requirements tailored accordingly. However, minimum or basic restrictions were stipulated for every industrial discharge; these were derived from an interpretation of a statutory provision of the compact requiring that all waters are to be "free from unsightly or malodorous nuisances due to floating solids or sludge deposits." These basic requirements, designated as IW-1, are shown in the box below.

The Commission believes that it has established the framework for engineering and economic appraisal of waste-control measures that will provide maximum beneficial use of water resources in the public interest as contemplated by the compact. Furthermore, the Commission is confident that the policy and procedures (as set forth in the resolution on the following pages) can be defended as representing a rational, practicable and reasonable manner of expediting industrial waste control.

### BASIC INDUSTRIAL-WASTE REQUIREMENTS

designated as IW-1 in the policy resolution adopted on April 6, 1955

Industrial wastes (exclusive of mine drainage until such time as practical means are available for control) shall be treated or otherwise modified prior to discharge so as to maintain the following conditions in the receiving waters:

Freedom from anything that will settle to form putrescent or otherwise objectionable sludge deposits which interfere with reasonable water uses.

Freedom from floating debris, scum and other floating materials in amounts sufficient to be unsightly or deleterious.

Freedom from materials producing color or odor in such degree as to create a nuisance.

These conditions to be maintained in the receiving waters following the discharge of industrial-waste effluents, are basic or minimum requirements. Investigations will be conducted by the Commission as time and circumstances permit to establish the need and validity of altering or adding to the above basic requirements.

Questions concerning compliance with requirements are to be addressed to the signatory state agency in the state in which the industrial plant is operating. Arrangements will be made by the state agency for such contact and consultation with the Commission as may be necessary or requested. (See page 23 for name and address of state agencies.)



# INDUSTRIAL-WASTE CONTROL

WHEREAS, activities and experiences of the Ohio River Valley Water Sanitation Commission have now reached the point where it is desirable and necessary from administrative and other standpoints to issue a formal statement of policy and procedure in order to:

Promote the execution of provisions in the Compact for the control of industrial wastes;

Provide for the Compact states a plan of action for expediting the Commission's control program on interstate waters;

Furnish to existing industrial establishments in the Ohio Valley located on waters under jurisdiction of the Commission and to those who are about to locate on these waters information with regard to control of waste discharges; and

Establish a basis for effective and orderly conduct of staff activities;

NOW, THEREFORE, the Ohio River Valley Water Sanitation Commission does hereby declare the following principles and procedures by which it will be guided in pursuing the obligations placed upon it by the provisions of the Compact and in the exercise of powers vested in it:

I. Requirements for the modification or restriction of industrial-waste discharges in waters as defined in Article VI of the Compact (the Ohio River and its tributary waters which form boundaries between, or are contiguous to, two or more signatory states, or which flow from one signatory state into another signatory state) shall be designed to safeguard and maintain water uses that will serve the public interest in the most beneficial and reasonable manner. However, certain minimum or basic requirements, applying to every industrial-waste discharge, will be stipulated in accordance with the directive in Article I of the Compact that all waters are to be "free from un-

sightly or malodorous nuisances due to floating solids or sludge deposits."

II. In reaching conclusions on water uses to be safeguarded in various sections along streams the Commission will be guided by an evaluation of present uses, such future uses as can be reasonably foreseen and all other pertinent information. Decisions with regard to water-uses shall be subject to such review as the Commission deems necessary in accordance with changing conditions or by request from parties who may be affected. Among the legitimate uses of water to be considered by the Commission—but not necessarily restricted to them—are the following: Public and industrial supplies, maintenance of aquatic life, agricultural purposes, recreational and esthetic pursuits, navigation, power development and ultimate disposal of waste effluents.

III. To aid in the appraisal of water suitability for various uses and for guidance in the establishment of waste-control requirements the Commission will employ quality criteria. These criteria, to be applied at point of use, are not to be considered as effluent standards. The criteria will define within the boundaries of expert knowledge the respective physical, chemical, biological and bacteriological conditions of water in the stream consistent with protection of specific uses.

IV. In developing control measures for industrial-waste discharges the Commission will be guided by an examination of all local factors, including:

- a. Variations in the size, flow, location, character, self-purification characteristics and the established and proposed uses of the receiving stream;
- b. Variability of industrial operations and consequent changes in location, volume, type and combinations of waste discharges;
- c. Economic considerations.



# L POLICY AND PROCEDURE

**V.** Industrial-waste control measures will be promulgated on a step-by-step basis as follows:

1st step—Establishment of basic requirements that are applicable to all industrial wastes discharged into interstate waters of the district. These basic requirements, designated as IW-1, are set forth following this statement.

2nd step—Determination of supplementary “tailored” control requirements, through and in cooperation with appropriate state agencies, for each industrial plant based on such investigations and voluntary agreements or hearings as deemed necessary to establish the need and validity of control measures beyond those that satisfy basic requirements.

**VI.** It is recognized that time and circumstances will determine how quickly supplementary “tailored” requirements should and can be stipulated for each industrial plant. Meanwhile, every industrial plant that is now discharging or may seek to discharge wastes into interstate waters of the district as defined in the Compact, will be expected to comply as promptly as possible with the first-step basic requirements, designated as IW-1 and set forth following this statement.

