COMMONWEALTH OF PENNSYLVANIA

WATER QUALITY STANDARDS SUMMARY

U.S. ENVIRONMENTAL
PROTECTION AGENCY

PENNA. DEPARTMENT OF
ENVIRONMENTAL RESOURCES

DOC. NO. 42-001

WATER QUALITY STANDARDS SUMMARY
FOR
INTERSTATE WATERS
IN THE
COMMONWEALTH OF PENNSYLVANIA

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SUMMARY OF WATER QUALITY STANDARDS FOR INTERSTATE WATERS OF THE COMMONWEALTH OF PENNSYLVANIA

Introduction

In the Water Quality Act of 1965, Congress authorized the establishment of water quality standards for interstate (including coastal) waters. The purpose of these standards is to protect the public health and welfare and enhance the quality of the Nation's interstate waters to serve a variety of beneficial uses, such as public water supply, recreation, protection of aquatic life, industrial, and agricultural uses. This publication summarizes the standards for the general information of the public and Federal, State, and local officials as to the uses and associated requirements for interstate waterways.

The Act, which amended the Federal Water Pollution Control Act, provided for the States to have the first opportunity to establish standards for their interstate waters, which were then subject to review and approval by the Secretary of the Interior. On December 2, 1970, the responsibility for administering the Water Quality Act of 1965 was transferred to the Administrator, Environmental Protection Agency.

All of the States, the District of Columbia, and the territories of Guam, Puerto Rico, and the Virgin Islands, participated in this landmark effort to set standards. In the course of establishing the standards, public hearings were held by the States and other jurisdictions noted above to give the public an opportunity to participate in setting water quality standards.

The standards for interstate waters, which the Commonwealth of Pennsylvania adopted on June 28, 1967, were then submitted to the Department of the Interior. With some exceptions, the standards were partially approved by the Secretary of the Interior on May 21, 1968. Subsequent revisions were then approved by the Secretary of the Interior on September 25, 1968.

The Commonwealth of Pennsylvania was also requested to adopt a policy to control degradation of high quality waters as part of their enforceable standards. On August 11, 1971, Pennsylvania's Environmental Quality Board adopted a policy to protect its high quality interstate waters. This policy was approved by the Administrator, Environmental Protection Agency in October 1971.

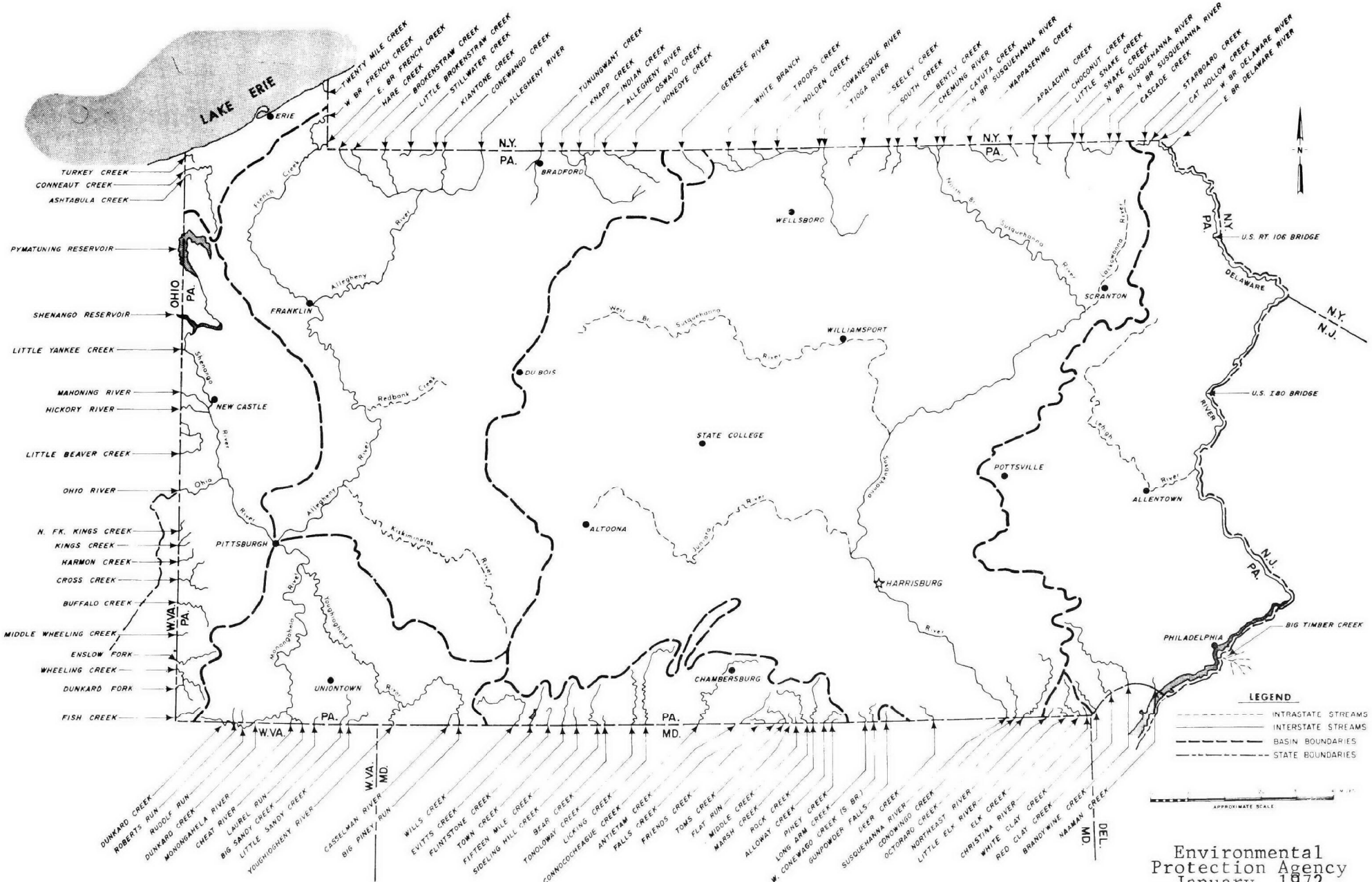
The approved standards are thus both State and Federal Standards, enforceable under the State Water Pollution Control Statutes and the Federal Water Pollution Control Act, as amended, (Section 10), and applicable to all interstate waters.

Figure 1, Page iii, shows the significant interstate waters to which the approved standards apply.

The standards consist of three major components: (1) designation of the uses which interstate waters are to serve, (2) specification of narrative and numerical criteria to protect and enhance water quality, and (3) specifications of a plan of implementation and enforcement, including treatment and control requirements for municipal, industrial, and other wastes discharged to or affecting interstate waters. All three of these components discussed in the following sections are essential to a complete standards program. The standards are now being implemented. However, there will be continuing research on water quality requirements for various beneficial uses and improved collection and evaluation of water quality data. As more information becomes available and experience with implementing the standards is gained, the standards will be refined and improved to reflect this new knowledge.

Should more detailed information be required on any aspect of the standards, it may be obtained from the Bureau of Sanitary Engineering, Pennsylvania Department of Environmental Resources, Post Office Box 2351, Harrisburg, Pennsylvania 17120; or the Federal Environmental Protection Agency, Region III, 6th and Walnut Streets, Curtis Building, Philadelphia, Pennsylvania 19106. The Commonwealth of Pennsylvania is also in the process of establishing water quality standards for its intrastate waters and information on these may be obtained from the Pennsylvania Bureau of Sanitary Engineering.

SIGNIFICANT INTERSTATE WATERS
OF THE
COMMONWEALTH OF PENNSYLVANIA



Environmental Protection Agency
January 1972

WATER QUALITY STANDARDS SUMMARY
FOR
INTERSTATE WATERS
OF THE
COMMONWEALTH OF PENNSYLVANIA

Section 1. General Scope

It is the public policy of the State of Pennsylvania that waters having a better quality than the applicable water quality criteria as of the effective date of the establishment of such criteria shall be maintained at such high quality unless it is affirmatively demonstrated to the State that a change is justified as a result of necessary economic or social development and will not preclude uses presently possible in such waters.

Any industrial, public, or private project or development which would constitute a new source of pollution or an increased source of pollution to high quality waters shall be required to provide the highest and best practicable means of waste treatment to maintain high water quality.

In implementing the provisions of this policy, the Department shall keep the Administrator of the Environmental Protection Agency advised and shall provide him with such information as he will need to discharge his responsibilities under the Federal Water Pollution Control Act (33 U.S.C. 1151 et.seq.).

Section 2. Water Uses

The general aim in designating uses for particular interstate waters is to recognize present uses and practicable future uses; to provide where possible for a variety of uses; and to assure compatibility of standards with Federal, State, and local resource planning. In order to satisfy the intent of standards with Federal, State, and local resource planning. In order to satisfy the intent of the Federal Water Pollution Control Act to enhance water quality, the standards specifically provide that no interstate waters may be used solely or primarily for waste assimilation. All interstate waters must be aesthetically pleasing, and this quality is usually protected by narrative criteria, which as set forth in Section 4, prevents unsightly or obnoxious conditions, such as floating debris, oil slicks, unpleasant odors, and colors.

The water uses which are to be protected in Pennsylvania fall into four major categories--Aquatic Life, Water Supply, Recreation, and Other. These categories are further classified by definition and assigned an alphabetical symbol. The alphabetical designations are keyed to the Table of Water Uses and Stream Quality Criteria in Section 6.

Section 2. Water Uses (continued)

1.0 Aquatic Life

A. Cold Water Fishes - Maintenance and propagation of the family Salmonidae and fish food organisms.

B. Warm Water Fishes - Maintenance and propagation of fish food organisms and all families of fishes except Salmonidae.

C. Migratory Fishes - Passage maintenance and propagation of anadromous and catadromous fishes and other fishes which ascend to flowing waters to complete their life cycle.

D. (Added December 20, 1967) Trout (Stocking Only) - Warm water fishes and trout stocking.

2.0 Water Supply

E. Domestic Water Supply - Use by humans after conventional treatment, for drinking, culinary, and other purposes.

F. Industrial Water Supply - Use by industry for inclusion into products for processing and for cooling.

G. Livestock Water Supply - Use by livestock and poultry for drinking and cleansing.

H. Wildlife Water Supply - Use for waterfowl habitat and by wildlife for drinking and cleansing.

I. Irrigation Water Supply - Used to supplement precipitation for growing crops.

3.0 Recreation

J. Boating - Power boating, sailboating, canoeing, and rowing for recreational purposes.

K. Fishing - Use of the water for the taking of fish by legal methods.

Section 2. Water Uses (continued)

L. Water Contact Sports - Use of the water for swimming and related activities.

M. Natural Area - Use of the water as an esthetic setting to recreational pursuits.

N. (Added December 20, 1967) Conservation Area - Waters used within and suitable for the maintenance of an area now or in the future to be kept in a relatively primitive condition.

4.0 Other

O. Power - Use of the water energy to generate power.

P. Navigation - Use of the water for the commerical transfer and transport of persons, animals, and goods.

Q. Treated Waste Assimilation - Use of the water for the assimilation and transport of treated waste waters.

Section 3. Water Quality Criteria

The protection of water quality and uses requires the establishment of numerical and narrative limits on pollutants which prevent the uses. The assigned water quality criteria reflect the best scientific judgement available as to the water quality requirements for the assigned uses. Numerical criteria are used wherever it is reasonable to do so. However, narrative criteria are also necessary in some cases, particularly with respect to aesthetic considerations.

Some interstate waters have a higher quality than the minimum levels assigned for protection of water uses, and the standards seek to protect this higher quality as much as possible in the face of increasing social and economic development. Scientific knowledge about the exact water quality requirements for uses is limited; and by preventing degradation of high quality waters, the standards seek to assure optimum, not marginal, conditions to protect the uses associated with clean waters.

Sections 6A through 6G show the water quality criteria and uses for specific streams in the Commonwealth of Pennsylvania.

The water quality criteria applicable to the interstate waters of the Commonwealth of Pennsylvania shall include the General Criteria set forth in Section 4 and the specific criteria selected from the standard list of criteria in Section 5. Waters which are designated for water contact use are assigned criteria for coliform organisms. The more critical criterion applies during the recreation season from May to September. The less critical criterion applies during the rest of the year. However, effective disinfection is required at sewage treatment plants at all times of the year and the coliform criteria standard is not intended to infer that disinfection will be suspended during the September to May period.

The criteria assigned to a stream applies to all flows equal to or exceeding the 7-day, 10-year frequency minimum flow conditions.

Section 4. General Criteria

The following General Criteria applies to all interstate waters in the Commonwealth of Pennsylvania:

> The water shall not contain substances attributable to municipal, industrial, or other waste discharges in concentrations or amounts sufficient to be inimical or harmful to water uses to be protected or to human, animal, plant, or aquatic life. Specific substances to be controlled include, but are not limited to, floating debris, oil, scum, and other floating materials; toxic substances; substances that produce color, taste, odors, or settle to form sludge deposits.

Section 5. Specific Criteria

Each of the waters for which specific criteria have been established is listed in Sub-sections 6A through 6G. The alphabetical designator under "column" in the following Standard List of Specific Criteria is keyed to the alphabetized columns in the Water Quality Criteria section of each river basin in Sub-sections 6A through 6G.

