

NINETY-THIRD ANNUAL REPORT  
OF THE  
BUREAU OF WATER,  
For the Year Ending December 31, 1894,  
AND  
FOURTH ANNUAL MESSAGE  
OF  
EDWIN S. STUART,

Mayor of the City of Philadelphia,

WITH  
ANNUAL REPORT  
OF  
JAMES H. WINDRIM,  
Director of the Department of Public Works,

ISSUED BY THE CITY OF PHILADELPHIA, 1895.

---

1895.

---

203

516

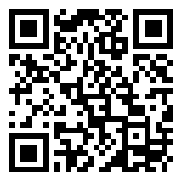
PHILADELPHIA:  
DUNLAP PRINTING CO., 1306-8-10 FILBERT STREET.  
1895.

---

This is a reproduction of a library book that was digitized by Google as part of an ongoing effort to preserve the information in books and make it universally accessible.

Google™ books

<https://books.google.com>





UNIVERSITY OF ILLINOIS  
LIBRARY

Class

628.1

Book

P53

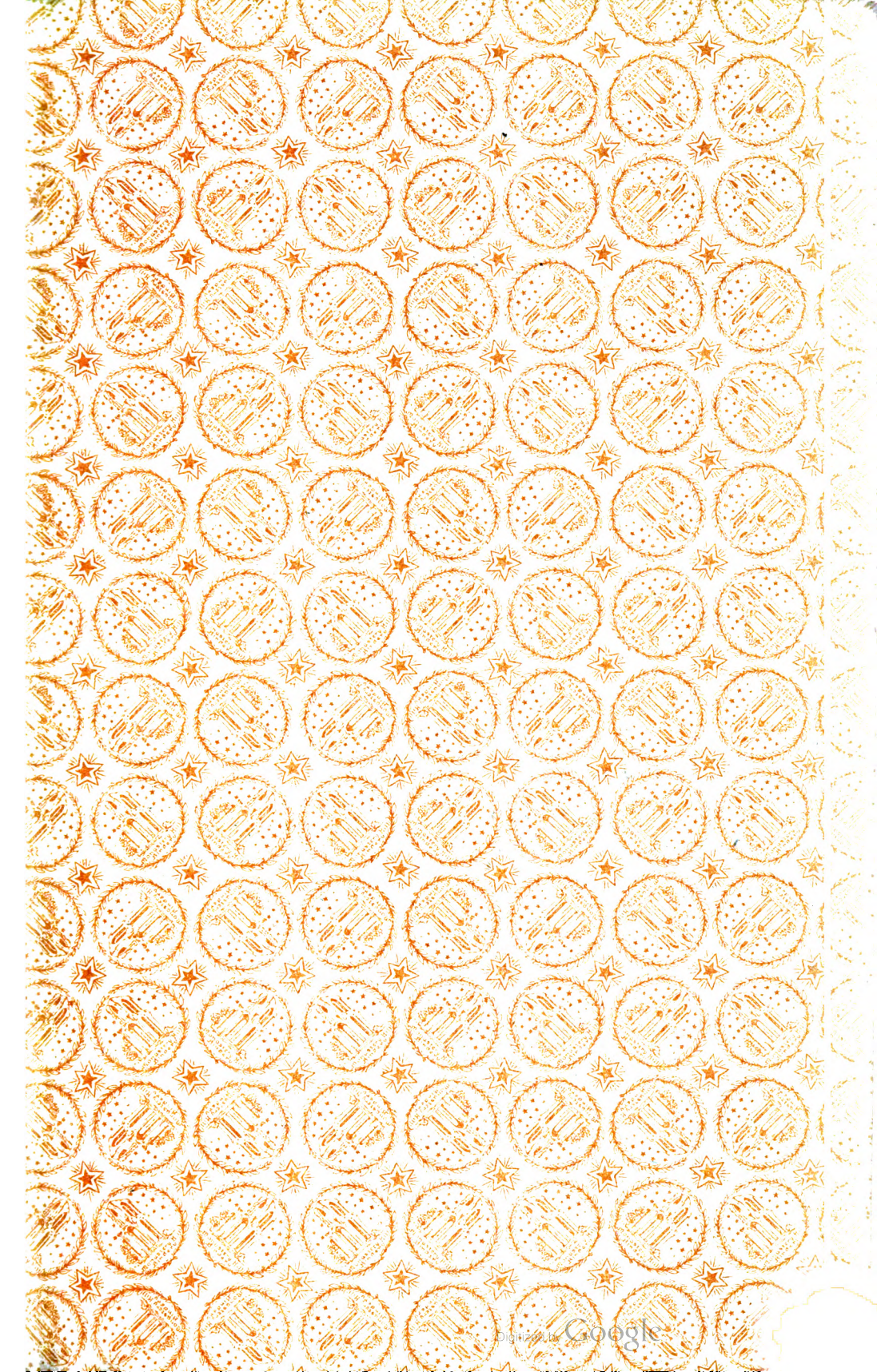
Volume

1894

F 11-20M

REMOTE STORAGE







663  
787  
1895

NINETY-THIRD ANNUAL REPORT  
OF THE  
BUREAU OF WATER,

For the Year Ending December 31, 1894,

AND

FOURTH ANNUAL MESSAGE

OF

EDWIN S. STUART,

Mayor of the City of Philadelphia,

WITH

ANNUAL REPORT

OF

JAMES H. WINDRIM,

Director of the Department of Public Works,

ISSUED BY THE CITY OF PHILADELPHIA, 1895.

---

1895.

---

PHILADELPHIA:  
DUNLAP PRINTING CO., 1306-8-10 FILBERT STREET.  
1895.



# REMOTE STORAGE



628.1  
P53  
1894

OFFICE OF THE MAYOR,  
PHILADELPHIA.

*Mayor :*

EDWIN S. STUART.

*Acting Secretary :*

JAMES R. CALHOUN.

*Contract Clerk :*

*Ass't Contract Clerk and Stenographer :*

HENRY W. PEIRSON.

*Ass't Stenographer and Typewriter :*

HARRY M. FISLER.

*Messengers :*

WILLIAM G. LEE.

188809







# FOURTH ANNUAL MESSAGE.

OFFICE OF THE MAYOR, CITY HALL.

*Philadelphia, April 1, 1895.*

TO THE SELECT AND COMMON COUNCILS  
OF THE CITY OF PHILADELPHIA.

GENTLEMEN:—I have the honor to transmit herewith to your Honorable Bodies, in accordance with the Act of Assembly this, my Fourth Annual Message relative to the finances and general condition of the affairs of the City, and accompany the same with the Annual Reports of the several Heads of Departments under my control.

An examination of our municipal finances shows that they are in as good, or in better condition than any other large city in this country, and the franchises owned by the City, such as gas and water systems, together with real estate, both improved and unimproved, would realize at least six times the amount of our debt.

The City's credit during the past four years has been considered equal to, if not superior to any other municipal corporation, and this is evidenced by the fact that during that period our loans have been sold to private investors at a lower rate of interest than ever before.

The last loan the City made was in the month of December, for the purpose of refunding a portion of the debt; it was floated at three and one-half per cent., and at this rate although but \$2,720,000 were required, the offerings aggregated \$19,675,000, all of the offerings be-

ing at very large premiums. The successful bidder paying a premium of \$201,552 for the privilege of getting the loan.

During 1894 the following loans were redeemed :

Six per cent. loan.....	\$6,103,800
Four per cent. loan.....	400,000
Overdue loans.....	8,600
	\$6,512,400

The assessed valuation of property January 1, 1895, was \$782,677,694. January 1, 1894, \$769,930,542, an increase of \$12,747,152.

---

To briefly review the work of the Departments during the year and during the past four years will occupy but a few moments of your time, but will furnish an interesting summary of the work the Executive and Legislative Departments of the City have been able to carry to completion during the period of my administration.

---

## DEPARTMENT OF PUBLIC SAFETY.

The Annual Report of the Department of Public Safety shows in detail the excellent work accomplished in the various Bureaus thereof during the year 1894.

### BUREAUS.

#### *Bureau of Police.*

During the year 1894, 72 officers and men were added to this Bureau, increasing the total force to 2,239, which includes officers, patrolmen, clerks, etc. During that year but one station-house was built, that at the corner of Mintzer street and Fairmount avenue, for the use of the Seventh Police District. The erection of buildings



for police, patrol and fire purposes, on the lot purchased in 1893, on Fifteenth street south of Vine, was not begun, no appropriation having been made for this purpose. Forty thousand dollars has, however, now been appropriated and the contract for the buildings will be awarded as soon as the plans have been prepared.

The total value of the property recovered by the Bureau of Police during 1894 was \$153,691.70. The continued absence of professional thieves, burglars and other criminals of a like character during the past year best demonstrates the efficiency of the Police Force of Philadelphia.

#### *Bureau of Fire.*

Much attention has been given during the past four years to the subject of increasing the efficiency of this most important Bureau. In 1891 there were 34 engines, 34 hose carts, 2 chemical engines and 6 trucks. On January 1, 1895, there were 44 engines, 34 hose carts, 10 combination chemical engines and hose wagons, 4 chemical engines, 16 trucks, 1 fire boat, 1 water tower, and 4 Duval water towers. Large sums of money have been necessary to make these additions to the Fire Bureau, thereby necessitating increased appropriations for the maintenance and for the additional men required. No better illustration of the advantage of this increase can be given than the statement that the fire losses for 1894 were lower than for any of the preceding 11 years with the exceptions of 1883 and 1887.

#### *Electrical Bureau.*

On January 1, 1891, there were 1,293 electric arc lights for public lighting in the City of Philadelphia, and at the present time there are 5,293 electric arc lights, an increase of 4,000 lights in four years.

While I have always been in favor of the City owning an electric light plant and doing this lighting herself, the appropriation necessary to instal the plant has never been made. Philadelphia is to-day the best lighted city in the United States, and there can be no question that this liberal lighting of the City has done much to develop the suburbs. It greatly aids in the proper policing of the City, and prevents numerous accidents and casualties.

In the Electrical Bureau, during the last four years, there has been laid 99,242 feet (18.8 miles) of underground electrical conduit, which is more than twice as much as were laid in all the years prior to 1891.. Underground electric service has been constructed, and in many cases the poles and overhead wires removed, as follows: Market street, from the Delaware river to Forty-fourth street, North and South Broad street, Girard avenue, Diamond street, Mt. Vernon street, Spring Garden street, Arch street, Christian street, Federal street, Locust street, Green street, west of Broad street, and other streets. In 1893, 64 miles of overhead city wires were removed, and in 1894, 97 miles were removed.

The City conduits in the future will be a source of revenue from the rented ducts, and the amounts expended in the removal of the poles and wires and the building of underground conduits have been not only a good investment but the popular and almost universal demand for the prosecution of this work has received the attention which was due.

#### *Bureau of Health.*

This Bureau during the last four years has been almost entirely reorganized, and in its affairs and equipments is now approaching that degree of efficiency which should be maintained in a large city like Philadelphia. Your Honorable Bodies have been very wise and generous in



your appropriations to this most important Bureau and the results show that the appropriations have been for the benefit of the city. I have no doubt, also, that the repaving of the small streets in the southeastern section of the city with improved impervious pavement has contributed very largely to the health, convenience and comfort of the people, not only those living in this section but throughout the entire city. There is no better evidence of the wisdom of this expenditure than in the decrease of the death rate which in 1894 was lower than it has been since 1890.

We have organized and now have installed in City Hall a Bacteriological Division, and there has been appointed as the chief, one of the best known and most prominent Bacteriologists in this country, with a corps of assistants, which will add very materially in the future in preventing the spread of contagious diseases.

#### *Bureau of Building Inspection.*

During the year 1894 there were 5,540 permits for 11,015 operations, involving an outlay of \$22,189,644, or a decrease of \$1,293,733.29 in the cost of the operations from that of 1893. This decrease is readily explained by the continued very great financial and business depression during the past twelve months.

#### *Bureau of City Property.*

During the last four years more work has been done and more buildings erected under the direction of this Bureau than ever before in any like period in the history of the City. During this period the City has purchased lots, and erected thereon buildings for Police, Fire and Patrol purposes, at the following places:

Police Station at Twentieth and Berks streets.

Fire and Police Station and stable at Longshore street, Tacony.

Fire, Police Patrol and stables at Sixty-first and Thompson streets.

Fire and Police Stations at Leverington avenue, Roxborough.

Fire and Police Station and stables, Sixty-fifth street and Woodland avenue.

Patrol Station, Frankford avenue and Master street.

Fire, Police and Patrol Station, Front and Westmoreland streets.

Fire and Police Station, Twenty-seventh street and Highland avenue (Chestnut Hill).

Fire and Patrol Station, Queen street near Front street.

Fire and Patrol Station, Warnock and Berks streets.

Veterinary and Van stables, Eleventh and Wharton streets.

Police and Patrol Station, Fairmount avenue and Mintzer street.