**VII.** If supplementary “tailored” waste-control requirements are to be stipulated for an industrial plant, they will be based on stream surveys and continuing investigations of water use and quality conditions, the volume and characteristics of waste discharges and other factors applicable to a specific situation or area. Recommendations will be developed after consultation and in cooperation with appropriate state agencies and the industrial plants involved. Revision of supplementary “tailored” control measures may be required from time to time depending on: (a) changes in the quantity or

character of industrial-waste discharges; (b) changes in conditions of stream use.

**VIII.** It shall be the responsibility of each state agency to supply such information and data as may be necessary to develop supplementary waste-control requirements. The states will also keep the Commission informed of new or contemplated industrial-waste discharges into those waters coming under the jurisdiction of the Commission, so that the effect of these on existing conditions can be appraised and decisions reached with regard to revised control requirements.

**IX.** Priority of attention by the Commission in development of supplementary “tailored” requirements shall be given to those industrial plants now discharging directly into the Ohio River; the plan shall be to proceed in an orderly manner from the head of the river to its mouth. However, on request of any state, consideration will be given to shifting investigations to any location which may best serve Commission interests.

**X.** The appropriate state regulatory agency will administer regulatory controls. Questions concerning compliance with requirements are to be addressed to the signatory state agency in the state in which the industrial plant is operating. The state agency will arrange for such further contact or consultation with the Commission as may be necessary or requested. Whenever, in the opinion of the Commission, satisfactory compliance with basic and supplemental requirements is not being or cannot be obtained through efforts of such state agencies, the Commission will take such action as may be necessary to transpose such requirement or requirements into treatment standards or regulations within the contemplation of Article VI of the Compact and to procure enforcement of them through use of the procedures prescribed in Article IX of the Compact.

*The foregoing resolution was adopted by the Ohio River Valley Water Sanitation Commission at its regular quarterly meeting held in Cincinnati, Ohio, on April 6, 1955.*



# Current Activities

Serving as the clearing house for problems common to the eight states, as well as for the development of control measures on the Ohio River, activities of the Commission and its staff encompass a broad range of interests and projects. Currently these include: Evaluation of water-quality criteria, sponsorship of investigations on the potential toxicity of trace substances in water; monitoring and appraisal of water-quality variations in the Ohio River; establishment of administrative relationships with regard to control of radioactive substances; development of a handbook for the investigation of fish-kills; and the conduct of studies relating to supplementary industrial-waste control measures for individual plants on the Ohio River.

Among the projects that have commanded attention and are now completed, the most important was the formulation and adoption of policy and procedures for the control of industrial wastes. This is detailed elsewhere in this report. Also of major significance was the completion of investigations and hearings and the subsequent promulgation of sewage-treatment requirements for all municipalities in the entire 981 miles of the Ohio River. Details regarding the latter are outlined in the Fifth and Sixth annual reports of the Commission.

The nature and status of current activities is as follows:

## TOXICITY EVALUATION

Five years ago the Commission undertook the sponsorship of a project for the assembly and critical evaluation of information on the undesirable effects of chemical pollutants in water as they relate to man and domestic animals. The aim of this work is to provide an authentic basis for the establishment of physiologically safe limits on the discharge of certain components of industrial-waste.

The project is being carried forward under contract with The Kettering Laboratory, in the Department of Preventive Medicine and Industrial Health, College of Medicine, University of Cincinnati. Dr. Robert Kehoe is director of the laboratory and Dr. Jules Cass is principal investigator on the project. A pioneer supporter in promoting the investigations has been the National Cash Register Company, a member company of the Commission's Metal-Finishing Industry Action Committee. More recently the Steel Industry Action Committee, with funds supplied to Mellon Institute by the American Iron and Steel Institute, has become a major participant in furthering the program.

Some 180 substances are included in the classification of potentially toxic pollutants in water. Efforts

are concentrated on a search for all published and unpublished information relating to the toxicity of selected substances found in water sources. All pertinent information is abstracted and systematically classified. The ORSANCO water pollution control file of Kettering Laboratory is the depository for this toxicologic information. The file contains approximately 11,650 cards and about 1,200 reprints of publications.

When these findings are determined to be adequate by the Kettering Laboratory, recommendations are prepared for physiologically safe limits. Recommendation reports have been completed on lead and fluorides. Interim reports have been made with regard to copper, cobalt, the cyanides and thiocyanates, and the chloride and sulfate compounds of sodium, potassium, calcium and magnesium. Nearing completion are interim reports on cadmium and chromium.

It is expected that a detailed summary of the work to date will be made available within the coming year.

## PHENOL STUDIES

In anticipation of the establishment of control measures on the Ohio River for the discharge of phenol waste, two practical questions have been under scrutiny. One is concerned with a determination of the concentration of phenol in raw water that causes taste and odor difficulties at water treatment plants. The other question relates to the rate of "die-away" or natural destruction of phenolic compounds in a stream. Answers to both questions are needed in order to design regulations for safeguarding water quality at points of use and at the same time permit maximum utilization of the assimilative capacity of the stream.

Major assistance to the Commission staff in promoting these studies is being furnished by the Steel Industry Action Committee and the Water Users Committee. The latter is composed of managers of municipal and industrial water supply plants who are confronted with the daily problems of treating Ohio River water. The Steel Industry Committee includes member companies whose by-product coke plants are producers of phenol-bearing wastes.

**Taste and odor correlation** — The efforts thus far to correlate phenol concentrations in the Ohio River with the occurrences of tastes and odors at water treatment plants have not permitted drawing conclusions regarding a limit. They have been constructive, however, in suggesting these lines of pursuit:

1. Arrange for an extension of a 3-week test run, similar to that carried out at five water-treatment plants in April 1955, to cover a period of three or more



months in the winter and early spring of 1955-56, in order to obtain more comprehensive data. The 3-week test furnished some valuable leads, but did not embrace a sufficient range of river conditions to yield conclusive results.

