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R e p o r t

o f t h e

INTERSTATE SANITATION COMMISSION

o n t h e

Water Pollution Control Activities

a n d t h e

Interstate Air Pollution Program

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THOMAS R. GLENN, JR.
DIRECTOR-CHIEF ENGINEER

January 22, 1968

To His Excellency, Nelson A. Rockefeller
His Excellency, John N. Dempsey
His Excellency, Richard J. Hughes
and the Legislatures of the States of
New York, Connecticut and New Jersey

Sirs:

The Interstate Sanitation Commission respectfully submits its report for the year 1967.

The members of the Commission trust that we will receive the continued active interest and support of the Governors and members of the Legislatures to assure the progress of this important interstate program in pollution abatement.

Respectfully submitted,

For the State of New York


Chairman

For the State of Connecticut


Vice Chairman

For the State of New Jersey


Vice Chairman

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New York - New Jersey

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I. SUMMARY OF ACTIVITIES

The Interstate Sanitation Commission continued its programs in water and air pollution during 1967. There were two Federal Abatement Conferences on water pollution and one on air pollution. There was a continued increase in all of the abatement activities from both a legal and an engineering point of view. Some of these activities are summarized below and all are presented in greater detail in the various sections of the report.

WATER POLLUTION

Public interest in the improvement of District Waters has been demonstrated through the appropriation of considerable state, local, federal, and private funds for pollution abatement work. Of greatest significance has been the planning of work which will take place within the next few years. More than \$931,712,332 has already been designated for abatement action to handle over 1,768,920,000 gallons per day of waste waters.

State, federal, local agencies and the Commission presented pollution problems, abatement progress and recommendations for future action to the public at the Hudson River and Raritan Bay Conferences. Conferees agreed to coordinate their activities to raise water quality standards. Standards for biochemical oxygen demand removal and time schedules for abatement action set by state and interstate agencies were approved by the Conferees. This is covered in greater detail in another section of the report.

In past years and at the present time, a large portion of the waste discharges to District Waters has been undergoing a primary degree of treatment. The Commission and other governmental agencies recognize that, although pollutants are being removed by the primary treatment, this removal will not be adequate to handle future population and industrial growth.

During 1967, many of the treatment facilities in the Interstate Sanitation District received orders

with specific time schedules for upgrading to secondary or biological treatment. Many projects which are in the preliminary planning stages this year are expected to be completed in 1970. Industries and municipal authorities, who are proceeding on their own initiative to develop effluent improvement programs are to be highly commended. Although the efforts of the many individuals involved in water quality improvement cannot be expected to have any instantaneous results, we expect to witness a gradual improvement in the District Waters during the ensuing years. New York City, now, has a program in progress to treat storm overflows from combined sewers. This program will improve the bacterial quality of the receiving waters and hopefully will permit the opening of new beaches.

Of concern to this Commission is the cutback in the Federal budget for money to aid in the construction of waste treatment facilities. The \$450,000,000 which was authorized by Congress for construction grants in fiscal 1968 has now been reduced to \$203,000,000.

Local governments in the Interstate Sanitation District have been proceeding with plans for new and improved facilities with the understanding that they would be eligible for Federal aid in the amount of 30 to 55 percent of project costs. Lack of funds will make it very difficult to enforce standards of waste water treatment.

AIR POLLUTION

In 1961, the States of New York and New Jersey with the approval of the State of Connecticut, authorized the Commission to engage in certain activities with respect to interstate air pollution problems between the States of New York and New Jersey. Funds were made available to the Commission and an air pollution program was initiated on January 1, 1962 without enforcement powers.

In January 1967 the Commission participated in a Federal Abatement Conference called for the Metropolitan Area under the terms of the Federal Clean Air Act. One of the major recommendations of this Conference was that there is a need for an interstate agency with both

standards-making and enforcement powers.

Since the States at first favored vesting enforcement powers to the Commission, a suitable amendment to the 1961 Tri-State Compact was drafted and submitted to the State legislatures. The proposal would have included an air pollution control program administered by the Interstate Sanitation Commission for portions of New York, New Jersey and Connecticut and so would have comprehended the entire metropolitan area. It also would have provided for participation of the Federal Government.

However, another proposal was enacted by the States creating the Mid-Atlantic States Air Pollution Control Commission with provisions for Federal participation and joining of other states such as Connecticut, Delaware and Pennsylvania. This proposal needs the approval of Congress which has not acted as of this date. When this new agency is approved, the Commission will be phased out of its air pollution program in possibly thirty days.

In the meantime, the Commission has continued with its present program which includes such activities as investigation of point sources of sulphur dioxide pollution; air pollution complaints; participating in the implementation of the Regional Air Pollution Warning System; and furnishing data from our fixed sampling stations and mobile sampling to appropriate control agencies.

II. W A T E R P O L L U T I O N

New York

New Jersey & Connecticut

II. STATUS OF WATER POLLUTION






GENERAL

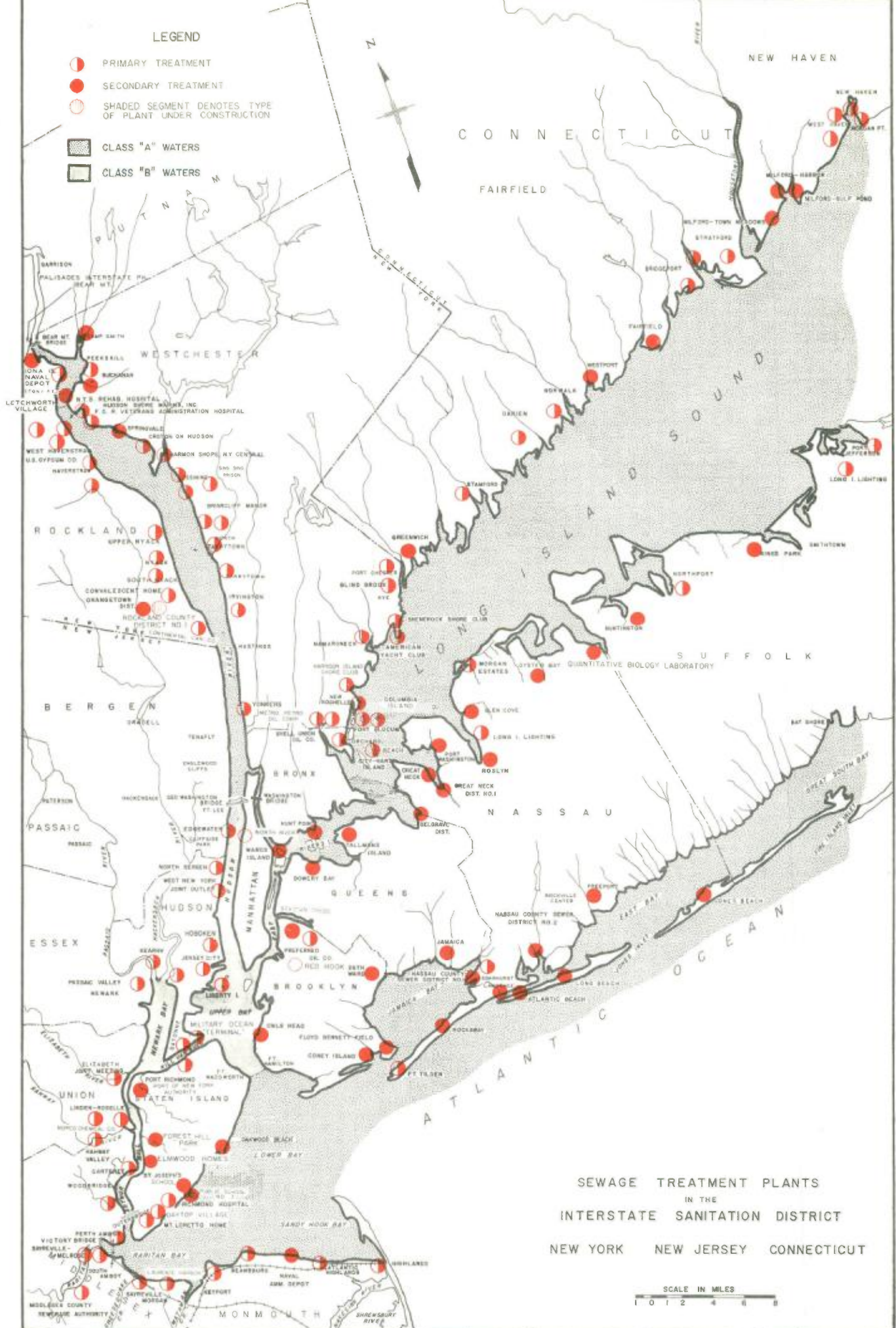
In 1967, there were 80 water pollution control projects which were completed, under construction, or in the planning stage. Appropriations for these various projects are estimated to total more than \$931,712,332. A breakdown of estimated appropriations gives \$233,484,000 for 15 completed projects, \$46,725,322 for 17 projects under construction and \$651,503,010 for 48 future projects. Through the construction of new treatment plants; additions and alterations to existing plants, pump stations, force mains and sewers, these projects will contribute toward improving the quality of discharges flowing into District Waters. In many cases, primary treatment plants are being upgraded to give secondary treatment in conformance with interstate agreement.

The status of construction, degree of completion, costs and details concerning plant design given herein are in all cases that reported to the Commission by responsible officials in the respective state or local governmental agencies, sewerage authorities or consulting engineering firms.

A map of the Interstate Sanitation District on the following page indicates the type of treatment and approximate location of each plant within the District. Appendix A lists additional information on each plant.

LEGEND

-  PRIMARY TREATMENT
-  SECONDARY TREATMENT
-  SHADED SEGMENT DENOTES TYPE OF PLANT UNDER CONSTRUCTION
-  CLASS "A" WATERS
-  CLASS "B" WATERS



SEWAGE TREATMENT PLANTS
IN THE
INTERSTATE SANITATION DISTRICT
NEW YORK NEW JERSEY CONNECTICUT



COMPLETED PROJECTS

Camp Smith, Peekskill, N.Y.

The first plant to complete upgrading its treatment processing from that of a septic tank to full secondary treatment in the Hudson River Valley was accomplished at this New York State National Guard Camp. On July 24, 1967, approximately one year in advance of the established time schedule, the full secondary units were in operation. This plant, designed by the New York State Department of Public Works at a cost of approximately \$250,000, consists of the following component units: Barminutor; coarse bar rack; circular Imhoff tank; two trickling filters; final settling tank; chlorine contact tank with a V-notch weir at the discharge end for measuring of the flow; two chlorinators; recirculating pumps; and open sludge drying beds.

East Street, New Haven, Conn.

Reconstruction of three old clarifiers was completed prior to the 1967 chlorination season. Two were converted to air flotation tanks and the third to a chlorine contact tank so that the effluent could be disinfected to a degree required for the receiving waters. A new multiple hearth incinerator has also been added.

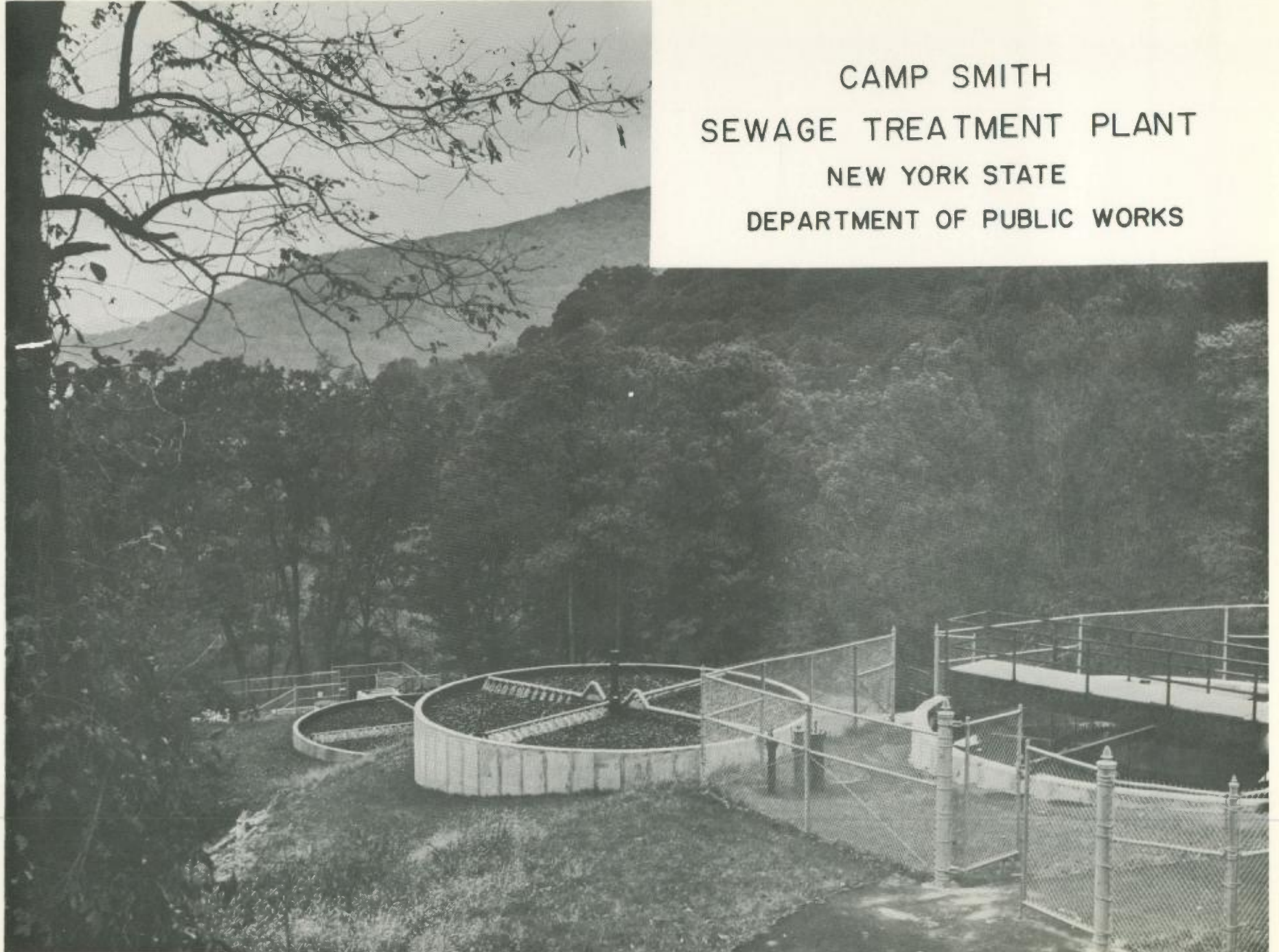
Glen Cove, N.Y.

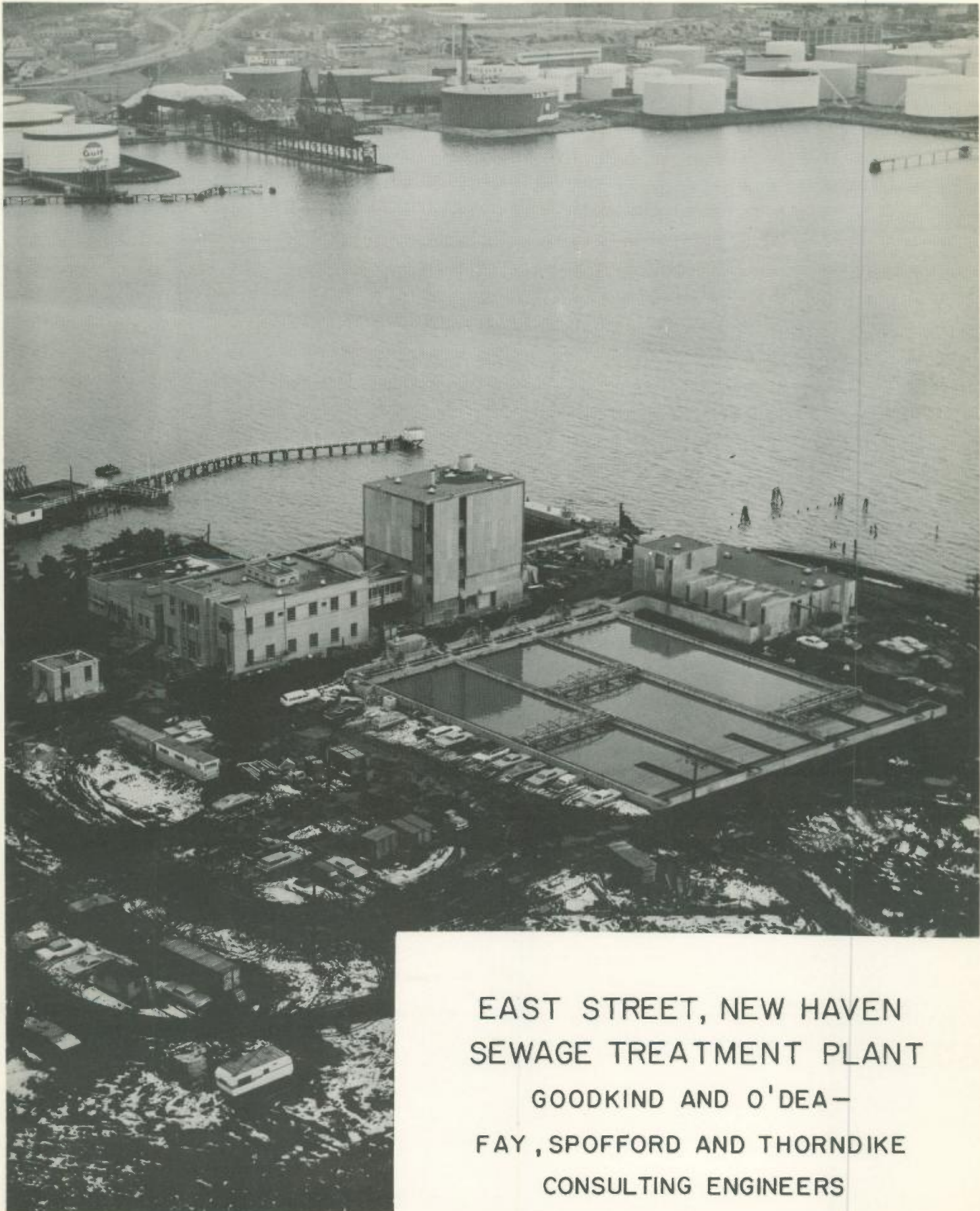
The installation of a 300-gallon-per-minute air ejector has increased the capacity of the Garvies Point pumping system by 50 percent. This brings to a total of three 300-gallon-per-minute air ejectors serving this unit. The installation of the additional air ejector became necessary due to an increase of building in this area.

Great Neck Sewer District, N.Y.

Construction was completed on the conversion of Bayview Avenue Primary Treatment Plant to a pumping station and enlargement of the East Shore Road Secondary Treatment Plant to receive and give adequate treatment

CAMP SMITH
SEWAGE TREATMENT PLANT
NEW YORK STATE
DEPARTMENT OF PUBLIC WORKS





EAST STREET, NEW HAVEN
SEWAGE TREATMENT PLANT
GOODKIND AND O'DEA—
FAY, SPOFFORD AND THORNDIKE
CONSULTING ENGINEERS

to this additional flow. This project consisted of the construction of a Pumping Station with three pumps, each with a capacity of 1,400 gallons per minute, a comminutor and installation of prechlorination equipment. The flow from the pumping station travels through 11,000 feet of 16-inch diameter force main to the expanded East Shore Road Treatment Plant. At the East Shore Road Plant, the expansion consists of an additional 90-foot trickling filter; a second vacuum filter with a 200-square-foot capacity and a pumping station with two 2,500-gallons-per-minute pumps for diverting the flow within the treatment plant. Garage facilities were built over the abandoned Imhoff Tank of the original treatment plant. With these additions the design capacity of the East Shore Road Treatment Plant has been increased to 4.0 million gallons per day. The cost for this entire project was \$1,053,500.

Jersey City Sewerage Authority, N.J.

East Side Plant

Improvements have been completed this year for a total cost of about \$1,237,000 at this 46.6-million-gallons-per-day capacity primary treatment plant.

A new grit chamber has been installed with the following components: a bar screen; grit collectors; Barminutor; sewage grinders; and live bin hopper.

The wet well has been revised. This plant now has two wet wells and is using one as a standby. The existing grit chamber was converted to a wet well.

West Side Plant

The facilities at this primary treatment plant have been improved at a total cost of about \$1,976,000. A new grit chamber was installed with the same components as the East Side Plant. A sludge incinerator has also been included in the new facilities at this sewage treatment plant, with a capacity of 6,150 pounds of solids per hour.

Lawrence, N.Y.

With the completion of construction in May 1967 of the Sage Lake pumping station and force main, located on Causeway near Mallow Way and Pond Crossing, wastes have now been diverted to the Lawrence Secondary Treatment Plant. Costs for this pumping station was \$50,000.

Provisions have been made for the addition of three more pumping stations including sewer laterals in preparation for future development of an area located in the southeastern section of this community. Each station will have two pumps ranging in size from 230 to 1000-gallons-per-minute capacity.

Longwood Harbor Apartments, Babylon, N.Y.

A 100,000-gallon-per-day contact stabilization and extended aeration plant has been constructed by the Longwood Harbor Garden Apartments to serve approximately 250 units. This secondary treatment plant will also contain chlorination equipment; comminutor; precast wet well; and standby engine generator. The system contains some 1640 lineal feet of sanitary sewers and a pumping station with two 160-gallon-per-minute pumps. The total cost of this project was approximately \$120,000.

Nassau County District No. 2, N.Y.

The construction of a 400-gallon-per-minute plant providing a tertiary effluent to fortify the ground water table by pumping it into wells has been completed. This is an experimental research program which will produce an effluent of drinking water standards and will aid in combating the infiltration of sea water into the underground fresh water supply. This project was completed at an approximate cost of \$513,000.

New York City, N.Y.

Newtown Creek, N.Y.

Construction of this modified aeration treatment plant was completed in September 1967. Newtown Creek,

which is New York City's largest sewage treatment plant, is designed for a capacity of 310 million gallons per day at a cost of \$223,000,000. Wastewater is, now, accepted from the plant's tributary area in Brooklyn and Queens and a flow will be added from Manhattan upon completion of a pumping station at Avenue D and E, 13th Street in 1968.

In 1968, the city plans to start a development and pilot program to improve the modified aeration removal efficiency in the Newtown Creek Plant. Funds have already been approved for the pilot plant study.

Wards Island, N.Y.

Three pumping stations, force main and intercepting sewers serving the Riverdale section of the Bronx were completed this year at a cost of \$1,560,000.

Northport, N.Y.

A new lift station has been installed at the foot of Beach Street, Northport, and a section of intercepting pipe line has been rerouted to attain a better gravity feed. The new lift station consists of two 100-gallon-per-minute ejectors. The total cost for this project is estimated to be \$30,000.

Orangetown, N.Y.

Ground breaking ceremonies were held on January 10, 1967 for the construction of the new \$2,865,000 high rate trickling filter treatment plant. This secondary plant with an 8.5-million-gallons-per-day capacity will serve the population of Orangetown with an initial flow of approximately 5 million gallons per day and is located at the site of the old Orangetown District No. 2 plant.

In December 1967, raw sewage entered the plant through the bar screen; disintegrator; grit chamber and automatic grit collector; two primary clarifiers; two high rate trickling filters; two final clarifiers; and three chlorinators with a total output of 2,650 pounds



ORANGETOWN
SEWAGE TREATMENT PLANT
DITMARS AND CARMICHAEL
CONSULTING ENGINEERS

chlorine per day. The effluent line to the Hudson will provide the contact time during the chlorination season.

