

January 26, 1925.

ANNUAL REPORT - 1924

- Director's Report:-

Activities on construction have occupied the engineering, operating and mechanical forces of the Bureau during the entire year. Under the respective divisions will be mentioned the additions and developments, all of which tends toward the general improvement of the works.

During the year a commission of expert engineers was selected by his honor the Mayor and assigned to the study of additional sources of water supply. Following the submittal of this report an inspection of the areas involved and the location of reservoirs was made by city officials. The improvement of undeveloped areas at different locations throughout the city has required extensive additions to the distribution service and the acquisition of the entire water system of the Holmesburg Water Company marked an important event in the history of the system.

The quantity and quality of water to the consumer has been satisfactory and the typhoid deaths of the city continues low, the rate for the year being 2.1 per 100,000 inhabitants. A detail of respective activities under Divisions follows:-

RIVER PATROL -

The work done on the Schuylkill River during the year by the Sanitary Patrol can be classified briefly under the following sub-divisions: Sanitary Survey of the river and its tributaries, patrol of the river in reference to tastes and odors, daily taste and odor determinations of raw and treated water, periodic inspections of industrial plants with taste and odor effluents, co-operative work with the State Department of Health, and control and elimination of certain trade wastes.

PUMPING STATIONS -

Rehabilitation has been in order at the major stations: at Shawmont, a bureau force has been engaged on the installation of mechanical stokers, one boiler having been equipped and in service. At Queen Lane, improvement work on boiler house floor, engine room gallery and station office has been accomplished. At Belmont and Torresdale new water softeners have been installed. Lardner's Point has assumed the pumping load formerly rendered by the abandoned Wentz Farm Station. The pump well arch and the basement floor above, is being replaced and steel framework and glazing was completed on monitors of both engine houses. A new high service station was put in operation to boost water into the Chestnut Hill High Area assuming the service of the abandoned Mt. Airy Station on Allen's Lane.

FILTERS -

The filter plants have had no unusual burdens as the flood flows of the rivers contributed no abnormal turbidities during the year. The application of alum as a coagulant at such periods of dirty water and the constant dosing of filtered water with liquid chlorine has been followed. The water served to the consumer has maintained its high quality and the operation of the beds have registered their efficiency. For the purpose of more economical washing of filter sand, there has been acquired twelve machines of the "Nichols" type. The change of the preliminary filters to the mechanical type was completed at Queen Lane where also was constructed in the sedimentation reservoir a flume which delivers the raw water to a remote point preventing the short circuit of pumped water to the intake for filtered effluent. At the Belmont Plant the Bureau of Water laboratory is being improved and the work will provide a convenient and modern equipment with apparatus suitable to meet the demands of analytical work which is routine to the operation of the plant.

DISTRIBUTION: -

Fifty (50) miles of pipe have been added to the distribution and

seven thousand seven hundred and nineteen (7,719) feet to the high pressure fire system. The operation and maintenance from one central location has proven economical and efficient. Notices of trouble reach headquarters immediately and attention follows with relief for complaints. The organization of this division has been directed upon a variety of important activities; as changes made necessary by the construction of the subway on North Broad Street; the development of new areas for extensive building operation: the furtherance of a broad program of grading, paving and repaving on which streets much pipe was laid or relaid: the construction of large cast iron and steel feeder mains to yield more volume and flexibility to the system: the acquisition of the Holmesburg entire system, which involved thirty-five (35) miles of pipe, laid over a broad and quite generally remote area. The year marks the passing of the horse drawn work wagon, there being substituted a rubber tired two wheel trailer supporting a commodious box for tools and equipment.

METERS: -

The total number of services metered is 127,709, there being 12,173 installations during the year. Approximately 280,000 services are still unmetered. On account of damages to meters on active services there were repaired 10,193 meters in the Bureau shop and 4,003 meters on the premises. One third of this repair work was occasioned by reverse flow through house service of hot water from the heating system. It is strongly urged to obtain legislation to install equipment which will prevent this unnecessary damage.