2. Study the possibilities of establishing odor thresholds for individual materials composing the mixture of taste-causing substances in the river, following methods similar to those developed at the Robert A. Taft Sanitary Engineering Center in the carbon-filter extraction and separation of such materials.

3. Evaluate the practicality of utilizing odor thresholds alone, without reference to their constituent elements, as a means of control for maximum tolerable loads of odor-causing waste materials on water-treatment plants. These thresholds may vary from one plant to another, but the aim would be to establish a tolerance-limit pattern for each plant both as a control on treatment and as an index for tracing overloads to upstream sources of pollution.

**Die-away determination**—Studies on “die-away” or natural oxidation of phenols have been more productive than those related to taste and odor correlation. These studies are based on an evaluation of data assembled by the phenol sub-committee of the Steel Industry Action Committee. The data include results from almost two years of sampling (one each week) at 19 points on the Monongahela and upper Ohio Rivers. Coupled with this are the phenol discharges along with a recording of stream flow and temperature variations during the period of sampling. The sampling involved a 23-mile stretch of the Monongahela above the Point at Pittsburgh and 71 miles on the Ohio below the Point.

The assembly of data began in August, 1953, and was carried on continuously until May 1, 1955. Statistical evaluation of all the data has not yet been completed. But results thus far have led to this interim conclusion by H. W. Streeter, staff consultant:

“In several stretches of the river under survey, notably those undisturbed by intermediate points of discharge, it has been possible to obtain good measurement of phenol die-away rates. These have revealed a rate of die-away at summer temperatures that approximates 40 to 50 percent in each 24 hours; at winter temperatures there is practically no die-away. As a matter of comparison, it may be said that the observed summer rate of phenol oxidation is about twice the normal rate of biochemical-oxygen-demand reduction at similar temperatures.”

## RIVER STUDIES

Investigations have been started for the first of a series of reports detailing industrial-waste control requirements for the Ohio River. The reports will set forth findings and recommendations on which the

Commission can base conclusions with regard to control measures as contemplated in a statement of policy and procedures adopted on April 6, 1955, as shown on page 12 of this report.

The current study is concerned with a 40-mile stretch of the river downstream from the Pennsylvania-Ohio state line. A substantial amount of data on river-quality conditions has been assembled during the past three years, as a result of the efforts of the Water Users Committee. This data has been supplemented more recently by the establishment of additional monitoring stations under a contract with the U. S. Geological Survey.

Detailed information on the type and amount of industrial-waste loads discharged into this stretch of the river is being assembled by the appropriate pollution-control agencies in Pennsylvania, Ohio and West Virginia.

Meantime, acting on a request from the West Virginia Water Commission, the Commission has called for a staff report outlining (1) present conditions with regard to the chloride content of the Ohio River; (2) the effect of chloride concentrations on various water users; and (3) proposals regarding the manner in which discharges of chlorides should be regulated.

## RADIOACTIVE WASTE CONTROL

For several years the Commission has been endeavoring to determine what its role should be in the control of radioactive wastes. The question assumed greater urgency this year because construction has been started on a nuclear reactor power plant at Shippingport, Pa., on the Ohio River, which is to be operated under private auspices.

As matters now stand, the Atomic Energy Commission of the federal government maintains jurisdiction and responsibility for radiation-control measures. National policy concerning the role of the states in this new field of public-health concern has not been delineated. Exactly what should be done by this Commission and how it might be accomplished is far from clear. The questions involve development of a pattern of administrative relationships among federal and state agencies and definition of the technical procedures to be employed for monitoring and evaluation of radiation hazards.