Standard List of Specific Criteria

Column	Identification	Key	Limits
a	pH	1	Not less than 6.0; not to exceed 8.5
		2	Not less than 6.5; not to exceed 8.5
		3	Not less than 7.0; not to exceed 9.0

Standard List of Specific Criteria			
Column	Identification	Key	Limits
b	Dissolved Oxygen	1	Min. daily av. 6.0 mg/l; no values less than 5.0 mg/l
		2	Min. daily av. 5.0 mg/l; no values less than 4.0 mg/l
		3	Min. daily av. not less than 5.0 mg/l, except during period 4/1-6/15 and 9/16-12/31, not less than 6.5 mg/l
		4	Min. daily av. not less than 3.5 mg/l, except during period 4/1-6/15 and 9/16-12/31, not less than 6.5 mg/l
		5	For the period 2/15 to 7/31 of any year; no value less than 5.0 mg/l. For the remainder of the year; no value less than 4.0 mg/l
		6	(Added Dec. 20, 1967) No value less than 7.0 mg/l
		7	(Added Dec. 20, 1967) For lakes, ponds, and impoundments only; no value less than 4.0 mg/l in the epilimnion
		8	(Added Dec. 20, 1967) For lakes, ponds, and impoundments only; no value less than 5.0 mg/l at any point
c	Iron	1	Total iron--not to exceed 1.5 mg/l
		2	Dissolved iron--not to exceed 0.3 mg/l
d	Temperature	1	Not to be increased by more than 5° F above natural temperatures or to be increased above 58° F
		2	Not to exceed 5° F rise above ambient temperature or a max. of 87° F, whichever is less; not to be changed by more than 2° F during any one-hour period
		3	Not to exceed 5° F rise above natural temperature or a max. of 86° F, whichever is less; not to be changed by more than 2° F during any one-hour period

Standard List of Specific Criteria

Column	Identification	Key	Limits
d (continued)		4	Not to exceed 93° F; not to be changed by more than 2° F during any one-hour period
e	Dissolved Solids	1	Not to exceed 500 mg/l as a monthly av. value; not to exceed 750 mg/l at any time
		2	Not to exceed 1,500 mg/l at any time
f	Bacteria (Coliforms/ 100 ml)	1	For the period 5/15-9/15 of any year; not to exceed 1,000/100 ml as an arithmetic av. value; not to exceed 1,000/100 ml in more than two consecutive samples, not to exceed 2,400/100 ml in more than one sample For the period 9/16-5/14 of any year, not to exceed 5,000/100 ml as a monthly av. value, nor to exceed this number in more than 20% of the samples collected during any month; nor to exceed 20,000/100 ml in more than 5% of the samples
		2	Not to exceed 5,000/100 ml as a monthly av. value; nor to exceed this number in more than 20% of the samples collected during any month; nor to exceed 20,000/100 ml in more than 5% of the samples
		3	Not to exceed 5,000/100 ml as a monthly geometric mean
g	Turbidity	1	Not to exceed 30 units during the period 5/30-9/15 nor to exceed a monthly mean of 40 units or a max. of 150 units during the remainder of the year
		2	Max. monthly mean 40 units, max. value not to exceed 150 units
h	Threshold Odor No.		Not to exceed 24 at 60° C
i	Alkalinity		Not less than 20 mg/l

Column	Standard List of Specific Criteria Identification	Key	Limits
j	MBAS (Methylene Blue Active Substance)	1 2	Not to exceed 0.5 mg/l Not to exceed 1.0 mg/l
k	Total Manganese		Not to exceed 1.0 mg/l
l	Fluoride		Not to exceed 1.0 mg/l
m	Cyanide		Not to exceed 0.025 mg/l
n	Sulfate		Not to exceed 250 mg/l or natural levels, whichever is greater
o	Chlorides	1 2	Not to exceed 150 mg/l Not to exceed 250 mg/l
p	Phosphorus (total soluble) (amended June 19, 1968)	1 2 3	Not to exceed 0.10 mg/l or natural levels, whichever is greater Not to exceed 0.30 mg/l or natural levels, whichever is greater Not to exceed 0.40 mg/l or natural levels, whichever is greater
q	Phenol		Not to exceed .005 mg/l
r	Color (added Dec. 20, 1967)		Not to exceed 50 units
s	Copper (amended June 19, 1968)	1 2	Not to exceed 0.02 mg/l Not to exceed 0.10 mg/l
t	Zinc (amended June 19, 1968)		Not to exceed 0.05 mg/l

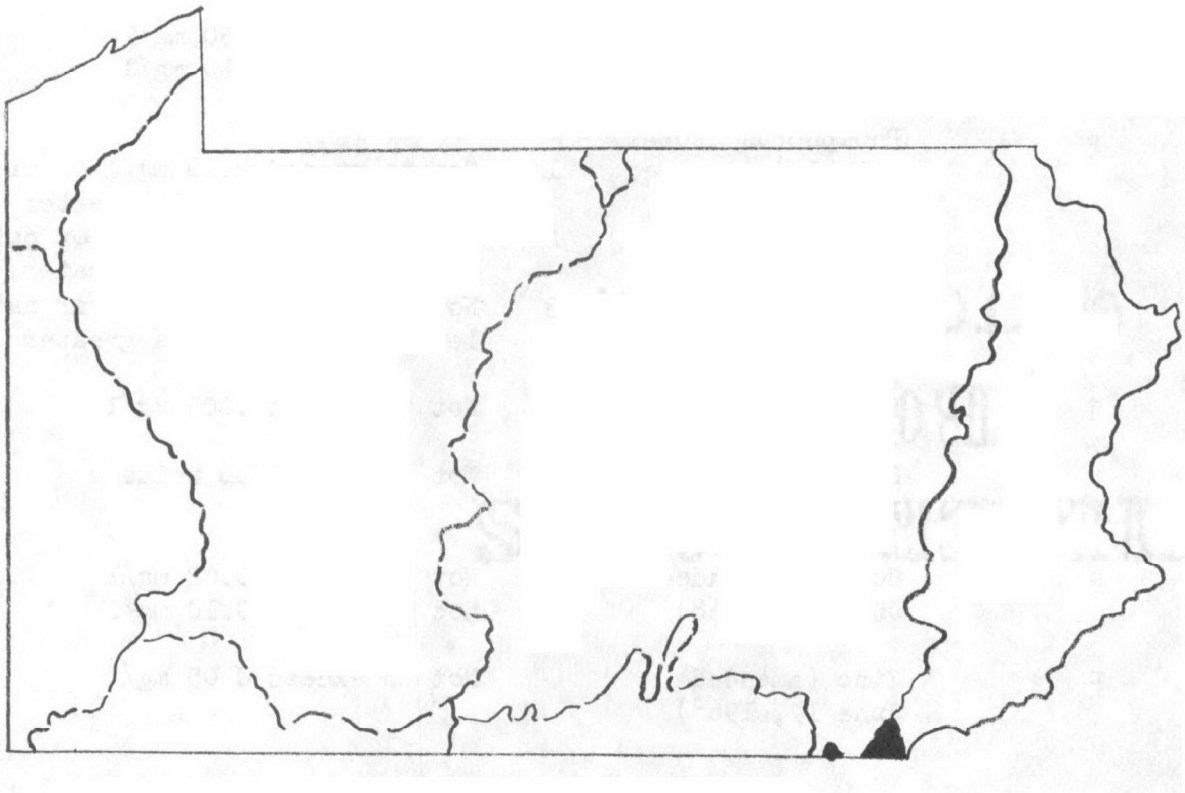
Section 6. Designated Water Uses and Water Quality Criteria

Through the public hearing process, the Commonwealth of Pennsylvania has adopted the designated water uses and water quality criteria assigned to the individual streams listed in this section.

Subsections 6A through 6G include the water uses keyed to Section 2; specific criteria keyed to Section 5; and a zone number. Zone number A-5 refers to Zone 5 shown on Exhibit A in the Appendix.

Section 6A

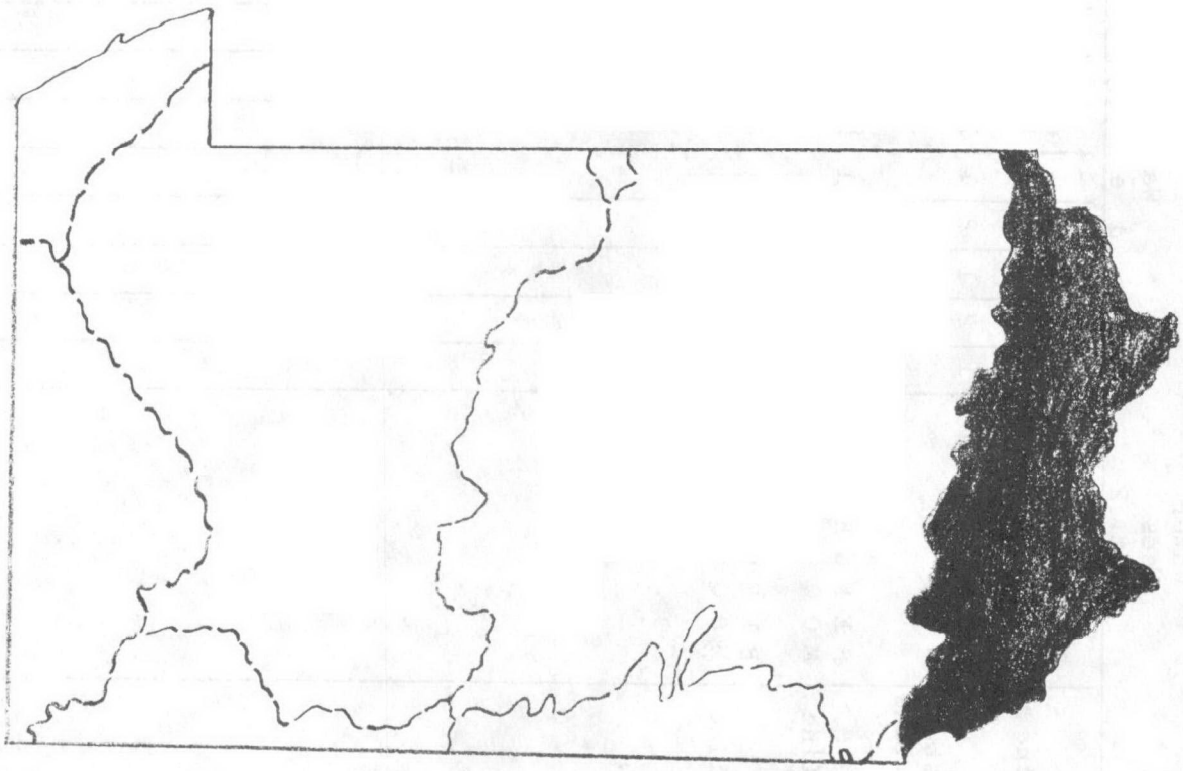
CHESAPEAKE BAY BASIN



Zone No.	Basin Description & Zone Limits	Water Uses Sect. 2	Water Quality Criteria (Section 5) a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
C-10	Little Elk Creek Source to Pa.-Md. State Line	B E F G H I K L M O Q	1	2	1	2	1	1														
C-11	Big Elk Creek Confluence of East and West Branches to Pa.-Md. State Line	B E F G H I K L M O Q	1	2	1	2	1	1														
C-9	Northeast Creek Source to Pa.- Md. State Line	B E F G H I K L M O Q	1	2	1	2	1	1														
C-3	Gunpowder Falls Source to Pa.-Md. State Line	B E F G H I K L M O Q	1	2	1	2	1	1														

Section 6B

DELAWARE RIVER BASIN



Zone No.	Basin Description & Zone Limits	Water Uses Sect. 2	Water Quality Criteria (Section 5) a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
A-5	Delaware Estuary Phila.-Delaware Co. Line to Pa.-Del. State Line	B(1)* C(2)* F H J	2	4		3		3	2		X	2										
A-4	Delaware Estuary Big Timber Creek to Phila.-Delaware Co. Line	B(1)* C(2)* E F H J K P Q R	2	4	1	3	1	2	2	X	X	1										
A-3	Delaware Estuary Pennypack Creek to Big Timber Creek	B(1)* C(2)* E F H J K O P Q	2	4	1	3	1	2	2	X	X	1										
A-2	Delaware Estuary Burlington Bristol Bridge to Pennypack Creek	B C(3)* E F H J K O P Q	2	3	1	3	1	2	2	X	X	1										
A-1	Delaware Estuary Head of tide to Burlington Bristol Bridge	B C(3)* E F H J K L M O P Q	2	3	1	3	1	1	1	X	X	1										

* (1) Maintenance only
(2) Passage only
(3) Passage and propagation only

II. Delaware River Basin (Except Estuary) (Cont'd)

Zone No.	Basin Description & Zone Limits	Water Uses Sect. 2	Water Quality Criteria (Section 5) a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
B-5	Delaware River Lehigh River to head of tide	B C E F G H I J K L M O Q	1	2	1	2	1	1		X												
B-4	Delaware River Tocks Island to Lehigh River	B C E F G H I J K L M O Q	1	2	1	2	1	1														
B-3	Delaware River U.S. Rt. 106 Bridge to Tocks Island	B C E F G H I J K L M O Q	1	2	1	2	1	1														
B-2	Delaware River Confluence of East and West Branches to the U.S. Rt. 106 Bridge	B C E F G H I J K L M O Q	1	1	1	1	1	1														
B-12	White Clay Creek Source to Pa.-Del. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														
B-13	Red Clay Creek Confluence of East and West Branches to Pa.-Del. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														
C-14	Brandywine Creek Confluence of East and West Branches to Pa.-Del. State Line	B C E F G H I K L M O Q	1	2	1	2	1	1		X				X								
C-15	Naaman Creek Source to Pa.-Del. State Line	B E F G H I K L M O Q	1	2	1	2	1	1														

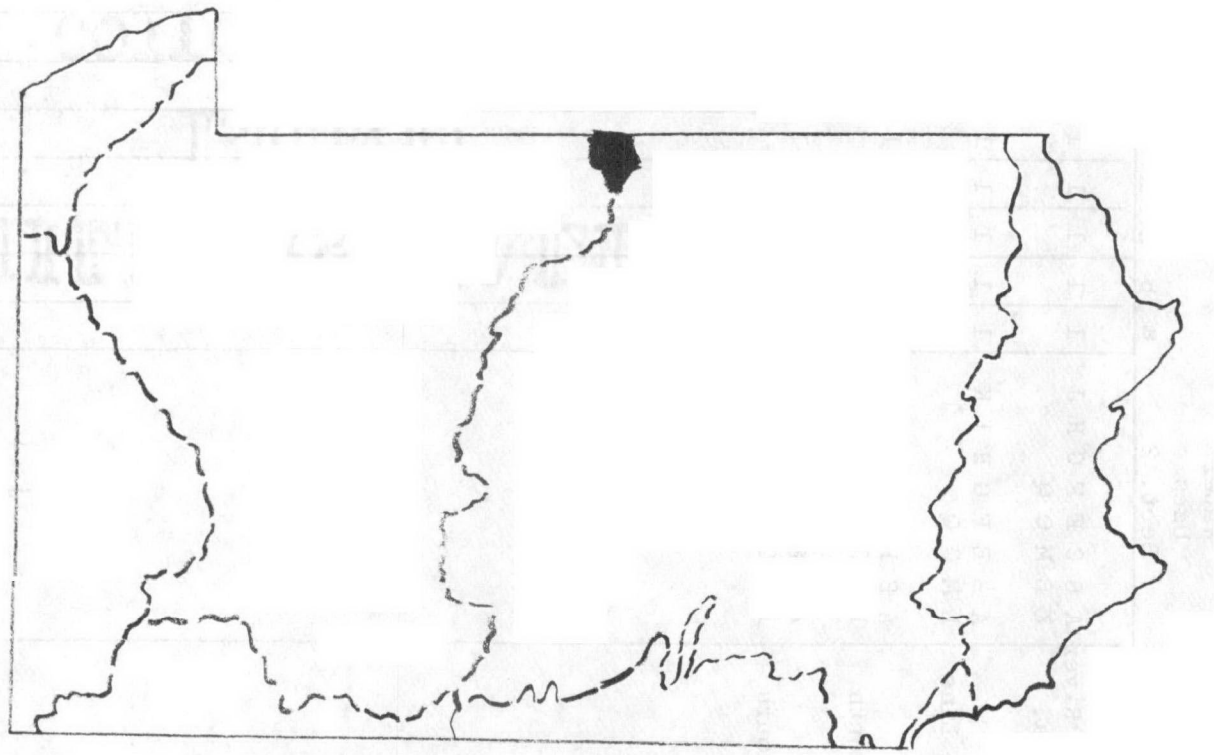
II. Delaware River Basin (Except Estuary)