Fire and Truck Station, Main and Seymour streets, Germantown.

Fire Station, Fourth street above Girard avenue.

Fire Station, Market street above Twenty-first street.

Fire Station, Reed and Otsego streets.

Fire Station, No. 1836 South street.

Fire Station, Twenty-sixth and York streets.

Fire Station, Haverford avenue and Wyoming street.

Cell Buildings: Fifteenth and Locust streets and Belgrade and Clearfield streets.

Additional stories to Police Stations Eighth and Lombard streets and Tenth and Thompson streets.

Bath house: Eighth and Mifflin streets.

Morgue: Wood street above Thirteenth street.

Lots purchased: Nos. 2136-8-40-42 East Dauphin street; Police, Nos. 2067-9 East Clearfield street; Fire, Nos. 235-7 North Fifteenth street.



*Bureau of Boiler Inspection.*

This Bureau inspected and approved during the year 3,217 boilers, an increase over the preceding year of 221. The number of certificates issued was 2,741, an increase of 177 over 1893. There were 500 new boilers erected, making the total number of boilers under the care of the Bureau during the year 3,602. In addition, there were under the care of the insurance companies 3,477. The number of high pressure boilers in use at the close of 1894 was 7,079, being an increase over 1893 of 487.

This Bureau paid into the City Treasury \$4,485.84 in excess of its expenses.

---

## DEPARTMENT OF PUBLIC WORKS.

The Annual Report of the Director of the Department of Public Works, herewith transmitted, shows the great amount of work performed in its various Bureaus during the past year.

*Bureau of City Ice Boats.*

The value of the City Ice Boats was never more fully demonstrated than during the recent severe weather in the early part of 1895, for if it had not been for the work done by these boats, it would have been almost impossible for any vessel to reach the port of Philadelphia, as there has not been for years such an obstruction of our rivers by ice as during the period referred to, and in all future appropriations particular attention should be given to maintaining these boats in proper order and repair. When they are needed it is always at a very short notice and by reason of a great emergency.

The Superintendent of the City Ice Boats, during the past year, has also inspected the construction of the Fire

Boat, and the repairs to machinery, etc., in the Police Boats in the Department of Public Safety.

For a comparative statement and an itemized report of the operations of this Bureau, I refer you to the Report of the Director of the Department of Public Works.

*Bureau of Gas.*

The total expenditures of the Bureau of Gas from 1891 to 1894, inclusive, for material, maintenance, labor, supplies, coal, etc., was \$10,858,910.58, and for extensions and permanent improvements \$1,050,248.81; a total of \$11,909,159.39. During the past four years there have been turned into the City Treasury as receipts from this Bureau \$14,790,404.25, or very nearly *three million dollars* in excess of the entire expenditures. This is in the face of the fact that the price of gas in 1894 was reduced from \$1.50 to \$1.00 per thousand feet, a decrease of thirty-three and one-third per cent. in the price.

It is but just to the Bureau of Gas to state clearly that the money received by the City for its operation during the past four years not only equaled the entire sum appropriated to it during that period, including the cost of permanent improvements, but that it returned a profit over and above these expenditures of nearly three millions of dollars.

In the Bureau of Gas, the important permanent improvements paid for out of the appropriations include the laying of 162½ miles of gas mains, the removal of primitive benches and resetting in their places new stacks of the D. D. Fleming Generating Benches, the introduction of 6 of the Ross Patent Retort Discharging Machines, 7 new station meters, new building for station meters, new purifying house, office and wash-house for employees, new exhaust house, rebuilding of stable, carpenter, wheelwright and paint shops (destroyed by fire June 25th,

1891), the rebuilding of a sponge shed at the Twenty-fifth Ward works (destroyed by fire February 2, 1893), a third lift to gas holders at the Ninth Ward works, Twenty-fifth Ward works, and Ninth and Diamond streets and Twenty-fifth and Callowhill streets holder stations, and various other improvements of a minor character at each of the other gas works. The manufacturing capacity of the several works of the city has been increased during the last four years 4,500,000 cubic feet per day, a gain of  $28\frac{1}{2}$  per cent., and during this period the holder capacity has been increased 2,510,000 cubic feet, a gain of  $16\frac{3}{4}$  per cent.

From 1891 to 1894 the Bureau of Gas has also furnished the various municipal departments and for street lighting 2,407,308,398 cubic feet of gas for which the Bureau receives no credit at all, and which, had the City been compelled to purchase at even one-half the price paid by private consumers, would have cost \$1,649,651.

Total number of gas lamps, 1891.....	16,649
Total number of gas lamps, 1894 (an increase of 5,067).....	21,716
Total number of gasoline lamps, 1891.....	7,911
Total number of gasoline lamps, 1894 (an increase of 2,688).....	10,599

#### *Bureau of Highways.*

In no direction has greater progress been made in Philadelphia during the past four years than in the matter of street paving. In fact the City has undergone a radical and almost complete change in this respect. What seemed at the commencement of my term to be almost an impossibility has in many respects been fully realized and the enormous amount of work done is unparalleled in the history of this Municipality. No part of this great public improvement to my mind has been so important and has added so much to the health, convenience



and happiness of the people as the paving of the small streets with impervious improved pavement, to which I have referred in connection with the report of the Bureau of Health, and no better policy can be adopted, nor can better returns be obtained for any money expended by the City, than to continue the project until in all small streets, in every section of the City, the cobble stones are removed and the streets paved with this improved and impervious pavement. This, I think, the municipality owes to her citizens, many of whom find it impossible to leave the City during the extended heated period of summer, and consequently every thing should be done to improve their condition, health, comfort and happiness.

Some idea of the immense amount of work done during the last four years may be obtained when you are informed that we have *repaved with modern and improved pavement* 1,128,582 square yards, which is equal to a roadway 23 feet wide and about 84 miles long. When you consider that this is very nearly the distance between Philadelphia and Harrisburg, you can very readily understand what an immense amount of *repaving* this represents. This work, done in the last four years, is *25 miles more than was done in the City of Philadelphia from 1870 to 1890*, a period of twenty years. There has also been 1,426,710 square yards of new paving put down during the last four years, or about 93 miles. This equals a road twenty-three feet in width, reaching from Philadelphia to New York. There has been also constructed, 445,462 square yards of new macadamizing, equal to about 44 miles. During 1893 and 1894 there were 181 miles of improved pavement laid by the Passenger Railway Companies. Including this pavement, the new pavement laid, the repaving done and the macadamizing, makes a grand total of 402 miles, or

a roadway, built or improved in four years, equal to one reaching half-way from Philadelphia to Chicago. While it is true that the new paving was laid at the expense of the property owners, yet the City had to bear her share. The intersections and the rounded curbs were paid for by the City, and the land damages paid to open the streets and all the expense of grading and gas pipes, were also paid by the City. Even the work done by the railway companies involved a large outlay for underground construction, new inlets, rounded curbs, etc.

*Bureau of Street Cleaning.*

The disbursements of this Bureau during the year 1894 for the cleaning of streets, removal of ashes, removal and disposal of garbage, and the expenses of administration amounted to \$873,493.75, for an area of  $129\frac{383}{1000}$  square miles, while New York City, with an area of but 41 square miles or about one-third of that of this City, disbursed in that period, through the Department of Street Cleaning and for the same purposes, \$1,621,488.04.

The inconvenience caused by heavy snow falls has again been forcibly brought to the attention of our residents, especially those who are called into the business sections of the City. During the past winter the Philadelphia Traction Company offered to remove the snow from Chestnut street and also from Walnut street, between the Delaware and Schuylkill rivers, provided they were allowed to dump it in the rivers.

I was unable to grant this permission, as what was desired was contrary to certain rules and regulations of the Board of Port Wardens.

Provision should not only be made for the removal of snow from the streets, especially in the business sections of the City, but also to provide for its disposal, in order

to do away with the many annoyances and discomforts to pedestrians and the interference with business traffic which the presence of snow in the highways entails. The only appropriation now made being for the removal of snow from the streets around City Hall and from the various bridges.

*Bureau of Surveys.*

In this Bureau during the last four years there has also been an unparalleled amount of work done, and never before in the history of the City has anything approaching the extent of work completed during such a period been nearly approached, and if nothing had received attention but the construction of sewers the work even in this connection alone would have exceeded anything ever before accomplished in that space of time. Added to this, however, is the construction of bridges and the removal of grade crossings, all of which is unprecedented in the City's history.

The total mileage of main sewers completed since January 1, 1891, or now under contract to be completed before April 1, 1895, is 54.58 miles, which *equals the total mileage constructed for the 23 years* between 1868 and 1891, and equals about 77 per cent. of the total mileage of sewers built in all the years prior to 1891. The total mileage of *branch sewers* built from 1891 to 1894 and under contract, to be constructed prior to April, 1895, is 190.33 miles, which equals all the branch sewers built from 1877 to 1891, a period of 14 years. The branch sewers built in the last four years equal about 57½ per cent of the total construction prior to 1891.

To briefly enumerate the principal items included in the above statement :

During this period a large portion of the Mill Creek Sewer was constructed, which has resulted in entirely



closing this creek from the Schuylkill River to the County line, a distance of about five miles, through a populous section of the City of Philadelphia, thereby enclosing all the open spaces where the polluted creek flowed.

The extensions of the Wingohocking Sewer, through the southeastern portion of Germantown and the adjacent territory, thereby enclosing a foul stream much polluted with sewage.

The construction of the Wolf street main sewer, from the Delaware river to Broad street, furnishing drainage to a large section of the City which heretofore was insufficiently provided for.

The construction of the Passyunk avenue and Shunk street system, developing a large territory in the southern part of the City.

The building of the extensive Aramingo system, thereby enclosing a foul, stagnant stream, which for many years has been a menace to the health of the northeastern part of the City.

The construction of extensions to the Intercepting Sewer in Manayunk, and all along the Wissahickon Creek and other streams, has to a large degree preserved the water supply of the City of Philadelphia from pollution, as the drainage of an extensive territory and of numerous buildings and large institutions is now carried and discharged below Fairmonnt Dam.

The construction of the Holly Street Relief Sewer, and of the sewer through the West Park, have both tended to preserve the purity of the water supply.

In the building of the large Dobson's Run and Lincoln Avenue Intercepting Sewer, the sewage of the southern part of Chestnut Hill and Germantown has been diverted from the streams which form the watershed of the Schuylkill river.

The extension of the Gunner's Run Sewer has enclosed a filthy stream in a populous territory.

Numerous other large and costly main sewers, absolutely necessary for the health of the citizens of Philadelphia, have been constructed, giving relief and adding to the taxable value of the property of the City.

The numerous main sewers built in the suburbs developed large tracts of land, which thereby contributed largely to the growth of the City.

In addition to the work just referred to, a large part of the Cohocksink Sewer was rebuilt, many hundreds of the old style of inlets have been removed and new ones have been constructed all over the City.

The extensive system of sewers built in connection with the Reading Subway and appurtenant to the abolishment of grade crossings on Pennsylvania avenue and Noble street, are also included in the list of main sewers.

A sewer, once built, is buried from sight, and the public is apt to forget the extensive public works that are under the streets they daily walk ; and, therefore, may fail to comprehend the importance of the sewage system in promoting the health of the City. The fact is, however, that it was a public wrong that this work was so long neglected, and as years come on it may be forgotten, but it will always show in the decreased death and sick rate of the City.

During the past four years there have been constructed twelve bridges, over rivers and streams, and fifteen highway bridges, and also nine railroad bridges, for the purpose of abolishing grade crossings, making a total of thirty-six. This includes the Walnut Street Bridge, which cost \$668,000 during the past four years, the Falls Bridge, over the Schuylkill river, and also the bridges for the following streets : Kensington avenue, over Frankford creek ; Torresdale avenue, over Pennypack creek ; Frankford avenue, over Pennypack creek ; Oxford street,

over the Connecting Railroad ; Penn street, under the Philadelphia, Germantown and Norristown Railroad ; Girard avenue, over Pennsylvania avenue ; Baltimore avenue, over Cobb's creek ; Woodbine avenue, under the Pennsylvania Railroad ; Glenwood avenue, Sedgley avenue, Erie avenue and Ontario street, over the North Pennsylvania Railroad, and many others of importance, and necessary for the safety and convenience of the public, including the City avenue bridge taken, by order of the Court, at a cost of \$110,000.

During the past four years a number of dangerous grade crossings have been abolished and highways carried either over or under the railroad. This work was done under the supervision of the City which has contributed large sums of money for the land damages, for changes of sewers, water and gas pipes, and in many cases for grading and repaving. When we compare this handsome result with what remains to be done, it may seem small, but the lives of the people, the safety of the school children, and the conveniences of business and trade demand that every such danger spot shall be eliminated as speedily as possible.

Among those that were abolished were the following :

Second street, over the Richmond Branch of the Philadelphia and Reading Railroad.