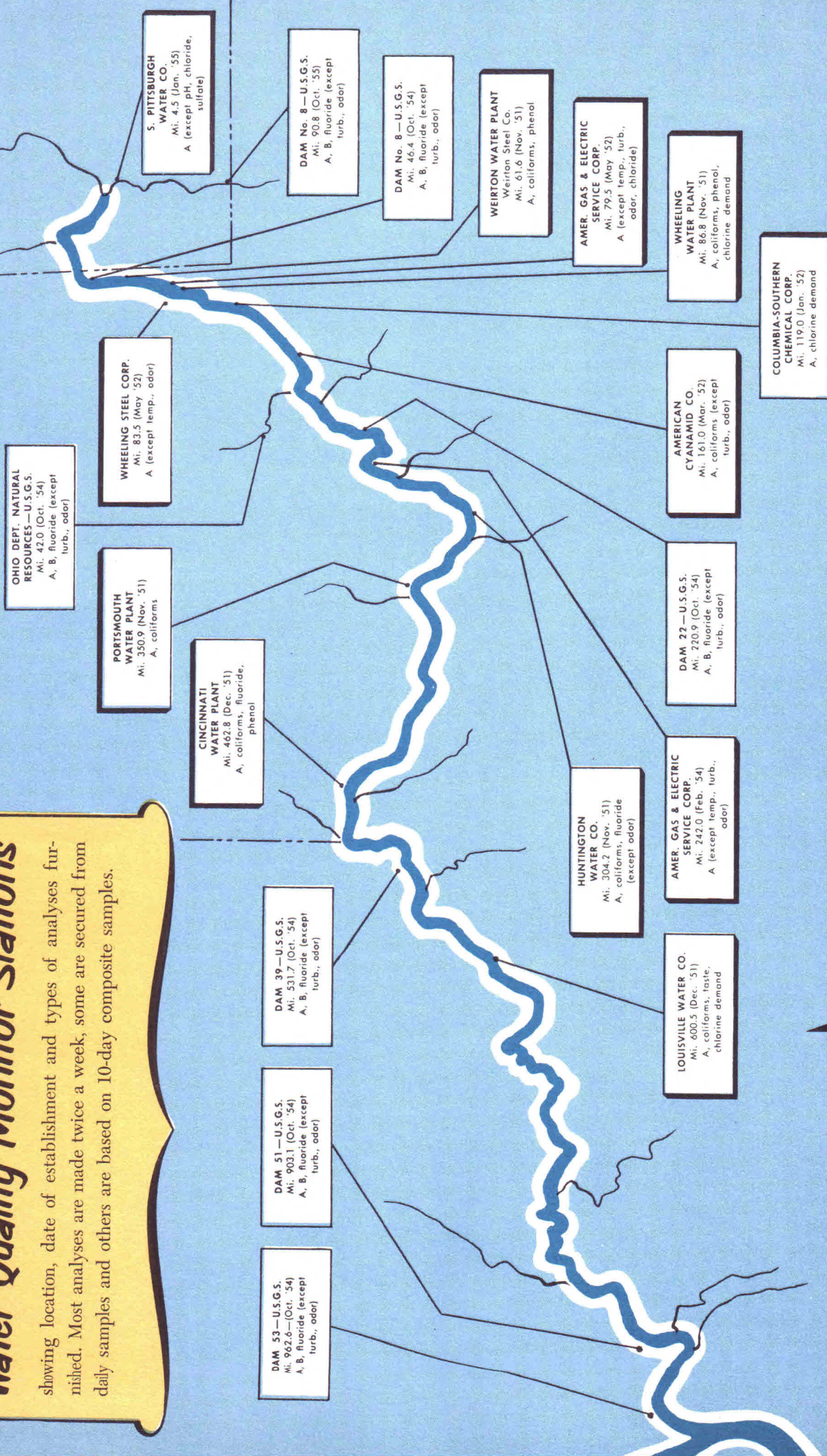
The most recent endeavor to secure expert aid and counsel, as well as emphasize the dilemma faced by the Commission and its signatory states, found expression in a resolution addressed to the Surgeon General of the U. S. Public Health Service on April 6, 1955. This stated:

“WHEREAS: The eight states signatory to the Ohio River Valley Water Sanitation Compact are desirous of securing recommendations for the conduct of an



# Water-Quality Monitor Stations

showing location, date of establishment and types of analyses furnished. Most analyses are made twice a week, some are secured from daily samples and others are based on 10-day composite samples.



A GROUP	TYPES OF ANALYSES			B GROUP			Sp. conductance		Sodium		
	Temperature	Turbidity	Odor	Total hardness	Non-carb. hardness	Color	Iron	Manganese	Potassium	Bicarbonate	Dissolved solids
	Alkalinity	pH	Chloride	Sulfate	Calcium	Magnesium				Nitrate	



integrated program of evaluation and control of radiation in waters of this district; and

WHEREAS: The U. S. Public Health Service maintains staff and facilities for research and study of water pollution and the training of personnel in work related to the control of water pollution at the Sanitary Engineering Center in Cincinnati; and

WHEREAS: Radiation evaluation and control is a new field of endeavor involving the interests and efforts of various agencies as well as entirely new concepts of measurement and appraisal;

NOW, THEREFORE, BE IT RESOLVED THAT: The Commission request the U. S. Public Health Service to use its facilities in drafting recommendations for the conduct of an appropriate program of radiation evaluation and control and related matters in the Ohio Valley. The Commission desires particularly to learn how administrative relationships might best be established among the various agencies concerned with radiation hazards and what technical procedures should be followed in measuring and evaluating hazards to water supplies."

The Public Health Service has consented to act on this resolution. In a report to the Commission on July 7 it was stated that conferences had been initiated among various government agencies with a view toward making recommendations.

## WATER-QUALITY MONITORING

Monitoring of water quality at certain points in the Ohio River was inaugurated late in 1951 and has been maintained continuously on a twice-weekly basis since then. This important element of the Commission's program represents a vital contribution from the Water Users Committee. The latter includes managers of waterworks plants, both municipal and industrial, who are processing water from the Ohio River.

Additional monitoring stations were established in 1954 in cooperation with the U. S. Geological Survey and the U. S. Corps of Engineers. Under this arrangement, samples of river water are taken at six stations by the Corps of Engineers. Analyses of these samples are then made by the U. S. G. S. laboratory in Columbus, Ohio.

The accompanying map shows the location of sampling stations and the agencies that are engaged in the analytical work. Also shown on the map are the dates when monitoring was started and the types of analyses made at each station.

Some special analyses will be made during the water year beginning October 1, 1955. For a period of three or four months samples will be taken at Dams No. 8, 22 and 39 on the Ohio River and analyzed for chromium, nickel, copper, cadmium, lead, zinc, cobalt, arsenic, cyanide and phenol.

Coordination of the monitoring program and the tabulation and evaluation of data are a major staff activity. The importance of the program cannot be over-emphasized. A knowledge of river quality conditions is essential in drafting waste-control regulations. Data from the monitoring program permits an appraisal of the effect of waste discharges on water uses, makes possible an evaluation of alternate control programs and provides information on available capacity for the assimilation of wastes from new or expanding industries. Continued monitoring of water quality will further provide a check on the effectiveness of waste-control programs and the manner in which they are operated.