(Cont'd)

Zone No.	Basin Description & Zone Limits	Water Uses Sect. 2	Water Quality Criteria (Section 5) a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
B-1	West Branch of the Delaware River All waters bordering on Pa.	A B C E F G H J K L M O Q	1	1	1	1	1	1														
B-6	Sand Pond Creek Source to Pa.-N.Y. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														
B-7	Cat Hollow Creek N.Y.-Pa. State Line to mouth	A B E F G H I K L M O Q	1	1	1	1	1	1														
B-8	Starboard Creek N.Y._Pa. State Line to mouth	A B E F G H I K L M O Q	1	1	1	1	1	1														

Section 6C

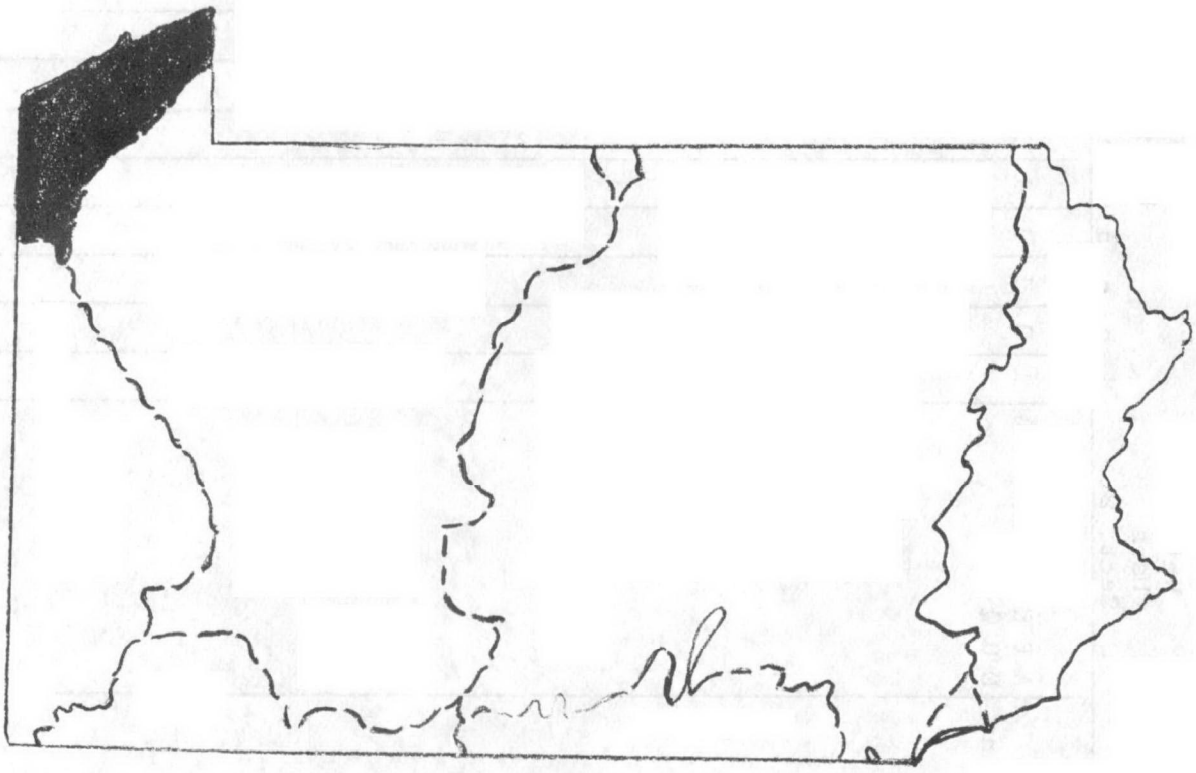
GENESEE RIVER BASIN



Zone No.	Basin Description & Zone Limits	Water Uses Sect. 2	Water Quality Criteria (Section 5) a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
B-27	Genesee River Source to Pa.-N.Y. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														

Section 6D

LAKE ERIE BASIN

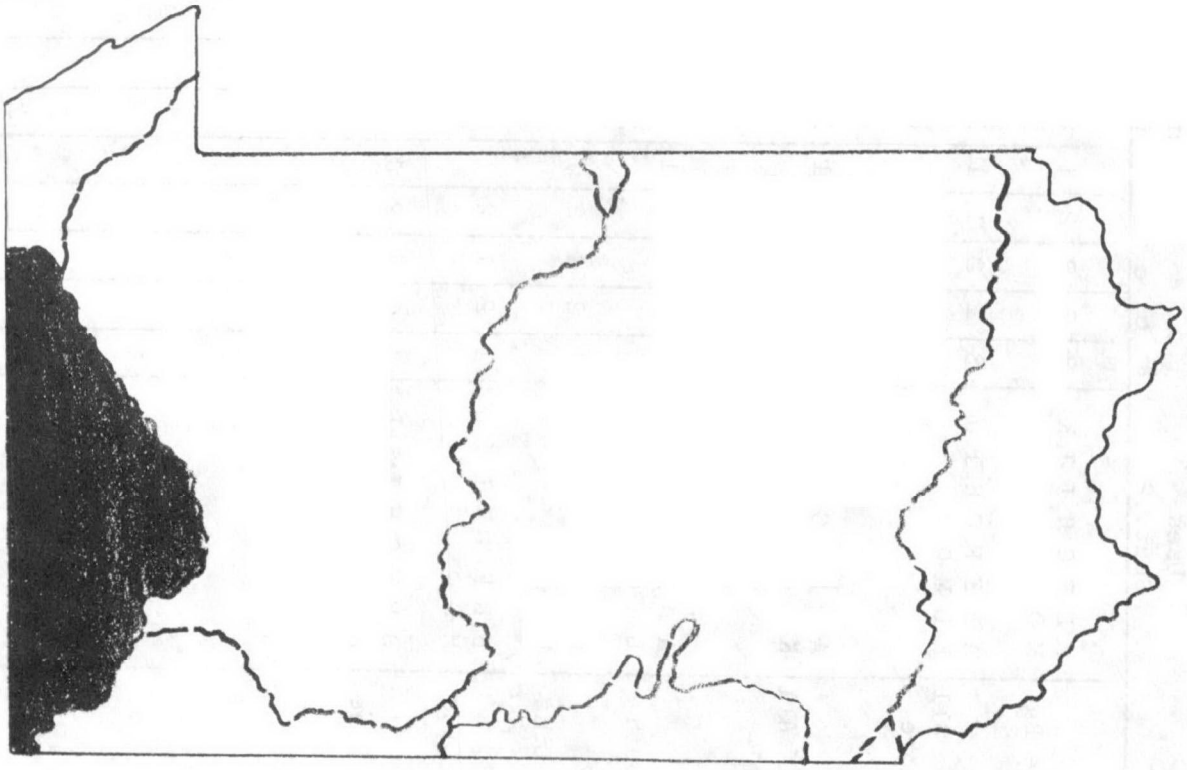


IV. Lake Erie Basin

Zone No.	Basin Description & Zone Limits	Water Uses Sect. 2	Water Quality Criteria (Section 5) a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
E-16a	Lake Erie Erie Harbor & Presque Isle Bay	B E F G H I J K M Q	3	2	2	2	1	2		X		1										
E-16b	Lake Erie N.Y. to Ohio State Lines. All waters to 200 yds. off shore except E-16a	A B E F G H I J K L M Q	3	1	2	1	1	1				1										
E-16c	Lake Erie N.Y. to Ohio State Lines. All waters beyond 200 yds. from shore except E-16a	A B E F G H I J K L M Q	3	1	2	1	1	1				1										
E-15	Twenty Mile Creek N.Y.-Pa. State Line to mouth	A B E F G H I K L M O Q	1	1	1	1	1	1														
E-17	Turkey Creek Source to Ohio-Pa. State Line	B E F G H I K L M O Q	1	2	1	2	1	1														
E-18	Conneaut Creek Source to Ohio-Pa. State Line	B E F G H I K L M O Q	1	2	1	2	1	1	X			1										
E-19	Ashtabula Creek Source to Ohio-Pa. State Line	B E F G H I K L M O Q	1	2	1	2	1	1														

Section 6E

OHIO RIVER BASIN



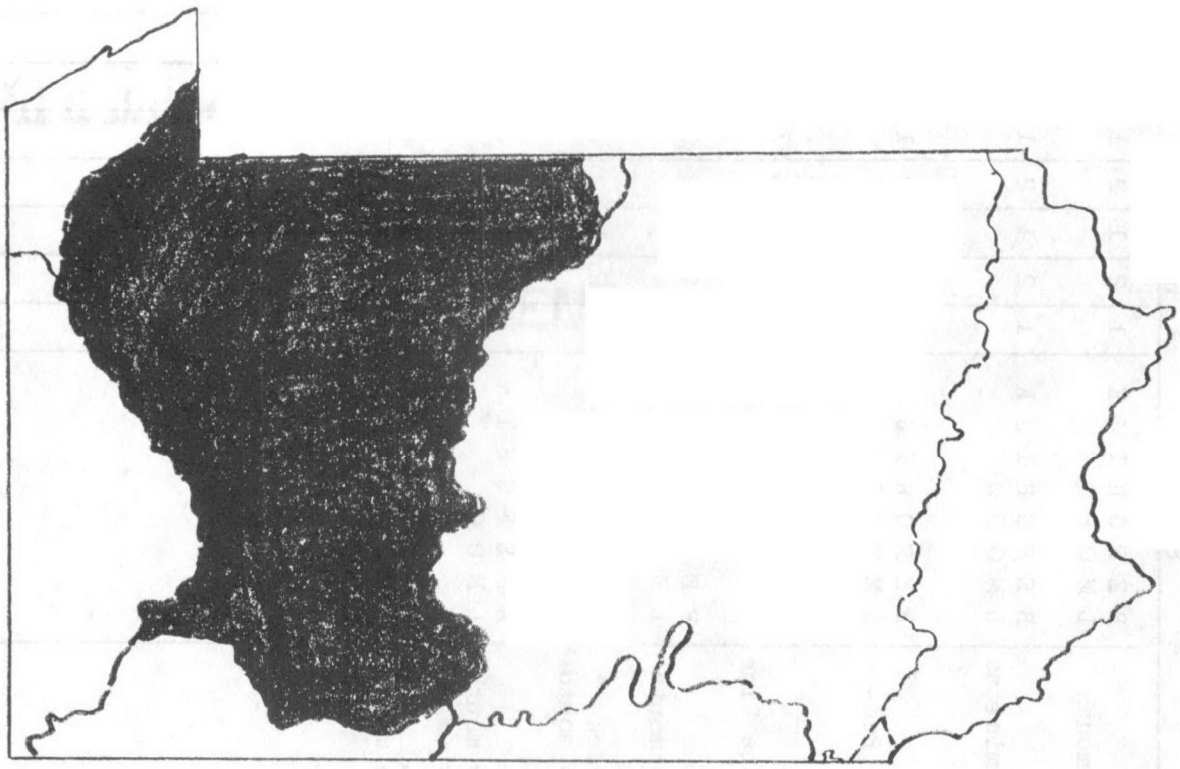
V. Ohio River Basin

Zone No.	Basin Description & Zone Limits	Water Uses Sect. 2	Water Quality Criteria (Section 5) a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
G-3	Ohio River Pittsburgh to Pa.-W.Va.-Ohio State Line	B E F G H I J K L M O P Q	1	2	1	2	1	1		X			X	X					X			
G-12	Pennsylvania Fork of Fish Creek Source to Pa.-W.Va. State Line	B E F G H I K L M O Q	1	2	1	2	1	1														
G-11	Dunkard Fork of Wheeling Creek Source to Pa.-W. Va. State Line	B E F G H I K L M O Q	1	2	1	2	1	1														
G-10	Enslow Fork of Wheeling Creek Source to Pa.-W. Va. State Line	B E F G H I K L M O Q	1	2	1	2	1	1														
G-9	Buffalo Creek Source to Pa.-W. Va. State Line	B E F G H I K L M O Q	1	2	1	2	1	1														
G-8	Cross Creek Source to Pa.-W. Va. State Line	B E F G H I J K L M O Q	1	2	1	2	1	1								X						
G-7	Harmon Creek Source to Pa.-W. Va. State Line	B E F G H I K L M O Q	1	2	1	2	1	1								X						
G-6	Kings Creek Source to Pa.-W. Va. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														
G-5	North Fork of Kings Creek Source to Pa.-W. Va. State Line	INTERMITTENT STREAM - NO USES	G	E	N	E	R	A	L			o										