The existing digesters are being used as sludge conditioning tanks. Sludge is dried by a vacuum filter and is then dropped onto a conveyor belt to the plant incinerator. The ash is used for land fill.

The new plant is equipped with five emergency generators which have an output of 50 kilowatts each. These will provide the necessary power in case of power failures.

The Orangetown Sewer District No. 1 (Pearl River) Treatment Plant has been abandoned and three new pumps with the pumping capacity of 5900 gallons per minute will pump the raw sewage through the existing outfall force main to the new treatment plant. A new trunk sewer from the Village of Pearl River to the old District No. 1 Plant has been completed at a cost of \$400,000. The Route 303 trunk sewer is 95 percent completed at an estimated cost of \$235,000.

Completion of all construction will be in the spring of 1968 at a total estimated cost of \$3,600,000.

Stamford, Conn.

A new Noroton River interceptor has been installed to eliminate the discharges of several industries to the Noroton River.

Standard Coated Products, Buchanan, N.Y.

As of July 1967, all polluted waste material has been removed from the waters by this company. The domestic waste has been intercepted and diverted to a lift station and is pumped to the village of Buchanan sanitary system. The industrial discharge is treated by means of evaporation. The residue from the evaporator is taken to the local dump for disposal; however, this company is now studying means of reclaiming this by-product. The cost of this project was \$95,000.

PROJECTS UNDER CONSTRUCTION

Bear Mountain, N.Y.

The existing primary treatment plant consists of one Imhoff tank; a chlorine contact tank; open sludge drying beds; and a control building. In the Spring of 1967, construction started with the addition of two high rate trickling filters; one final clarifier; Barminutor; flow meter; and two new 200-pounds-per-day chlorinators. By the Spring of 1968, the raw sewage will be receiving secondary treatment at an estimated cost of \$103,672 with a design capacity of 250,000 gallons per day.

Cedarhurst, N.Y.

Construction was started August 30, 1967 on the expansion and conversion of the Cedarhurst Primary Treatment Plant to a secondary treatment plant. This project consists of rebuilding two circular clarifiers and the addition of the following equipment: a high rate trickling filter, 80 ft. x 5 ft. and two secondary settling tanks, each with a capacity of 5,280 cubic feet. An 8,850 cubic foot secondary digester and associated pumps will also be installed. Under this contract, the two existing digesters will be converted so that one digester will be used as a sludge storage tank and the other as a primary digester. New chlorination equipment will be installed and modernization of a pumping station with two 350-gallon-per-minute pumps is also included. The design capacity for the Cedarhurst Secondary Treatment Plant will remain at 1.0 million gallons per day. The estimated cost of this construction and rebuilding is \$800,000.

East Shore Plant, New Haven, Conn.

Settling tanks are being added to the plant and the Morris Cove Pumping Station is being increased in capacity at a cost of about \$650,000.

Elizabeth, N.J.

To eliminate the discharge of raw industrial wastes to the Arthur Kill from the lower Trumbull Street Sewer and Bayway sections of Elizabeth, a \$1,030,000 bond issue ordinance was introduced on April 11, 1967. This is to be used for construction of the Bayway Interceptor Sewer and East Side Industrial Waste Sewer which is located on right-of-way within the property of Singer Manufacturing Company.

The Bayway Sewer construction includes 3,420 feet of 30-inch sewer, 1,360 of 24-inch sewer and 3,390 feet of 8-inch to 15-inch sewer. The East Side Industrial Sewer includes 2,930 feet of 18-inch pipe.

Bids have been accepted and construction is in progress. The Bayway Sewer is approximately 65% completed.

New sewers, a pumping station and force main are being constructed to eliminate pollution from the Port of Elizabeth area. The project includes 7,500 feet of sewer pipe and over 2,000 feet of CIP pressure main and is 95 percent completed. The construction cost is expected to be approximately \$950,000.

Elmwood Homes, Staten Island, N.Y.

An activated sludge plant is being constructed at this site at a cost of \$400,000 in order to treat wastes from 48 duplex homes. The following units are to be included in this project: bar screen; comminutor; two 230,000 gallon aeration tanks; 2 settling tanks; chlorine contact tank; sludge holding tank; 2 blowers; standby diesel engine; HTH storage tank; and pump station. Completion will be in early 1968.

Forest Park, Staten Island, N.Y.

Secondary facilities are under construction to accommodate 1200 new two-family homes. New facilities at this site are four 250,000 gallon aeration tanks; 2 settling tanks and a sludge holding tank. Operation should begin in March 1968 and give a 90 percent

FOREST PARK
SEWAGE TREATMENT PLANT

WILLIAM COSULICH
CONSULTING ENGINEER



biochemical oxygen demand reduction and 90 percent total suspended solids reduction.

Fairfield, Conn.

Construction of the first of two phases in expanding this plant's capacity is underway and will be completed in April, 1968. This work consists of one new primary tank and two new secondary tanks. Upon completion of this work, construction will start to increase the capacity of the aeration system by the addition of more tanks and blower equipment.

The plant's increased capacity will be 6.0 million gallons per day at a cost of \$1,600,000. Expansion of the service area calls for a pumping station and force main to serve a 400-bed hospital located on the East Turnpike and the Stratfield area of town.

Great Neck Village, N.Y.

Bids were accepted for the expansion and modernization of the Great Neck Village Secondary Treatment Plant and construction started late in 1967. In detail, the construction and modifications consist of replacing two existing primary settling tanks with two 60 ft. by 15 ft. enclosed units, a grit chamber and installation of an external heat exchanger and replacement of the furnace for the digesters. This project also includes repairs to the existing trickling filter, changing a chemical storage room to accommodate prechlorination equipment and modifications to the chlorine contact tank. The total cost for this work is estimated at \$250,000.

Greenwich, Conn.

A pumping station, force mains and trunk sewers are presently being constructed to take sewage from the Riverside Area of Greenwich to the Grass Island Treatment Plant. Cost of the project is \$3,200,000, and it was 50 percent completed at the end of 1967.

Long Beach, N.Y.

Modernization of the Long Beach Secondary Treatment Plant has been started. Under this phase of the project, modification of the present grit collecting system will be done and repairs to the wet well will be made. New chlorination equipment will be installed to replace the existing equipment. Two comminutors and an additional sewage pump are also provided for under this contract. Due to the pressing needs of this community, construction of the permanent dock to accommodate their sludge barge has been put off and the modernization of the Long Beach Treatment Plant has been given precedence over this phase of the operation.

Modernization costs for the Long Beach treatment plant project are estimated to be \$213,000.

Middlesex County Sewerage Authority, N.J.

Construction was started on a pumping station in the Raritan Centre Site (Old Raritan Arsenal), which is being built as replacement for the present Hayden Pumping Station, which has a 6-million-gallon-per-day capacity. The new station will have a 67-million-gallon-per-day capacity and ultimately, with additional pumps, this will be increased to 115 million gallons per day. A new force main across the river from this station to the central treatment plant and the new gravity sewer to the new station are being installed for the ultimate capacity.

Norwalk, Conn.

Work is in progress to expand this plant's capacity to 15 million gallons per day at a cost of \$1,738,000. The original grit chamber; circular settling tanks and chlorine contact chamber are to be demolished. A new grit chamber with grit collectors; four new primary tanks; a chlorine contact tank; sludge thickening tank; and F.S. System of sludge incineration should be completed by the summer of 1968. The service area is also being expanded.

Passaic Valley Sewerage Commission, N.J.

The Passaic Valley Sewage Treatment Plant is adding two sludge storage tanks to its facilities. These have a capacity of 7,000 tons each and will be completed at a cost of \$1,300,000 in 1968.

Rockland County Sewer District No. 1, N.Y.

In April, 1967, construction was started on a 10-million-gallon-per-day activated sludge treatment plant with the provisions for step aeration at an estimated cost of \$4,762,081.

The sewage handling units of the plant in the order of flow are: pumping station; primary tanks; aeration tanks; final settling tanks; and a chlorine mixing tank. The sludge handling units are: return sludge pumping chamber; primary sludge pumping chamber; cyclone grit removers; concentration tank; digesters; and sludge oxidation facility. The remaining units include an administration building and a garage.

The County District's responsibility is to build the interceptor sewer, and the sewage treatment plant, and to maintain them once they are constructed. It is the responsibility of the towns and villages to build and maintain the lateral sewers.

The construction of the county sewer system has been divided into 23 individual contracts, 15 of which have been either awarded or bids thereon have been received.

Stage II work will consist of 16 individual contracts, advertising for which will take place during this year.

The total estimated cost of the entire project is \$23,500,000.

Stony Point, N.Y.

The New York State Department of Health has approved Contract #5 at an estimated cost of \$1,000,000. These

are the plans for the construction of a 1.0-million-gallon-per-day extended aeration activated sludge processing plant. These plans have been forwarded to the Federal agency for approval. Construction is expected to start in early 1968.

Contract #4 will be advertised for bids by early 1968. This portion will include sewerage everything south of Main Street to the town line of Haverstraw. The estimated cost is \$1,200,000.

Contract #2 intercepting sewer, Contract #3 lateral sewers, and contract #6 effluent outfall pipe have all been completed at an estimated cost of \$1,760,000. Total estimated cost of the entire project is \$3,960,000.

Wards Island, N.Y.

Rehabilitation of the Manhattan and Bronx grit chambers is in progress and scheduled for completion in February 1969. New York is spending \$2,030,650 for this improvement.

West Haven, Conn.

A new 8.0-million-gallon-per-day primary plant is being built at a cost of \$5,000,000. Included in the total cost are plant pumping station renovations; additional trunk sewers and force mains. The new treatment units are Barminutors; four settling tanks; sludge degritter; sludge thickener; vacuum filter; F.S. incinerator; and post chlorinator. Completion of the project is anticipated by early 1969.

FUTURE PROJECTS

Darien, Conn.

Consulting Engineers completed a report in January 1967 to rebuild the present plant at a cost of about \$6,000,000. The expanded facility will have a design capacity of 2.0 million gallons per day and will be upgraded to provide secondary treatment utilizing mechanical aeration.

Elizabeth Joint Meeting, N.J.

The Pilot Plant Study has been completed and the data obtained is being used in the design of secondary treatment facilities.

An industrial waste survey is being conducted. Rules and regulations are to be approved by the eleven municipalities for discharge of industrial wastes to the secondary treatment units.

A report has been submitted which will fix the size and population to be served by the improved plant. This must be approved by the municipalities and then by the New Jersey State Health Department. Design of secondary treatment facilities will then proceed from there.

Fort Tilden, N.Y.

The District Engineer is proceeding with the design for diverting flow from the Fort Tilden primary treatment plant to the New York City, Rockaway Pollution Control Plant. He will negotiate with the City of New York and thereafter hire a contractor to begin construction. It is estimated that this work will be started in 1968 and completed the same year.

F.D.R. Veterans Administration Hospital, Crugers, N.Y.

To complete final plans for the additions of secondary units to this primary treatment plant, a flume has been inserted at the head of the chlorine contact

tank. From this, accurate flow measurements will be recorded and forwarded to the engineering department. After all necessary data has been compiled, final plans and specifications will be completed for construction of the additional units. This engineering report is being prepared by the Veterans Administration, Department of Medicine and Supplies, Washington, D.C. To date an appropriation for \$225,000 has been approved by the Veterans Administration for this project.

Freeport, N.Y.

A preliminary report has been prepared by a consulting engineering firm and submitted to the Nassau County Department of Health for the expansion and improvements required in the Freeport Secondary Treatment Plant for the control of industrial wastes. The modernization of the Ray Street pumping station is also included in this report. The design for the Freeport Plant is to be increased from 4.0 to 6.0 million gallons per day. The estimated cost for this proposed expansion is \$765,000.

Glen Cove, N.Y.

Two reports have been submitted by consulting engineers for the replacement of the Morgan Island primary treatment plant with either a secondary treatment package plant at a cost of \$90,000 or a pumping station which will require the building of another pumping station on the main land, force main, interceptors, and enlargement of the existing trunk lines to the Morris Avenue Secondary Treatment Plant.

Estates of Great Neck Landing, Babylon, N.Y.

Plans have been approved by the New York State Health Department for the construction of a tertiary treatment plant for a private development of 238 homes on the South Shore of Suffolk County.

The treatment plant will be constructed along the East Side of Dolphin Drive and will have a design flow of 120,000 gallons per day; its effluent will empty into the Great Neck Creek. Construction is expected to begin in the Spring of 1968. The estimated cost for this project is \$150,000.

Greenwich, Conn.

An engineering report has been submitted for construction of the Bell Haven Pumping Station, force mains and trunk sewers to convey septic tank discharge to the Grass Island Treatment Plant.

Huntington, N.Y.

Plans have been submitted to the New York State Health Department for review of the installation of an additional vacuum filtering unit and the construction of a chemical oxidation system for the treatment of scavenger waste. Included are plans to install a standby generator and revisions to the present grit collecting chamber. The total cost for this project is estimated to be \$170,000. Rehabilitation of the final settling tanks is being studied by the township of Huntington.

Joint Regional Sewerage Board, N.Y.

The final legal steps have been made to form a joint sewer district. This district will include the Village of West Haverstraw, the Town of Haverstraw Sewer District No. 1 and two New York State institutions, Letchworth Village and the Rehabilitation Hospital, also the industry of the Garnerville Holding Corporation. The town of Haverstraw Sewer District does not have any existing treatment facilities at this time. They will be responsible for the construction of the sewers in their district at an estimated cost of \$800,000.

The Joint Regional Sewerage Board will construct a new 3.2-million-gallon-per-day modified activated sludge treatment plant at an estimated cost of \$1,800,000. Upon completion of this new facility, the primary treatment plants of West Haverstraw, Letchworth Village, and the New York State Rehabilitation Hospital plant will be abandoned and the raw sewage diverted to the new plant.

Laurence Harbor, N.J.

The preliminary engineering reports for secondary treatment are complete and the final plans are about 85 percent completed. The capacity of the plant will remain at 1.4 million gallons per day, and the treatment will be upgraded to mechanical contact aeration giving

a 90 percent biochemical oxygen demand reduction and a 90 (or greater) percent total suspended solids reduction. Secondary units to be installed are dual aeration tanks with 1-1/2 hours detention time and dual secondary settling tanks with 3 hours detention. The cost of these secondary units is estimated at \$750,000. The starting date for construction depends on when Federal funds become available.

Letchworth Village, N.Y.

This is an Imhoff primary sedimentation type treatment, with facilities to chlorinate the final effluent sewage to the Hudson River. Because of the need to upgrade the present type treatment, this institution found it necessary to join the new Regional Sewerage Board. This will call for abandoning of the present type treatment and the diverting of raw sewage to the new activated sludge treatment plant upon its completion.

Linden-Roselle Sewerage Authority, N.J.

A pilot plant study which was begun in Fall 1964 was completed in January 1967. This study is in compliance with a state order of March 21, 1967. An industrial waste survey is being conducted to determine how these wastes will affect secondary treatment facilities.

Biological treatment will be provided by a deep plastic media roughing filter to be followed by a step aeration activated sludge process. The first stage will have a 17-million-gallon-per-day capacity and the ultimate capacity will be 25.5 million gallons per day.

Thickening tanks are to be provided for sludge concentration, together with additional sludge storage facilities. The plant will continue to handle Rahway Valley sludge and to barge sludge to sea.

Provisions are being made for effluent chlorination. The existing pump station will be increased to a 51

million-gallon-per-day capacity, which is that of the incoming trunk sewer. Plans call for conversion of sedimentation tanks to final clarifiers.

Madison Township Sewerage Authority, N.J.

The New Jersey State Health Department has approved plans for the construction of a comprehensive sewer system in Cheesequake Village at a cost of \$82,285. Sanitary sewers have also been approved in John Marshall Village and on Anwar Drive at a cost of \$3,725 and \$10,000 respectively.

Middlesex County Sewerage Authority, N.J.

The Pilot Plant Study has been completed and is being evaluated by their Consultants. Plans are being prepared for design of new secondary treatment works.

In early 1967, the Authority engaged three consultants for a preliminary report on the needed expansion of trunk lines, Sayreville pumping station, force main, and outfall.

The Authority has formed an overall consulting board to review and make recommendations on the overall design for new treatment works, pumping station and lines.

The Middlesex County Sewerage Authority has acquired about 100 acres of new land for construction of new biological treatment works.

Milford, Conn.

Final plans have been submitted for a new activated sludge treatment plant to treat the effluent from the Devon Area to the Housatonic River. The plant's design capacity will be 3.1 million gallons per day.

Nassau County District No. 3, N.Y.

Two of the three collection districts which were designed have been approved and the third is awaiting approval by the Nassau County Board of Supervisors. Site preparation drawings have been completed and plans for the interceptors are awaiting approval by the New York State Health Department. Official ground breaking for the Nassau County District No. 3 treatment plant is expected to take place late in 1968. The revised cost for this entire abatement program is estimated to be \$335,000,000.

Nassau County District No. 4, N.Y.

The contracted consulting engineering firm has reported to Nassau County that their comprehensive study of a sewer district to serve the entire length of the North Shore of Nassau County is better than 66 percent completed. This report will consider what is needed in the way of sewerage facilities for this area of Nassau County.

New York City, N.Y.

Bloomfield, Eltingville, Fresh Kills, Tottenville

The city originally planned to build a small treatment plant in each of the lightly populated portions of Staten Island, Bloomfield, Eltingville, Fresh Kills, and Tottenville in addition to the existing plants at Port Richmond and Oakwood Beach. It is now considered more feasible to divert flows from these lightly populated areas to the existing plants by construction of a system of interceptors and pump stations.

Coney Island, N.Y.

Preliminary work is now underway on a feasibility study for upgrading this facility to step aeration. Removal of biochemical oxygen demand will be enhanced above 90 percent. The expense of improving this 105-million-gallon-per-day facility will be about \$9,640,000. New York City is now negotiating for a consultant for this job.

North River, N.Y.

This plant, which will be located between 137th Street and West 145th Street on the North River, is designed to handle 220 million gallons per day of raw wastes which are now entering the Hudson and Harlem Rivers from upper Manhattan. Technical plans have been given clearance by sanitary engineering consultants and the architectural features are presently under review. The final design will include whatever revisions are recommended.

North River is a short period aeration plant of extremely compact design and because of its location on the Hudson, aesthetic features are being carefully considered. Initial construction should begin in the Summer of 1968. Cost of this project is about \$200,000,000.

Intercepting sewers to North River will be constructed in five sections. One was begun in 1966, three were completed in design this year and the last should be ready for contract in early 1968.

Oakwood Beach, N.Y.

This plant will also be upgraded to a step aeration plant with its capacity doubled to 30 million gallons per day and ultimately to 60 million gallons per day. About \$10,500,000 will be spent on this project. Preliminary design is now underway with construction completion anticipated by December 1971. Outfall design is being given careful consideration to insure that there will be no further degradation of Staten Island Beaches.

Preliminary plans have been completed for the west branch interceptor, which will accept sewage from the entire south shore of Staten Island from Great Kills Park to Prince's Bay. This project should be finished in November 1969.

Owls Head, N.Y.

A study is underway for upgrading this plant to a step aeration facility. The project will include expanding the property by filling an offshore portion to the south to provide room for new units, (primary settling tanks, additional aeration tanks and sludge thickening tanks). Biochemical oxygen demand removal for this 160-million-gallon-per-day plant should be enhanced to about 92 percent at a cost of \$14,000,000.

The Department of Public Works is presently negotiating for a consulting engineer. Their schedule calls for completion of this work by June 1968.

Port Richmond, N.Y.

Final design is underway to convert the Port Richmond plant from a 10-million-gallon-per-day primary facility to a 60-million-gallon-per-day secondary facility utilizing the Gould step-aeration process. The plant should begin operation in December of 1971 after an expenditure of about \$20,000,000. Design of the east branch interceptor was completed in 1967 and will be in operation by March 1972.

Red Hook, N.Y.

The Red Hook plant is being designed for step aeration and will be located on the Brooklyn shore of the Lower East River. Preliminary planning is underway and completion of the project is planned for December of 1972. The Department of Public Works is negotiating for a site which will be of an adequate size to accommodate step aeration facilities. The former Brooklyn Navy Yard is one being considered. This plant will have a capacity of 50 million gallons per day.

Final design of the interceptors is advancing. The north branch is 85 percent completed and the south branch 50 percent completed.

Spring Creek, N.Y.

The New York City sewer system is of the combined type and as a result, a large amount of raw sewage is discharged to the receiving waters during rain storms. This sewage is especially detrimental in the vicinity of bathing beaches where it becomes a public health hazard.

An Auxiliary Program is, now, being planned to impound, disinfect, settle, and degrit these combined flows in the vicinity of proposed bathing beaches. Design of the first prototype plant has been completed and will be located at Spring Creek on Jamaica Bay. Cost of the plant will be about \$12,000,000 and its impoundment reservoir has a capacity of 12,400,000 gallons. Start of construction is pending on determination of eligibility for State and Federal aid, which should be forthcoming in the near future.

Evaluation of the Spring Creek plant will serve as a basis for future auxiliary plants. Preliminary designs have already been prepared for the Brooklyn Marginal Pollution Control Project and the Eastchester Bay Marginal Control Project.

Wards Island, N.Y.

Preliminary design for this plant's expansion from 220 to 290 million gallons per day was completed by consultants. Construction of this expansion should be completed in 1971 at an approximate cost of \$18,500,000. and will provide a removal of 92 percent biochemical oxygen demand.

New York State Rehabilitation Hospital West Haverstraw, N.Y.

This state institution along with Letchworth Village will abandon its Imhoff primary sedimentation plant, and the raw sewage will be diverted to the new Joint Regional Sewerage Board's new activated sludge plant.

North Bergen - Woodcliff, N.J.

A consultant has completed the preliminary engineering for conversion of this plant to a pump station. Instead of giving the wastes primary treatment at the present site, the wastes will be pumped to a central secondary treatment plant which does not discharge into the Interstate Sanitation Waters. The pump station will have a one-million-gallon-per-day capacity and will cost approximately \$600,000.

Norwalk, Conn.

A preliminary report has been submitted for conversion of this primary plant to a secondary facility at a cost of \$3,000,000.

Nyack, South Nyack and Upper Nyack, N.Y.

The Villages of Nyack, South Nyack and Upper Nyack have completed all the legal requirements to abandon the three present primary treatment plants. The entire flow of raw sewage from these three communities will be diverted to the new Orangetown secondary Treatment Plant. This will be accomplished by the construction of the necessary pumping stations to lift the raw sewage from the river level up to the old Erie Railroad right-of-way. From this point, it will flow by gravity to the Orangetown-Sparkill Pumping Station.

To take the flow from the Jewish Convalescent Home and from the Village of Grandview, a new pump station will be constructed. The flow from this station will be pumped to the Nyack's gravity sewer line and then to the Sparkill Pumping Station.

Oyster Bay, N.Y.

Due to legal developments, the Oyster Bay Sewer District has at present been unable to obtain clear title to the property on which they wish to build a new pumping station. The pumping station will be

installed at an estimated cost of \$40,000. Construction will begin as soon as this legality has been resolved.

Peekskill, N.Y.

Three separate plans are being considered to abate all pollution from this area.

Plan "A" consists of a comprehensive study which will include the northern section of Westchester County; Putnam County; the City of Peekskill; and the industrial plant of Standard Brands, Inc. This study will also include the building of a secondary treatment plant adjacent to the present City of Peekskill primary plant. The plant effluent would also be extended out to the deep water channel of the Hudson River.