## INVESTIGATION OF FISH-KILLS

On various occasions since the formation of the Commission, the state sanitary engineer members have stated that they would look with favor upon the compilation of a handbook setting forth the manner for conducting an investigation of fish-kills insofar as they might be related to pollution-control.

This suggestion was conveyed to the Aquatic Life Advisory Committee following its formation in 1952. The committee accepted the assignment and developed the draft of a handbook that has since been circulated for comment and criticism. Final revisions are now being completed and the Commission has authorized its publication.

Commission interest in matters of this kind was further heightened last May because of a fish-kill on the Ohio River below the Pennsylvania-Ohio state line. Solving the mystery of what caused some 70 miles of river to become affected by acid involved the combined efforts of state sanitary engineers in Pennsylvania, Ohio and West Virginia. Contrary to popular opinion along the river that an industrial plant had spilled acid, it was determined that the trouble originated with the dewatering of an abandoned clay mine that had been proposed for emergency use as an air-raid shelter at Conway, Pa.

The first intimation of a change in water quality on the Ohio River reached Commission headquarters in a telephone call on May 23 from its Wheeling, W. Va., monitor station. Arthur Todd, superintendent of the Wheeling Water Works and a member of the Commission's Water Users Committee, reported that the degree of acidity in the river was much greater than normal and that dead fish were being observed.

Sanitary engineers in the three-state area were immediately alerted. Subsequent reports from Ohio and West Virginia fixed the source of trouble in the Pennsylvania stretch above the state line. Meantime, L. S. Morgan, division engineer of the Pennsylvania State Health Department, was in contact with a network of check points on the Monongahela, Allegheny and Ohio rivers, as well as other tributaries. His findings nar-



rowed down the area to "somewhere in the first 36 miles of the Ohio River below Pittsburgh."

Several days elapsed before this conclusion could be reached and with conditions in the river returned to normal Mr. Morgan despaired of pin-pointing the source of acid discharge. At this point he noted a story in a Beaver Valley (Pa.) newspaper stating that a mine had been dewatered by local civil defense authorities. This provided the clue. Making contact with the Pennsylvania State Department of Mines he learned that a mine inspector had been present who "estimated that millions of gallons of water had been discharged." A small discharge was still coming from the mine opening when Mr. Morgan reached it. Laboratory analysis showed that it was extremely acid.

## INDUSTRY COMMITTEES

Six industry committees—representing the steel, metal-finishing, chemical, oil refining, coal and paper and pulp groups—continued their active participation in several aspects of the Commission's program. However, the most important endeavor of mutual concern to all committees and the Commission was the exchange of views in the development of policy and procedures for the control of industrial wastes. Discussions on this matter have dominated attention for almost two years during which there were scores of regular meetings and special staff conferences interspersed with several joint sessions with the Commission.

On January 11 and 12 the Commission held a final series of conferences with all the industry committee members, following which on April 6 the Commission adopted the policy and procedures set forth elsewhere in this report. It is the Commission's view that of all the endeavors of the industry committees none has been more constructive than that of providing an organized forum before which the validity of a course of action for waste control could be thoroughly examined prior to its adoption.

Other activities of the industry committees may be briefly chronicled as follows:

**Steel Committee**—A two-year program of sampling and analysis of phenol loads in the Monongahela and upper Ohio rivers was completed in May. This forms part of a comprehensive series of studies being jointly conducted by the Commission and the steel industry in an endeavor to define more clearly the role of phenol in relation to taste and odor problems as well as to determine natural oxidation or "die-away" rates. Supplementary activities include efforts to perfect analytical methods as well as laboratory and field studies on the production and contribution of phenol from natural sources. A study made by the Youngstown Sheet and Tube Company on phenol concentrations in the Mahoning River during the last two years has been made available to the committee.

The committee was instrumental in securing further support for the Commission's toxicity evaluation program by means of a grant of \$42,000 from the American Iron and Steel Institute. Previously, and under similar auspices, the committee undertook sponsorship of a literature review and abstract project on the potential toxicity of certain substances in waste effluents.

To aid the Commission in its quest for economic yardsticks by means of which to evaluate water quality and its effect on industrial operations, the committee is making an appraisal of several constituents. They include: dissolved sodium salts, acidity, hardness, suspended solids, ammonia, iron, manganese and aluminum. To track down the elusive relationship of costs with varying concentrations, the committee is surveying operating experiences at a number of its plants. For example, in the sodium salts study the cost factor is being evaluated in terms of the additional operating expenses that might be incurred should there be an increase of 100 ppm of salt in the raw river water.

Methods for the disposal of spent pickle-liquor solutions continues to claim major attention by the committee. Several member companies are jointly engaged in sponsoring the erection of a pilot plant to test the Ruthner process. The plant will be operated at the Niles, Ohio, works of the Republic Steel Corporation.

Chairman of the committee is George M. Dreher, supervisor of chemical services, Jones and Laughlin Steel Corporation, Pittsburgh, Pa.

**Metal-Finishing Committee**—Completing five years of service to the Commission, during which all major assignments have been discharged, the Metal-Finishing Industry Action Committee has proposed that it be given a respite and continued on a stand-by basis. Accomplishments of the committee have been among the most fruitful of any group associated with the Commission.

Through one of its member companies—the National Cash Register Company—the committee pioneered in the promotion of toxicity evaluation. A major part of the literature review and abstracting of articles that are included in the central information file of the ORSANCO-Kettering project were furnished by the company.