Zone No.	Basin Description & Zone Limits	Water Uses Sect. 2	Water Quality Criteria (Section 5) a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
G-4	Little Beaver Creek Ohio-Pa. State Line to mouth	B E F G H I J K L M O Q	1	2	1	2	1	1														
I-8	North Fork of Little Beaver Crk. Source to Pa.-Ohio State Line	A B E F G H I J K L M O Q	1	1	1	1	1	1														
I-9	Beaver River Source to mouth	B E F G H I J K L M O P Q	1	2	1	2	1	1		X												
I-5	Shenango River Shenango Reservoir to mouth	B E F G H I J K L M O P Q	1	2	1	2	1	1							X							
I-3	Shenango River Shenango Reservoir	B E F G H I J K L M O P Q	1	2	1	2	1	1														
I-2	Shenango River Pymatuning Reservoir to Shenango Reservoir	B E F G H I J K L M O P Q	1	2	1	2	1	1														
I-4	Little Yankee Creek Ohio-Pa. State Line to mouth	B E F G H I K L M O P Q	1	2	1	2	1	1														
I-1	Pymatuning Reservoir All	B E F G H I J K L M Q	1	2	1	2	1	1														
I-6	Mahoning River Ohio-Pa. State Line to mouth	B E F G I J K L M O Q	1	2	1	4	1	1		X				X	X							
I-7	Hickory River Ohio-Pa. State Line to mouth	A B E F G H I K L M O Q	1	1	1	1	1	1														

Section 6F

ALLEGHENY RIVER BASIN



VI. Allegheny River Basin

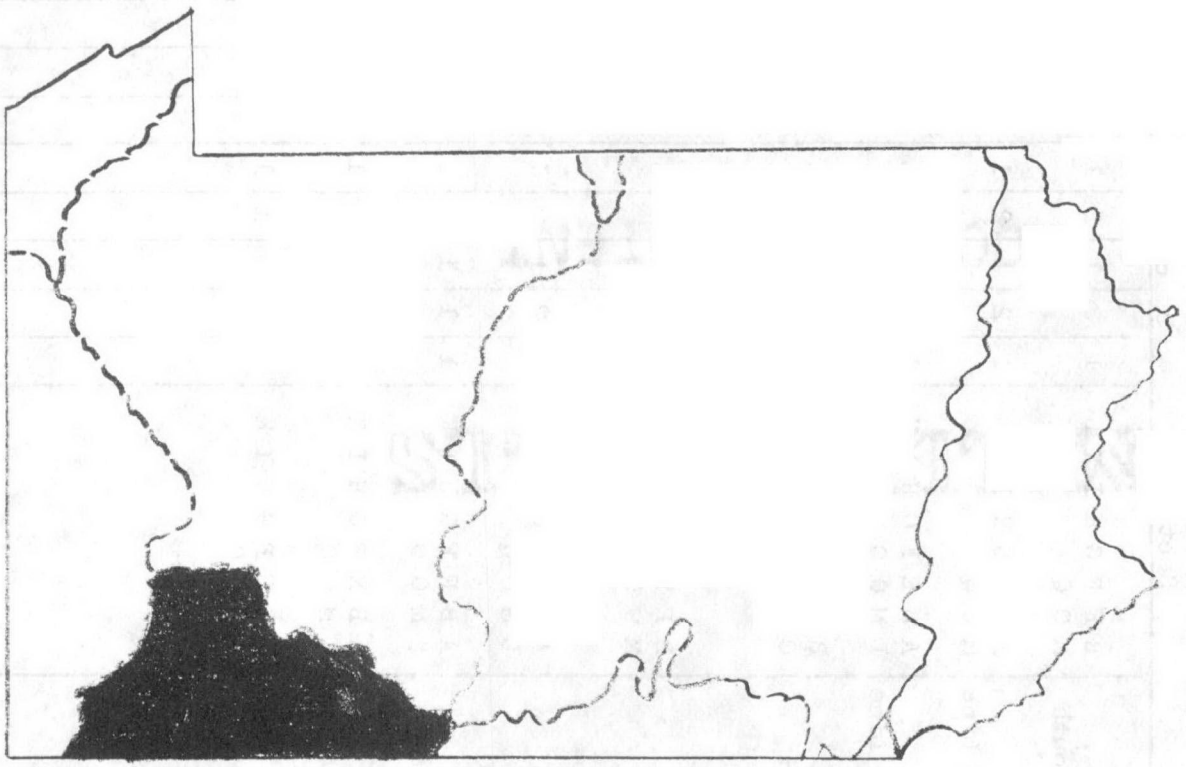
Zone No.	Basin Description & Zone Limits	Water Uses Sect. 2	Water Quality Criteria (Section 5) a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
G-2	Allegheny River Kiskiminetas River to mouth	B E F G H I J K L M O P Q	1	2	1	2	1	1		X			X									
G-1	Allegheny River Redbank Creek to Kiskiminetas River	B E F G H I J K L M O P Q	1	2	1	2	1	1														
G-7	Allegheny River N.Y.-Pa. State Line to Redbank Creek	B E F G H I J K L M O P Q	1	2	1	2	1	1		X	1	1					1					
H-3	Allegheny River Source to Pa.-N.Y. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1		X		1					1					
F-13	French Creek N.Y.-Pa. State Line to mouth	B E F G H I J K L M O Q	1	2	1	2	1	1		X		1										
F-14	West Branch of French Creek N.Y.-Pa. State Line to mouth	B E F G H I K L M O Q	1	2	1	2	1	1														
F-12	Brokenstraw Creek N.Y.-Pa. State Line to mouth	A B E F G H I K L M O Q	1	1	1	1	1	1									1					
F-11	Little Brokenstraw Creek N.Y.-Pa. State Line to mouth	A B E F G H I K L M O Q	1	1	1	1	1	1														

VI. Allegheny River Basin (Cont'd)

Zone No.	Basin Description & Zone Limits	Water Uses Sect. 2	Water Quality Criteria (Section 5) a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
F-8	Conewingo Creek N.Y.-Pa. State Line to mouth	B E F G H I K L M O Q	1	2	1	2	1	1														
F-9	Kiantone Creek Source to Pa.-N.Y. State Line	B E F G H I K L M O Q	1	2	1	2	1	1														
F-10	Stillwater Creek Source to Pa.-N.Y. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														
H-6	Tunungwant Creek Confluence of East & West Branches to the Pa.-N.Y. State Line	B E F G H I K M O Q	1	2	1	2	1	1									2					
H-2b	Oswayo Creek Honeoye Creek to Pa.-N.Y. State Line	B E F G H I K L M O Q	1	2	1	2	1	1									1					
H-2a	Oswayo Creek Source to Honeoye Creek	A B E F G H I K L M O Q	1	2	1	2	1	1									1					
H-1	Honeoye Creek N.Y.-Pa. State Line to mouth	A B E F G H I K K M O Q	1	1	1	1	1	1									2					
H-4	Indian Creek N.Y.-Pa. State Line to mouth	A B E F G H I K L M O Q	1	1	1	1	1	1									2					
H-5	Knapp Creek N.Y.-Pa. State Line to mouth	A B E F G H I K L M O Q	1	1	1	1	1	1									2					

Section 6G

MONONGAHELA RIVER BASIN



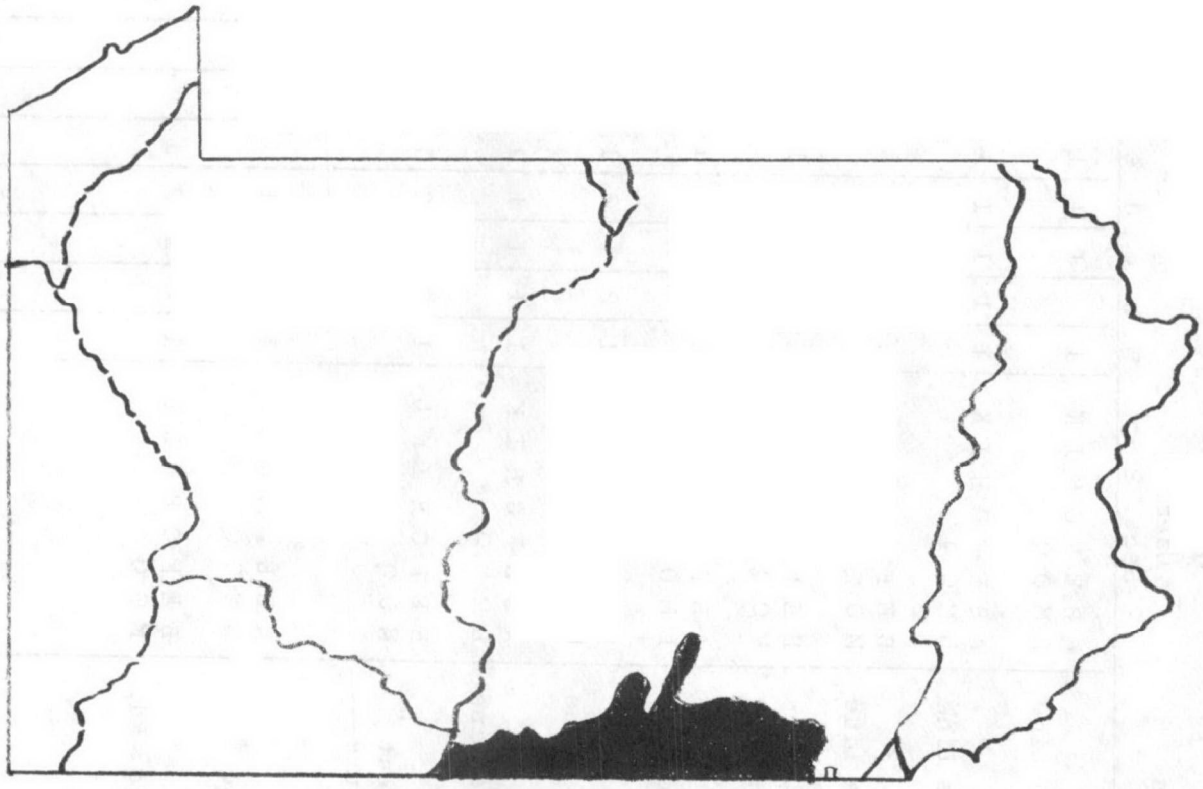
VII. Monogahela River Basin

Zone No.	Basin Description & Zone Limits	Water Uses Sect. 2	Water Quality Criteria (Section 5) a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
G-18	Monongahela River W. Va.-Pa. State Line to mouth	B E F G H I J K L M O Q	1	2	1	2	1	1		X			X						X				
G-23c	Youghiogheny River Indian Creek to mouth	B E F G H I K L M O Q	1	2	1	2	1	1														
G-23b	Youghiogheny River Youghiogheny Dam to Indian Creek	A B E F G H I J K L M O Q	1	1	1	1	1	1														
G-23a	Youghiogheny River Md.-Pa. State Line to Youghiogheny Dam	B E F G H I J K L M O Q	1	2	1	1	1	1														
G-24	Casselman River Md.-Pa. State Line to mouth	B E F G H I K L M O Q	1	2	1	2	1	1														
G-25	Big Piney Run All Pa. waters from source to Pa.-Md. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														
G-16	Dunkard Creek All Pa. waters from W. Va.-Pa. State Line to mouth	B E F G H I K L M O Q	1	2	1	2	1	1														
G-15	Rudolf Run Source to Pa.-W. Va. State Line	INTERMITTENT STREAM - NO USES	G	E	N	E	R	A	L		C	R	I	T	E	R	I	A				
G-14	Roberts Run Source to Pa.-W. Va. State Line	B E F G H I K L M O Q	1	2	1	2	1	1														

Zone No.	Basin Description & Zone Limits	Water Uses Sect. 2	Water Quality Criteria (Section 5) a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
G-13	Pa. Fork of Dunkard Creek All Pa. waters from source to mouth	B E F G H I K L M O Q	1	2	1	2	1	1														
G-19	Cheat River W. Va.-Pa. State Line to mouth	B E F G H I J K L M O Q	1	2	1	2	1	1														
G-21	Big Sandy Creek Source to Pa.-W. Va. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														
G-22	Little Sandy Creek Source to Pa.-W.Va. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														
G-20	Laurel Run Source to Pa.-W.Va. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														
G-17	Crooked Run All Pa. waters from source to mouth	INTERMITTENT STREAM - NO USES	G	E	N	E	R	A	L		C	R	I	T	E	R	I	A				

Section 6H

POTOMAC RIVER BASIN



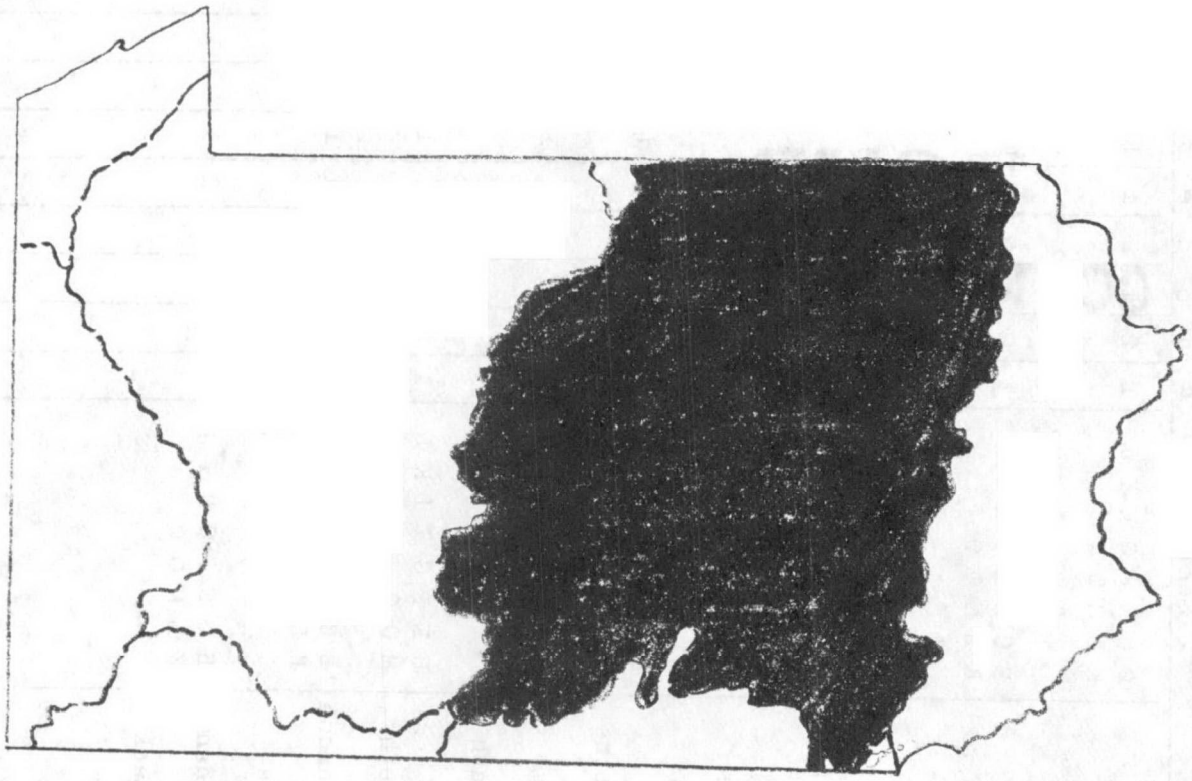
Zone No.	Basin Description & Zone Limits	Water Uses Sect. 2	Water Quality Criteria (Section 5) a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
D-17	Toms Creek Source to Pa.-Md. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														
D-19	Middle Creek Source to Pa.-Md. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														
D-18	Flat Run Source to Pa.-Md. State Line	B E F G H I K L M O Q	1	2	1	2	1	1														
D-23	Piney Creek Source to Pa.-Md. State Line	B E F G H I K L M O Q	1	2	1	2	1	1														
D-22	Alloway Creek Source to Pa.-Md. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														
D-21	Rock Creek Source to Pa.-Md. State Line	B E F G H I K L M O Q	1	2	1	2	1	1														
D-20	Marsh Creek Source to Pa.-Md. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														
D-15	Little Antietam Creek Confluence of East & West Branches to Pa.-Md. State Line	B E F G H I K L M O Q	1	2	1	2	1	1														
D-14	Marsh Run Source to Pa.-Md. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														
D-13b	Conococheague Creek L.R. 28017 Bridge to Pa.-Md. State Line	B E F G H I K L M O Q	1	2	1	2	1	1														