Plans "B" and "C" have been approved by the State and County Health Departments and time schedules have been accepted. Plan "B" would be the enlargement and upgrading of the present primary plant to give secondary treatment for the waste from the City of Peekskill only. Plan "C" would include Plan "B" and in addition, would treat all the waste from Standard Brands, Inc. No decisive decision will be made regarding these anticipated changes until the comprehensive study has been completed, reviewed by all participating parties and finally, approved by the State and County Health Departments.

Port Jefferson, N.Y.

The Port Jefferson Sewer District has engaged a consulting engineering firm to study the conversion of this treatment plant from a primary to a secondary treatment plant. They have already taken under consideration the requirements of the community due to the increase in population. This will include the need for pumping stations and sewers to newly developed areas of Port Jefferson.

Port Washington, N.Y.

Approval has been received for the construction of a

sludge incinerator and component building facilities. Also approved is the conversion of the secondary digester to a sludge thickening tank and the conversion of the primary digester to a standby storage tank. Two new pumping stations and main sewers will be built to service a newly developed section of the Port Washington Sewer District. Modernization of the existing main pumping station will also be done. The estimated cost for the construction and the modernization at the Port Washington Sewer District is \$460,000.

Rahway Valley Sewerage Authority, N.J.

Final design of modifications and secondary treatment facilities is underway and should be completed by March 31, 1968.

Modifications of the existing primary system call for a new parallel grit chamber, new mechanical bar screen and expanding the plant's capacity from 65 to 75 million gallons per day by putting larger engines on pumps and converting a 7-million-gallon-per-day pump to a 15-million-gallon-per-day pump. Primary settling tanks will be improved to eliminate carry-over of solids.

Plans call for building a new Administration Building and converting the existing one to a new Laboratory.

A step aeration process is planned to upgrade this plant's treatment. Aeration tanks and diffusers are being designed for a 35-million-gallon-per-day average daily flow. Other equipment to be included in the secondary treatment process is as follows:

- 5 Diesel Engines and Blowers
- 4 23-million-gallon-per-day Low Lift Pumps
- 3 60-Ft. Sludge Thickeners
- 3 80-Ft. Digesters
- 3 120-Ft. Final Settling Tanks

The existing digesters are to be converted to sludge storage tanks. The cost will be about \$10,800,000.

Roslyn, N.Y.

Bids have been submitted for the modernization and repair work required for the Roslyn Treatment Plant and work is expected to start immediately upon their acceptance. This contract calls for the rehabilitation of the primary settling tanks; trickling filters; secondary settling tanks; and sludge handling equipment. Additions include a comminutor; new main pump and controls; and heating coils to be installed in the digesters. The bid price for this program is \$117,000.

Sing Sing Prison, Ossining, N.Y.

The Department of Public Works, State of New York is currently preparing plans and specifications to upgrade the present primary units so that an adequate secondary treated effluent may be discharged to the Hudson River. However, final approval and submitting for bids will be delayed pending a study by the State Department of Correction regarding the renovation or complete abandonment of the prison from this location.

Stamford, Conn.

The City Officials have hired a consultant who has prepared an engineering report giving improvements needed for adequate treatment of all wastes by means of new secondary processing units. Also included will be the sewerage of areas which are considered a public health nuisance. The foregoing was directed by the Connecticut State Water Resources Commission in a letter of June 24, 1966.

Standard Brands, Inc., Peekskill, N.Y.

Although an engineering report and pilot plant studies have been completed to eliminate the domestic

and industrial waste discharges from this industrial plant site, no definite schedule of construction is contemplated. The revised plans to abate pollution from this corporation are to divert all wastes to the City of Peekskill's sanitary system. To accomplish this, a new engineering study and extended pilot plant studies are being conducted. A revised time schedule for eliminating this waste has been requested from the Municipal and Industrial Waste Section, New York State Department of Health.

Stratford, Conn.

A comprehensive study concerning the plant's needs for upgrading to secondary treatment has been submitted to the Connecticut State Health Department and Water Resources Commission for review and approval.

Stony Point District No. 1, N.Y.

This present high rate secondary treatment plant that services a portion of Stony Point will be abandoned and the raw sewage will be diverted by gravity to the new Stony Point activated sludge treatment plant upon its completion.

Suffolk County Districts No. 4, 5, 6, 7, & 8, N.Y.

The consulting engineering firm which was retained to study the sewerage requirements along the North Shore of Suffolk County is in the process of preparing the report for submission to the Suffolk County Board of Supervisors. The study indicates that Districts 4, 5 and 6 will be combined to serve Huntington and the immediately surrounding communities. District 7 will treat the sanitary waste of the Smithtown section and District 8 will accept the wastes from the adjacent drainage area of Port Jefferson. In each instance the activated sludge type of treatment will be employed.

West Haverstraw, N.Y.

West Haverstraw is a member of the new Joint Regional Sewerage Board, and upon completion of the new regional activated sludge treatment plant, will abandon its present Imhoff primary sedimentation type of treatment and divert the raw sewage to the new regional plant.

Westchester County, Department of Public Works, N.Y.

All communities located in the drainage area adjacent to the east shore of the Hudson River Valley extending from Croton south to the New York City line have had engineering reports completed and in some instances were prepared to let contracts for construction. However, a supplementary comprehensive study is now being prepared by the Westchester County Department of Public Works, who in turn have hired a consulting engineering firm to write this report. Briefly, the report will deal with the abatement of all waste to the Hudson River from a point south of Croton to the New York City line and from the village of Port Chester located on Long Island Sound. The report will indicate the feasibility of diverting the flow from these communities by means of pumping stations, force mains and transmission lines to either the Yonkers Joint Meeting Plant or the construction of an additional secondary treatment plant located at the head waters of the Croton River. The upgrading of the present primary plant at Yonkers will also be included in the study.

The following communities and industrial plants located in the Hudson River Valley are to be included in this report: Croton; New York Central Railroad (Harmon Shops); Crotonville; Ossining; Briarcliff Manor; North Tarrytown; Tarrytown; Irvington; and the General Motors-Chevrolet-Fisher Body, Tarrytown Division plant.

Other consulting engineering firms have been engaged by the Westchester County Department of Public Works to prepare engineering reports on upgrading the

treatment of the County owned plants which discharge to Long Island Sound. The plants involved are Blind Brook at Rye, New York, Mamaroneck and the New Rochelle primary pollution control plants. The Blind Brook study will also consider the diverting and treating of all wastes from the village of Port Chester. At present, Port Chester owns and operates a primary treatment plant with its discharge to the Byram River.

Westport, Conn.

This sewage system will be expanded through the construction of laterals, possible force mains and pumping stations. Facilities at this activated sludge plant will be increased to accommodate the higher flow.

Woodbridge, N.J.

The proposed basis of design has been completed and submitted to the New Jersey State Health Department for approval. The plans submitted call for combining Carteret with Woodbridge. The Keasby Sewage Treatment Plant will be converted to a pump station and its flow will pass through a force main to the Woodbridge Plant.

The new plant will handle a flow of 15.5 million gallons per day and is expected to give an 85 percent biochemical oxygen demand reduction and a 90 percent total suspended solids removal. The two existing primary clarifiers are to be converted to secondary clarifiers and a third clarifier is to be constructed. A new chlorine contact tank and a new aeration basin are also to be added. The existing sand filters will be rehabilitated to provide tertiary treatment for that portion of the flow which is to be sold to industry for cooling purposes. Alterations, new secondary units and the force main will be completed at an estimated cost of \$6,000,000.

INDUSTRIES IN THE INTERSTATE SANITATION DISTRICT

A major source of waste effluents which enter District Waters originate from industrial processes. These waste flows range from cooling waters, which have no direct contact with the product, to highly contaminated process waters.

The Commission has a policy of visiting and **sampling** those plants which discharge to its waters and recommending improvements where polluted conditions are found. The following industries are those which were surveyed during 1967.

American Agricultural & Chemical Company
Carteret, N.J.

This plant produces a variety of chemical fertilizers and phosphates. The sulfuric acid; superphosphate; granular fertilizer; phosphoric acid; fluosilicates; sodium tripolyphosphate; and sodium phosphate processes are used in production. Salt water is used for cooling in various processes on a once-through basis and then returned to the Kill. Most of the fresh water is consumed in production or discharged to the sewer system after being contaminated. Waste discharges may occur from leaks in the systems and regeneration of ion exchangers. Much of the fertilizer material is in the form of dust and a portion of it is transported to the Kill by wind and storm runoff. Losses also occur during the unloading of ships.

Agrico uses about 117 million gallons of fresh water per year and salt water at the rate of 1400 gallons per minute during its 8-hr.-per-day, 5-day-per-week operation.

Samples of the effluent flows were taken by the Interstate Sanitation Commission on July 26, 1967. These samples indicated acid and nutrient pollution. Observations will be made of a ship unloading operation to determine approximate losses of fertilizer material to the Kill.

American Cyanamid Company, Linden, N.J.

Because of an explosion damaging two waste storage tanks, operation of the new facilities will be delayed until May 30, 1968.

It is expected that early next spring, three storage tanks (135,000-gallon capacity each) will be completed and put into operation. A 5,000 ton barge is completed and operational. The barge will haul 1,200 to 1,400 tons of waste per trip for disposal 120 miles at sea every 7 to 10 days.

American Smelting & Refining Company
Perth Amboy, N.J.

Copper bullion, scrap copper and brass are electrolytically refined at this plant to produce pure copper. Slimes which collect in the bottom of the electrolytic tanks are further refined to yield gold and silver. Brass alloys are manufactured from refined copper, tin, lead, and zinc and cast into special sizes and shapes. Antimony alloys and oxides are made from crude antimonial lead alloys.

The American Smelting and Refining Company draws about 7.2 million gallons per day of salt water from the Kill. This is used on a once-through basis for cooling and returned. Approximately 875,000 gallons per day of fresh water is used for make-up water in the tank houses, for sanitary purposes, steam production and for make-up water in the recirculating cooling water system. The make-up water in the tank houses accounts for about 60 percent of the fresh water usage. The only waste waters being discharged are cooling waters, condensate waters and overflow from the plant's cooling pond.

Effluent samples were taken by the Interstate Sanitation Commission on June 21, 1967. These showed that there was some discharge of copper wastes. A letter was sent by this Commission to the American Smelting & Refining Company requesting plans to reduce this copper loss.

Archer Daniels-Midland, Elizabeth, N.J.

Fish, sperm and vegetable oils are processed here for use in the paint and varnish industry, cosmetic industry and as lubricating oil. The operations involved here are filtration of crude oils, oxidation of oils and refining of oils.

Approximately 190,000 gallons per day of fresh water are used in the various processes for steam

generation and sanitary purposes. Salt water which is drawn at a rate of 240,000 gallons per day from the Arthur Kill is used on a once-through basis in the refrigeration system and returned to the Kill.

Sanitary effluents are discharged to the city sewer. Waters which become contaminated in the processes pass through an oil-water separator. An inspection by this office revealed that the outlet from the separator, which formerly discharged to the Arthur Kill, has now been connected to the city sewer. The cooling water effluent was sampled by the Commission on May 5, 1967. An analysis of these samples indicated that there was no remaining pollution problem.

Armour Agricultural Chemical Company
Carteret, N.J.

This plant was investigated by the Interstate Sanitation Commission on February 23, 1967 and found to have discontinued its operation in Carteret. Another company has plans to acquire the property and most of the buildings on the site will be demolished. Armour will move its Carteret division to Hightstown, New Jersey.

Benrus Corporation, Ridgefield, Conn.

Waste treatment facilities are constructed to handle 200 gallons per minute of plating wastes at the Benrus Corporation. Most of this is recirculated with any overflow going to the Norwalk River.

Borne Chemical Company, Elizabeth, N.J.

Lubrication oils, sole leather, tanning products, textile processing oils, fugitive tints for yarn, additive dibenzol, disulfide and fuel oil additive are produced at this plant.

About 15,200 gallons per day city water is purchased from Elizabeth. An approximate breakdown of

water usage is 25 percent for cooling, 25 percent to boilers and 50 percent for products and sanitary.

Wastes from the divenzol, disulfide processes amount to 1,400 gallons every other day and are discharged to a 102,000 gallon open holding tank. This tank has a thick layer of oil on its surface and overflows during rainy weather. There was no flow observed from this tank to the Kill. Sanitary wastes flow to the city sewer.

Samples of the effluent flow were taken by the Interstate Sanitation Commission on June 7, 1967. There was high organic pollution due to oil which was leaking into the storm drainage system. A second visit, August 2, 1967, showed that this one outlet had been completely closed off.

Burndy Corporation, Norwalk, Conn.

Burndy Corporation has installed treatment facilities to handle about 5,000 gallons per day of plating wastes being discharged to the Noroton River.

Chesebrough-Ponds, Inc., Perth Amboy, N.J.

Petroleum jelly and white oil are produced at this plant. Raw materials used are petroleum, oils, waxes, sulphuric acid, soda ash, and caustic soda.

About 33,300 gallons per day of fresh water are utilized by Chesebrough-Ponds for cooling, steam, sanitary purposes, and fume scrubbers. Fume scrubber effluent is neutralized prior to discharge. Most waste waters pass through an oil and water separator prior to release to the Kill. Sanitary wastes are pumped to the municipal sewer system.

Samples were taken of the effluent flows on May 31, 1967 by the Interstate Sanitation Commission. Results indicated that a BOD was exerted by the separator overflow. A letter was sent by the Commission requesting that action be taken to alleviate this condition.

Chesebrough-Ponds has diverted this effluent to the city sewer.

Cities Service Oil Company, Linden, N.J.

Citgo owns an asphalt refinery in Linden, New Jersey. This has been closed down since November, 1966. At the present time, these Citgo facilities are used for pumping gasoline from barges and ships to storage tanks in another area for distribution.

Water which collects in sumps around the storage tanks is pumped to an A.P.I. separator which discharges to the Arthur Kill. This separator is skimmed daily and represents the only effluent flow to the Kill. Dry weather flow is 5 to 10 gallons per minute.

Copper Pigment and Chemical Works, Inc.
Elizabeth, N.J.

This plant had received a New Jersey State Health Department abatement order in 1965. A check by the Commission early in 1967 showed that the Elizabeth plant site has been completely demolished and moved to another location.

Continental Can Company, Piermont, N.Y.

The New York State Department of Health issued an order on May 15, 1967. This order supersedes the order dated June 10, 1966.

The most recent order calls for the upgrading of treatment for this industry by December, 1968. At the present time, the industry is giving primary treatment to its industrial wastes. The domestic wastes are discharged to the village sewer of Piermont.

An engineering report has been completed and will be forwarded to the New York State Health Department for approval by February 1968. Construction of new treatment facilities is expected to be completed by the end of 1968.

Foster Wheeler Company, Carteret, N.J.

Foster Wheeler was visited on February 21, 1967 and found to have discontinued the major portion of its Carteret operation. Only laboratory facilities still exist at the present site and there is no waste discharge to the Kill. The entire operation will be moved to Livingston, New Jersey.

This site is owned by a Newark realty company which is leasing the facilities formerly occupied by Foster Wheeler to several smaller companies. Improvements have been made at this site so that all waste waters will flow to the municipal sewer system for treatment.

General American Transportation Company
Carteret, N.J.

The Carteret Division of GATX is used as a storage and distribution facility for a variety of liquid chemicals, naphthas, petroleum products, and plastic pellets. These materials are transported by ship, barge, truck, and tank cars.

About 60,000 gallons per day of fresh water are utilized except during the winter when this increases to 100,000 gallons per day. Sixty percent of this water goes toward steam production and the remainder is consumed for cleanup, washdown and sanitary purposes.

The oil-water separators receive storm runoff from the diked storage areas along with cleanup waters. These separators which formerly discharged to the Kill have recently had their flows diverted to the municipal sewer system by the installation of pumping facilities. Only during heavy storms will there be any runoff to the Kill.

The Commission sampled the separator effluent on June 14, 1967. Oil pollution, along with high BOD and COD values are found. This pollution has been eliminated by the recent diversion.

General Aniline and Film Corp., Linden, N.J.

General Aniline and Film Corp. has conducted studies concerning the character and treatability of their wastes. These have been submitted to a consultant, who will submit a report early next year on the design of treatment facilities for the company.

There is no new construction this year. Sludge-type wastes are presently being buried on the plant's property.

Hess Oil Company, Port Reading, N.J.

Hess Oil Company released a contract for a new oil floatation chamber on December 1, 1967. This unit will be completed by June 1, 1968 and will have a capacity of 750 gallons per minute. Normal flow is approximately 350 gallons per minute which will permit recirculation.

Humble Oil and Refining Company, Linden, N.J.

The Bayway Refinery is able to handle a large quantity of crude oil per day. These crudes are brought in by tankers from South America and the Gulf of Mexico to this refinery where they are refined to a large number of different petroleum products.

Water is obtained from three sources which are the Arthur Kill, surface reservoirs and the Elizabethtown municipal supply. Approximately 99 percent of the water usage is for cooling and is pumped from the Arthur Kill.

Refinery effluent to the Kill averages about 187 million gallons per day. Refinery wastes which pollute the receiving stream include phenols, mercaptans, nitrogen bases, naphthenic acids, and oils. Sanitary wastes discharge to the city sewer.

Bayway's Water Effluent Improvement Program has initiated more than 35 different projects to raise the quality of its waste-waters. This program entails a spending of more than nine million dollars.

Projects completed this year are the closing of a water drawoff system from the Baltimore & Ohio Railroad and Greater Elizabeth Tank Fields, dredging of Morses Creek and building of facilities for spent caustics

collection and disposal. Work in progress during 1967 includes sewer segregation; a cooling tower for the east side chemical production; an oily water diversion system; and a lime pit to improve acid neutralization.

Various laboratory and engineering studies are under way to improve the handling of water borne wastes. Among these are the evaluation of secondary treatment processes for concentrated effluents and methods of oil-water separation.

Modernization and centralizing oil separators and storm water diversion plans are being submitted for funds and work should begin next year.

International Smelting & Refining Company,
Perth Amboy, N.J.

This plant electrolytically refines blister copper to produce 99.98% pure copper. Valuable impurities, such as gold, silver and platinum are recovered from the original blister copper. The refined copper is then cast into shapes which are best suited for its intended usage.

Fresh water is obtained from company-owned wells and from the municipal supply. This is utilized for sanitary purposes, steam production and make-up water. Approximately 1,400 gallons per minute of cooling water are drawn from and returned without recirculation to the Raritan River. All sanitary wastes are discharged to the city sewer system for treatment with the exception of one small area which is handled by a cesspool and tile field.

Slag material from the furnace area is sluiced to a pond on the property. The overflow from this pond goes to the Kill. This slag is piled near the Kill and trucked away.

Sampling by this Commission on August 16, 1967 showed the release of copper wastes to the Kill. A letter was sent to the company requesting plans to eliminate the copper content in its effluent.

King Chemical Company, Norwalk, Conn.

King Chemical Company has installed oil removal facilities for waste waters which are discharged to the Norwalk River.

Koppers Wood Preserving Division, Carteret, N.J.

This Port Reading operation makes use of creosote and No. 6 fuel oil to preserve such wood products as pilings, telephone poles and railroad ties. The wood is dried, treated with preservative and stored for shipment.

Fresh water is used at the rate of 1,000 to 1,500 gallons per day for the recirculating cooling water system, cooling the air compressor for vacuum units in the treating cylinder and sanitary purposes. Sanitary wastes are handled by a septic tank. Other waste waters which are comprised of steam condensate, water removed from the wood, floor washings, and water accumulations from pump drains pass through a separator system to a drainage ditch flowing to the Kill.

On July 19, 1967, the separator effluent and cooling pond overflow were sampled. The cooling water was free from contamination, while the separator effluent was highly colored. Results of analyses were indicative of organic pollution. A letter, August 22, 1967, demonstrates Koppers' intent to divert this separator wastes to the municipal sewer for treatment.

National Lead Company, Perth Amboy, N.J.

This plant manufactures Dutch Boy Paints and also recovers lead from storage batteries which is cast into shapes for shipment.

About 500,000 gallons of fresh water are used per day. Approximately 75 percent of this is cooling water and the remainder is used for sanitary purposes and product consumption. All wastes with one exception go to a collecting tank from which they are pumped to the

municipal sewer. During storm conditions, a by-pass permits excess flow to go to the Kill.

The main material discharge from National Lead is acid which leaks to a nearby creek from the battery crushing area.

Samples were taken of the creek, which flows through National Lead's property, on July 12, 1967 by the Interstate Sanitation Commission. Those from below the battery crushing area signify acid conditions. Since this investigation, an acid neutralization system has been installed and the plant will be kept under surveillance to check on conditions.

Nopco Chemical Corporation, Linden, N.J.

The facilities at this toluene diisocyanate plant have been dismantled by its former owner, The Industrial Chemicals Division of Allied Chemical Company. General Aniline and Film took over the property and existing buildings at the end of 1967.

Norwalk Dyeing and Finishing, Norwalk, Conn.

Approximately 18,000 gallons per day of untreated dyeing wastes, which were discharged to the Norwalk River by Norwalk Dyeing and Finishing, have now been diverted to the sanitary sewer system.

Phelps Dodge Copper Products Corp., Elizabeth, N.J.

Phelps Dodge utilizes copper bars which are brought in by barge to produce such marketable forms of copper as rods, wire, tubes, and pipes. The main processes at this plant are hot rolling; billet casting; wire drawing; extrusion milling; tinning; stranding; cold rolling; and tube and shape drawing. Over one million pounds of various copper shapes are produced here daily.

Fresh water is used here at an average rate of 416,000 gallons per day and salt water, which is used

for cooling on a once-through basis, is drawn at a rate of 1.3 million gallons per day. City water is consumed in pickling and rinsing, sanitary, boilers, and for make-up. With the construction of the new Bayway sewer, the company is presently making in-plant changes to connect its waste waters to it. Among the changes is the moving of washrooms near the waterfront, which are discharging raw wastes to the Kill, to a location where they can be connected to the municipal sewer.

Sampling by the Interstate Sanitation Commission on August 9, 1967 revealed that acid and high copper content effluents were being released to the Kill. This Commission sent a letter to Phelps Dodge requesting that a schedule be submitted giving plans to reduce excessive copper wastes.

Philip Carey Manufacturing Company, Perth Amboy, N.J.

Philip Carey has completed primary treatment facilities at a cost of about \$381,000. The newly installed units can handle a flow of 350 gallons per minute and include filters; screens; settling tanks; pH control; and surging facilities.

Reichhold Chemicals, Inc., Elizabeth, N.J.

Pollutants from this company's phthalic anhydride and maleic anhydride processes formerly discharged directly to the Kill have been diverted to the municipal sewer system. Now, one-hundred percent of Reichhold's storm flow and waste water is connected to the city sewer.

Sinclair-Koppers Company, Inc., Woodbridge, N.J.

High density polyethylene is produced at this plant in the form of pellets. These are manufactured by the Ziegler process from ethylene which is piped in from a nearby refinery.

Approximately 450,000 gallons per day of fresh water are absorbed by this plant. Most of this is cooling

water while the remainder is used for sanitary purposes and in production.

Formerly, sanitary wastes were handled by a septic tank and process waters by a separator prior to their discharge to the Kill. An investigation by the Commission on March 21, 1967 revealed that all waste effluents have been connected to the Municipal sewer system for treatment.

U.S. Gypsum, Grassy Point, N.Y.

This is an industrial plant located in Grassy Point in the town of Stony Point. During the construction of sewer lines for the Grassy Point section, a sewer outlet connection was made available to this industry by the Stony Point Sewer District #1.