Ontario street, over the North Penn Railroad.

Sedgley avenue, over the North Penn Railroad.

Erie avenue, over the North Penn Railroad.

Glenwood avenue, over the North Penn Railroad.

Orthodox street, under the Philadelphia and Trenton Railroad.

Margaret street, under the Philadelphia and Trenton Railroad.

Frankford street, under the Philadelphia and Trenton Railroad.

Bridge street, under the Philadelphia and Trenton Railroad.

Comly street, under the Philadelphia and Trenton Railroad.

Unruh street, under the Philadelphia and Trenton Railroad.

Longshore street, under the Philadelphia and Trenton Railroad.

Washington street, under the Philadelphia and Trenton Railroad.

Cottman street, under the Philadelphia and Trenton Railroad.

### READING SUBWAY.

Of the many important works projected there is none to my mind greater than that for the removal of the grade crossings on Pennsylvania avenue, known as the Reading Subway Plan. It was necessary to prepare for the drainage of that entire section at a depth below the base of the subway. The first work was the construction of the important system of sewers, ranging in depth from 30 feet to 45 feet below the surface of the street. This is now approaching completion, and is one of the most intricate as well as one of the most difficult feats of engineering that has ever been undertaken in this city.

It has been impossible to commence actual work on Pennsylvania avenue, but the plans have all been prepared and operations can be shortly begun. This great improvement will maintain Broad street in its present condition, thus obviating the projected hump which, if it had been constructed, would have certainly prevented the abolishing of the grade crossings at the streets west of that street; the present plan will also remove all grade crossings on the line of Pennsylvania avenue, from Broad street to Twenty-first street, the streets being carried over

on bridges. West from Twenty-first street the subway will extend through a tunnel, and will render the entrances to our Park entirely free from all steam railroad tracks.

Even if the work accomplished nothing more than this, in my judgment the city will be amply repaid for all expenditures she has to make.

#### IMPROVEMENT OF DELAWARE AVENUE.

The Board of Harbor Commissioners of the City of Philadelphia, under date of February 21, 1894, transmitted for filing in the Department of Public Works, Bureau of Surveys, plans accompanied by a communication from Major C. W. Raymond, Corps of Engineers, U. S. A., dated February 2, 1894, which, under authority of the Secretary of War, authorized the construction and extension of piers on and after May 1, 1894, between the Bulkhead and Pierhead Lines along the Philadelphia water front, between Moore street and Otis street (Susquehanna avenue), as established January 20, 1891, and January 5, 1894, under certain restrictions as to method and character of construction as therein described.

A similar communication was received from the Board of Harbor Commissioners November 17, 1894, announcing that the Secretary of War, under date of October 24, 1894, had authorized the construction and extension of piers between the Bulkhead and Pierhead Lines along the Philadelphia water front, between Otis street (Susquehanna avenue), and Allegheny avenue.

Both of the above plans were placed upon file.

Acting under the authority of an ordinance of Councils, approved June 23, 1893, authorizing a revision of the lines and grades of Delaware avenue, from Christian street to the angle in Delaware avenue northeast of



Laurel street, and to make the width thereof not less than 150 feet, surveys were made for widening between Vine and South streets, making the easterly line of the avenue correspond with the established Bulkhead Line. This plan, after public hearing on September 17, 1894, was duly confirmed November 19, 1894.

Councils have, by ordinance approved March 11, 1895, authorized the Department of Public Works to serve notices upon the property owners along Delaware avenue, between Vine and South streets, that at the expiration of three months from the date of said notices, the said street would be required for public use, excepting the properties on the west side of Delaware avenue, between Market street and Walnut street, and the Mayor of the City is authorized and empowered to negotiate with the said property owners to adjust the amount of damages to be paid on account of said opening, or may take such other lawful means to determine the amount of damages to be paid, and report to Councils the result of such negotiations, as early as possible.

Extensive revisions of the City plan in the vicinity of Cramps' Ship Yard north of the Aramingo Canal, which provided for the placing of Aramingo avenue upon the City plan from Girard avenue to Lehigh avenue, also, for the widening of Richmond street to the width of 120 feet, with the striking from the City plan and vacating of streets east of Richmond street, were fully inaugurated by the confirmation of the plans August 6, 1894.

The physical changes contemplated by this revision will probably be made in the near future.

Councils, by ordinance approved March 11, 1895, authorized the placing upon the City plan of a street which would be known as an extension of Delaware avenue between Fairmount avenue and Aramingo avenue. This avenue has been located through a section of the City

which demanded greater street facilities, and has been placed some distance from the river bank, so as to admit of the erection of large commercial and industrial establishments.

Plans for placing Delaware avenue on the City plan south of South street have been prepared.

This legislation has prepared the way for actual improvement along the river front.

The United States Government has, through its representatives, expressed itself upon the necessity for the extension of piers to the Pierhead Line for the purpose of maintaining the river channel.

Individual owners have already commenced the construction of piers in accordance with the approved plan. Other owners have expressed their intention of extending their piers and their applications are now being considered by the proper authorities.

City piers at several of the important streets along the river front should be extended. Plans have been prepared and the work now awaits appropriation.

The physical opening of Delaware avenue to the width authorized cannot be accomplished until funds are provided.

The construction of the Bulkhead carries with it the necessity for the extension of outfalls of a number of large sewers. For a permanent and satisfactory disposal of the contents of these sewers it is designed to carry them through the piers to points well out in the current and discharge submerged.

In order to give needed facilities to vast shipping, commercial and manufacturing interests, and increased terminal facilities to the railroad companies, and to relieve the congested traffic on Delaware avenue, these improvements cannot be delayed without interfering with the commercial progress of the City.

*Bureau of Water.*

The expenditures in the Bureau of Water for material, labor, maintenance, etc., for the four years from 1891 to 1894, inclusive, have been \$4,394,197.66, and for extensions and permanent improvements \$4,014,800.54; making a total of \$8,408,998.20, while the receipts from this Bureau have been \$10,569,124.58. That is to say, that while this Bureau has paid all expenses and completed all the permanent improvements, it has turned into the City Treasury, over and above all expenditures, \$2,160,126.38.

The permanent improvements paid for out of the appropriations to the Bureau of Water, include pumping engines and the requisite boilers; engine houses and other buildings; reservoirs, and the laying of 36 miles of water mains.

The pumping capacity per day in 1890 was about one hundred and eighty-five millions gallons. In 1894 the pumping capacity was increased to three hundred and eleven millions gallons, a gain of 67 per cent. When the four engines now under contract are completed, the pumping capacity will be increased eighty millions gallons, making a total capacity, upon the completion of these engines, of three hundred and ninety-one millions gallons per day. More than double the capacity of 1890.

The storage capacity of the reservoirs, in gallons,

In 1870 was . . . . .	142,874,200
In 1880 was . . . . .	195,414,200
In 1890 was . . . . .	869,288,814

While in 1894 the capacity had increased

to . . . . .	1,400,396,854
--------------	---------------

a gain of 61 per cent.

During the year 1887 the average daily pumpage was 88,840,492 gallons. During the year 1894 the average daily pumpage was 197,344,806 gallons, or considerably more than twice as much as in 1887.

## DEPARTMENT OF CHARITIES AND CORRECTION.

The Annual Report of the President of the Department of Charities and Correction is herewith transmitted, showing the efficient service of that Department during the past year, and I refer to his report for the details of the work done.

During the past four years much important and necessary work has been done in this Department, and among the most important additions and improvements made are the following :

At the Almshouse two new wards for the Insane, well lighted and ventilated, and upon approved plans, with accommodations for (240) patients, and an associate dining building also for the Insane, with servery and kitchen and boiler and engine-room attached; length of structure 294 feet, width 104 feet, were completed. The dining-room has seating capacity for nine hundred patients with their attendants.

The following were erected: A large laundry building, equipped with modern appliances, including sterilizing apparatus, and having capacity for washing 35,000 pieces weekly. This building is 188 feet long and 52.6 feet wide, with an addition 94.9 feet long and 31.3 feet wide, and supplanted a congeries of structures of various shapes and material and periods of erection.

An Isolation Building, 36 x 26 feet, with enclosed porch of wood and glass on the sides, used for such cases of contagious diseases as may be treated within our hospital, but require absolute separation.

A brick carriage house, replacing an old shed, and making possible an improved ambulance service.

A Hot House for the propagation of plants for the flower beds on the grounds of the institution.

An additional story upon the kitchen in the central court yard.

A substantial stone wall about the enclosed area, taking the place of the wooden fence, except upon that portion bordering upon Woodland Cemetery, where the slope of the grounds would not permit erection of a wall. The number of feet of wall erected was 4,332.

52,234 square feet of artificial stone pavement, and 370 square yards of asphaltum have been laid.

An Electric Light Plant was established and put in operation.

The House for Nurses described above was begun in September, and is now well under way ; its completion will not only furnish suitable quarters for the nurses and give needed room to the Hospital, but make a creditable architectural addition to the Institution.

The following material improvements have been made :

The Clinic Hall was entirely remodelled, and so greatly improved that the completion of the alterations was signalized by a formal re-opening under the auspices of the Medical Board, as expressive of its appreciation of the transformation.

The old wards of the Insane Department were changed by the removal of water closets and bath rooms from the centre of the buildings to exterior structures, to which sun and air have free access.

The kitchen of the Insane Department, disused since the erection of the new dining building, was changed into a well equipped brush factory.

Extensive repairs were made throughout the wards of the Hospital and in the Out-wards ; old plaster and white-wash have been removed, and walls replastered with adamantine cement and repainted ; wooden surbases removed and cement substituted ; decayed woodwork replaced by new ; the "Cubbies" or cell-like compartments



into which the out-wards had been originally divided, were removed ; arches were substituted for partition walls where practicable and advisable, with consequent improvement in light, room and ventilation.

A number of sheds and minor structures whose use had been outgrown, forgotten or misapplied, but which had continued to cumber the grounds, were removed, the ground graded and rendered more attractive and easily kept in order.

So great have been the improvements made in the grounds and buildings—so well have they been kept in repair, and that without costly exterior structural change, that although the main buildings of the Institution have been in constant use for more than sixty years—they compare favorably with buildings in similar institutions elsewhere of recent erection and elaborate and expensive equipment.

The House of Correction being of much more recent erection than most of the buildings of the Almshouse and having been planned for a number of inmates equal to its highest present requirements, and its grounds and out-buildings having been in so much better condition relatively at the beginning of my term, the necessities and opportunity for addition and improvement have not been so great ; but the maintenance of the high standard has demanded continual vigilance and labor, and betterments have been made.

The water supply has been perfected ; a new gas holder was erected ; a Nursery established for the reception of mothers with nursing children ; roofs have been repaired ; the river banks on the front of the Institution have been re-riprapped ; work on roads in the vicinity has been continued, greatly to the benefit of the community.

The work of grading and excavation, of removal of buildings and the stripping of walls at the Almshouse

was done by the men from the House of Correction, and their labor was utilized in all other ways possible and the stone from that Institution was used in walls and foundations wherever feasible.

This completes a brief summary of the Departments.

At the commencement of my administration the entire press of the city, backed by an apparently unanimous public opinion, demanded that great public improvements should be commenced and carried to completion. I therefore entered office with the well defined wish of the people that ways and means should be provided and that these permanent public improvements that had been talked of for so long time might be commenced and carried to completion without delay.

In my inaugural address I stated :

*“ We are all interested in having Philadelphia not only rank among the first cities of the country, but also desire her to press forward to the foremost place. This is only possible by constant improvements, and for these improvements there must be money, and money in amount considerably exceeding that which we have had in the past; otherwise, it must be fully appreciated, that many of the much needed improvements cannot be secured. If Philadelphia is to reach that success which her citizens are so anxious to attain, the great requirement is money in sufficient quantities.”*

Immediately after my introduction into office I was met with a series of financial difficulties and with complications in the finance of the city such as had never before confronted any of my predecessors in office and which rendered imperative my immediate attention. The results of this condition of affairs lasted throughout the first year of my administration and consequently prevented me from commencing at once the active work outlined as expressed in my inaugural.

There are two ways of deriving revenue for permanent improvements in a municipality ; one, revenue received from tax rate, the other, the creation of loans. Loans, under the law, can only be used for permanent improvements. The policy pursued for the last few years has been to create loans to pay for the many much needed improvements for which the current taxation did not yield sufficient revenue. While all were agreed as to the necessity of the improvements, there was a vigorous and proper protest against the increase of the tax rate ; the only plan left, therefore, was the creation of loans. The loans were created, and the moneys thus procured were used only in permanent public improvements. This was in accordance with the judgment of the Public Press and of all who are authority in the management of municipal corporations.

It seems no more than just that the future generation should be made to contribute in some measure toward the payment for these permanent public improvements. They will derive benefit from the expenditures, and the entire cost should not be paid out of current taxation.