Zone No.	Basin Description & Zone Limits	Water Uses Sect. 2	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
D-13a	Conococheague Creek Source to L.R. 28017 Bridge	A B E F G H I K L M O Q	1	1	1	1	1	1														
D-12	Licking Creek Source to Pa.-Md. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														
D-11	Great Tonoloway Creek Source to Pa.-Md. State Line	B E F G H I K L M O Q	1	2	1	2	1	1														
D-9	Sideling Hill Creek Source to Pa.-Md. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1										2				
D-10	Bear Creek Source to Pa.-Md. State Line	INTERMITTENT STREAM - NO USES	G	E	N	E	R	A	L		C	R	I	T	E	R	I	A				
D-8	Fifteen Mile Creek Source to Pa.-Md. State Line	INTERMITTENT STREAM - NO USES	G	E	N	E	R	A	L		C	R	I	T	E	R	I	A				
D-7	Bear Camp Branch Source to Pa.-Md. State Line	INTERMITTENT STREAM - NO USES	G	E	N	E	R	A	L		C	R	I	T	E	R	I	A				
D-6	Town Creek Source to Pa.-Md. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1										2				
D-5	Flintstone Creek Source to Pa.-Md. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														
D-3	Evitts Creek Source to Pa.-Md. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														
D-4	Rock Gulley Run Source to Pa.-Md. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														

Zone No.	Basin Description & Zone Limits	Water Uses Sect. 2	Water Quality Criteria (Section 5) a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
D-2	Wills Creek Source to Pa.-Md. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														
D-1	North Branch of Jennings Run Source to Pa.-Md. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														

Section 6I

SUSQUEHANNA RIVER BASIN



IX. Susquehanna River Basin

Zone No.	Basin Description & Zone Limits	Water Uses Sect. 2	Water Quality Criteria (Section 5) a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
C-6	Susquehanna River Juniata River to Pa.-Md. State Line	B C E F G H I J K L M O Q	1	2	1	2	1	1					X									
C-5	Susquehanna River Confluence of West Branch to Juniata River	B C E F G H I J K L M O Q	1	2	1	2	1	1					X									
C-4	Deer Creek Source to Pa.-Md. State Line	A B C E F G H I K L M O Q	1	1	1	1	1	1														
C-8	Octoraro Creek Confluence of East & West Branches to Pa.-Md. State Line	A B C E F G H I K L M O Q	1	1	1	1	1	1														
C-7	Conowingo Creek Source to Pa.-Md. State Line	A B C E F G H I K L M O Q	1	1	1	1	1	1														
C-2	South Branch of W. Conowingo Creek Md.-Pa. State Line to mouth	B E F G H I K L M O Q	1	2	1	2	1	1														
C-1	Long Arm Creek Md.-Pa. State Line to mouth	B E F G H I K L M O Q	1	2	1	2	1	1														
B-16	North Branch of the Susquehanna River Lackawanna River to mouth	B C E F G H I J K L M O Q	1	2	1	2	1	1					X									
B-15	North Branch of the Susquehanna River N.Y.-Pa. State Line to Lackawanna River	B C E F G H I J K L M O Q	1	2	1	2	1	1		X			X									

IX. Susquehanna River Basin (cont'd)

Zone No.	Basin Description & Zone Limits	Water Uses Sect. 2	Water Quality Criteria (Section 5) a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
B-10	North Branch of the Susquehanna River N.Y.-Pa. State Line to Pa.-N.Y. State Line (Great Bend Area)	B C E F G H I J K L M O Q	1	2	1	2	1	1														
B-18	Chemung River Entire Length in Pa.	B C E F G H I J K L M O Q	1	2	1	2	1	1														
B-19	Bentley Creek Source to Pa.-N.Y. State Line	INTERMITTENT STREAM - NO USES	G	E	N	E	R	A	L		C	R	I	T	E	R	I	A				
B-21	Seely Creek Source to Pa.-N.Y. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														
B-20	South Creek Source to Pa.-N.Y. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														
B-22b	Tioga River Crooked Creek to Pa.-N.Y. State Line	B E F G H I K L M O Q	1	2	1	2	1	1														
B-22a	Tioga River Source to Crooked Creek	A B E F G H I K L M O Q	1	1	1	1	1	1														
B-23b	Cowanesque River Westfield to Pa.-N.Y. State Line	B E F G H I K L M O Q	1	2	1	2	1	1														
B-23a	Cowanesque River Source to Westfield	A B E F G H I K L M O Q	1	1	1	1	1	1														
B-24	Holden Creek N.Y.-Pa. State Line to mouth	INTERMITTENT STREAM - NO USES	G	E	N	E	R	A	L		C	R	I	T	E	R	I	A				

Zone No.	Basin Description & Zone Limits	Water Uses Sect. 2	Water Quality Criteria (Section 5) a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
B-25	Troups Creek N.Y.-Pa. State Line to mouth	A B E F G H I K L M O Q	1	1	1	1	1	1														
B-26	White Branch N.Y.-Pa. State Line	INTERMITTENT STREAM - NO USES	G	E	N	E	R	A	L		C	R	I	T	E	R	I	A				
B-17	Cayuta Creek N.Y.-Pa. State Line to mouth	B C E F G H I K L M O Q	1	2	1	2	1	1														
B-14	Wappasening Creek Source to Pa.-N.Y. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														
B-13	Appolacon (or Apalachin Creek) Source to Pa.-N.Y. State Line	B E F G I K L M O Q	1	2	1	2	1	1														
B-12	Choconut Creek Source to Pa.-N.Y. State Line	B E F G H I K L M O Q	1	2	1	2	1	1														
B-11	Snake Creek Source to Pa.-N.Y. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														
B-9	Cascade Creek N.Y.-Pa. State Line	A B E F G H I K L M O Q	1	1	1	1	1	1														

IMPLEMENTATION PLAN

IMPLEMENTATION PLAN

The "action" plan of the standards is the plan of implementation and enforcement. This plan sets forth the requirements for treatment and/or control of all conventional municipal and industrial waste discharges in the Commonwealth which affect interstate waters, specifies the time within which this is to be accomplished, and contains programs for dealing with other water pollution control problems. In general, all biodegradable wastes will be given a minimum of secondary treatment and an equivalent of secondary treatment for nonbiodegradable wastes except that where wastes are discharged to a stream saturated with coal mine drainage to the extent that all alkalinity is exhausted and the pH of the stream is 4.0 or less at practically all times, a minimum of primary treatment shall be provided. Further, a minimum of secondary treatment shall be required on streams so defined where (1) the quality of the water in the receiving stream is expected to improve significantly due to scheduled mine drainage reclamation, or (2) the primary treated effluent would cause pollution in downstream waters. It is the intention of the Sanitary Water Board to take such action as will result in compliance with standards by July 1, 1972. Information on the requirements for any particular discharger may be obtained from the Bureau of Sanitary Engineering, Pennsylvania Department of Environmental Resources, P. O. Box 2351, Harrisburg, Pennsylvania, 17120.

Combined Sewer Overflows

Pennsylvania has not permitted the construction of any new combined sewer systems for more than 20 years. In some areas, pollution has occurred from discharges from combined sewer systems. This pollution has occurred primarily in areas where the discharge has been to waters that are not free flowing (Delaware Estuary, Lake Erie). Some of the municipalities in these areas have made estimates of the costs of separating combined sewers to prevent overflows, and the cost estimates have been quite high. Some sewers have been separated in redevelopment areas.

The problem of abating pollution from combined sewer systems has been recognized by the Federal government as evidenced by the grant program established under the provisions of the Federal Water Pollution Control Act. This program provides research funds to develop methods of eliminating pollution from combined sewer systems. Our agency is awaiting the results of this research so that feasible methods of controlling pollution that are developed can be utilized by Pennsylvania's municipalities.

On a State-wide basis, we have very little data on the effects of overflows from combined sewer systems on water quality. We plan to initiate a program to acquire this data. This first step in carrying out this program of abating pollution from combined sewer overflows must be to obtain data on the amount and quality of wastes and the effects on water quality. In order to initiate this program, the Sanitary Water Board will, by October 1967, issue orders to each municipality with a combined sewer system serving a population greater than 30,000 to prepare a report on the location and quantity of its combined sewer discharges and the effects of these discharges on receiving water quality. Each municipality will be given one year to submit a report. Where pollution occurs from such discharges, the Board will order the municipality to prepare a feasibility study for a pollution abatement program. These studies should be completed by July 1970. Final plans for abating pollution from combined sewer overflows would be due in 1972, and construction of abatement facilities should be completed in the period 1975 to 1977 depending upon the size and complexity of the project.

Agricultural Waste Waters

Agricultural waste waters that cause pollution of Pennsylvania's streams are handled either under the provisions of the industrial wastes section of the Clean Streams Act, the petty pollution section of the Clean Streams Act or as described under Item D. - Land Erosion and Land Wash. Irrigation practices in Pennsylvania do not lead to the discharge of highly mineralized irrigation return waters which is a problem in mid-western states. The rainfall in this State is normally adequate and irrigation is only practiced sporadically.

Wastes from Vessels and Marinas

Waste from shore facilities at marinas are subject to the sewage and industrial wastes provisions of the Clean Streams Act and are handled the same as other sewage or industrial waste cases by the Sanitary Water Board.

Pennsylvania has not adopted a State-wide pollution control program related to pollution from vessels. We have been cooperating and working with groups that are attempting to establish an effective nationwide program for control of pollution from vessels. It is our opinion that an effective Water Pollution Control Administration develops a model state law for this purpose and develops a uniform procedure for approval of treatment devices.

Land Erosion and Land Wash

Pennsylvania has established a Water Resources Coordinating Committee composed of representatives of the various State agencies with a program or responsibility in the area of water resources.

The Department of Environmental Resources and the Sanitary Water Board are working through this committee to cooperate with and encourage the land erosion and land wash control program development of the State and Federal soil conservation services.

Mine Drainage

The major pollution problem in Pennsylvania is caused by drainage from coal mines. There are two main categories of sources of mine drainage. One category is drainage from active mining operations and the other category is drainage from abandoned mining operations.

Pennsylvania's Clean Streams Law was amended in 1965 to give the Sanitary Water Board adequate control of the discharges from active mining operations. The Sanitary Water Board now requires that all discharges from operating coal mines be alkaline and that the iron concentration in the discharge be less than 7.0 mg/l. The Sanitary Water Board requires that those planning or operating mines provide measures to prevent pollutional discharges after mining is completed.

Due to the nature of the problem, the abatement of pollution from abandoned coal mine operations will have to be done with public funds, and the amount of public funds required for this job is substantial. Included with this part of the implementation plan is a copy of "Pennsylvania's 10 Year Mine Drainage Pollution Abatement Program for Abandoned Mines". This is the plan which Pennsylvania proposed to use for the abatement of pollution from abandoned coal mines. Although some state monies will be available for this program ($150 million of the recently approved $500 million bond issue), there is a great need for Federal funds to supplement the State funds for use in this area.

In addition to the control of drainage from mines, Pennsylvania has laws requiring complete backfilling and planting of strip mine areas. The purpose of this requirement is not only to beautify the landscape, but to prevent future pollutional drainage from the mining area after mining is completed.

Oil and Gas Well Pollution

It is estimated that there are between 100,000 and 150,000 abandoned oil and gas wells in Pennsylvania. The location of many of these may be impossible to determine. At this time it is not known whether or not a large percentage of these wells are causing pollution but on the basis of existing knowledge of surface water quality throughout the State, the total problem of pollution from abandoned oil and gas wells is very small when compared with the seriousness of pollution from abandoned mines. During the next five years, this problem is expected to be more clearly delineated and an abatement plan developed which is commensurate and timely in relation to the overall implementation plan.

At the present time, regulations regarding the control of oil from active wells are already in force. We expect to develop regulations relating to brine pollution within the next year.

Nutrients

The Sanitary Water Board has already issued orders to some Pennsylvania municipalities to limit nutrients in waste effluents. Where necessary to abate or prevent pollution, the Board will continue to require nutrient control.