At the present time, a primary treatment plant with facilities to chlorinate the effluent during the chlorination season is treating the raw sewage from U.S. Gypsum.

United States Metals Refining Company,
Carteret, N.J.

Foreign blister and scrap copper are the raw materials from which copper, zinc oxide, nickel sulfate, and a variety of precious metals are produced at this refinery. Copper is electrolytically refined and cast into shapes for customers or made into copper powder.

About 9.3 million gallons per day of fresh water are purchased for steam generation, sanitary purposes and cooling. Approximately 36 million gallons per day of cooling water is drawn from and returned without recirculation to the Arthur Kill. All sanitary sewage is diverted to the city sewer system.

LEGAL ACTIVITIES

1967 has been a year of considerable legal activity for the Commission, both with regard to its water and air programs. Consequently, it seems appropriate to discuss each of these items separately.

Water Pollution

The most prominent subject affecting water pollution control law during the past year has been the newly emerging relationship among control agencies resulting from the Federal Water Quality Act of 1967. This statute provides for the making of water quality standards by states and their submission to the Secretary of the Interior. Upon approval of a standard by the Secretary, it goes into effect on the interstate waters to which it applies. Each of the three states in the Tri-State Sanitation Compact has been making standards pursuant to this procedure. In order to clarify the Commission's relationship to these evolving patterns of standards-making, and also to permit a greater degree of flexibility in the already operative standard procedures contained in the Compact, counsel, in cooperation with Commission staff and appropriate officials of the states, has been exploring a possible amendment to the Compact. This work is still in progress.

During 1967, the third and second sessions respectively of the Raritan Bay and Hudson River Conferences were held. Each of these proceedings is pursuant to the Federal Water Pollution Control Act. Earlier sessions of these "Conferences" were to determine whether there was pollution of interstate waters, within the meaning of the Federal Statute, and to consider measures to improve water quality. The sessions during 1967 were designed merely to examine and report on progress being made. In all instances it was found that the States and the Commission were actively engaged in their work and that progress is being made. The engineering and other administrative aspects of work in progress in connection with these Conferences, as well as recommendations coming

from them, are detailed elsewhere in the Annual Report of the Commission.

There has been no new litigation undertaken by the Commission during the year. However, surveillance has been maintained to see that existing orders obtained by the Commission, or issued by it, are in compliance. Of greatest current interest in this regard is the role played by the Commission with respect to the City of Elizabeth. That community was already under court order, obtained by the Commission, to abate pollution, but had not yet intercepted some discharges of raw sewage. On that account, the Commission authorized Counsel to take such legal action as might be necessary to secure compliance. Following representations to this effect, the City determined to proceed with the necessary construction work. This construction should be completed during the early part of 1968.

Air Pollution

In January 1967, the Commission participated in a protracted "Conference" called under the Federal Clean Air Act for the New York Metropolitan area (defined for Conference purposes to include Northeastern New Jersey and Southeastern New York). During the course of this Conference, it became apparent that there was considerable support for a strengthened interstate air pollution control agency, with both standards-making and enforcement powers.

Since the Interstate Sanitation Commission had recommended, as early as 1959 that a program of that nature was desirable, the development of a suitable amendment to the Tri-State Compact was drafted and submitted to the state legislatures. It passed the New York Senate and seemed to be receiving favorable attention in the other legislative bodies as well.

The proposal would have included an Air Pollution Control Program administered by the Interstate Sanitation Commission for portions of New York, New Jersey and Connecticut and so would have comprehended the entire

metropolitan area. It also would have provided for participation of the Federal Government. However, the implementation of the new program would have depended only on favorable legislative action by New York and New Jersey. If the Federal Government failed to act, the States and the Commission would have proceeded alone; if Connecticut did not join, New York and New Jersey could have proceeded with the Commission.

However, toward the close of the 1967 session in New York, and part way through the New Jersey session, another proposal appeared which applied to the entire territory of New York and New Jersey, and permitted joinder by Pennsylvania and Delaware, as well as by the States now party to the Tri-State Compact administered by the Interstate Sanitation Commission and required participation by the Federal Government. This geographically broadened but less flexible proposal was the one ultimately enacted by New York, New Jersey, and Connecticut as well. However, to date there has been no Congressional action and some expression of disinclination to join by Pennsylvania and Delaware. It should also be noted that the enactments in New Jersey, New York and Connecticut contain some discrepancies that may need correction before any of those states may safely be said to have compacted with the others. Consequently, it is now possible to make a definitive statement concerning the eventual shape of an inter-governmental Air Pollution Control Program. In the meantime, the Commission's non-regulatory program remains in effect.

When it became known that the Commission's own proposal had been replaced, the Interstate Sanitation Commission informed the States that it would cooperate in smoothing the transition to whatever arrangements might eventuate. However, the uncertainties which continue to surround the situation have meant that up to the present, the only thing that can be done is to continue with the present program.

ORDERS AGAINST MUNICIPALITIES, AUTHORITIES
AND INDUSTRIES IN THE INTERSTATE SANITATION DISTRICT

The following lists have been compiled to give easy reference of those polluters which are under State Health Department orders. Time schedules are given, where possible, showing dates for various phases of the pollution abatement program. Notes are provided where needed to give a more complete explanation of the abatement program being developed.

CONNECTICUT TREATMENT PLANTS WITH POLLUTION ABATEMENT ORDERS

<u>NAME</u>	<u>ENGINEER REPORT</u>	<u>PLANS & SPECS.</u>	<u>START OF CONST.</u>	<u>COMP. OF CONST.</u>	<u>NOTES</u>
<u>Fairfield County</u>					
1. Bridgeport East Side	2/67	11/67	11/68	8/69	
2. West Side	2/67	9/67	9/68	6/69	
3. Darien	3/67	10/67	6/68	4/69	
4. Fairfield		2/68	10/68	8/69	
5. Norwalk	7/67	5/68	2/69	2/70	
6. Stamford	6/67	3/68	1/69	6/70	
7. Westport	8/67	4/68	1/69	12/69	
<u>New Haven County</u>					
8. New Haven Boulevard	9/67	6/68	6/69	6/70	
9. East Shore	12/67	9/68	10/69	10/70	
10. West Haven	10/67	10/68	6/69	4/70	

NEW JERSEY TREATMENT PLANTS WITH POLLUTION ABATEMENT ORDERS

<u>NAME</u>	<u>ENGINEER REPORT</u>	<u>PLANS & SPECS.</u>	<u>START OF CONST.</u>	<u>COMP. OF CONST.</u>	<u>NOTES</u>
<u>Hudson County</u>					
11. Bayonne	10/1/67	3/1/69	6/1/69	10/30/70	
12. Hoboken	10/1/67	3/1/69	6/1/69	10/30/70	
13. Jersey City-East Side	10/1/67	3/1/69	6/1/69	10/30/70	
14. West Side	10/1/67	3/1/69	6/1/69	10/30/70	
15. Joint Outlet (West New York)	10/1/67	3/1/69	6/1/69	10/30/70	
16. Kearney	4/30/68	6/1/69	10/1/69	10/30/70	
17. North Bergen-Woodcliff				12/1/66	
<u>Middlesex County</u>					
18. Laurence Harbor	10/1/67	3/1/69	6/1/69	10/30/70	
19. Middlesex County Sewage Authority	4/30/67	6/30/68	10/30/68	10/30/70	
20. Perth Amboy	10/1/67	3/1/69	6/1/69	10/30/70	1
21. Rahway Valley Sewage Authority	7/31/67	3/31/68	7/31/68	10/30/69	
22. Sayreville-Melrose	10/1/67	3/1/69	6/1/69	10/30/70	1
23. Morgan	10/1/67	3/1/69	6/1/69	10/30/70	1
24. South Amboy	10/1/67	3/1/69	6/1/69	10/30/70	1
25. Woodbridge (Sewarren)	10/1/67	3/1/69	6/1/69	10/30/70	1
<u>Monmouth County</u>					
26. Atlantic Highlands	10/1/67	3/1/69	6/1/69	10/30/70	
27. Highlands	10/1/67	3/1/69	6/1/69	10/30/70	
28. Keansburg	10/1/67	3/1/69	6/1/69	10/30/70	
29. Keyport	10/1/67	3/1/69	6/1/69	10/30/70	

1) A contract with the Middlesex County Sewage Authority may be executed in lieu of improving the existing facilities.

NEW JERSEY TREATMENT PLANTS WITH POLLUTION ABATEMENT ORDERS

<u>NAME</u>	<u>ENGINEER REPORT</u>	<u>PLANS & SPECS.</u>	<u>START OF CONST.</u>	<u>COMP. OF CONST.</u>	<u>NOTES</u>
<u>Union County</u>					
30. Elizabeth Joint Meeting	6/1/67	3/1/69	6/1/69	10/30/70	
31. Linden-Roselle		4/30/68	7/15/68	12/31/69	
32. City of Elizabeth					2
<u>Essex County</u>					
33. Passaic Valley	10/1/67	3/1/69	6/1/69	10/30/70	

2) The Elizabeth City Council has appropriated funds in the amount of \$929,000 for construction of the Bayway Interceptor Sewer and East Side Industrial Waste Sewer.

NEW YORK TREATMENT PLANTS WITH POLLUTION ABATEMENT ORDERS

<u>NAME</u>	<u>ENGINEER REPORT</u>	<u>PLANS & SPECS.</u>	<u>START OF CONST.</u>	<u>COMP. OF CONST.</u>	<u>NOTES</u>
<u>Rockland County</u>					
34. Orangetown District No. 2	Completed	Completed	11/66	10/1/68	
35. West Haverstraw	Completed		10/1/67	10/1/68	
<u>Westchester</u>					
36. Irvington	5/1/68	9/1/68	1/1/69	1/1/70	3
37. North Tarrytown	5/1/68	9/1/68	1/1/69	1/1/70	3
38. Peekskill	9/1/68	12/1/68	4/1/69	6/1/70	3
39. Tarrytown	5/1/68	9/1/68	1/1/69	1/1/70	3

3) Order pending.

CONNECTICUT INDUSTRIES WITH POLLUTION ABATEMENT ORDERS

<u>NAME</u>	<u>ENGINEER REPORT</u>	<u>PLANS & SPECS.</u>	<u>START OF CONST.</u>	<u>COMP. OF CONST.</u>	<u>NOTES</u>
<u>Fairfield County</u>					
1. Carpenter Steel of New England					1
2. International Harvester Company					1
3. Bullard Company	3/31/68	12/31/68	3/31/69	12/31/69	
4. Clark Metal Products, Inc.	3/31/68	12/31/68	3/31/69	12/31/69	
5. Exide Storage Battery	6/30/68	2/28/69	5/31/69	4/30/70	
6. Handy & Harman		3/31/68	6/30/68	3/31/69	
7. C.O. Jelliff Mfg. Company	3/31/68	12/31/68	3/31/69	12/31/69	
8. D'Addario Services					1
9. Devine Brothers, Inc.					1
10. King Chemical Co.		8/31/67	11/30/67	2/29/68	
11. Bridgeport Rolling Mills Company	8/31/68	1/31/69	4/30/69	1/31/70	
12. Chemical Plating Company	8/31/68	1/31/69	4/30/69	1/31/70	
13. Tilo Company, Inc.	7/31/68	12/31/68	4/30/69	1/31/70	
<u>New Haven County</u>					
14. Milford Rivet & Machine Co.	11/31/67	2/29/68	4/30/68	10/31/68	
15. Robert Shaw-Fulton Controls Co.	3/31/68	10/31/68	1/31/69	12/31/69	
16. Waterbury Lock & Specialty Co.	11/31/67	2/29/68	4/30/68	10/31/68	
17. American Steel & Wire (U.S. Steel)	8/31/68	3/31/69	6/30/69	3/31/70	
18. Federal Paper Board Co., Inc.	7/31/68	12/31/68	3/31/69	3/31/70	
19. New Haven Board & Carton Co.	7/31/68	12/31/68	3/31/69	3/31/70	
20. New Haven Gas Co.					1
21. New Haven Malleable Iron Co.					1
22. New York, New Haven & Hartford Railroad-New Haven Motor Storage					1
23. New York, New Haven & Hartford Railroad-Cedar Hill Yards					1
24. Wire Machinery Corp. of America					1
25. New Haven Rendering Company				12/31/67	

1) Order pending.

NEW JERSEY INDUSTRIES WITH POLLUTION ABATEMENT ORDERS

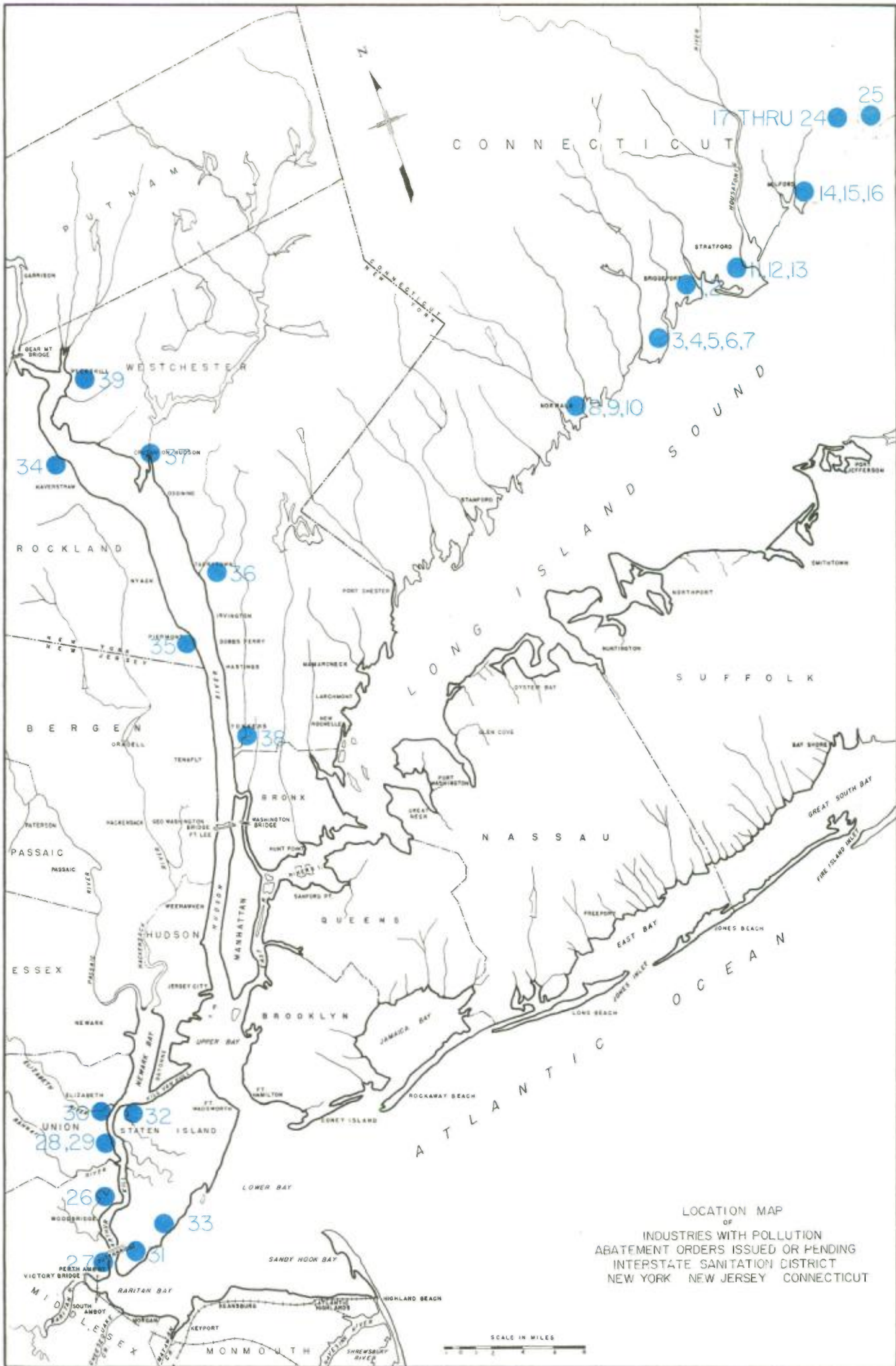
<u>NAME</u>	<u>ENGINEER REPORT</u>	<u>PLANS & SPECS.</u>	<u>START OF CONST.</u>	<u>COMP. OF CONST.</u>	<u>NOTES</u>
<u>Middlesex County</u>					
26. Hess Oil & Chemical Corp.		7/1/67	12/1/67	6/1/68	
27. Philip Carrey Mfg. Company				12/1/61	
<u>Union County</u>					
28. American Cyanamid Company				11/30/67	
29. General Aniline & Film Corp.	4/30/68	4/30/69	10/30/69	12/30/70	
30. Humble Oil & Refining Company	9/1/67	6/1/68	7/1/68	12/30/69	

NEW YORK INDUSTRIES WITH POLLUTION ABATEMENT ORDERS

<u>NAME</u>	<u>ENGINEER REPORT</u>	<u>PLANS & SPECS.</u>	<u>START OF CONST.</u>	<u>COMP. OF CONST.</u>	<u>NOTES</u>
<u>Richmond County</u>					
31. Nassau Smelting & Refining Co., Inc.				5/69	3
32. Proctor and Gamble Mfg. Co.				6/68	3
33. S. S. White Co.				4/69	3
<u>Rockland County</u>					
34. Kay-Fries Chemicals, Inc.		10/1/66	4/1/67	12/1/67	
35. Continental Can Company					
<u>Westchester County</u>					
36. General Motors-Chevrolet & Fisher		7/1/66	4/1/67	5/1/68	1
37. New York Central R.R. Co.	8/1/66	9/1/66		5/1/67	
38. Refined Syrup & Sugars, Inc.	1/15/68	6/15/68	11/15/68	8/15/68	
39. Standard Brands	1/1/68		5/1/68	4/1/69	

1) Order pending.

3) To connect to city sewer by the date specified.



LOCATION MAP
 OF
 INDUSTRIES WITH POLLUTION
 ABATEMENT ORDERS ISSUED OR PENDING
 INTERSTATE SANITATION DISTRICT
 NEW YORK NEW JERSEY CONNECTICUT



AUTOMATIC WATER QUALITY MONITORING SYSTEMS

GENERAL

The Federal Water Pollution Control Administration, as well as the Interstate Sanitation Commission, has existing Automatic Water Quality Monitoring Systems in the Interstate Sanitation District. The State of New York presently proposes ten monitors and a telemetry system for location within the District. The sites of these monitors can be seen on the Location Map and the subsequent tabulation. The States of Connecticut and New Jersey have no plans to install their own monitoring systems, but New Jersey presently plans to tie in with existing Federal and Interstate Sanitation Commission systems in the Interstate Sanitation District.

FEDERAL MONITORS

Federal Water Pollution Control Administration monitors measure the following parameters: dissolved oxygen; water temperature; pH; conductivity; oxidation-reduction potential; wind direction; wind speed; and solar radiation. Samples are taken at three depths: surface (5 feet below the surface); mid depth; and bottom sample (5 feet above bottom). Data is telemetered to a central receiver in Metuchen, New Jersey. There are no present plans for mobile sampling units.

NEW YORK STATE MONITORS

The proposed New York State monitors will measure dissolved chlorides; water temperature; pH; dissolved oxygen; conductivity; solar radiation; stage height; dissolved fluorides; and air temperature. These monitors will be capable of being moved but generally will remain stationary. Data from these monitors will be telemetered to a central receiver in Albany. The stations at Yonkers and Iona Island may be installed in 1968, but all other units are proposed for future installation.

INTERSTATE SANITATION COMMISSION MONITORS

The Interstate Sanitation Commission has two monitors that continuously telemeter data to the Interstate Sanitation Commission office in New York City. The monitors sample the water in the East River and the Arthur Kill. These monitors are located, respectively, at the Consolidated Edison Generating Stations in Long Island City (Ravenswood Generating Station) and in Staten Island (Arthur Kill Generating Station). The Commission has proposed a third monitor at Kearny Point in Kearny, New Jersey.

Commission monitors measure dissolved oxygen; water temperature; pH; and dissolved chlorides (measured as a function of conductivity). The data that is telemetered to the Commission office is both analog (in the form of a strip chart) and digital (8 channel paper tape). The digital unit was recently delivered and upon completion of debugging of the equipment, compilation and summary reports will be prepared on a monthly basis.

TABULATION
OF
AUTOMATIC WATER QUALITY MONITORING STATIONS
IN THE
INTERSTATE SANITATION DISTRICT *
(Numbers relate to LOCATION Map)

INTERSTATE SANITATION COMMISSION

1. Arthur Kill, Consolidated Edison Generating Station, Staten Island, N.Y. (existing)
2. East River, Consolidated Edison Generating Station, Long Island City, N.Y. (existing)
3. Kearny Point, Kearny, N.J.

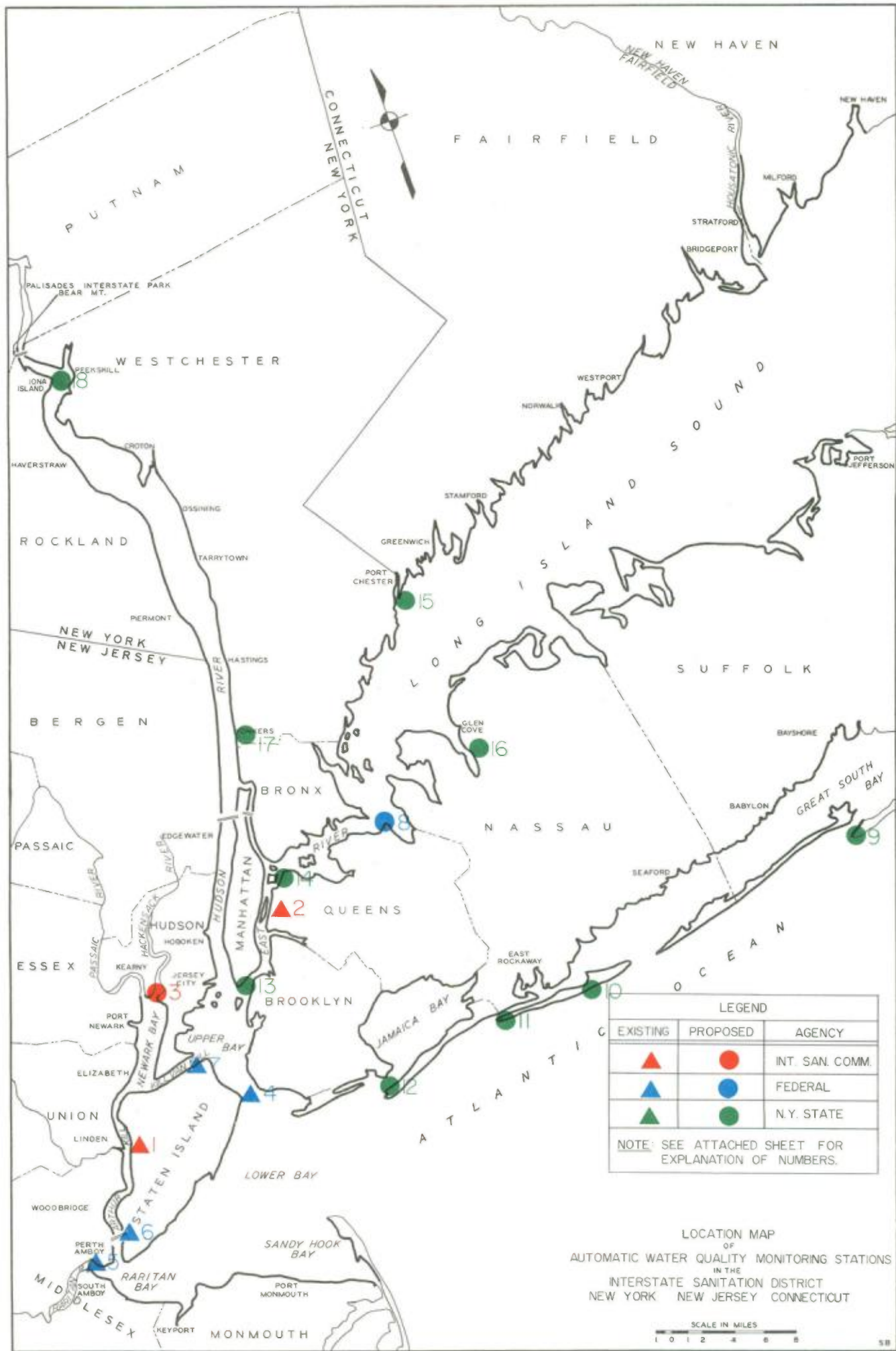
FEDERAL

4. Narrows, U.S. Gov't. Quarantine Station, Staten Island, N.Y. (existing)
5. Victory Bridge, Mid-Channel, N.J. (existing)
6. Outerbridge Crossing, East Pier, Staten Island, N.Y. (existing)
7. Kill Van Kull, U.S. Gypsum Co., Staten Island, N.Y. (existing)
8. Throgs Neck (Bridge), Bronx, N.Y.