Of exceptional value was the production of a series of four handbooks to explain and promote the application of waste control measures in metal-finishing plants. These practical manuals tell how to measure flows, analyze waste effluents, reduce pollution by good housekeeping and evaluate methods of waste treatment. They were distributed among the 2,000 metal-finishing plants in the compact district, and thousands more are being sold at cost in this country and abroad.

In cooperation with the American Electroplaters' Society, the committee promoted the development and



field-testing of procedures for analyzing wastes from plating and finishing processes. The objective of this important undertaking was to secure methods that would screen-out substances whose presence interferes with or otherwise distorts results from standard analytical procedures. The results from this endeavor have been published by the Commission in a 102-page manual.

Chairman of the committee is L. J. Hilbert, assistant director of research, National Cash Register Company, Dayton, Ohio.

**Oil Refining Committee**—To further the development of information on toxicity, with particular reference to substances in oil refinery wastes, the committee made representations to the American Petroleum Institute for aiding such work. As a result, the API has entered into a contract with The Johns Hopkins University for the conduct of investigations, allotting \$12,000 for this purpose. Toxicity information is being assembled with respect to: hydrocarbons, carboxylic acid, naphthenic acid and sulphonic acid. The work is being correlated with and designed to supplement the ORSANCO-Kettering project.

The committee has under preparation two reports. One of these concerns methods for the disposal of spent caustic solutions and the other deals with the removal of oil from refinery waste waters.

In common with all the other committees, the oil refinery group was preoccupied this past year with the Commission's development of industrial-waste control policy.

Chairman of the committee is T. A. Anderson, refinery manager, Quaker State Oil Refining Company, St. Marys, W. Va.

**Chemical Committee**—Meetings during the past year were primarily concerned with industrial-waste control proposals being developed by the Commission.

The detergents sub-committee worked with the Association of American Soap and Glycerine Producers, Inc., looking toward the sponsorship of research on questions in which the Commission has expressed interest. As a result the following four projects have been inaugurated:

(1) A study of the fate of syndets in sewage-treatment plants and in surface waters—at the University of California, under direction of Professors E. S. Crosby and P. H. McGauhey;

(2) Development of a strain of micro-organisms that will assist in the breakdown of syndets—at the Massachusetts Institute of Technology, under direction of Professors Clair N. Sawyer and Ross E. McKinney;

(3) Determination of the effects, if any, that syndets may have on water-treatment processes—at the University of Illinois, under direction of Professors J. C. Dietz and R. S. Englebrecht; and

(4) Investigation of the causes and prevention of frothing in sewage treatment plants—at the University of Wisconsin, under direction of Professor G. A. Rohlich.

Meantime, activity is being continued on perfecting analytical methods and on the collection and analysis of samples from the Ohio River for syndet content and phosphates.

A memorandum report outlining operating and design practices in chemical plants to promote pollution control efforts was compiled. Also completed was a draft of factors to be considered in assessing plant location sites from the viewpoint of suitability for waste disposal. Compilation of a manual on the treatment of antibiotic wastes has been started. A survey of difficulties experienced at municipal plants that provide combined treatment of industrial wastes has reached the analysis stage. Liaison is being maintained with the Steel Committee in questions regarding phenol control and taste and odor problems.

Chairman of the committee is Harold L. Jacobs, waste-disposal consultant, DuPont de Nemours and Company, Wilmington, Del.

**Coal Committee**—Among the member companies on the committee a sum of \$17,000 was raised to continue an acid-mine water drainage research fellowship at the Mellon Institute. Facilities and services from this fellowship are being made available on stream pollution problems associated with coal wherever they are encountered in the Ohio Valley district. The committee anticipates its aid will be called upon in connection with proposed studies by the State of Ohio on Racoon Creek.

The committee is currently engaged in discussions with manufacturers of water-clarification equipment on methods for removal of suspended solids from washery wastes.

Chairman of the committee is Henry F. Hebley, research consultant, Pittsburgh Consolidation Coal Company, Pittsburgh, Pa.

**Pulp and Paper Committee**—Although it was not organized until the final discussion phase of the industrial-waste control policy, the committee did participate in the concluding conferences. It also devoted special attention to proposals relating to dissolved-oxygen criteria. This resulted in a statement forwarded to the Aquatic Life Committee which prompted further delineation of the dissolved-oxygen requirements of aquatic life by that group in its forthcoming progress report.

Future activity of the committee is being held in abeyance pending the development of matters of interest to the membership.

Chairman of the committee is Virgil A. Minch, research laboratories, Mead Corporation, Chillicothe, Ohio.



# Commissioners and Committees

Administration of compact affairs is conducted by a commission of 27 members. On this commission each state is represented by three members appointed by the Governor of the state. The federal government also has three representatives appointed by the President of the United States. Commissioners serve without compensation; they are reimbursed for expenses incurred while attending meetings.

Operating funds are provided by the eight signatory states on a pro rata basis reflecting the area and population of each state within the compact district. For the first year the states appropriated on the basis of a \$40,000 budget; in each of the succeeding five years the budget was \$100,000. This year the budget was \$130,000. Financial details are shown on page 22.

During the year covered by this report, Mr. W. W. Jennings of West Virginia served as chairman and Mr. Earl Devendorf of New York acted as vice-chairman. Elected to take office in July of 1955 was Mr. Devendorf as chairman and Mr. Kenneth M. Lloyd, of Ohio, as vice-chairman.