The policy, pursued for the last few years, has met with the entire approval of many of our most prominent citizens and financiers.

Among the various loans authorized within the last four years, was one for \$6,000,000 for the removal of all the grade crossings on Pennsylvania avenue. This is what is known as the Reading Subway Plan. This had the support of all the newspapers of Philadelphia, and also of her most prominent and influential citizens. It must be borne in mind that while the City will borrow the \$6,000,000, one-half of that amount, together with one-half the interest charges, is to be returned by the Reading Railroad Company under their agreement, under authority of the United States Court, and by virtue of the ordinance authorizing the work.

\$2,720,000 was borrowed to fund a portion of City Loan falling due January 1, 1895. The Sinking Fund Commissioners had City loans in their hands to this amount, and it was intended to pay off the entire loan due on that date; but, by decision of the Supreme Court the Commissioners were restrained from selling the City securities already available and which had been purchased to meet this loan. The Supreme Court decided that all City loans in the hands of the Sinking Fund Commissioners are to be treated as an asset and considered paid. Consequently it was necessary to borrow \$2,720,000 in order to meet the loan coming due. These two items, viz.: the \$6,000,000 loan and the \$2,720,000 loan, aggregating \$8,720,000, are to be deducted from the sum available for general permanent public improvements during the last four years, and leaves actually authorized during my administration for these general permanent improvements \$8,600,000, an average of only \$2,150,000 per year.

While we have spent large sums of money in the making of important permanent improvements which should have been provided for years ago, the work has been accomplished without increasing the tax rate from \$1.85; and, at the same time, we have decreased the net debt of the City. And instead of adding to the burden of our people during a time of business depression, which has been the most severe the country has ever experienced, we have, on the contrary, by the expenditure of large sums, both by the City and the Passenger Railway Companies, in permanent improvements, furnished work to thousands who would otherwise have been out of employment; and this was the reason why the hard times were felt less keenly in Philadelphia than in any other city in the Union. During the last four years there has been an unparalleled amount of work done in all the Departments under me, greater than ever before in the same

period of the history of the City ; and while the policy of an administration is always to be determined by the Executive, he must necessarily rely upon his chosen official advisers to carry out the details of that policy. I have been particularly fortunate in this respect in having as heads of Departments those who have always shown a most intelligent and earnest appreciation of the duties and responsibilities of their several positions.

Major William H. Lambert, President of the Department of Charities and Correction, with his associate Directors, William D. Gardner, Alfred Moore, James W. Walk, M. D., and John Shallcross, have had under their care those poor, distressed and unfortunate ones who require to be not only cared for, but also surrounded by influences which may tend to improve and better their condition. They have shown an intelligent comprehension of the needs of this Department, and without pay have devoted their time to the City with results which I am convinced are most satisfactory to their fellow citizens, thereby maintaining the reputation of this City for excellent management and maintenance of Charitable Institutions.

The Department of Public Safety exercises the police and protective power of this great City. Upon its proper maintenance depends, not only the good name of the City, but the safety and health of its people and suppression of crime.

Abraham M. Beitler, Esq., took charge of this Department in October, 1891, and by his high character, undoubted ability, strict integrity and energy, and his thorough knowledge of the laws and ordinances governing the municipality, he has not only maintained the high standard of the City, but by his intelligent conception of the needs of the Department, and by his most excellent executive abilities has advanced the Department of Public Safety until it ranks second to none in the country.

The duties of the Director of the Department of Public Works are more diverse, technical and intricate than those of either of the other Departments.

The work of that Department has increased from year to year until now it comprehends such vast, administrative and constructive operations as to make it almost beyond human endurance to give attention to all the details, and demonstrates that the Director must soon be accorded a deputy to whom he may delegate some of the supervision of the work of the Bureaus. Mr. James H. Windrim took charge of this Department upon April 6, 1891, the same day that I assumed the office of Mayor. He came into the office with an unexcelled experience and training for the duties of his position. His many years of practice in his profession had resulted in the planning and successful erection of some of the finest architectural works in Philadelphia, and after four years of almost daily intercourse I find my confidence in his ability, character and integrity more fully confirmed by the results he has accomplished as Director of Public Works. During this time he has executed the greatest public works the City has ever undertaken, and has advanced the material welfare of the City in every division of his work. The results of his services will be more and more appreciated as years pass by and his intelligent forecast of the City's needs comes to be more generally understood.

The pleasant relations that have usually existed between the legislative and executive branches of the City government have been maintained during my administration. To carry out the great works that have been executed during the past four years has required the cooperation of Councils, and it is only justly due that I should thank you for the kindly consideration you have always shown to the needs of the several Departments under my control, and to accord you the credit that is



due you for assistance in carrying on the administration of the Departments during that period.

My administration ends to-day, and this is the last message I shall send to your Honorable Bodies. During my term of office there have been many important questions considered in relation to the municipality, and very many valuable franchises have been asked for, all of which have required the careful consideration of the Executive. Upon all questions coming before me there were naturally two sides, and representative citizens and men of character were found upon both, and it was sometimes difficult to determine just what to do; but I have given careful thought and consideration to every official act, and the ultimate decision has always been that which in my judgment was for the best interests of the people and of the municipality.

In submitting to my fellow-citizens through you my official acts in the honorable and responsible office of Mayor, to which I was elected by their suffrages, I desire to say that I have endeavored to faithfully administer the executive duties of the municipality, and have, as far as possible and as opportunity would allow and the means at hand would permit, carried out all the matters mentioned in my inaugural address.

Time has brought its ending, and now that my administration goes into the history of this City, I will be satisfied if in the opinion of my fellow-citizens I shall be accorded the judgment of having been faithful to their trust, and of having been able in any degree to advance the welfare and interests of this, my native City, towards which I have experienced, not only my boyhood enthusiasm, but as well my manhood pride, as the greatest and most loyal of American cities.

I am, respectfully,

EDWIN S. STUART,

*Mayor.*



---

---

ANNUAL REPORT

OF THE

**Department of Public Works**

FOR THE

**Year Ending December 31, 1894.**

---

---



OFFICERS  
OF THE  
Department of Public Works.

---

*Director,*  
JAMES H. WINDRIM.

*Chief Clerk,*  
HARRY W. QUICK.

GENERAL RECORD CLERK—WILLIS SHEBLE.  
CLERK—ERNEST T. HANEFELD.  
ASSISTANT CLERK—ANDREW L. TEAMER.  
STENOGRAPHER AND CLERK—FRED'K D. BIDDLE.  
STENOGRAPHER AND TYPEWRITER—HARRY S. STOY.  
MESSENGER—JOHN P. JUNIOR.

*Superintendent of City Ice Boats,*  
H. E. MELVILLE.

*Chiefs of Bureaus :*

GAS—WILLIAM K. PARK.  
HIGHWAYS—GEORGE A. BULLOCK.  
LIGHTING—JOHN J. KIRK.  
STREET CLEANING—SYLVESTER H. MARTIN.  
SURVEYS—GEORGE S. WEBSTER.  
WATER—JOHN L. OGDEN.





EIGHTH ANNUAL REPORT  
OF THE  
**DEPARTMENT OF PUBLIC WORKS.**

---

**JAMES H. WINDRIM, Director.**

---

*Philadelphia, January 2, 1895.*

HON. EDWIN S. STUART,  
Mayor of Philadelphia.

DEAR SIR:—In accordance with the Act of Assembly, approved June 21, 1885, I have the honor to present the Eighth Annual Report of the Department of Public Works, for the year ending December 31, 1894, with a review of the operations of this Department, and the reports of the Chiefs of the several Bureaus in detail, which show the extent of the works now under construction and those that have been completed during the past year.

The liberal appropriations made by Councils to the Department of Public Works for the years 1891–92–93–94, have permitted large additions and extensions to be made to all municipal works. The works completed have been of direct benefit to the public, and those under construction will assist in the future advancement and prosperity of the City.

The improvements within the corporate limits of the City in this period have been extended over 2,405 square acres in the north and northeast sections; 742 square acres in the south and southwest sections; and 848 square acres in the west and northwest sections.

Streets have been opened and municipal works constructed in these sections of the City, preparing the way for building improvements and development which will increase its revenue each succeeding year.

*Bureau of Highways.*

In 1890 there were 725.2 miles of paved streets, of which 115 miles were rubble, 375 miles were cobble, 88 miles of macadam roads, and 147 miles of improved paving. In 1894 there are 872.94 miles of improved highways, of which 92 miles are paved with rubble, 164 miles with cobbles, 114 miles of macadam roads, and 502 miles of improved street pavements.

During 1894 there have been laid by the Passenger Railway Companies 131.17 miles of repaving; and by the City 20.70 miles of new paving, and 21.32 miles of repaving with improved pavements, removing cobble stone paving to this extent.

During the year there have been built in the suburban districts 23.11 miles of macadam roads, making a total of 114 miles of macadam roads now maintained by the City.

The repaving of 131.17 miles of streets by Passenger Railway Companies adopting electric motor and the trolley system, has necessitated large expenditures to be made by the City for extensions of sewers, the laying and renewal of many miles of gas and water mains and other underground structures. These works have been completed as far as possible in advance of the paving and repaving, to prevent the breaking of the new pavements.

The Department has endeavored to have ordinances passed for the regulation of the repairs and maintenance of paved streets, to prohibit the displacement of the new paving, except under such guarantee as would secure the repairs being made in the most thorough manner. Di-

vergence of opinion has caused delay in the legislation upon this important matter.

There has been no departure from the system formerly adopted by the Highway Committee in the selection of materials for the paving and repaving of streets; the ordinances designate granite block for streets that are subjected to heavy travel, and asphaltum and brick paving for the resident streets.

Prior to the repaving of streets by Passenger Railway Companies, the Department recommended that granite block paving should be used for all streets between the rivers, and between South and Callowhill streets—the commercial centre of the City. For streets north and south of this section, running east and west, block and asphalt in alternate streets; and for streets running north and south, east and west of Broad street, block and asphalt in the alternate streets.

This recommendation of the Department was unpopular, as many of the property owners and residents on the streets designated to be paved with block, petitioned the Department and the Railway Companies to adopt sheet asphaltum as the material preferred by them for the repaving; and to satisfy this public demand many of the streets designated to be repaved with Belgian blocks have been repaved with sheet asphaltum.

The specifications for street paving during 1894 were general, inviting competition for all varieties of asphalt paving, and required the bidders to state the ingredients, their compositions, and the method of applying the same to street paving.

During the year proposals were received for asphalt paving, and contracts awarded to the lowest bidders for the work: 67 to the Vulcanite Paving Company, for pitch Lake Trinidad asphalt; 24 to the Pennsylvania Asphalt Paving Company, for Bermudez asphalt; 12 to

the Philadelphia Paving and Construction Company, for rock asphalt; and 7 to the California Petroleum and Asphalt Company, for Alcatraz asphalt.

The Department is of the opinion that the only test of the fitness of any asphaltic composition for street paving can be obtained by laying it, and recording its endurance when subject to average travel for a fixed time, and the effect of climate and temperature upon it.

It is to be regretted that the proposals for the new materials were confined to lesser streets, where they will not receive an average of commercial traffic to fairly test their comparative value for street paving.

The following tables give comparative statements in detail of the work done during the years 1891, 1892, 1893 and 1894; of the paving of new streets, the repaving of old streets, and of the receipts and expenditures of the Bureau of Highways:

*Comparative Statement of Work done.*

	1891.	1892.	1893.	1794.	
New Paving.....	197,511.00	226,438.60	270,420.15	221,572.	Linear feet.
Macadamizing (new).....	34,344.00	19,729.00	80,986.80	121,998.	" "
Grading.....	626,058.31	447,475.00	743,361.00	797,227.	Cubic yds.
New footway paving.....	305,518.00	154,999.00	116,430.91	103,915.	Square yds.
Repairs to paved streets.....	336,980.7	314,153.00	896,556.62	416,039.	" "
Footways repaved.....	12,684.8	18,465.00	21,985.37	17,678.	" "
Ditches repaved.....	64,366.	55,772.00	66,555.37	128,529.	" "
Gutter stone laid.....	53,023.00	48,715.00	48,678.00	40,869.	Linear feet.
Crossing stone laid.....	50,887.00	42,336.00	47,480.40	48,269.	" "
Tramway stone laid.....	2,053.00	6,759.00	8,363.00	8,360.	" "
Curbstone reset.....	272,137.5	350,689.00	643,362.00	1,163,836.	" "
Wooden trunks.....	6,284.00	8,484.00	6,278.00	7,277.	" "
Brick and stone drains.....	386.5	872.00	889.00	1,396.	" "
Hand railings.....	2,907.00	1,248.00	2,716.00	1,340.5	" "
Broken stone used.....	23,429.7	6,668.00	24,166.27	46,601.	Cubic yds.
Macadamizing (resurfaced).....	23,860.00	12,033.00	71,686.00	66,138.	Linear feet.
Footway, curb and railroad notices served.....	21,264.	32,806.00	58,434.	91,291.	