EXHIBITS

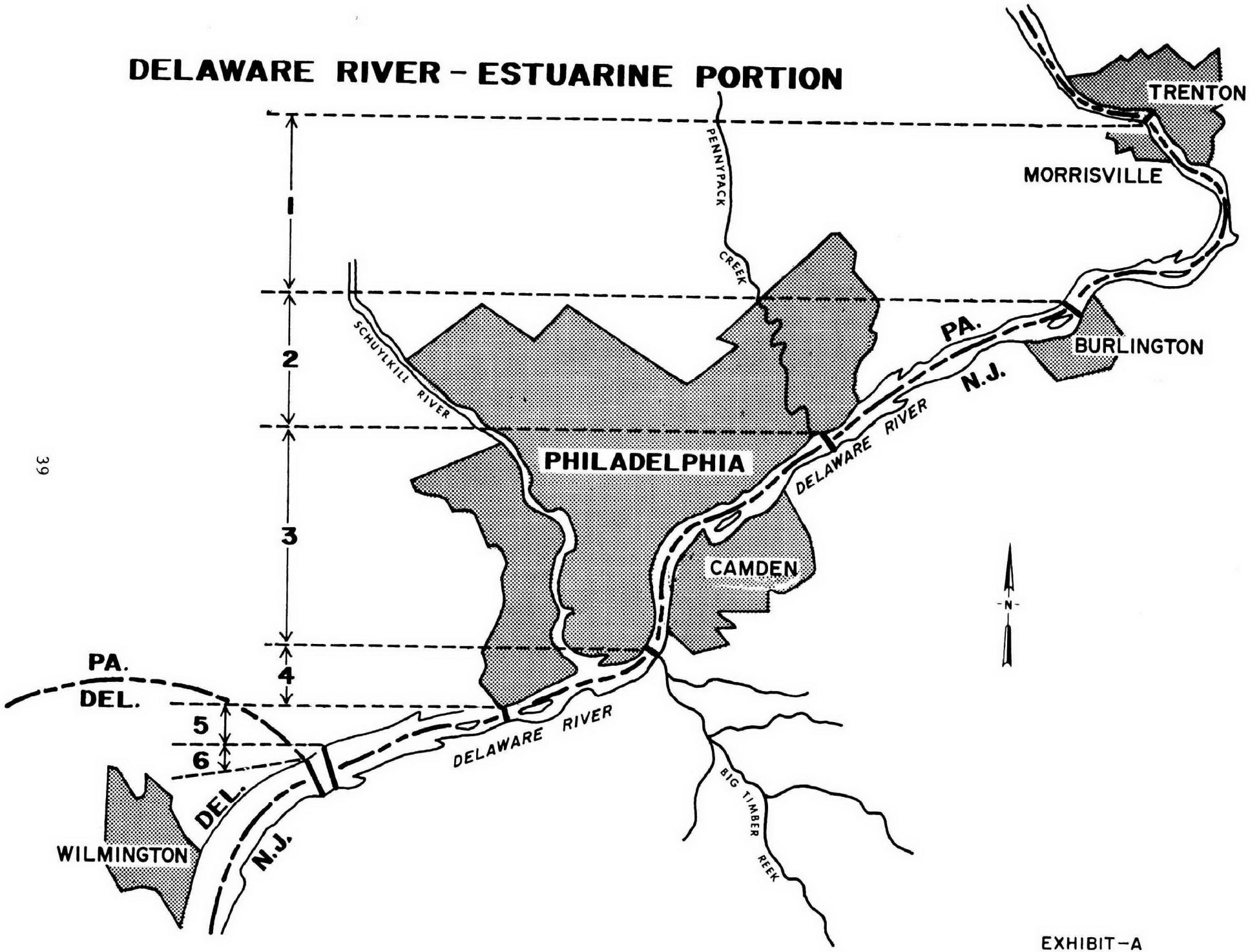
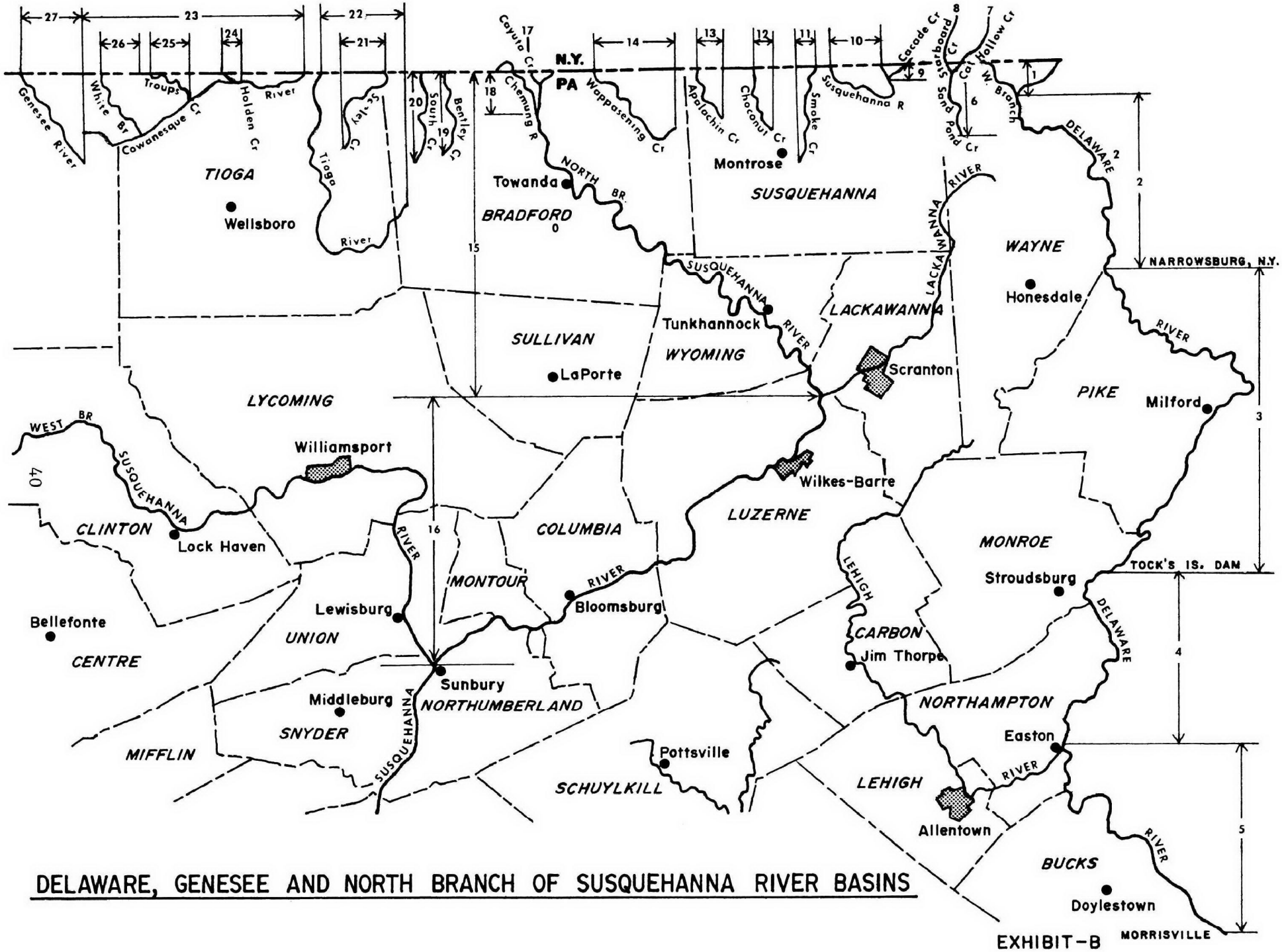

DELAWARE RIVER - ESTUARINE PORTION
TRENTON
MORRISVILLE
PENNYPACK CREEK
SCHUYLKILL RIVER
PA.
N.J.
BURLINGTON
DELAWARE RIVER
PHILADELPHIA
CAMDEN
1
2
3
4
5
6
PA.
DEL.
DEL.
N.J.
WILMINGTON
DELAWARE RIVER
BIG TIMBER REEK
N

EXHIBIT-A



DELAWARE, GENESEE AND NORTH BRANCH OF SUSQUEHANNA RIVER BASINS

EXHIBIT-B

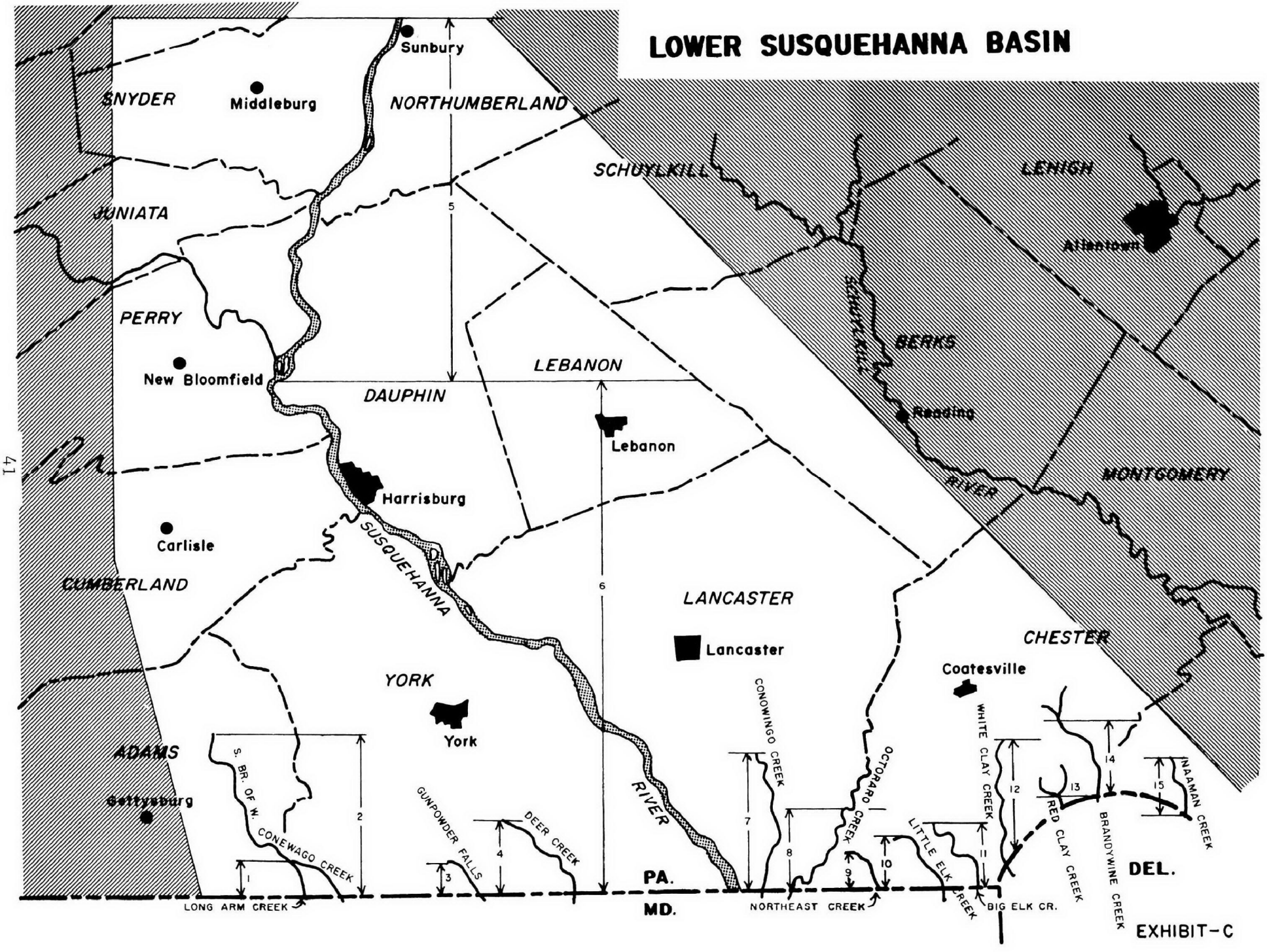

LOWER SUSQUEHANNA BASIN
Sunbury
SNYDER
Middleburg
NORTHUMBERLAND
SCHUYLKILL
LEHIGH
JUNIATA
Allentown
PERRY
BERKS
New Bloomfield
LEBANON
DAUPHIN
Reading
Lebanon
MONTGOMERY
Harrisburg
RIVER
Carlisle
SUSQUEHANNA
CUMBERLAND
LANCASTER
Lancaster
CHESTER
Coatesville
YORK
York
ADAMS
Gettysburg
S. BR. OF W. CONEWAGO CREEK
GUNPOWDER FALLS
DEER CREEK
CONOWINGO CREEK
OCTORARO CREEK
WHITE CLAY CREEK
LITTLE ELK CREEK
RED CLAY CREEK
BRANDYWINE CREEK
NAAMAN CREEK
LONG ARM CREEK
NORTHEAST CREEK
BIG ELK CR.
PA.
MD.
DEL.
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EXHIBIT-C