NEW YORK STATE

9. Great South Bay (Inlet)
10. Great South Bay (Fire Island)
11. Inlet at Point Lookout
12. Jamaica Bay Inlet
13. East River (at mouth)
14. East River (Wards Island)
15. Long Island Sound (Rye)
16. Long Island Sound (Sea Cliff)
17. Hudson River (Yonkers)
18. Hudson River (Iona Island)

* All stations are proposed, except where indicated.



LEGEND		
EXISTING	PROPOSED	AGENCY
▲	●	INT. SAN. COMM.
▲	●	FEDERAL
▲	●	N. Y. STATE

NOTE: SEE ATTACHED SHEET FOR EXPLANATION OF NUMBERS.

LOCATION MAP
OF
AUTOMATIC WATER QUALITY MONITORING STATIONS
IN THE
INTERSTATE SANITATION DISTRICT
NEW YORK NEW JERSEY CONNECTICUT



BIOLOGICAL DETERMINATIONS

INTRODUCTION

In the study of Aquatic Biology, one usually finds that the population of a particular body of water is composed of certain numbers of various groups of organisms much like the different ethnic groups that make up a metropolis. When conditions favor one or two groups, they tend to thrive while the others dwindle away to mere token status. While in human society it may be financial or political pressures which cause stratification, it is the physio-chemical alteration of environment which causes an unequal balance of life in bodies of water. This alteration is called POLLUTION!

WHAT HAS BEEN DONE?

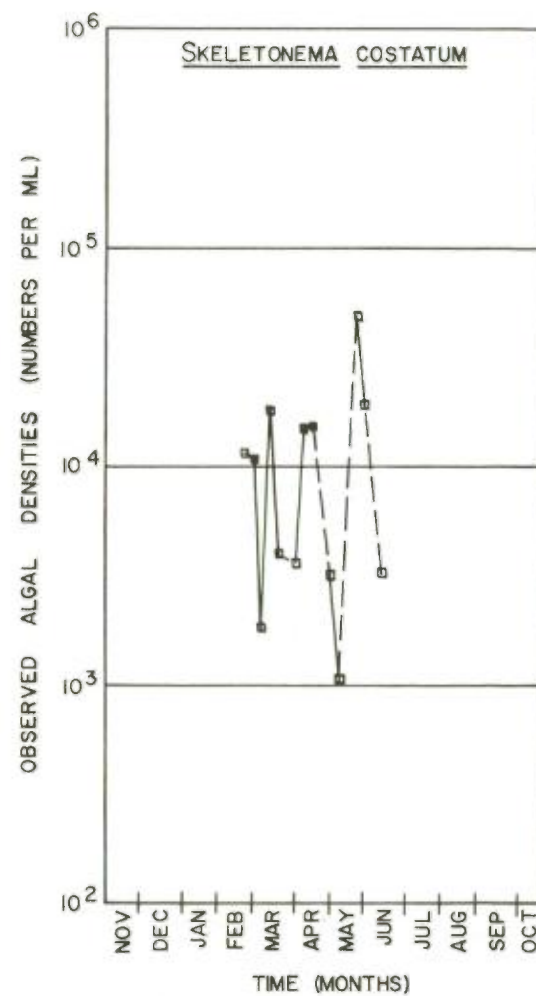
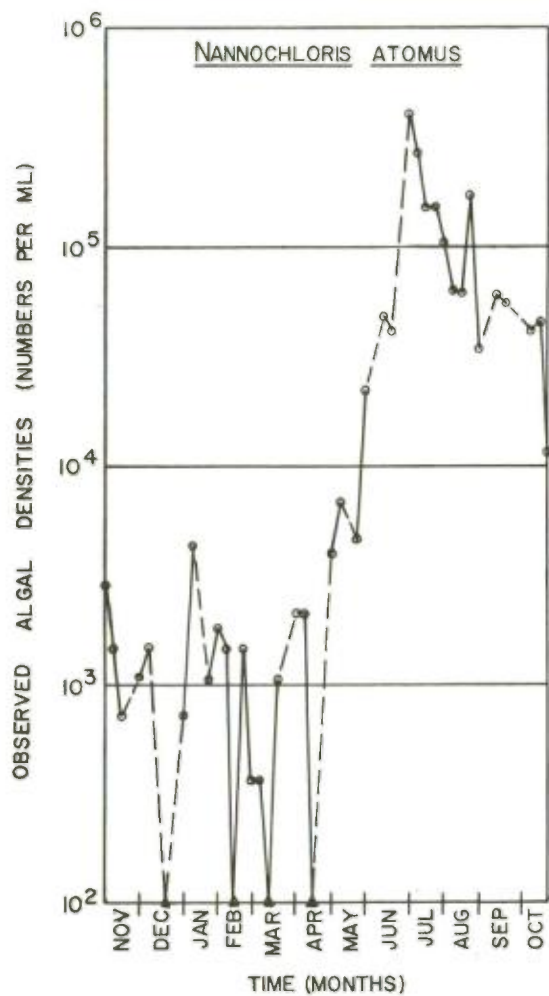
On June 23, 1966, the Commission began work on the quantitative enumeration of the biota from three areas within its District: the Arthur Kill, the Raritan Bay and the Raritan River. The stations were set up at Consolidated Edison; Pennsylvania Coal Dock and at Victory Bridge, respectively. The samples from these stations have been and are presently analyzed on a weekly basis.

Biologically, pollution has been proven at all three of these stations. This is borne out by the fact that two and only two groups of organisms, more specifically two exact species, have been found to exist in numbers far exceeding that one would assume should be their average presence in a body of water. The two organisms, termed Phytoplankton (free-floating microscopic plants), are called Nannochloris atomus and Skeletonema costatum. The former is a small, spherical, green cell which usually exists as either 2 or 4 celled units. The latter is a filamentous diatom which is usually between 10 and 200 microns long depending upon conditions. Although the diatom is physically a more hearty species than the green algae due to its siliceous shell, we have found that it is the little Nannochloris which persists throughout the year. Both of these organisms have been counted weekly and are found on the graphs on the following pages.

Note that the graphs represent one full calendar year from November 3, 1966 through and including October 27, 1967. The Nannochloris is found throughout the year while the Skeletonema is only found roughly between February and June. At the peak of the Nannochloris bloom, which this year occurred in early July, the samples had a definite, undeniable greenish cast.

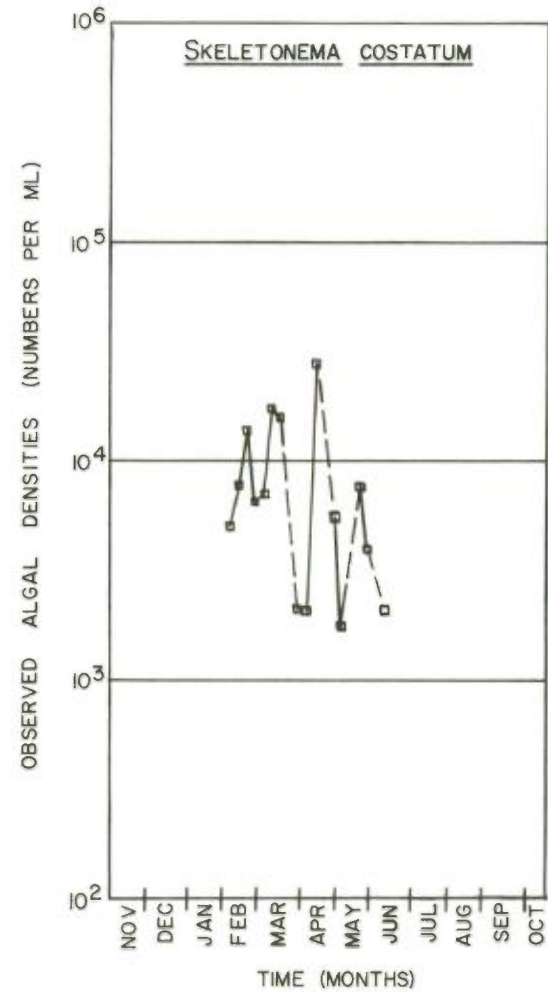
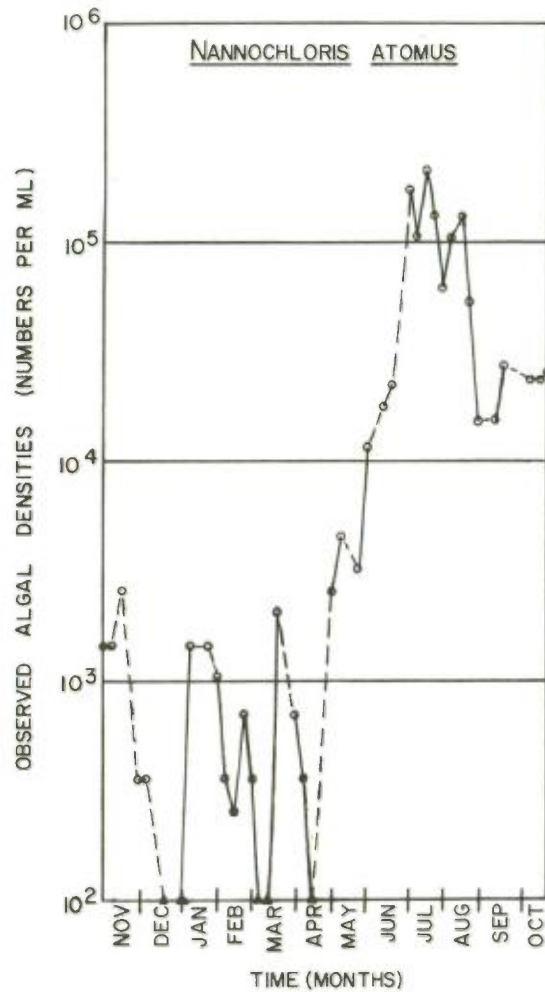
The photomicrographs on the following pages show these two organisms as well as some other interesting, less plentiful ones. The photomicrographs were made with a Polaroid camera in conjunction with an

ALGAL DENSITIES OBSERVED FROM NOVEMBER 3, 1966 TO OCTOBER 27, 1967
 FOR SAMPLES TAKEN FROM THE ARTHUR KILL
 AT THE CONSOLIDATED EDISON GENERATING STATION, STATEN ISLAND, N.Y.



NOTE: VALUES INDICATED BY Δ ARE ZERO.
 DOTTED LINE INDICATES THAT NO SAMPLE WAS TAKEN.

ALGAL DENSITIES OBSERVED FROM NOVEMBER 3, 1966 TO OCTOBER 27, 1967
 FOR SAMPLES TAKEN FROM THE RARITAN BAY
 AT THE PENNSYLVANIA COAL DOCK, SOUTH AMBOY, N.J.

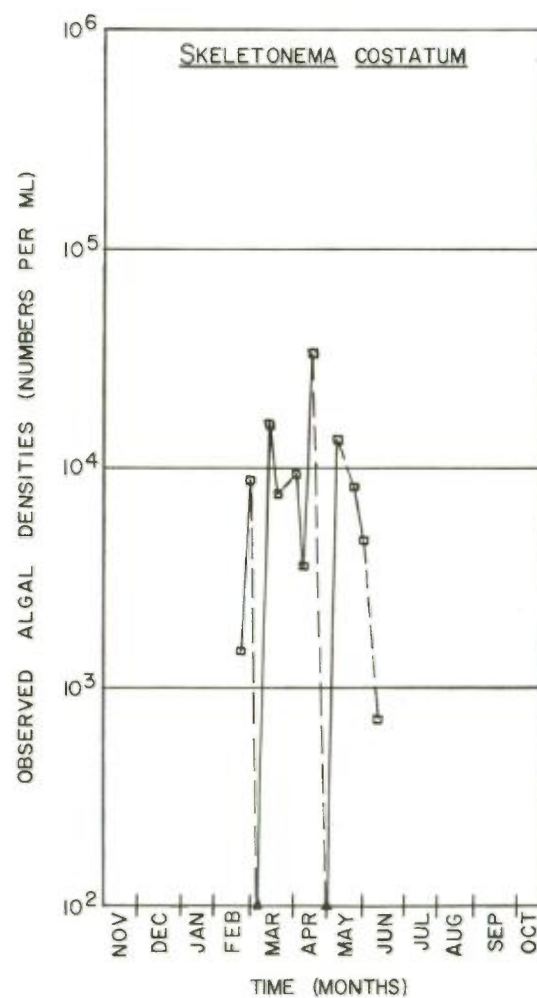
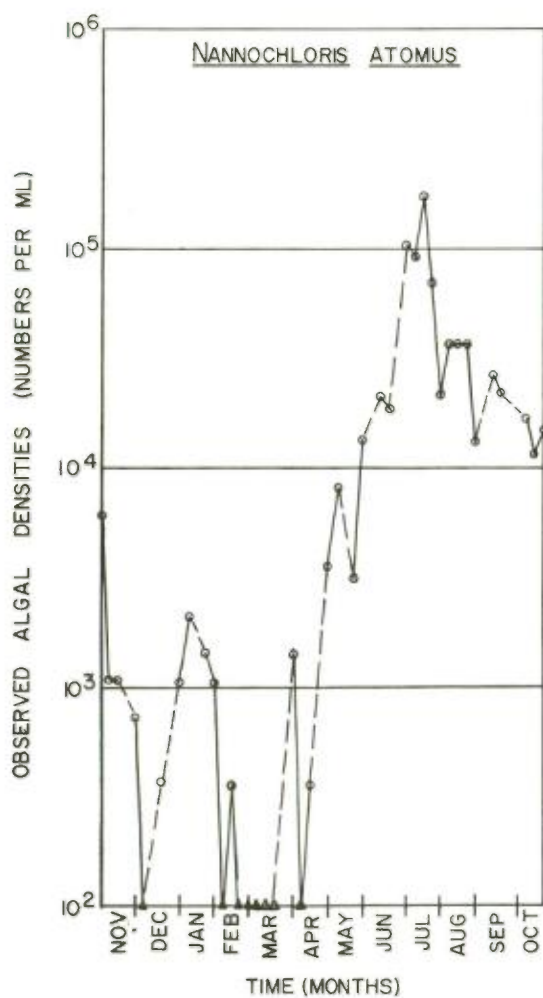


NOTE: VALUES INDICATED BY Δ ARE ZERO.
 DOTTED LINE INDICATES THAT NO SAMPLE WAS TAKEN.

ALGAL DENSITIES OBSERVED FROM NOVEMBER 3, 1966 TO OCTOBER 27, 1967

FOR SAMPLES TAKEN FROM THE RARITAN RIVER

AT THE VICTORY BRIDGE, PERTH AMBOY, N.J.



NOTE: VALUES INDICATED BY Δ ARE ZERO.

DOTTED LINE INDICATES THAT NO SAMPLE WAS TAKEN.

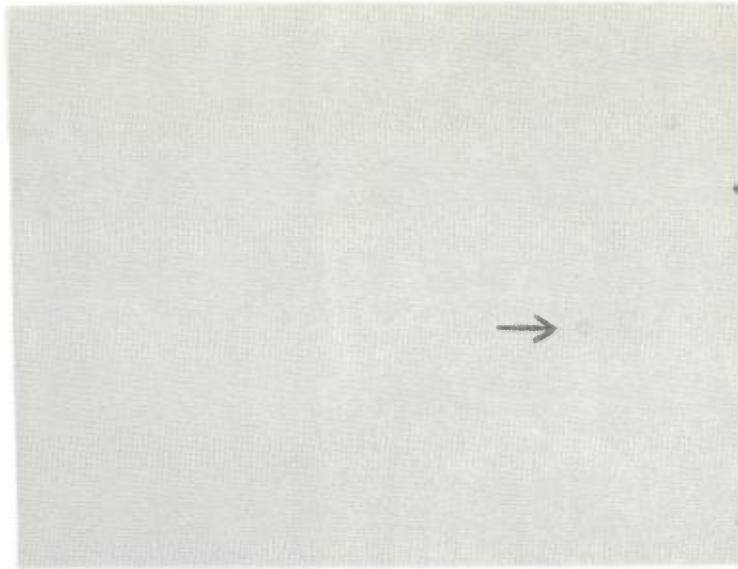
American Optical Microstar microscope. Note that in Photomicrograph III several cells have been lost due to changes in season and chemical alteration of the environment. Photomicrographs IV through IX represent other less commonly found species of the three areas. Photomicrograph IX is perhaps the most dramatic of the series because it reveals a 45° angle cross-section through a centric diatom showing the cytoplasm (cell material) and the striae (ribs) with great clarity.

THE PROCESS OF COUNTING ORGANISMS

When counting samples in which concentrations approach many thousands of cells per milliliter, it is necessary to employ a "factor" which when multiplied by the optical count will give a number in terms of counts per milliliter.

Two reliable methods of counting were utilized this year. The first is called the WHOLE STRIP, WHOLE FIELD count and the second is called the TEN FIELD count. In the former, an entire strip along the nanoplankton counting cell is counted using the sides of the field-of-view as the sides of the progressing strip. By multiplying the length of the strip by its depth and width-of-field, we obtain the actual volume of sample counted. The reciprocal of this number multiplied by 1000 gives us a factor which when multiplied times the raw count gives us number per milliliter.

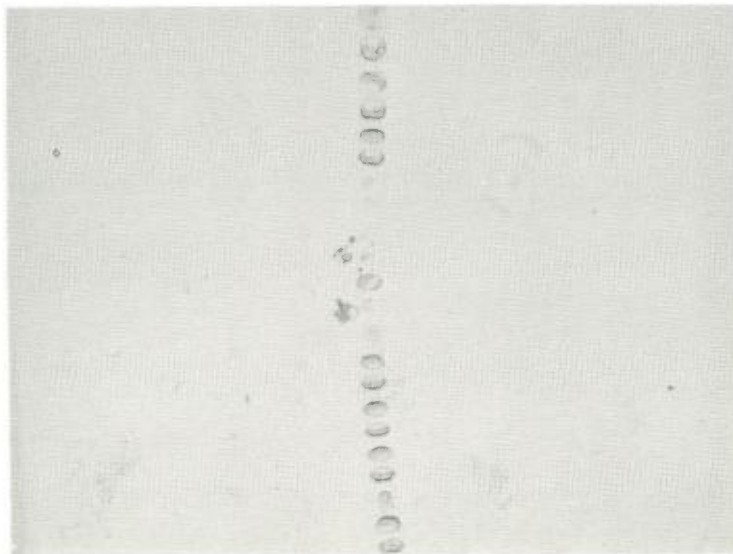
The ten-field count method is faster, simpler but not necessarily better. It is used when the counts are found to be at their high peaks during the year. In this count, 10 fields are counted, their average being obtained simply by dividing by 10. This number is multiplied by a factor obtained in the following manner: The radius, (one-half the width-of-field or diameter), is multiplied by itself and then by pi. This number is then multiplied times the depth of the counting cell. The reciprocal of this number multiplied by 1000 gives us the multiplication factor.