*Summary of Work Done in Improved Pavements—New Streets.*

	1891.		1892.		1893.		1894.	
	Square Yards.	Linear Feet.	Square Yards.	Linear Feet.	Square Yards.	Linear Feet.	Square Yards.	Linear Feet.
Granite blocks.....	183,918.16	57,296	134,715.38	49,219	84,655.04	30,860.00	142,420	54,088
Sheet asphalt.....	40,654.8	16,126	71,685.96	21,002	61,246.89	18,434.00	115,056	33,400
Vitrified bricks.....	192,692.00	58,122	143,953.82	48,474	119,914.93	40,350.00	75,851	21,307
Asphalt blocks.....	671.00	400	.....	.....	602.00	387.06	815	524
Macadamizing .....	74,900.00	34,344	47,503.00	19,729	148,059.23	80,986.80	228,484	121,998
<b>Total.....</b>	<b>492,835.96</b>	<b>*166,286</b>	<b>397,858.16</b>	<b>†138,424</b>	<b>414,478.09</b>	<b>†171,017.86</b>	<b>562,576</b>	<b>†231,317</b>

*Replacing Cobblestone with Improved Pavements—Old Streets.*

	1891.		1892.		1893.		1894.	
	Square Yards.	Linear Feet.	Square Yards.	Linear Feet.	Square Yards.	Linear Feet.	Square Yards.	Linear Feet.
Granite blocks .....	94,588.00	41,344	161,370.00	75,882	159,873.29	76,823.00	60,655	23,834
Sheet asphalt.....	78,894.00	23,984	133,644.75	31,861	235,989.36	68,527.34	156,233	63,282
Vitrified brick.....	860.6	239	.....	.....	25,400.00	10,344.00	33,305	11,623
Granolithic.....	.....	.....	.....	.....	18,143.43	24,694.75	10,536	13,814
<b>Total.....</b>	<b>174,342.6</b>	<b>*65,567</b>	<b>295,014.75</b>	<b>†107,743</b>	<b>439,406.08</b>	<b>†180,389.99</b>	<b>260,729</b>	<b>†112,553</b>

\* 1891. Total amount of new paving 231,855 linear feet, equal 43 miles 4,815 lin. ft.  
 † 1892. Total amount of new paving 246,167 linear feet, equal 46 miles 3,287 lin. ft.  
 ‡ 1893. Total amount of new paving 351,406.95 linear feet, equal 66 miles 2,926.95 lin. ft.  
 ¶ 1894. Total amount of new paving 343,370 linear feet, equal 65 miles 670 lin. ft.

In addition to the work done by the City in paving and repaving of streets, the following statement shows the repaving done by passenger railway companies during the year 1894 :

Granite blocks.....	485,339 linear feet.
Sheet asphalt.....	194 624 " "
Vitrified brick .....	12,620 " "
<b>Total.....</b>	<b>692,583 " "</b>

Equal to 131 miles, 903 linear feet; at an estimated cost of \$5,000,000.

*Comparative Statement of Receipts.*

Year.	Receipts.	Increase.	Decrease.
1891.....	\$71,815 89		
1892.....	81,467 97	\$9,652 08	
1893.....	97,004 85	15,536 88	
1894.....	93,249 33		3,755 52

*Comparative Statement of Expenditures.*

	1891.	1892.	1893.	1894.
Current expenses.....	\$293,522 41	\$315,580 94	\$473,133 77	\$498,372 12
For extensions.....	820,401 64	856,283 09	1,839,087 40	1,586,504 12
<b>Totals.....</b>	<b>\$1,113,924 05</b>	<b>\$1,171,864 03</b>	<b>\$2,312,221 17</b>	<b>\$2,084,876 24</b>

*Bureau of Surveys.*

In 1890 there were 73.18 miles of main sewers; in 1894 there are completed 119.46 miles, an increase of 46.28 miles, or a gain of 63 per cent. In 1890 there were 328.50 miles of branch sewers; in 1894 there are completed 521 miles, including old sewers rebuilt, an increase of 192.50 miles of branch sewers, or 59 per cent. The aggregate length of the sewer system of the City is 640.46 miles.

In the additions made to main sewers, the object of the Department has been to complete as far as possible the system of drainage the main sewer was originally intended to provide, by building the portions that had been omitted, and abolish the nuisance of open drain water courses wherever they existed, in the improving and populous sections.

All the new main sewers have been finished in the first construction, or in continuous sections, as far as the amount appropriated for the work would permit.

The main sewers constructed from 1891 until December 31, 1894, include the Mill Creek system, which has been entirely closed from the Schuylkill river to the County Line through a populous section of the City, thereby removing all the open spaces where the polluted creek flowed.

The extension of the Wingohocking Sewer through the eastern part of the built up portions of Germantown, thereby enclosing a foul stream much polluted with sewage.

The construction of extensions to the Intercepting Sewer, which preserves the water supply of the City from pollution, as the drainage of a large territory and of numerous buildings and large institutions is now carried and discharged below Fairmount Dam.

In the building of the large Dobson's run and Lincoln avenue Intercepting Sewers, the sewage of the southern part of Chestnut Hill and Germantown has been diverted from the streams which formed the water-shed of the Schuylkill river.

The construction of the Holly street relief sewer, and of the sewer through the East Park, have both tended to preserve the purity of the Schuylkill river.

The building of the Aramingo system, thereby enclosing a foul, stagnant stream, which was for many years a

menace to the health of the public in the northern part of the City.

Another large work was the construction of the Wolf street main sewer, from the Delaware river to Broad street, furnishing drainage to a large section of the City which heretofore had been insufficiently provided for.

The construction of the Passyunk avenue and Shunk street system developed a large tract in the southern part of the City.

The completion of these main sewers has enabled large areas in the City to be reached by branch sewers; and portions of the City that were without sewer facilities have been provided with drainage for the highways, and opportunity has been furnished for the underdrainage of properties.

The public health requires that all surface drainage, and the drainage from properties, should be conducted away by sewers. The large area covered by the great number of miles of sewers constructed by the Department during the past year, will materially aid the Bureau of Health in securing compliance with its rules and regulations concerning the subject of compulsory and efficient drainage.

The policy of the City to abolish the crossings of streets at grade with steam railroads, has been signally advanced during the past year, the most important of which was the adoption of a plan by the City and the Philadelphia and Reading Railroad Company for the abolishment of all crossings of streets at grade with the track system of this company, from its new Terminal Station at Twelfth and Market streets westward to the Park.

The plan contemplates the lowering of the present tracks on Pennsylvania avenue in a subway, by an average depression of twenty-five feet below the present grades, extending an open cut to Twenty-first street, and contin-



uing west from that point in tunnel to Taney street. The length of the open cut will be 6,150 feet, and the length of tunnel 2,910 feet. It is provided that all streets crossing the subway shall be carried on substantial steel plate girder bridges.

Four tracks in width will be relaid in the subway, with terminal depots for freight, etc., largely increasing the present facilities of the railroad company, and continuing the track connections with all industrial establishments on its line.

The deep sewer system, made necessary for the drainage of the locality affected, is now under construction. To cause the least inconvenience to the public, the work was divided into five sections, and a time limit fixed requiring each section to be completed in four months. From the reports of the City's engineers, the contractors will have their sections practically completed within the time limit.

The sewers have been principally constructed in tunnel from shafts 250 feet apart; the work has progressed successfully and without any serious damage to life or property.

The other works to complete this improvement will also be contracted for in sections, so as to have the entire work finished at the earliest time possible.

There has been no work devolving upon the Chief Engineer of the Bureau of Surveys heretofore which has included such a variety of engineering problems as this, to wit: The solution of a difficult system of drainage and sewer construction, preparatory to the commencement of other works; the maintenance of existing buildings affected; railroad engineering in the construction of the subway for roadbed with its retaining walls; the bridge structures; tunnel construction; and not least, providing convenient connections between the railroad and the in-

dustrial establishments located on the line of the subway system.

The completion of this great public work will remove from the City's streets 1.71 miles in length of the tracks of a steam railroad which have been an obstruction to progress, retarded business improvements, and depressed the value of a large area of property in a location close to the business centre of the City.

For the execution of the work the City has appropriated by loan ordinance, six million (6,000,000) dollars, of which amount it has contributed three million (3,000,000) dollars, the other three millions to be paid by the Philadelphia and Reading Railroad Company under agreement with the City within the time limit of the loan.

A second great improvement well under construction, and now nearing completion, is the abolishment of what is known as the North Penn grade crossing; the intersection at grade of two main lines of travel of competing roads: the New York Division of the Pennsylvania Railroad and the North Pennsylvania Railroad, a branch of the Philadelphia and Reading Railroad Company.

This work involved the partial reconstruction of both roads at this locality; the tracks of the Pennsylvania Railroad have been elevated, crossing the track system of the Philadelphia and Reading Railroad by bridge, the tracks of the latter company to be lowered to conform to the revised grades. The work, when completed, will remove five grade crossings.

For this work the City appropriated two hundred thousand (200,000) dollars, and the Pennsylvania Railroad Company one hundred thousand (100,000) dollars. The City will be benefited by the removal of a most dangerous crossing of two steam railroads at grade, which was perilous to the citizens and to a general public using either of these main lines of travel.

During the year there has been completed and now under construction by the City, jointly with the Pennsylvania Railroad Company, sixteen bridges, to abolish grade crossings.

The construction of the Pennsylvania and New Jersey Railroad, by the Pennsylvania Railroad Company, will give increased facilities to the manufacturing industries local thereto, and encourage further improvements in the northeast section of the City.

Plans have been prepared by the Bureau of Surveys for an important bridge structure over the Schuylkill River at the Falls, to replace the wooden structure that was abandoned only a few days before it was carried away by a wind storm.

The new bridge will be constructed of steel, with a roadway on its bottom chord to accommodate the travel upon the established streets and roads which now lead to it on the level with the river. A roadway is also to be completed on the top chord, to connect the roads on the high lands on each side of the river. Contract has been awarded for the construction of this bridge, which includes the completion of the lower roadway.

Plans are now under consideration for the erection of a bridge structure at Gray's Ferry over the Schuylkill river. This bridge is to replace the old timber bridge. It will be used for the highway on its top chord, and provide for the track system of the Philadelphia and Baltimore Railroad upon the lower chord. Crossing a navigable stream, a draw section is required to accommodate the traffic on the river.

The City was directed to purchase a wrought-iron girder bridge over the Schuylkill river at County line, known as the City Avenue bridge, upon appraised valuation of the Grand Jury, November term of Court, for the sum of \$109,807.43.

There have been built between the years 1890 and 1894 within the City, including those approaching completion, 36 bridges, 27 of which are over streams and highways, and 9 railroad bridges to abolish grade crossings.

Another great improvement committed to the Bureau of Surveys is the widening of Delaware avenue along the river front to a roadway 150 feet in width from property line to the bulkheads. Plans have been made for this work under the inspection of Major Raymond, U. S. A., Engineer in Charge of Philadelphia Harbor Improvements; they show a revision of bulkheads and construction of piers, which will be proportionate with the demands of the business interests of the City.

This great work, when completed, will give to the City a harbor which will greatly facilitate its commerce and industries, and will open the way for commercial activity, which has been restricted by the neglect of the City to avail itself of the natural advantages of her river fronts and the water way to the ocean.

#### *District Surveyors.*

The great extent of street improvements during the year has added an unusual amount of work upon the District Surveyors. The force employed in these offices number 141 skilled men.

The cash returns to the City Treasury from the offices of the District Surveyors was \$177,549.20, and the credit for the work done for the City amounted to \$201,553.20. The expenses of the District Surveyors and their corps were \$176,575.23.

The following tables give a comparative summary of the operations of this Bureau in the active construction of work, also of receipts and expenditures during the years 1891, 1892, 1893 and 1894.

*Comparative Summary of Main, Branch and Private Sewers built during the years 1891, 1892, 1893 and 1894.*

	1891.		1892.		1893.		1894.	
	No.	Linear ft.	No.	Linear ft.	No.	Linear ft.	No.	Linear ft.
Bridges .....	4		5		6		4	
Intercepting sewer (section).....	1	3,184	1	5,855			8	9,214
Intercepting sewer connections .....					4	10,260		
Wissahickon Valley sewer (section).....	3	5,600	4	7,564	3	10,712	7	17,362
Main sewers .....	20	27,318	26	31,705	40	55,743	57	75,693
Branch sewers .....	196	133,216	213	132,000	550	273,433	522	332,220
Private sewers.....	60	23,465	68	29,218	58	36,738	65	45,723
<b>Total .....</b>	<b>284</b>	<b>*192,783</b>	<b>317</b>	<b>†206,342</b>	<b>661</b>	<b>‡386,886</b>	<b>663</b>	<b>¶480,212</b>

\*1891, equal to 33.50 miles. †1892, equal to 39.08 miles. ‡1893, equal to 73.27 miles. ¶1894, equal to 90.95 miles.