REVENUE -

There has been returned \$6,764,723.49 contributed from the following sources:

Water Rents:

Flat rates	-	\$2,990,363.25
" " fractional	-	68,282.56
" " delinquent	-	151,919.20

Meter Rates:

Current	-	2,965,883.33
Delinquent	-	266,419.71
Water searches	-	5,432.25
Frontage - water pipe	-	195,423.68
Specials	-	15,210.45
New services	-	33,871.00
Meter Repairs	-	34,352.56
Miscellaneous	-	37,565.50

3.121

The work of this division has been greatly increased due to the many new meters and the absorption of the private water company's accounts. Additional inspectors and clerks will augment this force during the coming year.

FINANCIAL -

The total disbursement of funds was as follows:-

Salaries and wages	-	\$1,772,900.28
Material & equipment	-	<u>1,333,121.32</u>
TOTAL	-	\$3,106,021.60
Betterments & additions	-	<u>2,674,610.00</u>
GRAND TOTAL	-	\$5,780,631.60

During the year ordinances embracing from loans, an amount of \$5,704,610 were passed by Council, and an assignment of an additional \$5,000,000 was set aside from a popular loan for water improvement. The amount of \$3,533,610 was pledged from this loan fund and for the coming year extensions totalling \$2,297,000 have been estimated.

CONSTRUCTION: -

The Engineering Force were engaged on work completed or approximately so, as follows:-

Pipe Lines: Forty-eight (48) inch steel main on Hunting Park avenue and the Roosevelt Boulevard. Forty-eight (48) and thirty-six (36) inch steel main on Girard avenue and 40th street, involving a structure over the Schuylkill River supported below the upper deck on the existing masonry. Forty-eight (48) and thirty (30) inch steel main, replacing cast iron mains of same size on Rising Sun avenue, north of the Roosevelt Boulevard. Sixteen (16), twelve (12) and eight (8) inch cast iron High Pressure Fire lines on Sansom and Market streets west of Broad to 23rd street. Sixteen (16), twelve (12), eight (8) and six (6) inch cast iron mains throughout West Philadelphia and the Northeast Section. An areation flume built on the slope of Queen Lane settling reservoirs carrying the raw water delivered to the head house to a far corner of the basin.

The contracts, which were begun during the year and have been carried over: The work on the Fairmount Dam has developed a full section of the structure and the progress during the coming year will advance towards the completion of the structure.

At the Belmont Filter Plant a readjustment of space in the administration building, affecting the general offices, store rooms and laboratory is well under way and an early completion is anticipated.

At the Queen Lane and Lardner's Point Pumping Stations new doors and window framing will be set. Steel has been planned to take the place of the wooden construction and at the former station the work is approaching completion.

At Queen Lane Pumping Station considerable interior work was done and the activities will carry over in to the coming year. A gallery

around the interior of the engine room, new offices and toilets for the operating forces and new floors throughout the plant were included in this program of work.

The laying of a thirty (30) inch steel main in Frankford and Bristol Pike for volume supply into the recently acquired territory of the Tacony and Holmesburg area.

CONTEMPLATED WORK -

The activities of the coming year will be directed towards extensive pipe laying, including feeder and service mains.

The rearrangement of service from the Queen Lane Pumping Station to supply water to West Philadelphia through a steel conduit to the Belmont Filter Plant.

The construction of a High Service Station, boosting water from Queen Lane Filter into the areas of Germantown and Chestnut Hill, now supplied by the Shawmont Pumping Station and Roxborough Filter Plants. The reconstruction of Preliminary Filters at the Torresdale Filter Plant and improvements and incidental work at the Queen Lane Filter Plant.

A further extension of the High Pressure Fire System east of Broad Street to the Delaware River on Callowhill Street with connecting links to the present system.

Engineering studies will be continued on the improvement of the water supply and measures to meter a number of the old services will be undertaken.

The statistical data showing quantities and costs of all operation is attached as an addenda.

ALEXANDER MURDOCH,
Chief of Bureau.