Photomicrograph I
Nannochloris atomus
337.5 Power
Cells approximately
4 microns in diameter

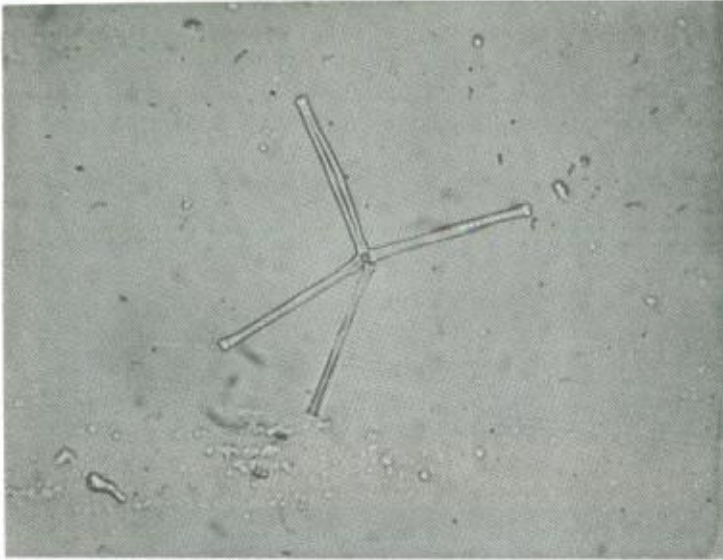


Photomicrograph II
Skeletonema costatum
337.5 Power
Filament approximately
90 microns in length

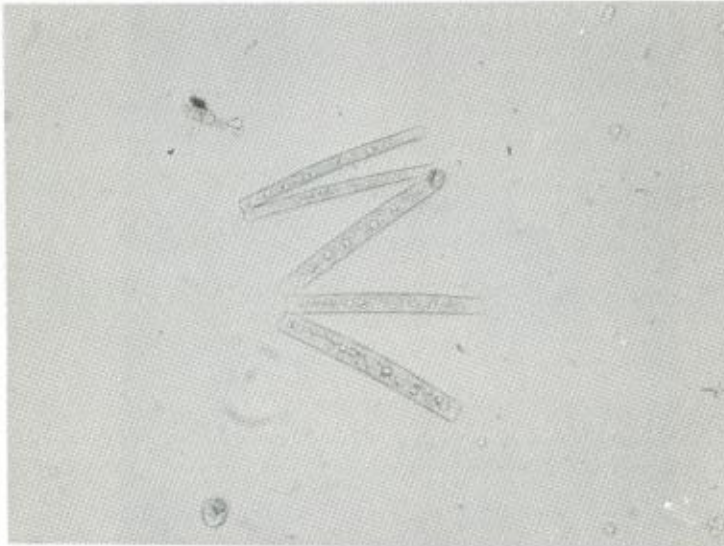


Photomicrograph III
Skeletonema costatum
(late in season)
337.5 Power showing
missing cells due to
environmental changes

OTHER COMMUNITY ORGANISMS OF INTEREST



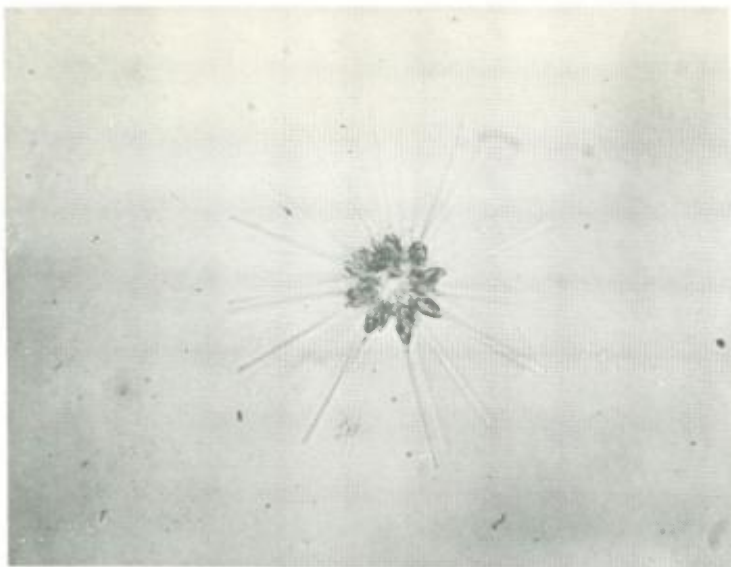
Photomicrograph IV
Asterionella gracillima
Each ray approximately
65 microns in length
"Taste and odor"¹ type
diatom 337.5 Power
¹Dr. C.M. Palmer,
"Algae in Water
Supplies" P.H.S.
1959



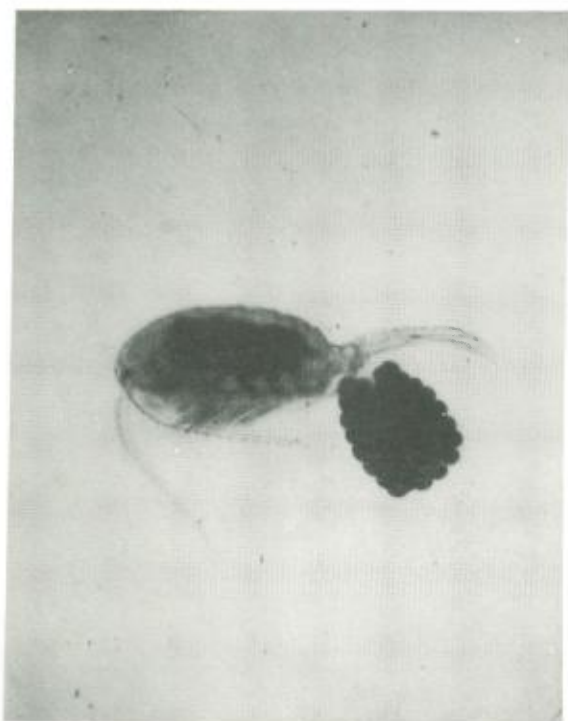
Photomicrograph V
Tabellaria fenestrata
Each cell approximately
75 microns in length
"Filter Clogging"¹
type diatom
337.5 Power
¹(same as above)



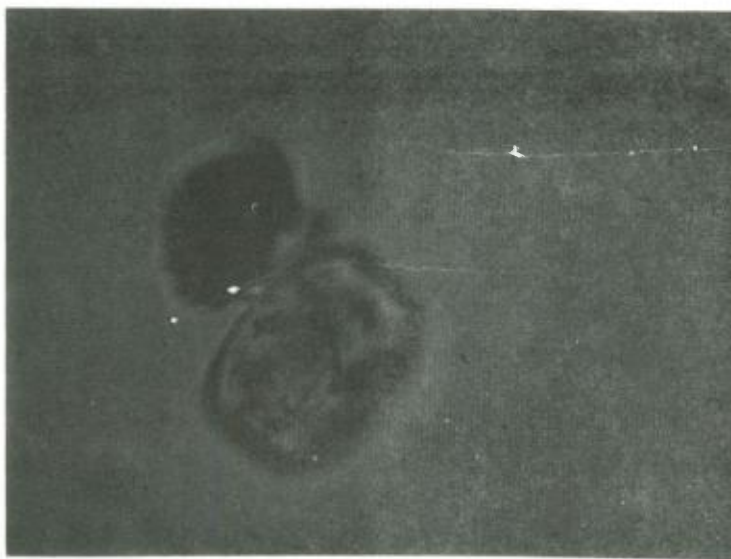
Photomicrograph VI
Actinastrum gracillimum
Each ray approximately
20 microns in length
Green algae
337.5 Power



Photomicrograph VII
Micractinium pusillum
337.5 Power
Diameter from tip
to tip: approximately
125 microns
A spiny-Green Algae



Photomicrograph VIII
A Micro-Crustacean
with egg sac attached
75 Power
600 microns in length



Photomicrograph IX
A Centric Diatom
750 Power under oil
immersion, 45° angle
by physical manipulation

FOR THE FUTURE

It is hoped this Commission, through further investigations in Aquatic Biology Dynamics, will eventually establish some correlation between the ecology of these waters and the chemical constituents which determine this ecology.

FEDERAL CONFERENCES

RARITAN BAY AND ADJACENT WATERS

Secretary of the Interior, Stewart L. Udall, called the Third Session of the Raritan Bay Conference for abating pollution on the Bay and its adjacent waters. The Conference met at the Waldorf-Astoria Hotel in New York City on June 13-14, 1967. In attendance were representatives of the Federal Water Pollution Control Administration, State of New York, State of New Jersey and the Interstate Sanitation Commission.

The report published by the Federal Water Pollution Control Administration on the Raritan Bay and adjacent interstate waters was reviewed.

S t a t e m e n t
of the
INTERSTATE SANITATION COMMISSION

The Interstate Sanitation Commission and local water pollution control agencies of New York and New Jersey have continued to engage in an active and effective program in the New York-Metropolitan Area waters. We would like to bring the status of pollution abatement up to date since the Second Session of the Pollution of the Interstate Waters of the Raritan Bay and Adjacent Interstate Waters was held on May 9, 1963.

The waters of Raritan Bay are affected by any pollution in entrant waters from the Arthur Kill, Raritan River, through the Narrows and from any direct discharge locally.

Some wastes are transported by the Arthur Kill directly into the Raritan Bay but the majority of the wastes discharged into the Arthur Kill pass through the northern end out through the Kill Van Kull and eventually through the Narrows into the Raritan Bay. As stated at the Second Session, the Commission in November 1962 determined the assimilative capacity of the tidal waterway and made it possible to set new treatment requirements for the Arthur Kill. The State of New Jersey and New York City followed this up with orders to municipal and industrial plants requiring 80 percent removal of B.O.D. or its equivalent. Several of the smaller industries found it more economical to connect to municipal systems rather than provide secondary treatment on their individual wastes. One of the larger industrial plants has chosen to barge their wastes 110 miles to sea. Their barge is under construction and this operation should begin in September of this year. Three of the five municipal plants located in New Jersey along the Arthur Kill constructed and operated pilot

plants and these studies are nearly completed. The State of New Jersey followed up the original orders with amended orders which contained detailed timetables. The Rahway Valley Sewerage Authority is scheduled to complete construction by October 30, 1969, the Linden-Roselle Sewerage Authority by December 31, 1969, the Elizabeth Joint Meeting and the Woodbridge Treatment Plants by October 30, 1970, and the Carteret Sewage Treatment Plant has been turned over to the Attorney General of New Jersey for the necessary legal action to obtain compliance. The industries in the Arthur Kill, which are required to have 80 percent B.O.D. reduction or equivalent, have also received timetables requiring completion by specific times, some as early as this year but none later than October 30, 1970. Elizabeth is receiving bids on the two projects which will remove raw wastes from the Bayway and Singer area. These projects will be completed this year. On the New York State side of the Arthur Kill, it was determined that the Willowbrook State School, instead of going into secondary treatment, would put in a pumping station and pump to Port Richmond Treatment Plant on the Kill Van Kull. This diversion has now been completed. The two industrial waste discharges will be intercepted into the New York City sewer system. The West Branch Interceptor of the Port Richmond Plant, which will intercept one of these industrial plants, is scheduled to be completed in the Summer of 1968 and the Tottenville Plant will intercept the other.

In addition to wastes from the Arthur Kill eventually passing through the Narrows, there are other sources in the Upper Harbor Area which were subject to the Hudson River Conference, which also discharge out through the Narrows and affect Raritan Bay. In 1965, the States agreed with the Commission that more than primary treatment should be required and it would be left to the States as to what degree of secondary treatment if necessary. At the Hudson River Conference, the States and this Commission again agreed to this policy of

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secondary treatment. Construction continues on the Newtown Creek Pollution Control Project and is nearing completion. This plant will provide treatment for approximately 300 million gallons per day of raw wastes and will remove approximately 150 million gallons per day for treatment immediately and the remainder will be intercepted for treatment in 1968 when the pumping station on Manhattan is completed. This project has been under construction for several years and the total cost is approximately \$165,000,000. It will make a substantial improvement in the quality of the water passing through the Narrows and thereby will benefit the bathing beaches of the Raritan-Lower Bay Area.

The States and the Commission agreed in 1965 that chlorination would be required for plants in the Upper Harbor Area by the Summer of 1967. This is timed with the completion of the Newtown Creek Plant. This chlorination requirement will make a tremendous improvement in the bacteriological quality of the beaches in the Staten Island and Coney Island Area. The North River Treatment Project which will remove the remainder of raw wastes from Manhattan for treatment has been designed and some of the interceptors are under construction. The treatment plants in the Upper Harbor, Lower Hudson and Kill Van Kull Areas have been issued orders by the State of New Jersey with detailed timetables. The larger plants affected by these orders are Passaic Valley, Bayonne, Jersey City, and Hoboken and the construction of secondary treatment plants to remove not less than 80 percent B.O.D. is to be completed not later than October 30, 1970. New York City has designed plans not only for secondary treatment but also greater capacity for the Port Richmond Plant. This is scheduled to be completed during 1969.

In the immediate Raritan Bay Area, New Jersey has issued orders on all plants requiring secondary treatment not later than October 1970. The Middlesex County Sewerage Authority in preparation for this additional treatment has been operating a pilot plant

to obtain design criteria. The Tottenville Plant is under design and the plant for secondary treatment completed by the Summer of 1969. New York City is planning an extension of the Oakwood Beach interceptor by the Summer of 1969. Between this interceptor and the sewer system for Tottenville, all industries along the south shore of Staten Island will be intercepted for treatment.

Thus, it may be seen that very substantial progress is being made in the Conference area and in the waters adjacent thereto. As the conferees agreed at the close of the Second Session of the Conference, "The States of New Jersey and New York and the Interstate Sanitation Commission have active and effective programs for the control and abatement of pollution of the waters of Raritan Bay and adjacent waters as evidenced by: . . ." (This was followed by a recital of the activities of the two states and the Commission up to the time of the Second Session). This is not to say that the waters under consideration are in a condition even approaching the quality that could prevail if the area were less heavily populated and industrialized. On the other hand, the fact of this intense population and industrial concentration must not be used to condone a lesser water quality than reasonably can be produced, and that is desirable for the health and welfare of the people of the metropolitan area.

In view of the ongoing programs already recognized by the Conference, the problem is how best to sustain control and abatement activities which have been underway for a number of years. In the Raritan Bay area we do not write on a clean slate. Fortunately, all of the municipal discharges and many of the industrial discharges are already receiving a significant measure of treatment or are programmed for it pursuant to administrative and court orders already issued and containing timetables for the installation of facilities. Nothing should be permitted to place obstacles in the way of compliance with these orders and timetables.

The fact that standards for effluents and receiving waters have been increasing in the past few years introduces a complicating element. Several years ago we would have viewed the achievement of primary treatment of all wastes as a proud accomplishment. Anything more was thought by the knowledgeable part of the public and the technicians to be an extra measure of virtue, above and beyond the call of necessity. It is only well within the last five years that secondary treatment has been determined to be the general rule for the area. This is not to say that it should remain so for the indefinite future. But no one interested in improving the quality of Raritan Bay waters now or in the immediate future can ignore the fact that plants recently completed, others already under construction, and still others which have already entered the design and financing stages rely on the proposition that secondary treatment will meet regulatory requirements now and for a reasonable time into the future. Moreover, secondary treatment is not generally understood to mean an immutable set of numbers. Account must be taken of the fact that virtually all secondary treatment facilities recently built and underway have been designed to an 80 percent removal figure, and that this has most assuredly been regarded as well within the confines of secondary treatment. Indeed, this 80 percent figure frequently means something more than that, because the standards in effect for most of the Raritan Bay area propose "never less than 80 percent."

The report issued by the Federal Water Pollution Control Administration just prior to this Third Session of the Conference suggests that a flat 90 percent removal of B.O.D. be required. It also suggests agreement on a timetable for all dischargers of waste in the area that would have universal completion of treatment works' designs by the end of this year, commencement of all construction no later than mid 1968, and all treatment works in operation and meeting the 90 percent removal requirement by 1970. This completion date is realistic only if reliance is placed on the knowledge that most or all of the major projects necessary to meet the standard have

already been initiated and that some actual work has been done. Indeed, so far as those who will comply with outstanding orders by 1970 are concerned, this is the case. But their compliance will be the standard as it is now and as it was when they made their commitments, and not with an until now unknown 90 percent removal figure.

Consequently, this proposal based on an administrative decision creates a dilemma that all the Conferees should avoid. Either a number of new plants will be in immediate violation of requirements, through no fault of their municipal and industrial owners, or design and construction work already in progress must be discarded, with consequent waste of money and time, and the time when actual improvement of water quality in the area can be expected must be pushed back a number of years.

If the standards being suggested were so clearly superior in practical effect on the waters of Raritan Bay and its environs to the versions of secondary treatment hitherto thought acceptable, present insistence on the new requirement might be justified, even though involving substantial delay in the attainment of any improvement in water quality. But as already pointed out, the actual difference between what has been hitherto understood and what the Federal Water Pollution Control Administration now suggests is quite small. The practical effect becomes yet smaller when one realizes that none of the water concerned is potable and that its uses are limited by its salt character. Moreover, it must be recognized that such difference as may exist will be periodically obliterated by mammoth discharges from combined sewers.

It should be clearly understood that the Interstate Sanitation Commission has no objective to a 90 percent removal requirement as such. If secondary treatment were not yet a fact on any significant part of the waters under consideration, and if there were not substantial construction already in preparation or

underway to produce more such treatment, we would be pleased to consider the 90 percent proposal. On the other hand, the existence of the circumstances just discussed leads us to point out further that the report of the Federal Water Pollution Control Administration, which proposes 90 percent removal, contains no explanation of the figure and does not even attempt to show why it is the best one to meet the actual conditions and needs of the area. Accordingly, we suggest a firm requirement for secondary treatment. It is also useful to point out in the Conference conclusions, as the FWPCA report does, that even more treatment probably will be required in the future; as population densities and pressures on water use increase, and to indicate that all future site selections should be so arranged that these additional degrees of treatment may be added.

One more point should be made. All sessions of this Conference have dwelled more or less forcefully on the previous shellfish industry in Raritan Bay and on the closing of the beds because the water quality in the area is not good enough to make shellfish culture safe. Unfortunately, the FWPCA report does not state unequivocally that shellfish require the very best water quality and that, under the conditions prevailing in the Greater New York Metropolitan Area, even 90 percent B.O.D., plus year-round disinfection of effluents, will not raise the quality of Raritan Bay water to a point where there can be a safe shellfishery. Achievement of this goal, in addition to many other steps that might be necessary, would certainly require the elimination of the combined sewers in the area, at a cost of many billions of dollars.

Accordingly, we urge that proposed "Conclusion 12 be amended to read:

12. Additional major benefits would accrue if the quality of these waters were at the level necessary to support a safe shellfishery, but this could be accomplished only at a cost running to many billions of dollars."
(proposed new language underlined)

The Interstate Sanitation Commission is pleased to see the change that has come over attitudes toward water pollution control in this area and throughout the Nation. It is now almost universally recognized, as it was not only several years ago, that we do need to make major improvements in water quality, and that substantially increased treatment requirements must be one of the means to the necessary end. However, we do not want to see our progress measured only by paper requirements of a kind that, however impressive sounding, will produce significant delay in the actual cleanup. We need to encourage early compliance, and we do not want enforcement agencies faced with numerous foredoomed violators who can plead the changes in requirements as an excuse to win endless extensions of their timetables in the courts.

CONCLUSIONS AND RECOMMENDATIONS
of the
THIRD SESSION
of
THE CONFERENCE ON POLLUTION OF
RARITAN BAY AND ADJACENT
INTERSTATE WATERS

In the light of Conference statements and discussion, the Conferees at the Third Session agreed to the following conclusions and recommendations:

1. Pollution of the interstate waters of Raritan Bay and its tributaries is occurring due to the discharge of inadequately treated municipal and industrial wastes.

2. Considerable progress has been made towards abating this pollution problem.

3. Progress has not been more rapid because of the complexity of the discharges and the difficulties in dealing with controlling pollution in an estuarine system of waters such as exists in Raritan Bay.

4. Still more has to be done to abate pollution of the Raritan Bay area, even though most wastes in the area are now receiving treatment.

5. All wastes prior to discharge into waters covered by this Conference, including Raritan Bay, Arthur Kill, and the Raritan River system, shall be treated to a degree providing as a minimum 80 percent reduction of biochemical oxygen demand at all times, including any four-hour period of a day when the strength of the wastes to be treated might be expected to exceed average conditions. It is recognized that this will require a design of an average removal of 90 percent of biochemical oxygen demand.

6. Effective year-round effluent disinfection

shall be provided at all municipal plants and all industrial plants with bacterial discharges.

7. Industrial treatment facilities to accomplish such reduction shall provide removals at least the equivalent of those required for municipal treatment plants.

8. Facilities and procedures be established to provide laboratory control for each treatment facility.

9. The schedule for remedial action is as follows:

This means that the schedules for remedial action by New York and New Jersey have been accepted by the Conferees. All of the improvements will be in operation between 1967 and 1970, except that the expansion of one plant will be in operation by 1971, and one interceptor will be completed in 1972.

10. The Conferees shall meet every six months to review and evaluate progress on water quality improvement.

11. The Conferees have appointed a technical committee to further evaluate the effects of the shipping channel through Raritan Bay by dredging on water quality. The committee shall consist of Mr. David H. Wallace, Director of Marine Fisheries, New York State Conservation Department, Chairman; and Mr. George Cowherd, Assistant Chief Engineer, Interstate Sanitation Commission; Anthony Ricigliano, Supervising Public Health Engineer, New Jersey State Department of Health; and Mr. Paul De Falco, Deputy Director, Federal Water Pollution Control Administration; and Frank Panuzio, Chief, Engineering Division, U.S. Army Engineer District, New York.

SECOND CONFERENCE
ON THE
HUDSON RIVER AND TRIBUTARIES

The Second Hudson River Enforcement Conference was reconvened on September 20-21, 1967. Officials from the Federal Water Pollution Control Administration, States of New York and New Jersey, New York City and the Interstate Sanitation Commission were in attendance at the Conference. The Conferees reported on the present status of the progress that has been made on the abatement of the water pollution problems since the First Conference in 1965.

S t a t e m e n t
of the
INTERSTATE SANITATION COMMISSION

The present session of the Conference has been called to review progress made in implementing the agreements reached at the first session which was held two years ago. Partly because of the nature of such an undertaking, and partly because new Federal statutes have made the processes for revising standards in interstate waters different than they were in 1965, it seems inappropriate to do more in the present context than summarize the actual events of the past two years in securing better facilities for water pollution control in the Hudson River area. We believe that progress has been good.

At the Conference on the Hudson River held on September 28, 1965, the Conferees agreed that all wastes discharged to the Hudson River should receive a minimum of secondary treatment. We reported at the Conference that all of the sanitary wastes originating in the New Jersey portion of the Conference area were receiving primary treatment at one of nine sewage treatment plants with the exception of approximately 30 million gallons per day. This waste was discharged through Peddie Ditch into Newark Bay but was intercepted during 1966 and diverted to the Passaic Valley Sewage Treatment Plant for treatment. The primary plants received orders from the New Jersey State Health Department in August 1966, requiring an upgrading of treatment; and then in March and April of 1967, they received amended orders requiring a removal of not less than 80 percent of the biochemical oxygen demand and included a detailed timetable. The date for completion of construction is October 10, 1970.

At the time of the previous Conference, we stated that practically all sanitary wastes from the Rockland and Westchester County Area were receiving at least primary treatment and chlorination during the recreational season. Also, we reported that the State of New York

and the Commission had agreed that secondary treatment was needed and steps were being taken to accomplish this. Since then, the Village of Piermont has completed the pumping station and force main which diverts its flow to the Orangetown Treatment Plant. This latter plant is under construction for the addition of secondary treatment facilities. The New York State Health Department has also issued orders on the remaining primary treatment plants and the completion of construction is scheduled from 1968 through 1970 depending on each individual situation.

In the New York City portion of the Conference area, the Commission has had a Consent Order against the City of New York since 1957 and all of the projects are neither completed, under construction or under design.

The largest project under the Consent Order is the Newtown Creek Pollution Control Project which will provide secondary treatment for approximately 300 million gallons a day of raw waste and will improve considerably the water quality of the Upper New York Harbor Area and the waters passing through the Narrows and also water carried by tides up the Hudson River. This project is scheduled to be completed this month at a total cost of \$165,000,000. We had planned to have chlorination of all sewage discharges in the Upper Harbor, Kill Van Kull, Lower East River, and Hudson River by this summer. The summer or bathing season of 1967 was selected as the starting time of chlorination in this area as it was to have been the first bathing season following the scheduled completion of the large Newtown Creek Sewage Treatment Plant. Although this plant was not completed as scheduled, some of the existing treatment plants started chlorinating. Others have chlorination facilities under construction and will be chlorinating prior to the bathing season of 1968.

The interceptors for the North River Pollution Control Plant are now under construction. This plant is designed to treat 220 million gallons per day and will be located between West 140th Street and West 148th Street; and most of the plant will be built on reinforced concrete platforms supported on long piles and

caissons in the Hudson River. The North River Project is scheduled for completion by 1972. Construction will begin this year on interceptors to the Port Richmond Plant and design is under way for full secondary treatment with a design capacity from 10 to 60 million gallons per day. This construction should be completed in 1971. Design continues on the Red Hook Pollution Control Project which will provide treatment for the remaining raw wastes from Brooklyn. This plant is scheduled for completion in 1972.

The combined sewers are always a real problem and a majority of the Metropolitan Area, unfortunately, has this type of sewer. Due to the heavy rainfall this summer, this problem caused a very high coliform count in the New York City Beach Areas and lower dissolved oxygen values in many areas.

In judging the likelihood of continued satisfactory progress in bringing the waters of the Conference area under control, it is appropriate to note what the first session of the Conference found:

"5. The States of New Jersey and New York and the Interstate Sanitation Commission are empowered to abate pollution and have active programs to accomplish this result. These programs include: establishment of water quality requirements; enforcement actions to abate waste discharges; development of comprehensive water pollution control programs; and fiscal incentives.

This conclusion of the Conference in 1965 is just as apt today as it was then. At the time, the Conferees also found that the problems of the Hudson River are large and complex, owing to the heavily populated and industrialized character of the region. It may be understood, then, that a great deal of continuous effort on the part of all concerned is necessary for successful pollution control.