*Comparative statement of work upon bridges during the years  
1891, 1892, 1893 and 1894.*

	1891.	1892.	1893.	1894.
Finished .....	4	5	6	4
Begun.....	3	4	9	17
Authorized.....	3	4	13	17
Planned.....	4	10	18	23

*Comparative Statement of Receipts.*

Year.	Receipts of Bureau.	Receipts of District Surveyors.	Total.	Increase.
1891.....	\$45,216 96	\$98,155 30	\$143,402 26	
1892.....	50,199 74	108,433 42	158,633 16	\$15,230 90
1893 .....	73,073 59	125,971 42	199,045 01	40,411 85
1894 .....	139,626 34	177,549 20	317,175 54	118,130 53

*Comparative Statement of Expenditures.*

	1891.	1892.	1893.	1894.
Current expenses.....	\$146,668 60	\$174,600 77	\$210,223 87	\$247,492 25
For extensions.....	1,061,409 95	1,047,169 14	1,801,375 35	2,538,586 24
<b>Total.....</b>	<b>\$1,208,078 55</b>	<b>\$1,221,769 91</b>	<b>\$2,011,599 22</b>	<b>\$2,786,078 49</b>

The following table gives a summary of the receipts and expenditures of the District Surveyors for the year 1894 by districts; also, in totals for the years 1891, 1892 and 1893.

Summary of Receipts and Expenses of District Surveyors.

Districts.	Surveyors.	Cash Receipts.	Credit for work done for the City.	Total Credit.	EXPENSES.			Balance Profit to the City.	Profit to the City in 1893.	Increase.	Decrease.
					Salaries.	Pay of Assistants.	Miscellaneous.				
First.....	Thomas Daly.....	\$18,068 78	\$15,925 64	\$33,461 32	\$3,000 00	\$6,894 72	\$1,228 20	\$11,122 92	\$2,338 40	\$14,006 60	\$8,331 80
Second.....	Charles W. Close.....	13,248 15	14,825 12	27,673 27	3,000 00	6,536 18	1,761 68	11,297 86	16,375 41	5,559 83	11,016 08
Third.....	William C. Cranmer.....	25,338 85	31,519 09	56,857 94	3,000 00	16,029 35	2,233 01	21,362 36	35,495 68	19,116 20	16,379 88
Fourth .....	Fritz Bloch.....	13,009 59	18,001 45	31,011 04	3,000 00	9,558 84	2,140 74	14,699 58	16,311 46	10,150 81	6,160 65
Fifth .....	Walter Brinton.....	7,318 07	9,494 51	16,812 58	3,000 00	6,716 62	1,661 65	11,378 27	5,434 31	1,765 98	3,668 33
Sixth .....	Joseph Mercer.....	20,137 72	26,241 03	46,378 75	3,000 00	8,293 25	2,046 75	13,340 00	33,038 75	12,909 90	20,128 85
Seventh.....	William K. Carlisle.....	15,850 95	11,597 49	27,448 44	3,000 00	6,023 96	2,374 56	11,398 52	16,049 92	12,178 33	3,871 59
Eighth.....	C. A. Sundstrom.....	6,437 94	9,162 01	15,599 95	3,000 00	9,858 19	2,484 17	15,292 36	307 64	95 10	212 52
Ninth.....	Walter Jones.....	4,515 07	9,491 01	14,007 08	3,000 00	6,880 00	1,218 68	11,068 68	2,908 40	2,434 48	473 92
Tenth.....	John Webster, Jr.....	11,331 34	12,492 70	23,824 04	3,000 00	11,057 27	2,822 78	16,880 00	6,944 04	3,545 78	3,398 26
Eleventh.....	Joseph Johnson.....	15,844 16	19,120 79	34,964 95	3,000 00	9,094 83	2,304 84	14,389 73	20,565 22	6,971 92	13,588 90
Twelfth.....	William H. Jones.....	9,699 86	17,034 39	26,734 05	3,000 00	6,300 96	1,104 50	10,414 55	16,219 50	6,028 70	10,290 80
Thirteenth.....	H. M. Fuller.....	16,547 72	7,681 24	24,328 96	3,000 00	8,744 92	2,145 48	13,890 40	10,438 56	6,359 98	4,078 58
	Total, 1894.....	177,549 30	201,553 90	379,102 40	39,000 00	111,998 15	25,577 08	176,575 23	202,557 1	100,922 51	101,604 66
	Total, 1891.....	125,971 41	129,900 01	255,911 43	33,938 83	92,938 70	23,066 89	155,008 92	100,922 51	47,118 03	*34,850 95
	Total, 1892.....	108,434 42	61,517 99	169,981 41	33,583 33	64,945 13	19,675 13	123,078 59	47,118 06	28,145 57	20,433 88
	Total, 1891.....	98,155 3	33,838 55	131,993 8	36,000 00	46,148 65	21,704 43	103,848 28	28,145 57	21,210 63	8,690 63

\* 1893 net increase, \$53,804 43.

*Registry Division.*

The work devolving upon this division increases each year with the growth of the City. The report of the Registrar details the work done during the past year.

The work of the Registry Branch, attached to the Bureau of Surveys, is shown by the following summary of its operations :

	1891.	1892.	1893.	1894.
Number of certificates registered owners issued.....	10,522	11,053	11,188	12,860
Number issued for use of the Law Department .....	507	212	212	542
Receipts from certificates of registered owners	\$2,617 00	\$2,765 00	\$2,979 00	\$3,203 00
Number of original lots plotted.....	11,705	12,387	11,796	10,975
Number of transfers registered.....	22,365	22,540	24,315	22,720
Number of plans made for use of City Departments, Bureaus, etc.....	543	440	561	451
Number of examinations of registry plan books made by the public.....	21,396	23,824	24,703	26,736
Number of descriptions of property filed for registry.....	34,770	35,195	35,279	34,093
Number of titles perfected.....	1,858	2,215	2,093	1,905
Number of certificates of legal opening of streets, issued to Bureaus, etc.....	3,071	3,112	3,245	3,158
Number of certificates of registered owners in municipal lien cases for Law Department...	6,827	5,825	4,833	3,500

*Bureau of Water.*

During the past four years the additions to the Bureau of Water for increasing the supply, are best shown by stating that in 1890 the pumping capacity for water at all the pumping stations of the City was 185,290,000 gallons per day ; the storage capacity in the reservoirs 869,288,814 gallons. In 1894 the pumping capacity has increased to 311,940,000 gallons, a gain of 68 per cent., and the storage capacity of the reservoirs increased to 1,400,396,854 gallons, a gain of 61 per cent.



In the report for the year 1891 the Department recommended that a plant for the filtration of water be established at Belmont or Frankford Stations.

On June 21, 1892, an Ordinance was approved, including a specification of the requirements of the City for the filtration of water. Bids were invited by advertisement and three proposals received. As no appropriation was available the Department was prevented from entering into a contract for the work.

The matter of an additional water supply for the City is now before the Water Committee of Councils. The committee has under consideration the various propositions that have heretofore been made, with the advantages claimed by those in interest, for each method or plan proposed.

This Department, in its annual reports and by special reports submitted through the Mayor to Councils, has set forth a full review of the present condition of the water supply and of the constant demand by the public for an increase in the quantity of water required for domestic use and the purposes of business.

The necessity for intelligent and prompt decision upon the very important subject of an adequate water supply for the City has been repeatedly urged, and legislation recommended to authorize the adoption of a system to reserve the present supply, or the selection of a plan that will be the most desirable for the public welfare.

It should be remembered that two manufacturing establishments now consume per annum the amount of water pumped per day by the Bureau of Water, with the present facilities. If by extensions or increase in business the manufacturing industries should require an additional water supply in like proportion with those above stated, the supply of water remaining available will be insufficient for the necessities of the general public.

It is claimed that the great amount of water used in many industrial establishments is wasted or misused. To prevent the charge that water is wasted, the Department has urged the introduction of meters on the supply pipes of all large consumers, and it still recommends the adoption of meters as the best means for preventing waste by those who will not acknowledge that they tolerate waste, so long as they are uninformed of the great quantity of water they are receiving.

There have been erected four engines at the Spring Garden Pumping Station from 1890 to 1894, with a capacity of 100,000,000 gallons per day ; at the Roxborough Pumping Station one engine, with a capacity of 12,000,000 gallons per day ; and at the Lardner's Point Pumping Station, Frankford, one engine with a capacity of 15,000,000 gallons per day.

The Roxborough Reservoir was commenced under contract with John B. Riley November 25, 1890, and was under construction when I assumed office ; the work was completed September 21, 1893, the contractor having been delinquent in completing his contract eleven months.

Water was pumped into the reservoir on September 21, 1893. It was found to leak, with 16 feet height of water in the basins.

The contractors were notified of the leaks, and directed to make the necessary repairs ; not responding, the securities were notified that the contractor had been requested to make the repairs to prevent leaks ; a second notice was given the contractor that the City would make the repairs and charge all expenses, as unfulfilled obligations of the contract. The work was commenced by the City, and had progressed satisfactorily until the freezing weather and winter prevented its completion.

The Queen Lane Reservoir was reported by the contractors completed on December 13, 1894.

On November 29, 1894, the contractors requested the Department to pump water into the reservoir, to protect the bottom lining from frost, and water was pumped into the basins. With 10 feet depth of water in the basins, water showed in the trench excavations made for the supply pipes to the reservoir, apparently from leaks in either of its basins; and at the request of the contractors the water was lowered, with the intention of ascertaining the cause of the leakage; but the severity of the winter made it impracticable to empty the water from the basins until after the period of freezing weather.

The sites of the Roxborough and of the Queen Lane Reservoirs are upon high land, with top soil and disintegrated rock covering a micaceous rock formation with irregular strata; this character of material is general to the high ground of these sections available for reservoir sites. The locations for the reservoirs were selected as the best on account of their elevations above the districts they were to supply.

The plans and specifications for the reservoirs were made by the Chief of Bureau of Water as sufficient in each detail to make them permanent and substantial structures, and any leaks occurring from imperfections found in the work the contractors will be held responsible to repair in the best manner.

The bottoms of the basins are large areas upon sections of rock, with strata at irregular angles of slope; if the clay puddle linings provided, prove inadequate to prevent water under pressure passing the clay and into the soft rock and seams, the inside surfaces, wherever the rock forms the sides or bottom, must be supplemented by a covering material that will be proof against water passing through it under the maximum of pressure when the reservoirs are full.

It should be here stated, that if any additions shall be required to the inside linings of the reservoirs, such ad-

ditions are made necessary by the natural formation of the ground, and were not considered essential by the engineers when the plans and specifications were prepared for the work.

The general construction of the reservoirs as executed under the contracts would be practically the same had the Chief of the Bureau considered it necessary to provide for the additional water-proof lining for the portions of the work having rock surfaces or bottom.

Whatever may be done in the future will be new work, and necessitated from the conditions of the sites upon which the reservoirs are built.

In connection with the Queen Lane Reservoir there is being constructed in the East Park on the Schuylkill River front, near the Wissahickon, a pumping station to be equipped with four 20,000,000 gallon pumping engines, to be connected direct with the Queen Lane Reservoir. The last of these engines will be finished on March 12, 1896, when the whole of the Fifteenth, Twenty-eighth, Twenty-ninth, Thirty-second and Thirty-seventh Wards, and portions of the Nineteenth, Twentieth, Twenty-first, Twenty-second and Thirty-third Wards—the district under direct pumpage—will receive their supply from the new reservoir.

The high service stations recommended to be erected at the Roxborough Reservoir for the supply of Chestnut Hill and adjacent territory of high elevation, is rapidly approaching completion; also, the high service station at the Belmont Reservoir, for the supply of Haddington and the high elevations in West Philadelphia, is well advanced, and will be completed and in service early in the spring.

The following tables give the number and type of engines, location of reservoirs, and comparative summary of the operations of the Bureau; also, the receipts and expenditures for the years 1891, 1892, 1893 and 1894.