POTOMAC BASIN

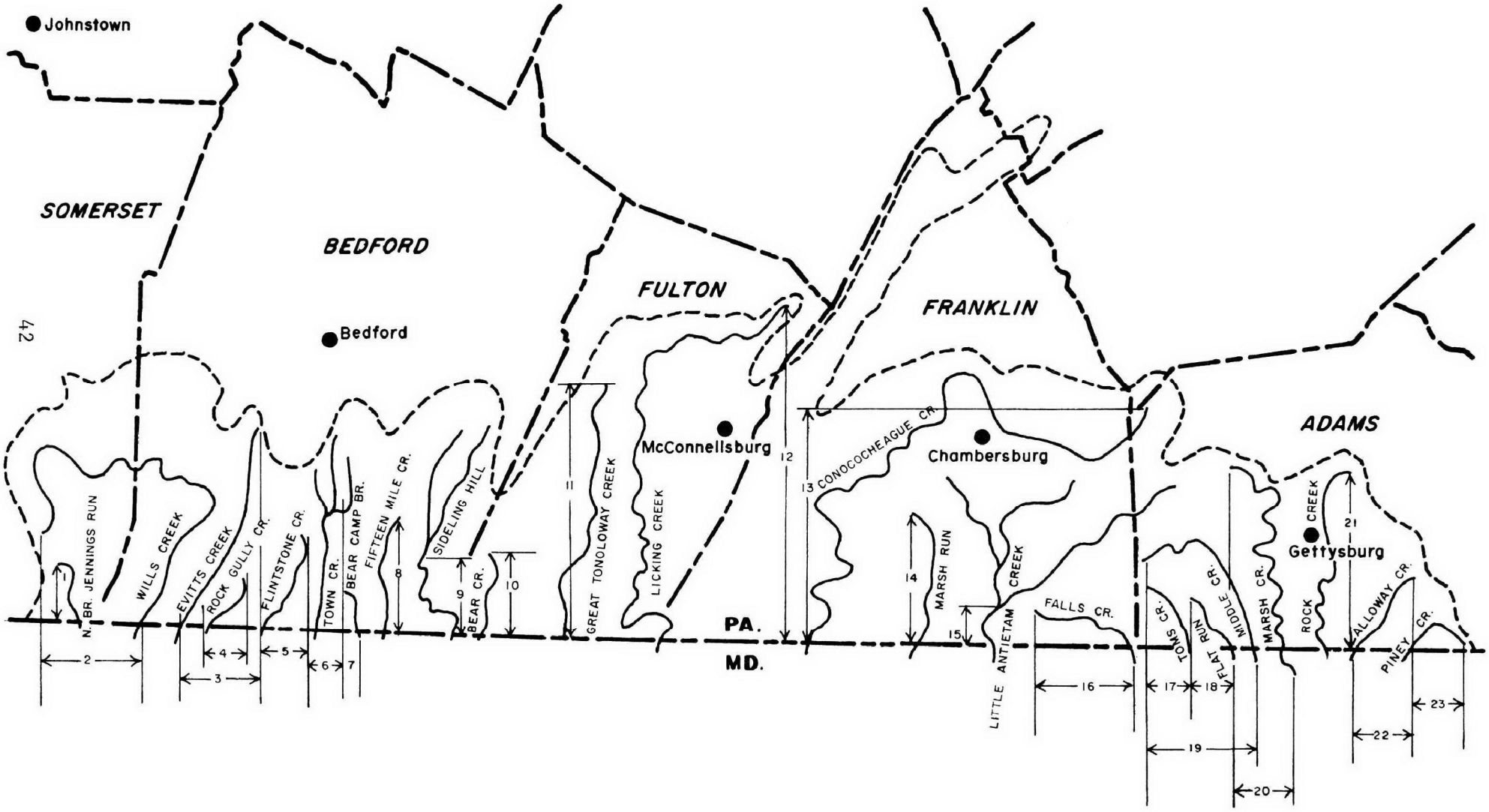


EXHIBIT-D

LAKE ERIE BASIN

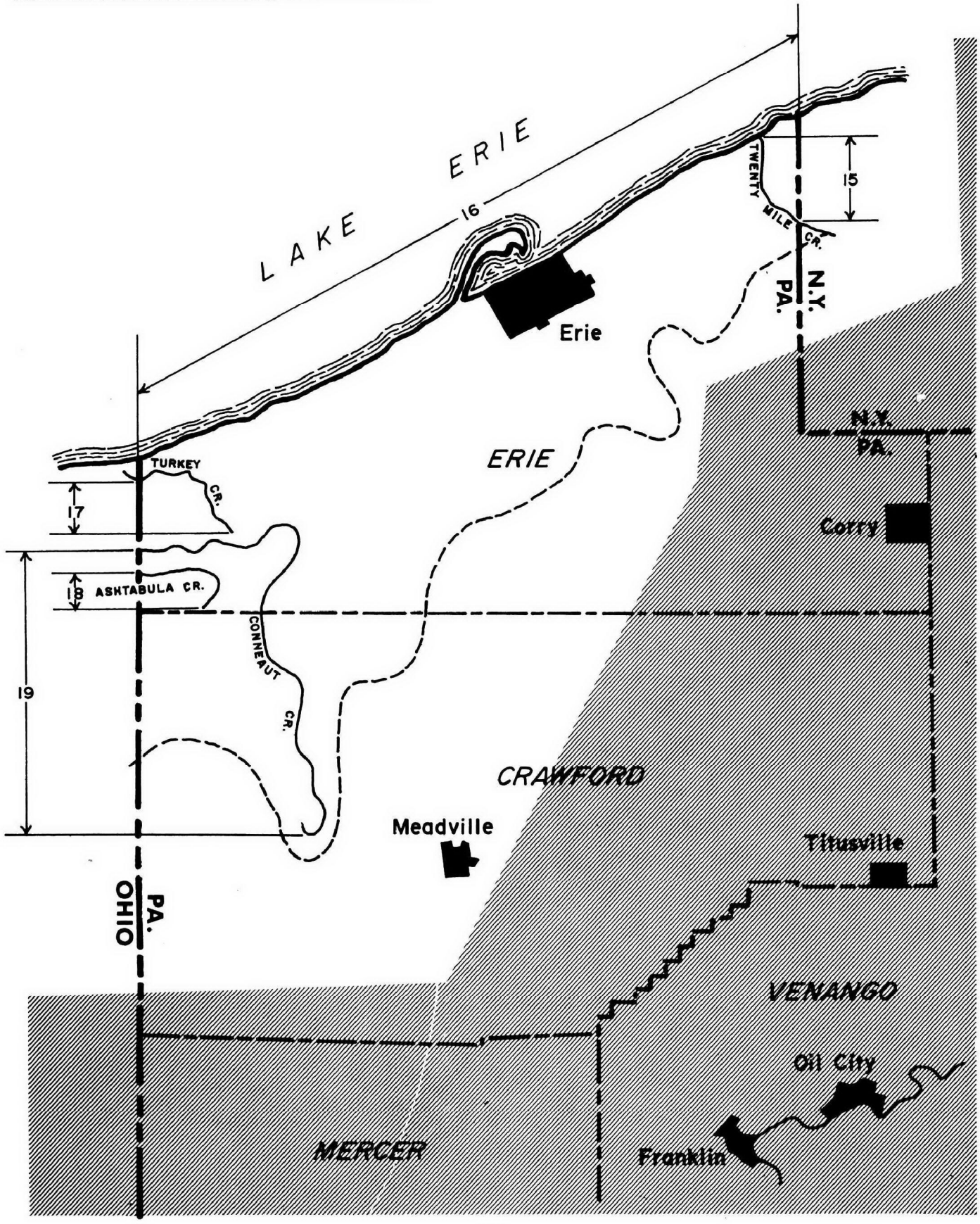


EXHIBIT-E

ALLEGHENY RIVER BASIN

STATE LINE TO REDBANK CREEK

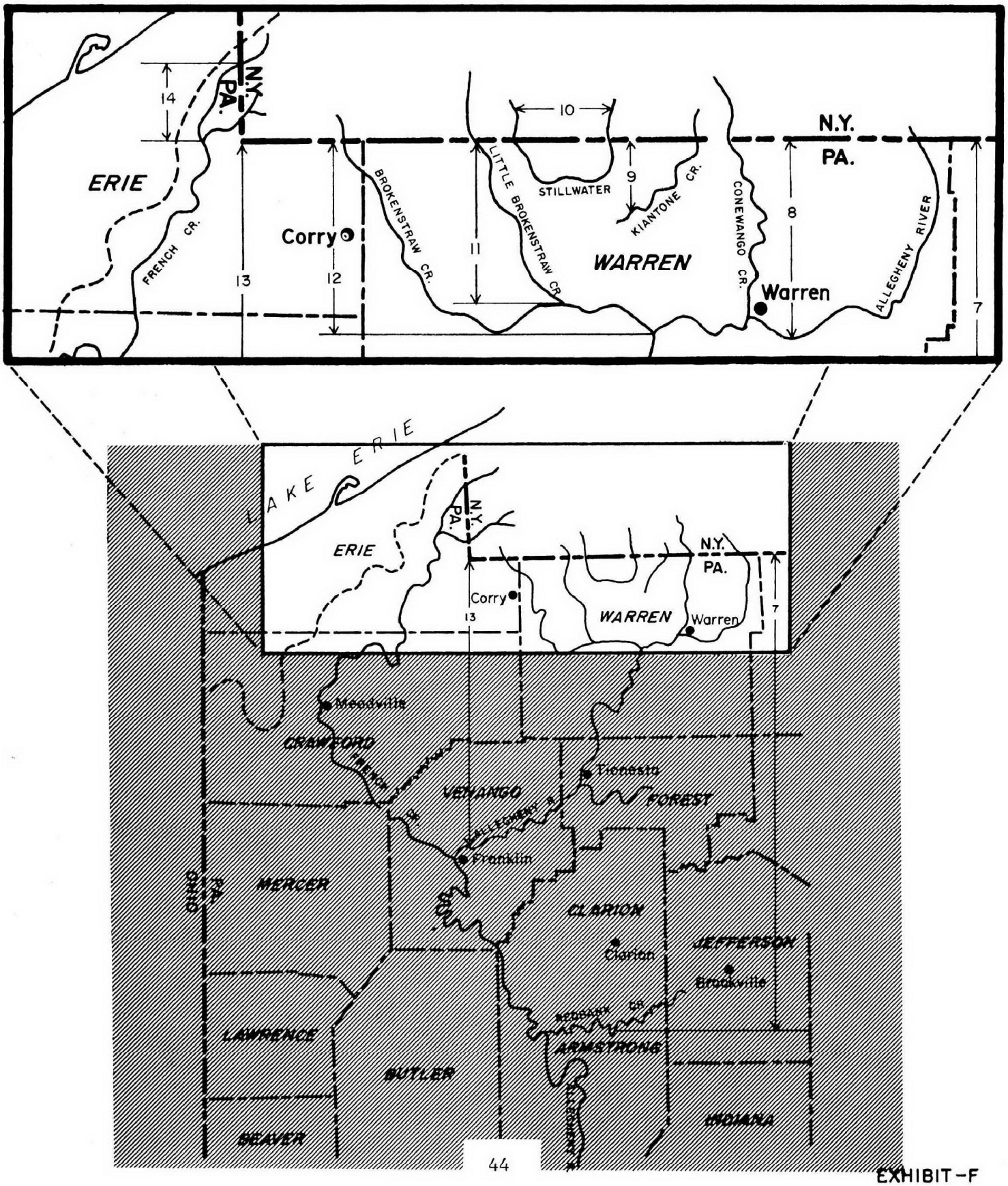


EXHIBIT-F

OHIO RIVER BASIN

SOUTHWESTERN PENNSYLVANIA

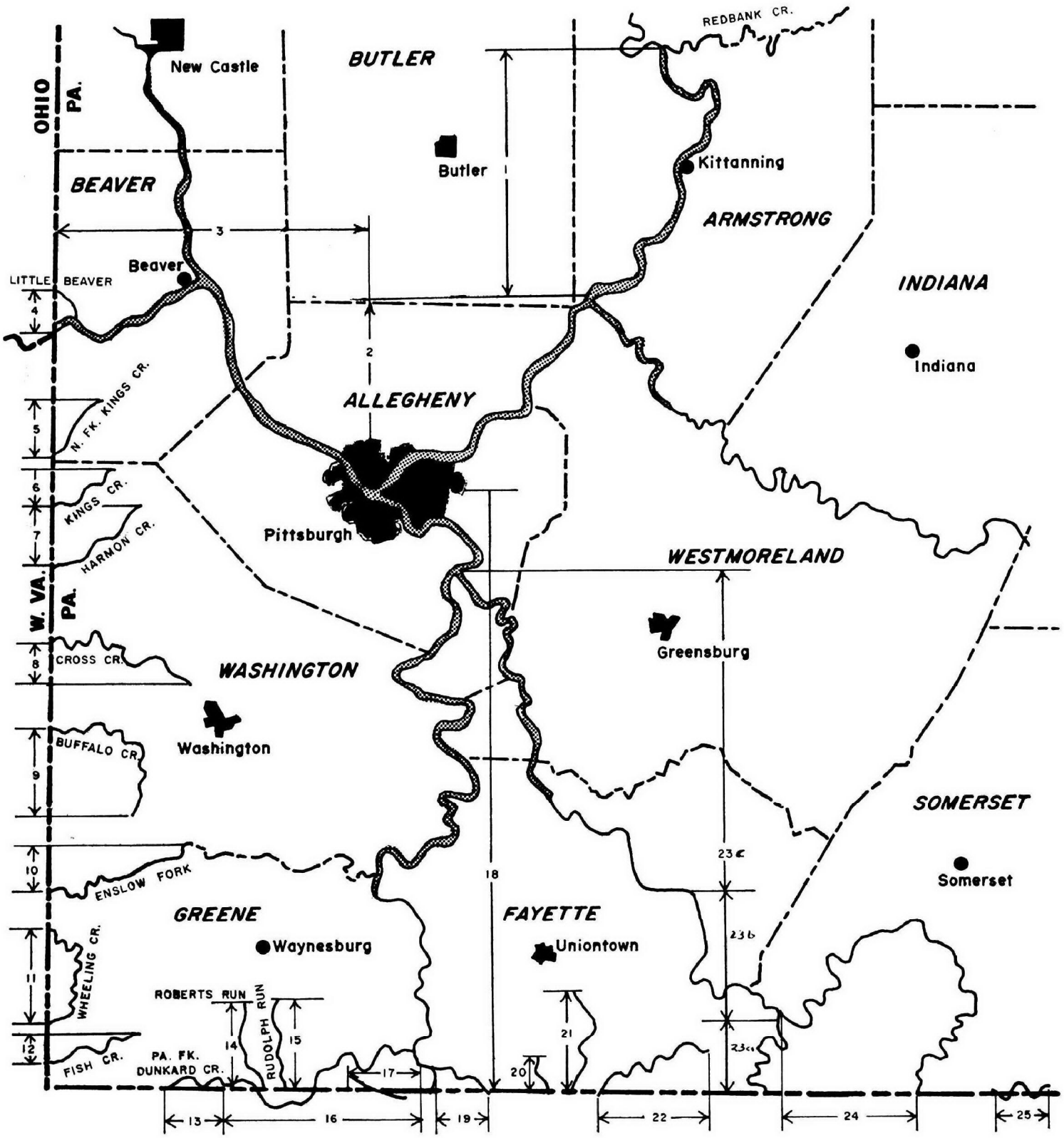


EXHIBIT-G

UPPER ALLEGHENY RIVER BASIN

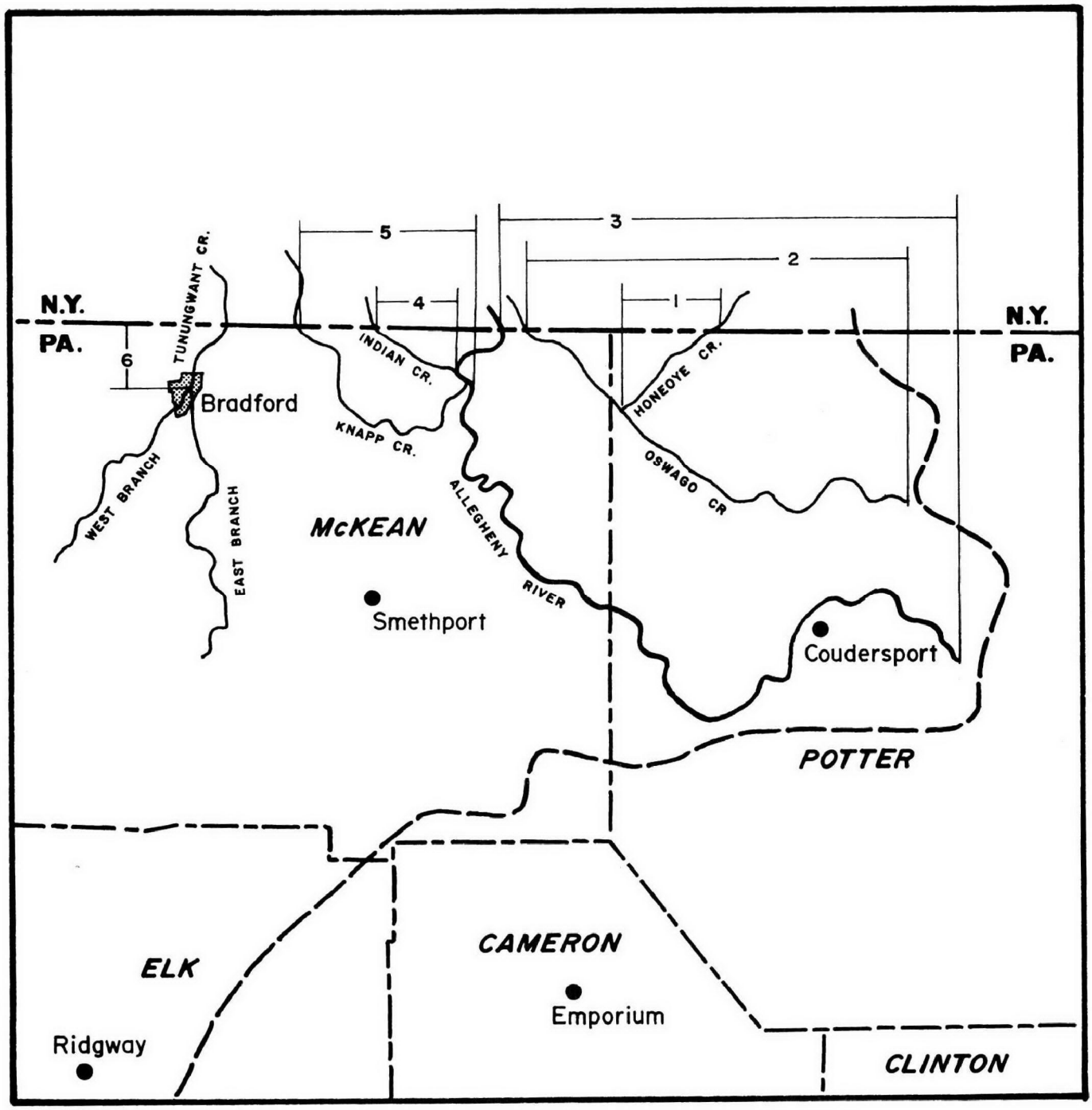
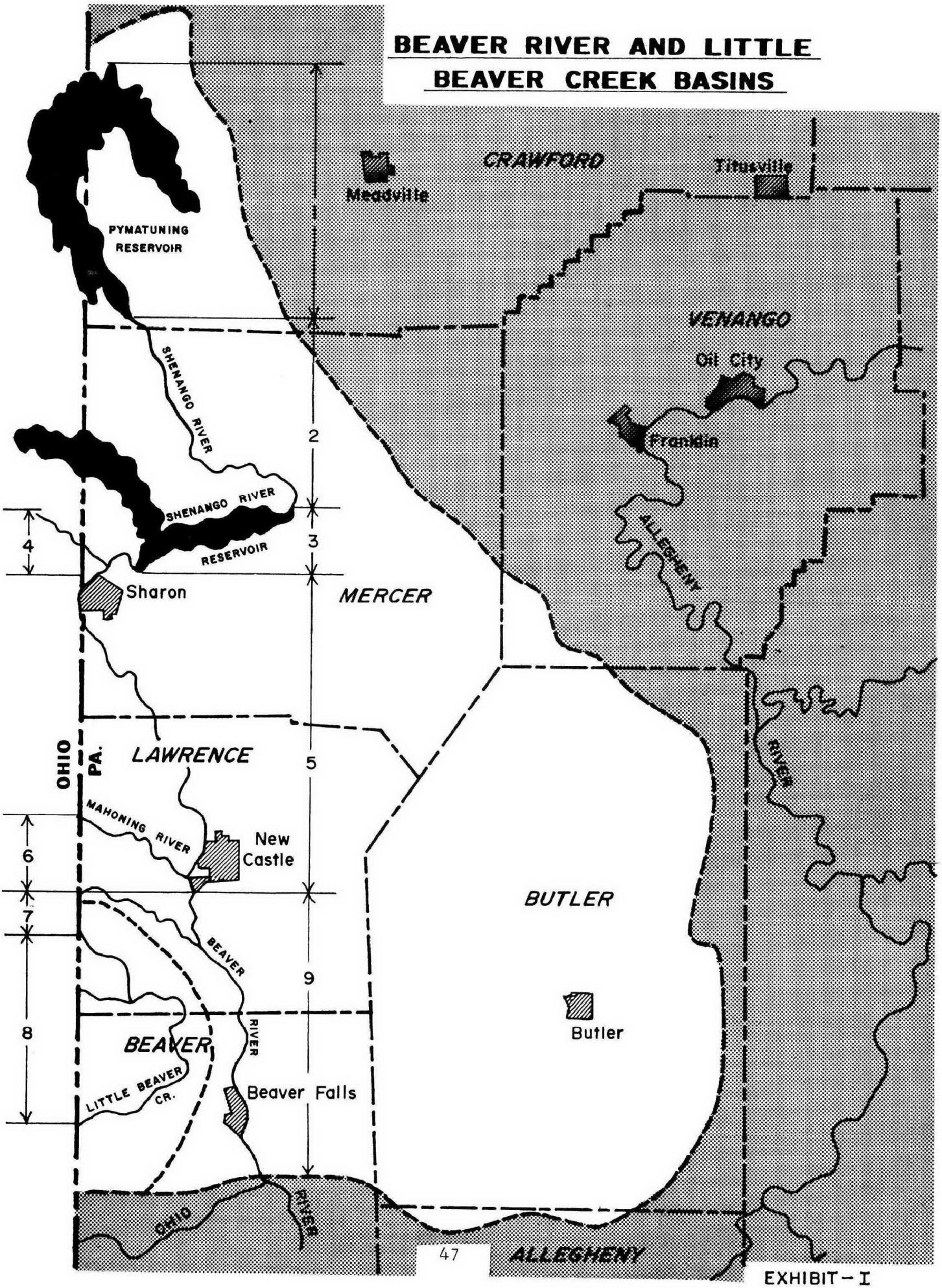


EXHIBIT-H


BEAVER RIVER AND LITTLE BEAVER CREEK BASINS
CRAWFORD
Meadville
Titusville
PYMATUNING RESERVOIR
VENANGO
Oil City
Franklin
SHENANGO RIVER
SHENANGO RIVER RESERVOIR
ALLEGHENY
Sharon
MERCER
OHIO
PA.
LAWRENCE
MAHONING RIVER
New Castle
BUTLER
BEAVER
RIVER
Butler
BEAVER
LITTLE BEAVER CR.
Beaver Falls
OHIO RIVER
ALLEGHENY
1
2
3
4
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6
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8
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EXHIBIT – I

A P P E N D I X

GLOSSARY OF TERMS

Advanced Waste Treatment - Refers to methods and processes that will remove more contaminants from wastewater than are usually removed in present day conventional treatment plants. The processes may be physical, chemical, or biological. Examples of advance waste treatment are carbon columns, electrolytic coagulation, reverse osmosis, electrodialysis, and ion exchange.

Bacteria - A group of test organisms which are used as indicators of the sanitary quality of the water. The Commonwealth of Pennsylvania uses total coliform bacteria as their specific test organism. Bacterial concentrations originate primarily from municipal waste treatment plants, sanitary and combined sewers, storm drains, vessels and agricultural wastes.

Biochemical Oxygen Demand (BOD) - The quantity of oxygen utilized in the biochemical oxidation of organic matter in a specified time and at a specified temperature. Waste discharges containing high levels of BOD will deplete oxygen supplies in receiving waters.

Disinfection - The killing of the larger portion (but not necessarily all) of the harmful and objectionable micro-organisms in, or on, a medium by means of chemicals, heat, ultraviolet light, etc. Chlorination is the method commonly employed in sewage treatment processes.

Dissolved Oxygen (D.O.) - The oxygen dissolved as a gas in sewage, water, or other liquid usually expressed in milligrams per liter (mg/l), parts per million (ppm), or percent saturation. Adequate dissolved oxygen levels are necessary in waters to protect fish and other aquatic life and to prevent offensive odors. Low dissolved oxygen concentrations are generally due to excessive organic solids discharged as a result of inadequately treated waste (having high BOD); excessive algal growths may cause vastly fluctuating dissolved oxygen levels, and other factors such as temperature and water movement have an impact on dissolved oxygen levels.

Interstate Waters - Under the Federal Water Pollution Control Act, interstate waters are defined as:

1. rivers, lakes, and other waters which flow across or form part of State or international boundaries;

2. waters of the Great Lakes;

3. coastal waters--whose scope has been defined to include ocean waters seaward to the territorial limits and waters along the coastline (including inland streams) that are influenced by the rise and fall of the tide.

pH - The index of hydrogen ion activity, used as an indication of acidity or alkalinity in waters. The pH of most waters ranges from 6.5 to 8.5 and most uses of water, such as aquatic life propagation, prosper at these levels. In most cases a pH outside this range is due to discharge of industrial wastes or decaying organic vegetation.

Pollution - The addition of sewage, industrial wastes, or other harmful or objectionable material to water at a concentration or in sufficient quantity to result in measurable degradation of water quality.

Primary and Secondary Contact Recreation - Also called Whole-body Contact Recreation, Primary Contact Recreation includes uses of water such as swimming, water skiing, and skin diving. Secondary Contact Recreation, also called Partial-body Contact Recreation includes such recreational uses as boating and fishing.