This proposition could be illustrated in many ways. As previously mentioned, the Interstate Sanitation

Commission has a Consent Order against New York City under which that municipality's vast program of treatment plant and related construction is being carried out. The order dates from 1957, but the achievement of totally satisfactory results were recognized to involve a multi-stage construction program. New York City activities reported for the two-year period, since the first session of this Conference, have constituted the most recent phase of work toward full compliance with the Interstate Sanitation Commission's Consent Order.

We believe the opportunity for the abatement of water pollution was never more favorable than at the present time. The people of the area have never before shown such solidarity in expressing their desire for cleaner waters for best usage. This has been shown in many ways such as the New York Bond Issue in 1965 and the new Legislation passed in New Jersey and Connecticut during the early part of this year which provides state matching funds so that projects will be eligible for the maximum Federal matching funds. This has lead to communities under orders to construct secondary treatment facilities to make financial plans based on receiving from 60% up to 85% of total construction cost from State and Federal sources. Our real concern is that we now have the sentiment of the public to get the job done and the lack of Federal funds at this time will provide such an obstacle that the construction of abatement projects may be brought to a standstill. For instance, some of the larger projects are being prefinanced by New York State to the extent of 26 percent or more of the Federal share of 30 percent. This does not include another 25 percent of promised Federal matching funds as "bonuses," which the communities were expecting and which they may now only hope to receive at some time in the future. New York may reclaim some of their prefinancing funds if Federal money is ever appropriated for this purpose at a later date. It might prove quite difficult to achieve the current level of public support again if Federal funds are not made available for the projects to proceed as now scheduled.

We look forward to a steady improvement of waste treatment in that portion of the Hudson River Basin lying within the Interstate Sanitation District. To this end, we count on the continuing cooperation of the States of New Jersey and New York, the Federal Government and the Interstate Sanitation Commission.

CONCLUSIONS AND RECOMMENDATIONS
of the
SECOND CONFERENCE
ON THE HUDSON RIVER AND ITS TRIBUTARIES

The Conferees agreed upon the following conclusions and recommendations:

1. Pollution of the Interstate waters of the Hudson River and its tributaries is occurring due to the discharge of inadequately treated municipal and industrial wastes.

2. Considerable progress has been made toward abating this pollution problem and the programs underway, when carried to their logical conclusion, will abate and control this pollution.

3. All wastes prior to discharge into the waters covered by the Conference (a) shall be treated to provide a minimum of 80 percent reduction of biochemical oxygen demand at all times. It is recognized that this will require a design for an average removal of 90 percent of biochemical oxygen demand. Or (b) shall be treated, as approved by the State Water Pollution Control Agency, to the degree necessary to meet the water quality standards approved by the Secretary of the Interior under the Water Quality Act of 1965.

4. All the waters covered by the Conference shall receive effective disinfection of the effluents as required to protect water uses.

5. The Conferees accept its schedule that all remedial facilities be placed in operation by 1972.

6. The State and Interstate Conferees agree that recent actions in Congress make it appear that the fiscal year 1968 appropriations will be less than one-half the inadequate authorization of \$450,000,000. It is destructive of pollution control efforts to continue a

system in which actual appropriations are far below statutory authorizations. It should be understood that congressionally authorized amounts constitute a serious moral obligation on which states and municipalities should be able to rely in planning their projects for water quality improvement. Unless congressional appropriations are reasonably consistent with the authorizations enacted by Congress, it is obviously impossible for any municipality to receive the 55 percent of construction cost in Federal aid clearly provided in the Clean Waters Restoration Act of 1966. If the Congress intends to fund projects at 55 percent, then increases in the existing authorizations, as well as increases in the appropriations are needed.

7. Periodic progress meetings shall be called by the Chairman after consultation with the Conferees.

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AIR POLLUTION

GENERAL

In 1967 the Commission was faced with the realization that its functions in air pollution would be terminated in the near future. At a Federal Conference on Abatement of Interstate Air Pollution in the New York-New Jersey Metropolitan Area early this year, the first recommendation of the Conferees was that an appropriate interstate agency must be vested with adequate legal authority. The Interstate Sanitation Commission, for a while, hoped that its powers would be expanded to achieve the objectives agreed to by the Conferees. Later, Governor Hughes and Governor Rockefeller decided they would recommend a separate agency consisting of 5 states to handle interstate air pollution matters on which the Governors themselves would serve as the Commissioners. That proposal was passed by New York and New Jersey legislatures and signed by the Governors.

The federal legislation is all that is required now for the Mid-Atlantic States Air Pollution Control Commission to be created. This office will cooperate in every way to make the transition as smooth as possible.

With this in mind the Commission did not undertake any expansion of its present air pollution functions except for an intensive odor survey. All activities that were being performed in 1966 were for the most part continued into this year. These activities included the following: mobile unit sampling of point sources of pollution in the Staten Island-New Jersey Area; maintaining an around-the-clock, seven-day-week answering service for receipt of smoke and odor complaints; following up such complaints with field investigations and processing them on our official complaint forms which are referred to the appropriate enforcement agencies; participating in the Regional Air Pollution Warning System; furnishing data from our fixed sampling stations and mobile sampling to appropriate control agencies.

NEW YORK - NEW JERSEY INTERSTATE AIR

POLLUTION ABATEMENT CONFERENCE

In October, 1965, Federal abatement action was requested by Governor Rockefeller of New York, who asked Secretary John W. Gardner to call an Abatement Conference under the terms of the Federal Clean Air Act, on the basis that air pollution arising in New Jersey was adversely affecting the health and welfare of New York residents. Secretary Gardner broadened the scope of the Conference by initiating concurrent abatement action concerning air pollution originating in the State of New York, which might have possible adverse effects on the health and welfare of persons in New Jersey.

The purpose of an Abatement Conference is to provide information on which the Secretary of Health, Education and Welfare can base recommendations for abatement of an interstate air pollution problem in accordance with provisions of the Clean Air Act of 1963. The Secretary is empowered to take additional abatement action if his recommendations are not carried out.

The first session of the Conference, which was primarily concerned with an investigation of air pollution caused by sulphurous compounds and carbon monoxide, was convened on January 3, 1967, at the Statler Hilton Hotel, Seventh Avenue and 33rd Street, New York, N.Y. The area to be covered by the investigation consists of eight counties in New York -- the five counties in New York City and Nassau, Rockland and Westchester -- and nine counties in New Jersey -- Bergen, Essex, Hudson, Middlesex, Monmouth, Morris, Passaic, Somerset, and Union.

The Abatement Conference was open to the public, but participation was limited to representatives of the Department of Health, Education and Welfare and local and state officials responsible for public health and air pollution control in the problem area. The official participants were allowed to invite other individuals to participate.

Mr. S. Smith Griswold, of the Department of Health, Education and Welfare, was designated Presiding Officer

of the Conference, and Mr. William H. Megonnell was designated as the official Conference participant of the Department of Health, Education and Welfare.

Testimony and statements were heard from various governmental officials and representatives of the participating control agencies. data was presented by the participating agencies attempting to show in detail the source, magnitude and effect of the pollutants being considered. Information furnished by the Commission such as SO₂ data from our fixed sampling station on Staten Island and nearby New Jersey, mobile unit sampling for sources of SO₂, and records of complaints were part of the data presentation.

Each participant brought forth their own conclusions and recommendations concerning the causes and major sources of the pollutants and corrective measures to be taken for abatement of said pollutants. After hearing the testimony, the Presiding Officer recessed the Conference for an executive session.

At the executive session were representatives of New York State, New York City, New Jersey, the Interstate Sanitation Commission, and the Department of Health, Education and Welfare. They joined in sending conclusions and recommendations to Secretary of Health, Education and Welfare, John W. Gardner, for final recommendations by him under the 1963 Clean Air Act procedures. Following are the official conference conclusions and the recommendations made by the Secretary.

GENERAL CONCLUSIONS REACHED
BY OFFICIAL PARTICIPANTS
INTERSTATE AIR POLLUTION
ABATEMENT CONFERENCE

A. Occurrence of Air Pollution Subject to Abatement
under the Clean Air Act.

1. The predominant portions of air pollutants present in the State of New York and in the State of New Jersey are discharged within each respective state, and each would have a serious air pollution problem without the existence of the other. Also, however, pollutants discharged to the atmosphere in the State of New Jersey cross the boundary into the State of New York, and pollutants discharged to the atmosphere in the State of New York are transported into the State of New Jersey; hence, indigenous air pollution in either State is increased by transport of pollutants from the other State.

The interstate New York-New Jersey metropolitan area, in fact, has a common air mass and any discharge of pollutants into that air mass, regardless of point of discharge, causes or contributes to air pollution and may be carried indiscriminantly throughout the area, subject to the vagaries of wind and weather.

The material presented at the Conference establishes that such interstate movement of air pollutants includes particulate matter, sulphur oxides, hydrogen sulphide, mercaptans, and other compounds; but the record is insufficient to establish interstate movement of carbon monoxide.

2. Interstate air pollution in the New York-New Jersey metropolitan area causes or contributes to conditions which endanger health or welfare, as follows:

- a. It results in visibility restrictions endangering the safety of persons in interstate travel, both by land and by air, and it causes inconvenience and economic loss to the public and to transportation companies, due to disruption of traffic schedules.
 - b. It causes damage to vegetation, including ornamental vegetation, with a consequent substantial economic and esthetic loss.
 - c. It results in the deterioration, damage and destruction of materials and property, including historical and architectural art objects and monuments, requiring additional expenditures for maintenance and replacement of materials.
 - d. It has multiple adverse economic effects of business and commercial operations.
 - e. The levels of sulphur dioxide monitored have been demonstrated to exceed consistently the objectives for 24-hour sulphur dioxide concentrations in community atmospheres adopted by the New York State Air Pollution Control Board for the New York State portion of the interstate metropolitan area, which also are recommended by the United States Public Health Service, (0.1 ppm 24-hour average of sulphur dioxide not to be exceeded more than one percent of the time).
 - f. At times, the actual concentrations of air pollutants in considerable portions of the area are at or above levels which have been observed in community situations to result in increased illness. Under certain meteorological conditions, these levels could, and have in the past, contributed to excess deaths.
3. Such interstate air pollution endangers the health and welfare of persons in New York and New Jersey, respectively, and is therefore subject

to abatement under Section 105, Title I of the Clean Air Act (42 U.S.C. 1957, et seq.).

B. Adequacy of Measures Taken Toward Abatement of Air Pollution.

Insufficient and inadequate action has been taken toward abatement of interstate air pollution in the 17-county New York-New Jersey metropolitan area. There is no interstate regional agency with adequate authority to establish uniform air pollution control regulations and to assure coordinated uniform enforcement against all pollution sources located within the area.

The following actions relating to prevention, control and abatement of sulphurous air pollution have been taken by various jurisdictions in the bi-State metropolitan area:

Chapter VIII of the New Jersey State Air Pollution Control Code, which becomes effective March 1, 1967, limits the concentration and rate of omission of sulphurous compounds from industrial process operations. The Conference has been assured that Chapter VIII will be vigorously enforced by the State of New Jersey. While this Chapter will prevent or eliminate some localized problems associated with industrial sulphurous emissions, it is not applicable to fuel-burning sources, which discharge more than 92 percent of the total sulphur oxides emitted in New Jersey. Chapter VII will in no way abate the emission of sulphurous compounds from fuel burning, and it is doubtful that it will abate interstate air pollution from certain industrial process sources. Conference participants for the State of New Jersey are of the opinion, however, that the limitations on emission of sulphurous compounds from industrial process sources will be effective in eliminating problems caused by the interstate transport of sulphurous pollution from such sources.

The Interstate Sanitation Commission identifies point sources of interstate air pollution,

investigates complaints, and supplies information to State and local agencies that is used in enforcement proceedings.

A New York City gas distributor, Brooklyn Union Gas Company, encouraged and supported by the New York City Department of Air Pollution Control, offers to large installations a special temperature-controlled, interruptible gas-distillate fuel oil rate. This system, if widely adopted, very significantly can reduce, at some increased cost, the sulphur-oxide emissions from non-power generating sources. It is unlikely that large-scale conversions to this system will be made voluntarily, however, and there was no indication that other gas utilities in the area intend to offer similar service. New York City is planning to convert the space heating of its municipal facilities to this system. The City of Newark has announced that space heating for several of its municipal facilities will be provided by burning low-sulphur No. 2 distillate oil, instead of high-sulphur No. 6 residual oil.

The State of New York has adopted a system of ambient air quality objectives and, accordingly, has classified New York City and the surrounding New York counties of the metropolitan area. Also, it has adopted Rules to Prevent New Air Pollution, whereby it reviews and approves plans for construction or major reconstruction of facilities which may increase, decrease or alter air pollutant emissions. Under new authority, the New York State Air Pollution Control Board is empowered to promulgate emission standards and to regulate composition and use of fuels throughout the State.

New York City's Local Law 14 requires stepwise reduction in the maximum allowable sulphur content of fuels to one percent by 1971. The local electric utility, Consolidated Edison Company, which emits about 50 percent of the sulphur oxides in New York City, has been cooperating with City authorities by attempting to reduce sulphur content of its fuels well in advance of the mandatory schedule. Further, Consolidated Edison has submitted to the City a

ten-year plan whereby its sulphur-oxide emissions to the City atmosphere would be significantly reduced; and, at the request of the City, Consolidated Edison has sought and found a means whereby low-sulphur oil can be obtained for use in its plants during the winter heating season when air pollutant concentrations in the New York-New Jersey area are highest. There is nothing in the record to show that similar action has been requested of or initiated by Consolidated Edison's counterparts in the New York portion of the interstate area or by Public Service Electric and Gas Company and Jersey Central Power and Light Company in the New Jersey portion. Several municipalities in the metropolitan area have adopted and others contemplate the adoption of rules and regulations specifically designed to reduce sulphur-oxide emissions.

While each of these actions is designed to cope with a portion of the sulphur-oxide problem, they will not, individually or collectively, sufficiently alleviate this serious problem through the New York-New Jersey interstate metropolitan area to a point where health and welfare are not endangered.

C. Causes of Delay in Abating the Pollution.

The States of New York and New Jersey have not conferred adequate authority in an interstate agency for adoption and enforcement of uniform standards and regulations. Consequently, standards, regulations and enforcement measures are neither uniform nor aimed at a common objective. Activities undertaken by individual jurisdiction in each State are designed to cope with portions of the problem arising within their borders; even if such actions were totally effective in abating pollution arising in a given jurisdiction, however, that jurisdiction still could suffer from air pollutants reaching it from other portions of the metropolitan area.

RECOMMENDATIONS BY THE SECRETARY

DEPARTMENT OF HEALTH, EDUCATION AND WELFARE

It is found that effective progress toward abatement of the air pollution discussed at this Conference is not being made, and that the health and welfare of persons in the 17-county area is being endangered. It is therefore recommended that necessary remedial action be taken. The following recommendations, it may be noted, were unanimously concurred in, except for Recommendation I. Regarding this Recommendation, all participants concurred in principle.

RECOMMENDATION I

INTERSTATE AIR POLLUTION CONTROL AGENCY

In order to deal with the bi-State air pollution problem on a regional basis, an appropriate interstate agency must be vested with adequate legal authority. Such legislation for this purpose should provide:

1. Authority to establish ambient air quality standards for at least the 17-county area, i.e., Bergen, Essex, Hudson, Middlesex, Monmouth, Morris, Passaic, Somerset and Union Counties in the State of New Jersey; and the five counties of New York City as well as the counties of Nassau, Rockland, and Westchester in the State of New York;
2. Adequate rule-making power and enforcement authority to abate, control and prevent air pollution originating in at least the 17-county New York-New Jersey metropolitan area, and to make the maximum effective utilization of existing local resources for inspection and enforcement.
3. Effective representation of local governments in the 17-county bi-State area on State delegations on the Interstate Agency and
4. Federal representation on the interstate agency with the same vote as any State.

This Abatement Conference shall remain in continuing session, subject to the call of the Presiding Officer or his designated representative, until an interstate regional air pollution control agency with adequate legal authority as outlined above, is established, staffed, and effectively operational.

RECOMMENDATION II

CONTROL OF EMISSIONS OF SULPHUR DIOXIDE FROM EXISTING POWER GENERATION PLANTS

It is found:

- a) That in order to protect health and welfare of residents in the bi-State metropolitan area, the New York State Ambient Air Quality Objectives already adopted for the New York State portion of the area should be applied over the entire area. These standards provide that a 24-hour average concentration of sulphur dioxide shall not exceed 0.1 ppm by volume more than 1% of the time and shall not exceed 0.25 ppm by volume on an hourly basis more than 1% of the time.
- b) That these levels are consistently exceeded in a considerable portion of the area.
- c) That the evidence in the record shows that nearly 40% of the annual emissions of this toxic, corrosive gas into the atmosphere of the 17-county area emanates from steam and electric-power generating plants.

Therefore, as an immediate measure to be taken, it is recommended:

That all steam and electric power generating facilities producing steam or electric power for sale currently existing within the 17-county, bi-State area not to be permitted to burn fuel containing in excess of 1.0% sulphur by weight beyond October 1, 1969, unless they have installed effective means to control sulphur oxide emissions (calculated as sulphur dioxide) to an equivalent level. Local programs can and should be encouraged, to meet the above target prior to the deadline recommended.

RECOMMENDATION III

CONTROL OF EMISSIONS OF SULPHUR
DIOXIDE FROM NEW OR EXPANDED
EXISTING POWER GENERATION PLANTS

It is found:

- a) That present electric generating capacities for the area must be increased; and
- b) That it must be ensured that meeting these increased demands for electricity does not impose an additional burden on the health and welfare of the bi-State community.

It is therefore recommended that:

After July 1, 1967, no new power generating facilities or expansion (or major reconstruction) of existing facilities be allowed within the 17-county, bi-State area of New York and New Jersey, unless evidence is presented guaranteeing an assured 20-year supply of low sulphur fuel which would not allow emissions at any time to exceed 0.35 lbs. of sulphur dioxide per million BTU gross heat input, or unless it can be shown that demonstrated effective means will be employed to control sulphur oxide emissions to an equivalent level.

RECOMMENDATION IV

CONTROL OF EMISSIONS OF SULPHUR DIOXIDE
FROM SPACE HEATING

It is found that:

- a) That the use of sulphur-rich fuels for space heating and other domestic or commercial uses is responsible for more than 50 percent of annual emissions of this contaminant; and

- b) That not only do these emissions sharply increase in the winter months, but they are released relatively close to ground level where people live and work.

It is therefore recommended that:

- 1) Fuel utilized for space heating or for other domestic, commercial and industrial uses within the 17-county bi-State area after October 1, 1969, shall be natural gas, coal containing not in excess of 0.2 percent sulphur by weight or oil containing not in excess of 0.3 percent sulphur by weight.
- 2) Local, State, and Federal agencies be strongly urged to comply with this standard at an even earlier date, to demonstrate their desire to provide guidance to private sectors of the community.

RECOMMENDATION V

CONTROL OF EMISSIONS OF SULPHUR COMPOUNDS FROM INDUSTRIAL PROCESSES

It is found:

That specific point source emissions of sulphur oxides and extremely malodorous sulphur compounds (mercaptans, hydrogen sulphide, etc.) result in localized excessive ground level concentrations that cause detriment to the health and welfare of the community.

It is therefore recommended that:

- 1) Standards be established which would limit emissions of sulphur dioxide to 2,000 ppm at existing sources and 500 ppm at new sources. Dilution or diffusion of exhaust gases shall not be considered an acceptable means of meeting this standard (sulphur recovery plants are to be exempted).

- 2) All sources emitting odorous or offensive sulphur compounds shall be controlled to the extent that no nuisances are created, and legal enforcement and inspection programs be rigorously prosecuted so as to assure good operating practices to the end of minimizing accidental or inadvertent releases of such compounds.
- 3) As agreed by the Conference participants, the State of New Jersey, when applying Chapter VIII of its Air Pollution Control Code, which becomes effective March 1, 1967, shall assign first priority to the nine New Jersey counties in the 17-county interstate metropolitan area, and that the State of New Jersey will submit to the Presiding Officer, no later than June 1, 1967, a progress report delineating the steps taken in this regard.

RECOMMENDATION VI

CONTROL OF CARBON MONOXIDE EMISSIONS

It is found that:

- a) Evidence is inadequate to establish interstate transport of carbon monoxide, but concentrations in localized areas approach limits specified in a recognized air quality standards.
- b) Available air quality data do not adequately identify the maximum levels and frequencies to which many persons are exposed.
- c) Ninety-five percent of the carbon monoxide is emitted from motor vehicles operating throughout the 17-county area.
- d) There are only two significant process sources of carbon monoxide in the metropolitan area--- Hess Oil Company and California Oil Company in

Sewaren and Perth Amboy, New Jersey, respectively. Hess Oil Company emits 79,000 tons and the California Oil Company emits 75,000 tons of carbon monoxide annually. Using accepted diffusion equations, it is computed that maximum short-term, ground-level concentrations from these plants under varying meteorological conditions will range from 6.0 ppm carbon monoxide, 8 kilometers from the source, to 167 ppm carbon monoxide, 4/10 kilometers from the source.

- e) Federal and State regulations will require exhaust controls on all new 1968 model-year and later automobiles and light trucks, with an anticipated reduction in carbon monoxide emissions.
- f) The State of New Jersey already has adopted legislation and is implementing a control program for reducing atmospheric carbon monoxide levels.
- g) It is technologically feasible to reduce carbon monoxide emissions from used motor vehicles, and it is possible to develop and implement other actions that would reduce emissions in presently congested areas.

It is therefore recommended that:

- 1) The States continue to monitor atmospheric levels of carbon monoxide, particularly in locations where maximal levels are expected to occur, and that they advise the Secretary of Health, Education, and Welfare of any apparent need for more stringent control of new motor vehicle emissions.
- 2) Individual jurisdictions should continue to give consideration to the necessity and means for reducing atmospheric carbon monoxide levels.
- 3) That, as suggested by the Conference participants, the State of New Jersey urge Hess Oil

Company and California Oil Company to control their contributions to localized carbon monoxide levels. In accordance with good engineering practice, waste heat boilers can be installed economically to serve this purpose.

RECOMMENDATION VII

CONTROL OF EMISSIONS FROM THE ABEX CORPORATION - MAHWAH, NEW JERSEY

It is found that:

Emissions from the Abex Corporation in Mahwah, New Jersey are transported from the State of New Jersey into the State of New York and cause air pollution problems consisting of odors and impaired visibility and of objectionable levels of particulate matter in the vicinity of Suffern, New York. Cognizance is taken of the remedial measures being undertaken by the Corporation, which are expected to meet the air pollution control requirements of the State of New Jersey by August 1, 1967. There is no assurance that the proposed installation will adequately reduce emissions from the plant so as not to cause or contribute to air pollution which endangers the health and welfare of persons in the State of New York.

It is therefore recommended that:

- 1) The time schedule for the abatement of emissions agreed to between the Abex Corporation and the State of New Jersey be adhered to strictly.
- 2) The States of New Jersey and New York mutually arrange to undertake surveillance of the operation and effectiveness of the controlled process, after it is installed for a period of at least 60 days, and report in writing to the Presiding Officer of the Conference (or the

Chairman of the continuing session) the results of such surveillance within 75 days for such further consideration and action, if any, as may be necessary.

REGIONAL AIR POLLUTION WARNING SYSTEM

This past year, the Commission continued its role of functioning as the central office for the New York-New Jersey Regional Air Pollution Warning System. Concentration data of the three pollutants (SO₂, CO and Smoke Shade) from the New York City Laboratory at East 121st Street, was still being temporarily utilized as the official concentrations to determine any necessary action. Additional data from four New Jersey Health Department stations located in Newark, Bayonne, Perth Amboy, and Paterson are telemetered to their central office in Trenton and then referred to the Commission office by telephone.