Statement of the number and type of engines and their several aggregate capacities at the various stations :

PUMPING STATION.		Designated number of Engine or Turbine.	TYPE OF ENGINE.	Designed capacity in million gallons per day.	Total.		
Spring Garden.	Old Station .....	4	Worthington Duplex.....	20,000,000	190,000,000		
	" " .....	5	Compound Rotary.....	20,000,000			
	" " .....	6	Simpson Compound Rotary	10,000,000			
	" " .....	7	Marine Compound Rotary.	2,400,000			
	" " .....	8	Worthington Duplex.....	10,000,000			
	" " .....	11	Gaskill.....	20,000,000			
	New Station .....	9	Worthington Duplex.....	15,000,000			
	" " .....	10	" " .....	15,000,000			
	" " .....	2	Holly.....	30,000,000			
" " .....	3	" .....	30,000,000				
Belmont.....	.....	1	Worthington Duplex.....	5,000,000	18,000,000		
	.....	2	" " .....	5,000,000			
	.....	3	" " .....	8,000,000			
Roxborough.....	.....	1	Vertical Compound.....	12,000,000	24,500,000		
	" .....	2	Worthington Duplex.....	5,000,000			
	" .....	3	" " .....	7,500,000			
Roxborough Auxiliary.....	.....	2	Knowles Pump.....	250,000	6,700,000		
	" " .....	3	" " .....	250,000			
	" " .....	1	Worthington.....	6,000,000			
Mt. Airy.....	.....	1	Davidson Pump.....	1,000,000	3,000,000		
	" .....	2	" " .....	1,000,000			
	" .....	3	Knowles " .....	1,000,000			
Chestnut Hill.....	.....	1	Knowles Pump.....	250,000	750,000		
	" .....	2	Worthington Duplex.....	500,000			
Frankford .....	.....	1	Marine Compound Rotary.	10,000,000	35,000,000		
	" .....	2	Corliss Compound Rotary..	10,000,000			
	" .....	3	Southwark Rotary.....	15,000,000			
Fairmount.	New House.....	1	Turbine Wheels.....	2,000,000	33,200,000		
	" " .....	3	" " .....	5,330,000			
	" " .....	4	" " .....	5,330,000			
	" " .....	5	" " .....	5,330,000			
	Old " .....	7	" " .....	5,100,000			
	" " .....	8	" " .....	5,100,000			
	" " .....	9	" " .....	5,100,000			
	<b>Total.....</b>					<b>311,040,000</b>	

The following is a Statement of the Location, Date of Completion, Elevation, and Capacity of the City's Reservoirs.

Name of Reservoir.	Location.	Date of Completion.	Hei. ht. above City Datum.	Capacity in Gallons.
Lehigh, Fairmount.	Reservoir No. 1.....	East Fairmount Park.....	94 feet.	26,350,800
	" " 2.....			
	" " 3.....			
	" " 4, Section 1.....			
	" " 4 " 2.....			
" " 4 " 3.....				
Lehigh, Fairmount.	Section 1.....	Sixth and Lehigh avenue.....	114 "	26,394,000
	" 2.....			
	" 3.....			
Spring Garden.....	Twenty-sixth and Master streets.....	1844	120 "	12,000,000
Corinthian.....	Corinthian avenue and Poplar street.....	1852	120 "	87,341,400
East Park.	Section 1.....	East Fairmount Park.....	133 "	62,737,632
	" 2.....			
	" 3.....			
Frankford.....	Oxford Turnpike and Comly street.....	1877	167 "	36,016,000
Belmont.....	West Fairmount Park.....	1870	212 "	39,755,000
Mount Airy.....	Allen's lane and Mower street, Germantown.....	1851	363 "	4,546,000
Roxborough.....	Ridge and Shawmont avenues.....	1866	365 "	12,338,000
New Roxborough.....	Port Royal avenue and Ann street.....	1843	414 "	148,000,000
Manatawna tanks—2.....	Manatawna and Ridge avenues.....	1878	442 "	100,000
Chestnut Hill tank.....	Hartwell avenue and Chestnut Hill Railroad, Chestnut Hill.....	1860	481 "	40,000
Queen Lane.....	Thirty-third street and Queen lane.....	1894	238 "	383,108,040
<b>Total</b> .....				<b>1,400,396,854</b>

The following is a comparative statement of the total pipe laid and of other work done during the years 1891, 1892, 1893, and 1894.

YEAR.	PIPE LAID.			*PIPE RELAID.	FIRE HYDRANTS PLACED IN POSITION.			SUBSTITUTED FOR DEFECTIVE HYDRANTS.			Fire Hydrants in use.	Water Attach- ments.	
	Feet.	EQUAL TO			Feet.	New Style	Old Style.	Total.	New Style	Old Style.			Total.
		Miles.	Feet.										
1891.....	221,336	41	4,856	32,081	626	5	631	221	23	244	8,105	8,178	
1892.....	158,783	30	383	50,074	634	.....	634	384	28	412	8,447	8,900	
1893.....	265,911	50	1,911	96,066	1,000	.....	1,000	323	10	333	8,884	11,892	
1894.....	283,569	53	3,729	89,553	1,248	1	1,249	497	9	506	9,449	11,569	

Total pipe laid, 1,135 miles 727 feet.

\* Adds nothing to feet in ground.

The following is a comparative summary of the operations for the years 1891, 1892, 1893 and 1894.

*Receipts.*

	1891.	1892.	1893.	1894.
Receipts from water rents.....	\$2,057,417 39	\$2,147,447 98	\$2,220,083 24	\$2,300,158 59
"    "    fractional rents	200,868 36	214,678 24	237,125 48	190,453 82
"    "    water pipes ....	138,180 98	152,916 45	114,531 78	152,163 31
"    "    City Solicitor's office .....	34,394 49	58,768 25	44,265 44	41,663 04
Receipts from penalties.....	29,672 21	27,136 90	30,981 84	31,998 99
"    "    delinquent rent	25,183 85	15,422 75	13,745 58	25,103 40
"    "    Chief Engineer's office .....	6,503 70	10,274 24	5,836 84	8,917 46
Receipts from searches .....	5,046 75	5,718 50	5,830 25	5,571 75
"    "    delinquent penalties.....	3,495 00	2,092 71	1,874 79	3,605 23
<b>Total.....</b>	<b>\$2,500,762 73</b>	<b>\$2,634,456 02</b>	<b>\$2,674,271 24</b>	<b>\$2,759,631 59</b>

*Expenditures.*

	1891.	1892.	1893.	1894.
Current expenses.....	\$781,227 83	\$314,352 89	\$1,121,535 91	\$1,677,081 03
For extensions.....	749,066 21	558,124 42	1,471,834 90	1,235,775 01
<b>Total.....</b>	<b>\$1,530,294 04</b>	<b>\$1,372,457 31</b>	<b>\$2,593,390 81</b>	<b>\$2,912,856 04</b>

*Pumpage.*

	1891. Gallons.	1892. Gallons.	1893. Gallons.	1894. Gallons.
Pumped to reservoirs.....	53,665,648,000	59,787,584,178	65,352,736,978	72,073,724,238
Equal to gallons pumped 100 feet high.....	93,490,106,725	102,443,373,631	110,590,708,479	121,199,588,387

NOTE.—The "pumped to reservoirs," etc., includes 636,381,450 gallons of repumpage to higher levels at Mount Airy, Roxborough, and East Park Reservoirs.

This, deducted from the total pumped, gives 71,437,342,788 gallons as the total consumption.

The cost of pumpage is calculated on the total pumpage, and the consumption per capita on the smaller quantity.



	1891. Gallons.	1892. Gallons.	1893. Gallons.	1894. Gallons.
Pumped by water-power.....	11,380,824,570	10,401,951,806	9,911,619,325	10,632,201,689
Pumped by steam-power.....	44,284,823,430	49,385,632,372	55,441,127,653	61,441,519,348
Largest quantity pumped in 24 hours.....	183,421,163	199,996,713	222,518,845	234,894,075
Smallest quantity pumped in 24 hours.....	73,057,433	83,599,844	108,970,675	130,048,225

Year.	Average consump- tion in gallons per capita per day, es- timating the popu- lation at*	Increase of	Increase per capita per day	Cost per 1,000,000 gallons pumped 100 ft. high.	Reduc'n in cost of pumpage per 1,000,000 gallons
	Gallons.	Gallons.	Gallons.		
1891	140	4,405,019,930	9	\$2 99	6 cents.
1892	143	4,121,936,178	3	2 68	31 cents.
1893	150	5,565,152,800	7	3 22	*54 cents.
1894	159	6,720,987,260	9	3 48	*26 cents.

\*1891—1,071,672, estimated.  
 1892—1,142,650, City Census.  
 1893—1,190,493, estimated.  
 1894—1,238,112, estimated.

\*Increase.

The cost of pumping one million gallons lifted one hundred feet high was \$3.48, or 26 cents greater than in the previous year.

Fifteen per cent. of the total pumpage was by water-power, the turbine wheels using.....318,966,140,670 gallons.  
 To pump..... 10,632,204,689 “

### Bureau of Gas.

The report of 1891 enumerated in detail the facilities and equipment of the City for the manufacture of gas at its several works.

The increase made by the City to its manufacturing plant to this date has been by rebuilding, from time to time, modern benches for the manufacture of gas from coal, to replace those of primitive type. These improvements have increased the manufacturing capacity of the works 4,500,000 cubic feet per day, which is a gain of  $28\frac{1}{2}$  per cent. By these changes a greater quantity of gas is made per retort at a great reduction in the cost of manufacture.

The holder capacity in 1890 was 14,908,000 cubic feet; in 1894 it is 17,418,000 cubic feet, an increase of 2,510,000 cubic feet, a gain of  $16\frac{3}{4}$  per cent.

The holder capacity is still insufficient for the demands of the City.

The increase in consumption has been regular each year, and the additional amount of gas required from the increase in consumption has been provided by improved manufacturing facilities, and by purchase from the Philadelphia Gas Improvement Company, under the terms of the contract of August 3, 1888, which has been continued each year.

Suggestions have been made by the Department of the additions required at the City's Works, some of which are absolutely necessary to utilize improvements that have been made, and which cannot be put into use until the further additions are completed, to wit: by an increased holder capacity and additional large distributing mains.

These matters are now before Councils Committee for their action.

If the extensions suggested had been authorized, the Department would have been able upon their completion to provide the additional demand for gas from the City's Works.

From the constant increase in the consumption of gas, it will be desirable for Councils to give early consideration

to a method which will provide in the most economical manner the additional supply that will be required by the consumers.

It will be but a short time when the manufacturing plant at the Ninth Ward Works—Twenty-second to Twenty-third streets and Market to Filbert streets—will have to be transferred to the Point Breeze Works, and additional holders built on the site of the present Ninth Ward Works.

From the report of the Chief of Bureau of Gas, it will be noted that the percentage of leakage during the past year has largely increased. The unusual increase at this time has been occasioned to a great extent by the renewal of many miles of pipes prior to the repaving of streets and the loss from the mains consequent to this work.

The increasing percentage of leakage each year is due to the insufficient size of many of the distributing mains which are extended in length from year to year, as the growth of the City makes it necessary to supply gas in new territory; to reach these extreme distances requires greater pressure at the works or holder stations, which increases condensation in the pipe lines and forces leakage from joints which might not leak under less pressure.

This condition implies that additional holder stations would shorten the distance that gas has to flow in supplying specific districts; that blowers may be inserted in the circuit of the present mains to assist the distribution; or that the mains should be sufficiently increased in size to pass freely the volume of gas required in any section with the least pressure at the works or holder stations.

The minimum percentage chargeable to leakage will be obtained when mains are of adequate size to deliver the amount of gas required with the least resistance, at the lowest pressure, and with the joints in the pipe lines kept free from leaks.

Ninth and Diamond Streets Holder Station is supplied from the Twenty-fifth Ward Works under vacuum of 15 to 19 inches of water. With this vacuum the supply is about 150,000 cubic feet per hour.

This method of transmitting, in case of a break in the mains, makes liable such an admixture of air with the gas in the holder that would imperil life and possibly cause great destruction to property. With the intake of air from the leak in the joints of the mains, the illuminating quality of the gas is also much reduced. A blower station at the Twenty-fifth Ward Works would obviate these conditions and secure uniformity of delivery and safety.

Small mains are responsible for the unsatisfactory supply of gas at the Falls, Manayunk, portions of Germantown, and Chestnut Hill. In this connection it should be stated that if the 20-inch main, before recommended by the Department from the Twenty-fifth Ward Works to the Germantown holder station with a third lift added to the holder, and the 16-inch main continued to Chestnut Hill from this Holder, the lighting of these districts can be made satisfactory.

The greatest inconvenience in these sections from short supply occurs early in the evening when, with the first lighting, the largest supply of gas is required. The sections of the City furthest from the holder stations at such times have a reduced supply, while to provide gas to those nearest the stations the mains must carry an excess in pressure to distribute to the localities most distant.

The Ordinance of Councils, approved January 6, 1894, reducing the price of gas from \$1.50 to \$1.00 per 1,000 cubic feet, was immediately thereafter put into effect.

In 1893 the surplus over expenditures from the Bureau of Gas was \$1,459,069.37. In 1894 the surplus over the expenses was reduced to \$192,410.81.

The report of the Chief of Bureau refers to special needs for the current business; an increase in the holder

capacity at the Point Breeze Works and at the Twenty-fifth Ward Works, and at the Manayunk Holder Station ; for large distributing mains necessary to increase the supply to Chestnut Hill and adjacent territory, which has been inadequately supplied, and in which the demand is increasing constantly on account of extensive building improvements ; for mains to increase the distribution in the central portions of the City and West Philadelphia ; for mains to increase the supply in the northeastern section of the City.