Mr. Devendorf, a member of the Commission's Engineering Committee since its inauguration seven years ago, is director of the bureau of environmental sanitation of the New York State Health Department. In addition to administering the multifold sanitary

engineering program within his own state, he also participates as a member of three interstate water-pollution control compact commissions. He began his career with the New York State Health Department in 1915. Appointed state water coordinator at the beginning of World War II he devised a system of interconnections and other engineering measures for maintaining water service during disaster periods among municipalities and industries. Known as the "mutual-aid program," it was adopted nationally by the office of Civil Defense, and Mr. Devendorf received an award of recognition from the American Water Works Association.

A listing of the officers, the commissioners and the staff is given on the front inside cover of this report. Four new commissioners took office during the past year. For Indiana, Dr. A. C. Offutt replaced Dr. L. E. Burney, who resigned to accept an appointment to the U. S. Public Health Service; Dr. Burney served on the Commission since its establishment.

For Illinois, Mr. Maurice E. Gosnell, an attorney, succeeded Mr. W. H. Wisely, an engineer; Mr. Wisely, who served as a commissioner for two and a half years, resigned when he became a resident of another state.

For New York, Mr. Joseph R. Shaw received an interim appointment to fill the vacancy created by the



Vice-Chairman Kenneth M. Lloyd of Ohio pledges support and good wishes to Chairman Earl Devendorf of New York who took office on July 1, 1955.





Engineering committee representatives at the July 6, 1955, meeting. Seated (left to right): O. Lloyd Meehean Edward J. Cleary Blucher A. Poole, chairman H. E. Moses F. H. Waring Standing (left to right): Clarence W. Klassen Earl Devendorf W. W. Towne Harry K. Gidley J. L. Hamrick, Jr. Edgar Landenberger Louis F. Birkel

Robert E. Stigers photo

resignation of Martin F. Hilfinger; Mr. Hilfinger had been a member of the commission since its establishment.

For Pennsylvania, Dr. Berwyn F. Mattison succeeded Dr. Russell E. Teague when the latter resigned as secretary of the state health department. Dr. Teague was a member of the Commission for four years.

For Ohio, Dr. Ralph E. Dwork succeeded Dr. John D. Porterfield. The resignation of Dr. Porterfield, who had been a member of the Commission since it was organized, followed his appointment to another post in the state government.

Certain functions of the Commission are conducted with the aid of standing committees, the names and composition of which are shown in the accompanying list. The Engineering Committee is the only one not restricted to members of the Commission; its membership is composed of the executive engineer officers of the eight state pollution control agencies.

Special committees to advise or otherwise aid the Commission, have been established from time to time. These include seven industry groups, an aquatic-life specialist committee and a water-users committee. Their activities are detailed in other sections of this report, beginning on page 18.

## COMMITTEE ASSIGNMENTS

(for year ending June 30, 1956)

### Engineering

B. A. POOLE, *Chairman*  
LOUIS F. BIRKEL  
EARL DEVENDORF  
HARRY K. GIDLEY  
CLARENCE M. KLASSEN  
EDGAR LANDENBERGER  
O. LLOYD MEEHEAN  
H. E. MOSES  
A. H. PAESSLER  
W. W. TOWNE  
F. H. WARING  
EDWARD J. CLEARY

### Audit

E. A. HOLBROOK, *Chairman*  
JOSEPH L. QUINN, JR.  
ROSS H. WALKER

### Executive Committee

*Chairman* —EARL DEVENDORF  
*Vice-Chairman* —KENNETH M. LLOYD  
Illinois —CLARENCE W. KLASSEN  
Indiana —JOSEPH L. QUINN, JR.  
Kentucky —HENRY WARD  
New York —EARL DEVENDORF  
Ohio —RALPH E. DWORK  
Pennsylvania —H. E. MOSES  
Virginia —E. BLACKBURN MOORE  
West Virginia —W. W. JENNINGS  
Federal —O. LLOYD MEEHEAN

### By-Laws

HUDSON BIERY, *Chairman*  
H. E. MOSES  
E. BLACKBURN MOORE

### Finance

KENNETH M. LLOYD, *Chairman*  
HENRY WARD  
BERWYN F. MATTISON

### Interstate Relations

HENRY WARD, *Chairman*  
HUDSON BIERY  
W. W. JENNINGS

### Pension Trust

ROSS H. WALKER  
CLARENCE W. KLASSEN  
ROBERT K. HORTON



# FINANCIAL REPORT

## For Year Ended June 30, 1955

### STATEMENT OF RECEIPTS AND DISBURSEMENTS

#### RECEIPTS:

From signatory states.....	\$129,355.00
Interest earned on bank deposit.....	534.23
Sale and handling of publications.....	1,937.50
Total receipts .....	<u>131,826.73</u>

#### DISBURSEMENTS:

Auditing .....	\$ 450.00
Automobile .....	2,395.40
Consulting services .....	4,800.00
Contractual services .....	102.65
Electric and water.....	636.77
Employees' pension trust.....	4,435.01
General office equipment and furnishings .....	452.98
Insurance .....	232.14
Legal services .....	3,600.00
Maintenance and repairs.....	2,068.64
Meetings .....	995.57
Miscellaneous .....	792.74
Office rent .....	7,734.00
Office supplies .....	1,512.45
Postage .....	755.43
Printing .....	5,159.19
Research:	
University of Cincinnati (Kettering Laboratory) .....	5,000.00
Salaries .....	53,243.48
Service fees and subscriptions .....	379.94
Social security tax.....	590.19
Telephone and telegraph.....	1,687.83
Travel:	
Advisory committee .....	1,821.77
Commissioners .....	4,512.70
Staff .....	4,367.06
U. S. Geological Survey.....	5,000.00
Total disbursements .....	<u>\$112,725.94</u>
Excess of receipts over disbursements....	<u>\$ 19,100.79</u>