With the creation of the Mid-Atlantic States Air Pollution Control Commission, the Commission had to put aside their plans for having data from the planned remote monitoring stations telemetered directly into a central system at the Commission office. The new Commission will probably perform the above function.

In 1967 up until the date of this writing there were 4 Watches and 1 First Alert called under the standards of the warning system. The First Alert, which was in January, was based on the original standards approved by the Cooperative Committee on Interstate Air Pollution in 1964. The Committee then made changes of the standards and procedural changes to try to improve the system. In Appendix B may be found the standards of the Alert System which went into effect April 18, 1967. The 4 Watches were called under these standards. These standards were only interim until entirely new considerations for formulating the criteria of the warning system were adopted on October 20, 1967 and replaced the old system of standards. Below is an explanation of the new system followed in tabular form.

The Criteria

1. Status - "Forecast" - an internal watch shall be actuated by a United States Weather Bureau advisory

that a high air pollution potential will exist for the next thirty-six hours.

2. Status - "Alert" - At the initiation of, and periodically during, a "Forecast" period, air quality information for the immediately preceding twenty-four-hour period shall be reviewed. If for any consecutive six-hour-period during the last twelve hours, the sulphur dioxide dosage is equal to or greater than 2.0 part per million-hours and soiling index is equal to or greater than 25 RUD-hours/1000 lin. ft.

OR

if for any consecutive six hours in the immediately preceding twelve hours the carbon monoxide dosage is equal to or exceeds 180 parts per million-hours

OR

the sulphur dioxide dosage for the last twenty-four-hour period is equal to or greater than 6.0 part per million-hours and the dosage is increasing and the soiling index is equal to or greater than 100 RUD-hours/1000 lin. ft.

AND

adverse meteorological conditions are predicted for at least an additional twelve hours:

an "Alert" status has been reached

3. Status - "Warning" - If during an "alert" period for any consecutive six-hour-period during the last twelve hours, the sulphur dioxide dosage is equal to or greater than 3.0 part per million-hours and the soiling index is equal to or greater than 25 RUD-hours/1000 lin. ft.

OR

if for any consecutive six hours in the immediately preceding twelve hours the carbon monoxide dosage is equal to or exceeds 300 parts per million-hours

OR

the sulphur dioxide dosage for the last twenty-four-hour period is equal to or greater than 9.0 parts per million-hours and the dosage is increasing and the soiling index is equal to or greater than 100 RUD-hours/1000 lin. ft.

AND

adverse meteorologic conditions are predicted for at least an additional twelve hours:

a "Warning" status has been reached

4. Status - "Emergency" - If during "warning" period in any consecutive twenty-four-hour period the sulphur dioxide dosage is equal to or greater than 15.0 part per million-hours and the soiling index is equal to or greater than 200 RUD-hours/1000 lin. ft.

AND

adverse meteorologic conditions are predicted for at least an additional twelve hours:

an "Emergency" - status has been reached

5. Status - "Termination" - Once declared, any status reached by application of these criteria shall remain in force until the high air pollution potential advisory is ended.

CRITERIA FOR AIR POLLUTION WARNING SYSTEM

EFFECTIVE OCTOBER 20, 1967

STATUS		TIME INTERVAL CONSIDERED PRIOR TO STATUS (Hrs.)	(1) SULPHUR DIOXIDE (ppm- Hrs.)	(2) RUD (RUD-Hrs.)	(3) CARBON MONOXIDE (ppm- Hrs.)	(4) Forecast (Hrs.)
Forecast		-	-	-	-	36
ALERT	1+2+4 or 3+4	*	2.0	25	180	12
	1+2+4	24	6.0 ↑	100		12
WARN- ING	1+2+4 or 3+4	*	3.0	25	300	12
	1+2+4	24	9.0 ↑	100		12
EMERGENCY 1+2+4		24	15.0 ↑	200		12
TERMINATION						0

* Any consecutive 6 hrs. in the last 12 hrs.

These criteria incorporate the concept of dosage as the measure of exposure to the air pollution contaminants and it is believed that the effects of the contaminants are probably more directly related to these dosages than to the old standards of duration of certain minimum concentration levels. The only important change in the method of analysis of the pollutants was the measurement of soiling index by reflectance and reporting in RUD rather than COH units. This method is more compatible than transmittance when used in a telemetering system.

SUMMARY OF AIR POLLUTION EMERGENCIES

January 26, 1967

A First Alert was recommended by the Commission for the metropolitan area at 11:00 A.M. primarily because of the high levels of sulphur dioxide readings. The States then declared a First Alert. Sulphur dioxide readings were at or near one part per million for 4 consecutive hours just before the Alert went into effect.

The New Jersey Department of Health, in calling the Alert, asked communities to stop using incinerators. Industry was requested to reduce activities that create pollution and to switch from coal or oil to fuels that cause less pollution.

In New York Con Edison started drawing natural gas from its own stock and purchased some from the Brooklyn Union Gas Company, to replace its sulphurous fuels. The Long Island Lighting Company also switched to gas. The City Housing Authority and all Federal buildings shut down their incinerators and cut heating to 60 degrees. Sanitation Department incinerators were under instructions to reduce their operations to a minimum.

At 3:45 P.M. the U.S. Weather Bureau forecasted the diminishing of the inversion layer which caused the pollution buildup. However, light winds and fog still prevailed until Midnight. At Midnight, the Interstate Sanitation Commission recommended that the States call off the Alert but continue the Watch. The States agreed and the Watch was continued until 7:00 A.M. on the 27th, when it was terminated due to low levels of the pollutants.

August 16, 1967

Due to a 36-hour High Air Pollution Potential Forecast from the U.S. Weather Bureau, a Watch was called by the Commission at 11:00 A.M. Although concentrations of the pollutants did not approach Alert levels, the Watch was continued on the following day due to an advisory from the U.S. Weather Bureau that the

High Air Pollution Potential conditions were to continue for another 24 hours. Levels of pollutants were still well below alert standards the following day. The Watch was terminated at 11:00 A.M., August 18, 1967, when the forecaster was able to predict a frontal system which would pass through the area and clear the then present stagnant air mass.

September 8, 1967

At 12:00 Noon, the Commission notified the States that it was calling a Watch based upon a High Air Pollution Potential Forecast for the next 24 hours. Values of the pollutants remained low and the Watch was terminated at 10:30 A.M., September 9, 1967, when the High Air Pollution Potential Forecast was lifted.

September 18, 1967

A Watch was called at 2:00 P.M. by the Commission based on a 24-hour High Air Pollution Potential Forecast. Concentration of the pollutants, however, were extremely low and the Watch was terminated at 10:30 A.M., when the High Air Pollution Potential was terminated at 2:00 P.M.

October 3, 1967

A Watch was called at 12:00 Noon by the Commission based on a 36-hour High Air Pollution Potential Forecast. Concentration levels were low and a revised forecast terminated the High Air Pollution Potential at 12:00 Noon, October 4th.

A P P E N D I X A

SEWAGE TREATMENT PLANTS

Discharging into the

INTERSTATE SANITATION DISTRICT

SEWAGE TREATMENT PLANTS
Discharging into the
INTERSTATE SANITATION DISTRICT WATERS
1967

Plant	Receiving Water Class	Date of Const.	Flow MGD		Type of Treatment	Estimated Population Served
			Average	Design		
<u>CONNECTICUT</u>						
<u>Fairfield County</u>						
Bridgeport - East Side	A	1950+	11.0	14.0	Primary	47,000
- West Side	A	1951+	25.0	17.0	Primary	109,000
Darien	A	1956+	1.0	1.2	Primary	6,500
Fairfield	A	1967+	4.0	4.0	Secondary	30,000
Greenwich - Central	A	1964+	6.8	8.5	Secondary	42,000
Norwalk	A	1953+	7.5	11.3	Primary	55,000
Stamford	A	1943+	10.9	10.0	Primary	60,000
Stratford	A	1953+	5.8	4.8	Primary	40,000
Westport	A	1960	0.7	0.6	Secondary	5,000
<u>New Haven County</u>						
Milford - Gulf Pond	A	1960	1.8	2.4	Secondary	6,000
- Harbor	A	1937	0.7	0.5	Secondary	4,000
- Town Meadows	A	1954	1.7	1.2	Secondary	10,000
New Haven - Boulevard	A	1959+	12.0	13.8	Primary	63,100
- East Shore	A	1953	8.2	7.0	Primary	35,000
- East Street	A	1966+	20.0	22.5	Primary	67,100
West Haven	A	1950+	5.0	3.2	Primary	40,000
<u>NEW JERSEY</u>						
<u>Bergen County</u>						
Edgewater	B	1958+	1.9	2.5	Primary	5,000
<u>Hudson County</u>						
Bayonne	B	1954	8.2	20.0	Primary	73,000
Hoboken	B	1958	12.4	20.0	Primary	70,000
Jersey City - East Side	B	1967+	30.8	46.6	Primary	160,000
- West Side	B	1967+	15.4	36.0	Primary	110,000
Joint Outlet (West New York)	B	1953	5.8	10.0	Primary	50,000
Kearny	B	1955	1.7	4.0	Primary	30,000
North Bergen - Woodcliff	B	1962	0.9	4.4	Primary	14,741
<u>Middlesex County</u>						
Carteret	B	1953	3.0	3.0	Primary	21,000
Madison Township Sewerage Authority						
- Laurence Harbor	A	1963+	0.6	1.0	Primary	8,000
Middlesex County Sewerage Authority	A	1965+	60.8	78.0	Primary	500,000
Perth Amboy	A	1934	5.9	10.0	Primary	41,000
Rahway Valley Sewerage Authority	B	1937	27.4	16.7	Primary	68,000
Sayreville - Melrose	A	1949	0.04	0.1	Primary	1,000
- Morgan	A	1951	0.14	0.3	Primary	2,000
South Amboy	A	1940	0.8	1.0	Primary	9,000
Woodbridge	B	1954	4.45	10.0	Primary	25,000
<u>Monmouth County</u>						
Atlantic Highlands	A	1928	0.3	0.6	Primary	4,100
**Highlands	A	1928	0.4	1.2	Primary	3,500
Kearnsburg	A	1964+	1.7	2.5	Primary	6,900
Keyport	A	1962+	0.8	2.9	Primary	6,400
<u>Union County</u>						
Elizabeth Joint Meeting	B	1958+	59.2	100.00	Primary	465,000
Linden-Roselle	B	1952	11.6	12.5	Primary	66,000
*Nopco Chemical Co.	B	1962	-	-	3-Septic Tanks	Industrial
<u>Essex County</u>						
Passaic Valley	B	1937+	250.0	-	Primary	2,899,000
<u>NEW YORK</u>						
<u>Nassau County</u>						
Belgrave Sewer District	A	1965+	1.3	2.0	Secondary	15,000
Cedarhurst	A	1934+	0.8	1.0	Primary	7,000
Freeport	A	1960+	4.2	4.0	Secondary	40,000

SEWAGE TREATMENT PLANTS
Discharging into the
INTERSTATE SANITATION DISTRICT WATERS
1967

Plant	Receiving Water Class	Date of Const.	Flow MGD		Type of Treatment	Estimated Population Served
			Average	Design		
<u>NEW YORK (continued)</u>						
<u>Nassau County (continued)</u>						
Glen Cove - Morgan Island Estates	A	1948	-	-	Septic Tank	-
- Morris Avenue	A	1965+	2.3	4.0	Secondary	25,000
Great Neck Dist. - Plant #1	A	1962+	1.0	2.7	Secondary	6,000
- Plant #2	A	1961+	1.0	1.0	Primary	8,000
Great Neck Village	A	1948+	1.0	1.2	Secondary	9,000
Jones Beach	A	1951	Seasonal	1.0	Secondary	Seasonal
Lawrence	A	1966+	0.8	1.5	Secondary	6,000
Long Beach	A	1953+	6.4	9.6	Secondary	29,000
*Long Island Lighting Company (Glenwood Landing)	A	1929	-	-	3-Septic Tanks	Industrial
Nassau County Sewer Dist. #1	A	1961	1.3	2.5	Secondary	9,000
Nassau County Sewer Dist. #2	A	1962+	53.5	50.0	Secondary	600,000
Oyster Bay Sewer District	A	1965+	1.0	1.2	Secondary	6,000
Port Washington Sewer District	A	1952+	2.2	3.0	Secondary	25,000
*Quantitative Biology Lab.	A	1965	-	0.008	Secondary	40
Roslyn	A	1950+	0.4	0.4	Secondary	3,000
West Long Beach Sewer District (Atlantic Beach)	A	1960+	0.7	1.5	Secondary	Seasonal
<u>NEW YORK CITY</u>						
<u>Bronx County</u>						
Hart-City Island	A	1942	1.0	1.5	Primary	5,000
Hunts Point	B	1965+	117.6	150.0	Secondary	770,000
Orchard Beach	A	1945+	Seasonal	0.1	Primary	Seasonal
<u>Kings County (Brooklyn)</u>						
Coney Island	A	1965+	78.0	110.0	Secondary	535,000
**Newtown Creek	B	1967	140.0	310.0	Intermediate	2,500,000
Owls Head	B	1952	92.4	160.0	Intermediate	750,000
26th Ward	A	1951+	51.4	60.0	Secondary	385,000
*Preferred Oil Company	B	1948	-	-	Septic Tank	Industrial
<u>New York County (Manhattan)</u>						
Dyckman Street	A	1917	5.0	7.5	Screening	39,000
Wards Island	B	1948+	205.9	220.0	Secondary	1,470,000
<u>Queens County</u>						
Bowery Bay	B	1958+	104.1	120.0	Secondary	1,000,000
Jamaica	A	1965+	72.6	100.0	Secondary	415,000
Rockaway	A	1961+	15.7	30.0	Secondary	90,000
Tallmans Island	A	1964+	50.6	60.0	Secondary	251,000
<u>Richmond County (Staten Island)</u>						
*Daytop Village	A	-	-	-	Septic Tank	-
*Mount Loretto Home - Plant #1	A	-	-	-	Septic Tank	-
Plant #2	A	-	-	-	Septic Tank	-
Oakwood Beach	A	1956	13.5	15.0	Secondary	85,000
*Port Authority	B	1965	-	-	Extended Aeration	40
Port Richmond	B	1953	8.0	10.0	Primary	60,000
*Public School #7	A	1965	-	-	Extended Aeration	2,200
*Richmond Memorial Hospital	A	1936	-	-	Septic Tank	-
*Saint Joseph's School	A	1965	-	-	Extended Aeration	910
*Willowbrook State School	B	1941	0.5	0.6	Primary	6,000
<u>Rockland County</u>						
*Continental Can Co.	A	1954	2.55	3.0	Primary	Industrial
Haverstraw	A	1940	0.4	1.0	Primary	6,000
*Jewish Convalescent Home - Grandview	A	-	-	-	Septic Tank	-
*Kay-Fries Chemicals, Inc.	A	1966	-	0.01	Neutralization	Seasonal
*Letchworth Village (Thiells)	A	1935+	0.5	0.8	Imhoff Tank	4,500
*New York State Rehabilitation Hospital (West Haverstraw)	A	1933	0.05	0.2	Imhoff Tank	300
Nyack	A	1940	1.2	1.0	Primary	6,000
Orangetown Sewer Dist. #1 (Pearl River)	A	1952+	2.2	1.8	Secondary	3,600

SEWAGE TREATMENT PLANTS
Discharging into the
INTERSTATE SANITATION DISTRICT WATERS
1967

Plant	Receiving Water Class	Date of Const.	Flow MGD		Type of Treatment	Estimated Population Served
			Average	Design		
<u>NEW YORK (continued)</u>						
<u>Rockland County (continued)</u>						
Orangetown Sewer Dist. #2	A	1961+	1.1	1.3	Primary	2,500
Palisades Interstate Park (Bear Mountain Plant)	A	1951	0.01	0.3	Imhoff Tank	Seasonal
	A	1942	-	-	Primary	Seasonal
**South Nyack	A	1941	0.3	0.6	Imhoff Tank	3,100
Stony Point District #1	A	1963	-	0.15	Secondary	1,000
Upper Nyack	A	1953	0.07	0.1	Imhoff Tank	1,500
*U.S. Gypsum Company	A	1956	0.01	0.1	Imhoff Tank	Industrial
**West Haverstraw	A	1936	0.8	0.4	Imhoff Tank	5,500
<u>Suffolk County</u>						
Huntington Sewer District	A	1957+	1.4	2.0	Secondary	34,700
*Kings Park State Hospital (Smithtown)	A	1964+	0.8	2.0	Secondary	9,500
*Long Island Lighting Company (Port Jefferson)	A	-	-	-	Septic Tank	-
Northport	A	1949+	0.09	0.5	Imhoff Tank	6,000
Port Jefferson Sewer District	A	1963+	0.8	1.5	Primary	2,000
<u>Westchester County</u>						
*American Yacht Club (Rye)	A	-	Seasonal	-	2-Septic Tanks	Seasonal
Briarcliff Manor - River Road	A	1951+	-	-	Septic Tank	200
	A	1926+	-	-	Septic Tank	1,500
Buchanan	A	1962	0.1	0.55	Secondary	-
*Columbia Island	A	-	-	-	Septic Tank	-
Croton-on-Hudson	A	1951+	0.6	0.5	Primary	7,000
*Harrison Island Shore Club	A	-	Seasonal	-	Septic Tank	Seasonal
*Hudson Shore Marina, Inc.	A	1960	Seasonal	-	2-Septic Tanks	Seasonal
Irvington	A	1950	0.9	0.5	Primary	5,500
Metropolitan Petroleum Corp.	A	1954	-	-	Septic Tank	-
*N.Y.C.R.R. Harmon Shop (Croton)	A	1941	0.13	0.7	Primary	Industrial
North Tarrytown	A	1940+	1.2	1.7	Primary	8,800
Ossining - Liberty Street	A	1939	0.4	0.5	Imhoff Tank	3,000
	A	1940	1.7	2.0	Primary	16,000
Peekskill	A	1953	1.6	4.0	Primary	19,000
Port Chester	A	1965+	4.3	6.0	Primary	27,000
*Shell Union Oil Co. (Mount Vernon)	A	1949	-	-	Septic Tank	Industrial
*Shenerock Shore Club (Rye)	A	-	Seasonal	-	Septic Tank	Seasonal
*Sing Sing State Prison (Ossining)	A	1950+	0.3	0.6	Primary	2,000
Springvale	A	1959	0.08	0.1	Secondary	1,000
Tarrytown	A	1940+	1.2	1.5	Primary	11,100
<u>Westchester County D.P.W.</u>						
Blind Brook (Rye)	A	1963+	2.1	5.0	Primary	23,000
Mamaroneck	A	1965+	12.6	70.0	Primary	95,000
New Rochelle	A	1955+	10.8	15.0	Primary	75,000
Yonkers Joint Meeting	A	1960+	58.1	63.0	Primary	475,000
<u>FEDERAL & MILITARY</u>						
Camp Smith	A	-	-	-	Secondary	-
Earle Naval Ammunition	A	-	-	-	Secondary	-
FDR Veterans Administration Hospital	A	-	-	-	Primary	-
Floyd Bennett Field	A	-	-	-	Secondary	-
Fort Slocum	A	-	-	-	Primary	-
Fort Tilden	A	-	-	-	Primary	-
Liberty Island	B	-	-	-	Septic Tank	-
Military Ocean Terminal	B	-	-	-	Imhoff Tank	-

+ Year of major additions of reconstruction

* Private, institutional and industrial
sewage treatment plants

** Estimated flows

A P P E N D I X B

STANDARDS FOR AIR POLLUTION ALERTS

From

1965 TO PRESENT

STANDARDS FOR AIR POLLUTION ALERTS
EFFECTIVE FROM: 1965 TO APRIL 18, 1967

Alert Status	Air Concentrations			Duration Sustained Levels of Air Concentrations (hours)		N.Y.-N.J. Metro. Area Meteorology High Air Pollution Potential Forecast for Next hours	Action Plan
	SO ₂ ppm	CO ppm	Smoke Level COHS				
Air Pollution Watch	.5	10+	5.0	1	and/or	36	A
FIRST	.7+	10+	7.5	4*	and	36	1
SECOND	1.5+	20+	9.0	2	and	12	2
THIRD	2.0+	30+	10.0	1	and	8	3

COMMENTS: The Standards tabulated above are predicated on the presumption that an Air Pollution Alert should be based on the following criteria:

1. The concentration of any two pollutants of three above mentioned with sustained levels measured at selected test sites for periods in excess of the duration indicated except air pollution watch as described below under Plan A.

2. A meteorological forecast reporting that High Air Pollution Potential conditions will persist for the tabulated period of time. This would indicate that the levels of concentration will be present for that period of time.

3. The levels of SO₂, CO, and smoke measured and confirmed for the tabulated periods of time together with the forecast of weather duration of continued High Air Pollution Potential provide the basis for the Alert Status.

Watch and Alert Status and Action:

Plan A - Upon receipt of a High Air Pollution Potential forecast for the next 36 hours, or all three pollutants over the levels shown above for 1 hour, the Interstate Sanitation Commission will call an Air Pollution Watch and notify cooperating agencies. If both conditions are met, a Public Announcement of the Watch will be made by the Commission.

Plans 1 through 3 - When air pollution measurements exceed the Standards for an Alert and the meteorological forecast indicates profound stable air conditions for the period of time tabulated in the above table, an Alert will be recommended by the Interstate Sanitation Commission to the Commissioners of Health of New York and New Jersey or their designee. Detailed actions to implement Alerts are given, starting on Page 4 of the Regional Air Pollution Warning System Report.

* Any one pollutant concentration in excess of 8 hours.

INTERIM STANDARDS FOR AIR POLLUTION ALERTS

From

APRIL 18 TO OCTOBER 20, 1967

Alert Status	Air Concentrations			Duration Sustained Levels of Air Concentrations (hours)	N.Y.-N.J. Metro Area Meteorology High Air Pollution Potential Forecast for Next (hours)	Number of Pollutants	Action Plan	
	SO ₂ ppm	CO ppm	Smoke Level COHS					
Air Pollution Watch						24	A	
FIRST	0.5+	10+	5.0	4	and	18	2	1
	0.7+			2	and	8	1	1
			7.5	2	and	8	1	1
	1.5+			1	and	8	1	1
			9.0	1	and	8	1	1
SECOND	1.0+	20+	7.5	2	and	8	2	2

COMMENTS: The standards tabulated above are predicated on the presumption that an Air Pollution Alert should be based on the following criteria:

1. The concentration of the number of pollutants as specified above with sustained levels measured at selected test sites for periods in excess of the duration indicated.
2. A meteorological forecast reporting that High Air Pollution Potential conditions will persist for the tabulated period of time. This would indicate that the levels of concentration will be present for that period of time.
3. The levels of SO₂, CO and smoke measured and confirmed for the tabulated periods of time together with the forecast of the weather duration of continued High Air Pollution Potential provide the basis for the Alert Status.

Watch & Alert Status and Action:

Plan "A" - Upon receipt of a High Air Pollution Potential forecast for the next 24 hours, the Interstate Sanitation Commission will call an Air Pollution Watch and notify cooperating agencies.

Plans 1 & 2 - When air pollution measures exceed the Standards for an Alert and the meteorological forecast indicates profound stable air conditions for the period of time tabulated in the above table, an Alert will be recommended by the Interstate Sanitation Commission to the Commissioners of Health of New York and New Jersey or their designee. Detailed actions to implement alerts are specified by the States.