Primary Treatment - May be defined as that process or group of processes capable of removing a high percentage of floating and settleable solids. This is the first major treatment in a sewage treatment works and generally removes from 30 to 65 percent of the suspended solids and 30 to 40 percent of the 5-day biochemical oxygen demand.

Secondary Treatment - May be defined as that process or group of processes capable of removing virtually all floating and settleable solids, generally from 85 to 95 percent of the 5-day biochemical oxygen demand, and a similar level of removal of suspended solids in untreated waste. The equivalent treatment may generally be defined as that process or group of processes achieving maximum practicable removal of solids, oils, grease, acids, alkalis, toxic materials, bacteria, taste, and odor-causing materials, color, and any other objectionable constituents contained in untreated waste to produce an effluent to that obtained from secondary treatment facilities in current use for any specific category of industrial waste.

Sewage - (1) The water supply of a community after it has been used and discharged into a sewer, (2) wastewater from the sanitary conveniences of dwellings, business buildings, factories, and other institutions.

Sewage, Combined - A sewage containing both sanitary sewage and surface or storm water with or without industrial wastes.

Sewer, Combined - A sewer which carries both sanitary sewage and storm drainage. Where combined sewers are used, the capacity is usually exceeded at times of heavy rainfall and the sewers overflow, discharging combined sewage directly into streams without treatment of any kind.

Solids, Settleable - Suspended solids which will subside in quiescent water, sewage or other liquid in a reasonable period.

Solids, Suspended - Solids that either float on the surface of, or are in suspension in, water, sewage, or other liquids and which are largely removable by laboratory filtering.

Temperature - A measure of the heat content of water. While stream temperature is affected naturally, man significantly affects it through the construction and operation of dams and the discharge of cooling waters from industrial processes, particularly power generation.

Toxic Materials - Materials which are harmful to human, plant, animal, and aquatic life. These may include hundreds of compounds present in various waters, such as industrial waste discharges or runoff from where pesticides have been applied.

Warm and Cold-Water Fish - Warm-water fish include black bass, sunfish, catfish, gar, and others; cold-water fish include salmon and trout, whitefish, Miller's thumb, and blackfish. The temperature factor determining distribution is set by adaptation of the eggs to warm or cold water.

INDEX
TO
INTERSTATE STREAMS
IN
PENNSYLVANIA

INTERSTATE STREAMS IN
PENNSYLVANIA

Pennsylvania

Typical Time Schedule

The following information was submitted by letter dated August 3, 1967, from Richard M. Boardman, Chief, Water Quality Section, Pennsylvania Department of Health, to F. R. Blaisdell, Deputy Regional Director, Middle Atlantic Region, Federal Water Pollution Control Administration:

A. As indicated in the approved Water Quality Standards, Pennsylvania industries and municipalities are given 90 days from date of SWB order to submit a schedule.

B. Three typical schedules were enclosed as examples applicable to treatment plants serving populations, flows (or the equivalent) of 240,000 (24.0 mgd), 150 mgd, and 8,000 (approximately 1.0 mgd). The examples cited specific dates. For the purpose of this document, the lapse times for accomplishing the construction of the size plant indicated in the typical time schedule follow:

Stage of Planning	Cumulative lapse time (in Months)		
	150.0 mgd	24.0 mgd	1.0 mgd
1. Complete Preliminary Report/Plans	0	0	0
2. Complete Final Report/Plans	14	14	4
3. Financing Arranged (Municipalities)	21	19	11
4. Begin Construction	24	26	12
5. Complete Construction	48	56	24

The following quotation from the approved Pennsylvania Water Quality Standards submitted in July 1967 also provides an overall final compliance date of July 1972:

> "The actions that the Sanitary Water Board take will result in compliance with the orders within the 5-year limitation indicated in the guidelines prepared by the Federal Water Pollution Control Administration."