NOTE 1: The total receipts of \$131,826.73 shown above includes an amount of \$21,720.00 received from signatory states during the twelve months ended June 30, 1954, which is applicable to their contribution for the twelve months ended June 30, 1955 as follows:

Illinois .....	\$ 450.00
Indiana .....	5,295.00
Kentucky .....	300.00
New York .....	330.00
Ohio .....	7,020.00
Pennsylvania .....	4,665.00
West Virginia .....	3,660.00
Total .....	<u>\$21,720.00</u>

NOTE 2: The total receipts above of \$131,826.73 does not include an amount of \$300.00 received from the Commonwealth of Kentucky during the fiscal year ended June 30, 1955, which is applicable to their contribution for the twelve months ended June 30, 1956.

### STATEMENT OF UNUSED RESOURCES

June 30, 1955

Available resources for period to June 30, 1954.....	\$ 35,196.54
Add: Annual budget—July 1, 1954 to June 30, 1955.....	130,000.00
Interest earned on bank deposit .....	534.23
Sale and handling of publications .....	1,937.50
	<u>167,668.27</u>
Less: Disbursements July 1, 1954 to June 30, 1955.....	<u>112,725.94</u>
Available resources for period to June 30, 1955.....	54,942.33
Add: Receipt from the Commonwealth of Kentucky which is applicable to their contribution for the twelve months ended June 30, 1956.....	300.00
Total resources June 30, 1955.....	<u>\$ 55,242.33</u>

The above amount of \$55,242.33 is comprised as follows:

Cash on deposit with the Central Trust Company.....	\$ 53,405.67
Petty cash on hand.....	200.00
Cash on deposit with American Airlines, Inc.....	425.00
Accounts receivable:	
State of Illinois.....	645.00
Travel advance—staff .....	100.00
Advances for employees.....	466.66
(Hospitalization expense and employee pension trust contributions are advanced by the commission and repaid by the employees through regular semi-monthly payroll deductions.)	
	<u>\$ 55,242.33</u>

### SCHEDULE OF ACCOUNTS RECEIVABLE—JUNE 30, 1955

	Annual Budget July 1, 1954 to June 30, 1955	Receipts July 1, 1954 to June 30, 1955	Balance June 30 1955
Illinois .....	\$ 6,695.00	\$ 6,050.00	\$ 645.00
Indiana .....	22,945.00	22,945.00	
Kentucky .....	27,560.00	27,560.00	
New York .....	1,430.00	1,430.00	
Ohio .....	30,420.00	30,420.00	
Pennsylvania .....	20,215.00	20,215.00	
Virginia .....	4,875.00	4,875.00	
West Virginia .....	15,860.00	15,860.00	
TOTALS .....	<u>\$130,000.00</u>	<u>\$129,355.00</u>	<u>\$ 645.00</u>

*In our opinion, the accompanying statement of receipts and disbursements, statement of resources, and schedule of accounts receivable present fairly the operations of the Ohio River Valley Water Sanitation Commission on a receipts and disbursements basis for the fiscal year ended June 30, 1955, and its financial condition on June 30, 1955.*

Wm. H. Mers & Co., Certified Public Accountants



# Regulatory Agencies of The Signatory States

Operations of the Ohio River Valley Water Sanitation Commission are designed to promote and coordinate pollution control on a regional basis. Guided by the principle that no sewage or industrial-waste discharge originating within a signatory state shall injuriously affect the uses of interstate waters, the Commission makes determinations regarding control measures.

Securing compliance with these measures then becomes an obligation of each state. The Commission does not deal directly with any municipality or industry regarding compliance. Whenever, however, in the

opinion of the Commission, satisfactory compliance is not being or cannot be obtained through the effort of state agencies, enforcement procedures prescribed in Article IX of the compact may be employed.

Listed on this page are the names and addresses of the regulatory agencies in the signatory states. Questions concerning compliance with water-pollution control requirements should be addressed to the agency in the state in which a municipality or industrial plant is located. The state agency will arrange for such contact or consultation with the Commission as may be necessary or requested.

ILLINOIS	Technical Secretary State Sanitary Water Board Springfield, Illinois
INDIANA	Technical Secretary Indiana Stream Pollution Control Board 1330 West Michigan Street Indianapolis 7, Indiana
KENTUCKY	Executive Director Kentucky Water Pollution Control Commission 620 South Third Street Louisville 1, Kentucky
NEW YORK	Executive Secretary New York State Water Pollution Control Board New York State Dept. of Health Albany 1, New York
OHIO	Engineer in Charge Sewage and Industrial Wastes Unit Division of Sanitary Engineering Ohio Department of Health Columbus 15, Ohio
PENNSYLVANIA	Sanitary Water Board Box No. 90 Harrisburg, Pennsylvania
VIRGINIA	Executive Secretary State Water Control Board 415 West Franklin Street Richmond 20, Virginia
WEST VIRGINIA	Executive Secretary State Water Commission 1709 Washington Street, East Charleston, West Virginia











OHIO RIVER VALLEY WATER SANITATION COMMISSION — SEVENTH ANNUAL REPORT