The report makes special reference of the insufficient holder capacity at the Twenty-fifth Ward Works, and states that 1,000,000 cubic feet more gas could have been disposed of per night during the last two months of the year had the holder capacity been sufficient.

The following tables give the manufacturing and holder capacities ; also, comparative statements of the operations of the Bureau during the years 1891, 1892, 1893 and 1894 :

*Manufacturing Capacity.*—The following table gives in detail the capacity of the several Works :

Works.	Stacks.	Retorts per Stacks.	Total Retorts.	Grand Total.	Maximum Capacity per Works, 24 hours.	Total Maximum Capacity, 24 hours.
Ninth Ward.....	4	150	600			
	2	191	388			
Experimental Bench.....			3			
				591	6,600,000	
Twenty-first Ward.....	1	30	30	30	200,000	
Twenty-fifth Ward.....	6	120	720	720	5,500,000	
Twenty-sixth Ward.....	6	144	864	864	8,000,000	
						20,300,000

The above does not include the plant of the Philadelphia Gas Improvement Company, which has a capacity of 11,000,000 cubic feet per day.

There are at the Ninth Ward Works, in addition to

the above, eight (8) retorts used exclusively for vaporizing naphtha, for maintaining clear pipes about the Works.

The following table gives in detail the date of construction, the location and capacity of all the holders. :

Location.	When Erected.	Dimensions.	Capacity.	Total.
Ninth Ward Works.....	1851	Feet. 140 x 70	Cubic feet. 1,000,000	
“ “ .....	1871	140 x 70	1,000,000	
“ “ .....	1844	80 x 40	300,000	
“ “ .....	1847	80 x 40	300,000	2,600,000
Twenty-fifth Ward Works.....	1876	140 x 70	1,500,000	
“ “ “ .....	1876	140 x 70	1,000,000	
“ “ “ .....	1885	140 x 70	1,500,000	
“ “ “ .....	1885	140 x 70	1,000,000	
“ “ “ .....	1889	140 x 70	1,000,000	6,000,000
Twenty-sixth Ward Works.....	1852	160 x 90	1,800,000	1,800,000
Twenty-first Ward Works.....		60 x 38	108,000	
“ “ “ .....	1874	78 x 44	200,000	308,000
Frankford: Frankford avenue and Buckius street.....		50 x 16	31,000	
Frankford: Frankford avenue and Buckius street.....		45 x 16	25,000	
Frankford: Frankford avenue and Buckius street.....	1869	80 x 26	130,000	186,000
Bridesburg: Richmond and Bridge streets.....	1869	60 x 21	59,000	59,000
Ninth and Diamond streets.....	1869	140 x 70	1,560,000	
“ “ “ .....	1874	140 x 70	1,500,000	3,060,000
Ninth and Miffin streets.....	1874	115 x 62	600,000	
“ “ “ .....	1890	160 x 84	1,577,000	2,177,000
Twenty-fifth and Callowhill sts...	1851	100 x 50	700,000	
“ “ “ “ .....	1888	80 x 42	203,000	903,000
Germantown: Near Wister Sta- tion, P. & R. R. ....	1870	100 x 50	390,000	390,000
<b>Total.....</b>				<b>17,418,000</b>

The following is a comparative statement of the pipe laid during the years 1891, 1892, 1893 and 1894 :

	1891.	1892.	1893.	1894.
	Feet.	Feet.	Feet.	Feet.
2 inch.....		62	653	
3 ".....	8,072	6,933	23,796	23,429
4 ".....	130,978	111,770	120,564	179,940
6 ".....	5,420	26,784	19,612	40,672
8 ".....	25,435	972	3,856	24
12 ".....	33,494	16,148	2,924	4,280
20 ".....	26,152	14,272	12,091	
30 ".....	8,640			
<b>Total.....</b>	<b>†238,192</b>	<b>†186,941</b>	<b>*183,496</b>	<b>‡248,345</b>

† 1891 equal to  $4\frac{1}{10}$  miles.

‡ 1892 equal to  $35\frac{3}{8}$  miles.

\* 1893 equal to  $34\frac{3}{4}$  miles.

‡ Equal to  $47\frac{1}{4}$  miles.

The following is a summary of the receipts and expenditures for the years 1891, 1892, 1893 and 1894 :

*Comparative Statement of Receipts.*

Year.	Receipts.	Increase.	Decrease.
1891.....	\$3,774,072 09		
1892.....	3,845,825 99	\$71,753 90	
1893.....	4,027,074 88	181,248 89	
1894.....	3,143,431 29		\$883,643 59

*Comparative Statement of Expenditures.*

	1891.	1892.	1893.	1894.
Current expenses.....	\$2,552,150 39	\$2,604,432 90	\$2,772,761 60	\$2,929,565 69
Extensions.....	274,124 31	207,465 64	217,870 66	350,787 20
<b>Total.....</b>	<b>\$2,826,274 70</b>	<b>\$2,811,899 54</b>	<b>\$2,990,632 26</b>	<b>\$3,280,352 89</b>

The decrease in the receipts of this Bureau is owing to the reduction in the price of gas from \$1.50 to \$1.00 per 1,000 cubic feet. This reduction was made by Ordinance of Councils, approved January 6, 1894.

The receipts, as reported in detail by the Chief of the Bureau, are :

1894. For Gas, Services, etc.....	\$2,777,993 97
Coke, Tar, etc.....	359,347 29
Miscellaneous .....	6,090 03
Total.....	\$3,143,431.29

To the receipts from gas should be added the value, at \$1.00 per 1,000 cubic feet, of the increased quantity of gas sold for which payment is not due, as follows :

December 31, 1894.....	644,294,320 cu. ft.
December 31, 1893.....	560,016,800 cu. ft.
	84,277,520 cu. ft.   \$84,277 52

The operations of the Bureau of Gas during the years 1891, 1892, 1893 and 1894 are summarized as follows :

	1891. Cubic Feet.	1892. Cubic Feet.	1893. Cubic Feet.	1894. Cubic Feet.
Total output.....	3,391,887,000	3,585,158,000	3,802,140,000	4,109,316,000
Largest production of gas in any 24 hours.....	* 14,253,000	† 15,332,000	‡ 15,421,000	¶ 16,809,000
Largest consumption in any 24 hours...	a 16,196,000	b 16,328,000	c 16,387,000	d 17,506 000

\* † ‡ ¶ On December 4th, 19th, 17th, and 12th.  
a b c d On December 24th, 24th, 22d and 27th.



UNIVERSITY OF ILLINOIS  
UNIVERSITY OF ILLINOIS

Stock delivered and not paid for, and on hand January 1.

Manufactured and purchased during the year.....

Total to be accounted for.....

Per cent.

Delivered to private consumers, for which bills have been rendered  
Delivered to consumers (bills not rendered) and in holders

50.80  
13.80

Public lighting, etc.	1891.	
	Cubic feet.	Per cent.
Bureau of Police.....	16,415,900	0.42
Bureau of Fire.....	10,747,400	06.27
Bureau of Water.....	2,549,900	06.07
Public Buildings.....	26,941,900	06.70
Almshouse.....	13,793,100	06.36
City Property.....	4,622,900	06.12
Public Squares.....	7,203,342	06.19
Park Commission.....	376,800	06.01
Schools.....	9,428,600	06.24

02.28

Street lamps.....  
Used at works, offices, stations, etc.....  
Unaccounted for, leakage, etc.....

11.06  
00.57  
21.49

Total.....

100.00

	Bushels.	Bushels.	Bushels.	Bushels.
Quantity of coke on hand Jan'y 1.....	256,000	110,615	146,600	21,000
Made during the year .....	5,965,109	6,712,082	7,391,471	8,115,627
<b>Total.....</b>	<b>6,161,199</b>	<b>6,822,647</b>	<b>7,540,071</b>	<b>8,136,627</b>
Coke sold during the year.....	3,065,168	3,389,513	3,684,198	3,691,698
Breeze sold during the year.....	606,000	807,520	1,123,445	1,300,485
Used under retorts.....	2,092,846	2,017,911	2,205,494	2,510,124
Used under boilers and lime-kilns....	368,066	375,724	413,889	431,190
In offices, yards and in pipe-laying..	68,510	83,379	92,050	86,180
On hand December 31 .....	110,615	146,600	21,000	117,000
<b>Total.....</b>	<b>6,161,199</b>	<b>6,822,647</b>	<b>7,540,071</b>	<b>8,136,627</b>
	1891.	1892.	1893.	1894.
Number of meters introduced during the year.....	5,465	4,862	4,628	5,282
Total in use.....	188,755	143,687	148,265	153,547
Services introduced during the year..	10,515	9,287	9,026	9,287
Total in use.....	169,420	178,707	187,733	197,020
Lights added during the year.....	120,284	111,486	104,641	107,172
Total in use. ....	2,449,270	2,560,756	2,665,897	2,772,569
Total number of consumers.....	140,062	144,897	149,492	154,743
Number of public lamps .....	19,947	20,754	21,333	21,716

The following table gives in detail the total output of gas and its distribution during the years 1891-'92-'93-'94.

The average candle power of the gas for the year 1894 was 19.47.

The following table gives the amount of gas consumed in the several Departments of the City, and for which the Bureau of Gas receives neither money nor credit :

Quantity of gas burned free in 1891,	587,398,328 cubic feet.
Quantity of gas burned free in 1892,	594,203,605 cubic feet.
Quantity of gas burned free in 1893,	602,392,714 cubic feet.
Quantity of gas burned free in 1894,	623,313,751 cubic feet.

#### *Bureau of Lighting.*

The report of the Chief of Bureau gives the details of the work of the year as designated by Ordinance of Councils.

The public lamps have been well attended to, lighted and kept in good condition, by the employes of the Bureau.

The Maloney Company's patent gasoline lamps have been continuously lighted and maintained in a thoroughly satisfactory manner, and every condition of the contract with the City has been promptly complied with.

The following comparative statement shows the number of lamps and the expenditures during the years 1891, 1892, 1893 and 1894:

	1891.		1892.		1893.		1894.	
	No.	Cost.	No.	Cost.	No.	Cost.	No.	Cost.
Electric Arc Lights .....	1,719	\$231,741 13	2 667	\$328,055 94	3,534	\$467,221 40	.....	.....
Gasoline Lamps .....	7,911	162,904 55	8,757	180,287 96	9,519	197,880 00	10,599	\$214,114 75
Gas Lamps supplied by the Northern Liberty Gas Company .....	317	7,420 51	264	6,785 76	245	5,772 36	174	4,802 65
Under charge of Bureau of Lighting .....	*19,947	161,260 89	20,754	175,800 45	21,333	195,697 89	21,716	202,292 13
Electric Arc Lights under charge of Board of Direc'rs of City Trusts	50	.....	50	.....	50	.....	50	.....
Gas Lamps under charge of Bureau of Correction .....	197	.....	218	.....	219	.....	236	.....
<b>Total .....</b>	<b>30,141</b>	<b>\$563,327 08</b>	<b>32,710</b>	<b>\$693,930 11</b>	<b>34,900</b>	<b>\$866,521 45</b>	<b>32,775</b>	<b>\$420,709 33</b>

\*Not lighted because of proximity to Electric Lights—1891, 3,298; 1892, 4,200; 1893, 4,358; 1894, 4,882.  
 †An Ordinance of Councils, approved December 30, 1893, transferred the erection and care of electric lights from the Department of Public Works to the Department of Public Safety, and appropriation was made to the latter department for the work.

In addition to the 32,775 lamps under the charge of the Bureau of Lighting, there are 5,336 electric lights under the charge of the Department of Public Safety (Electrical Bureau), making the total number of lights 38,111 ; an increase of 3,211 lights over the number in use in 1893.

#### *Bureau of Street Cleaning.*

The contracts for street cleaning and the collection and disposal of garbage, combustible waste and ashes for the year 1895, have been awarded to the lowest bidders in each of the five districts, the aggregate cost of which was \$755,810, a reduction from the contract price in 1894 of \$99,663.

The repaving of the principal streets of the City does not diminish the area to be cleaned, but the work can be more readily and better done. As the improved street pavements are extended each year, the contract price for this work should be further reduced.

In sections where inferior and irregular street paving has been replaced by new surfaces, with better drainage, the sanitary conditions are materially improved.

The contracts for 1895 require the collection of garbage daily, and its disposal in a sanitary manner within the City's limits.

✦ The several contractors are required to construct plants of ample capacity to fulfil the conditions of the contract.

In three districts crematories are in successful operation ; in one the garbage will be treated to utilize the grease extracted ; and by one company the solid matter is combined with a refuse wax product from distillation of petroleum, in compressed blocks, to be used for fuel.

With the experience of the last two years in combatting imperfect construction and methods of destroying garbage and combustible offal in the City, the Department has

every assurance that under the contracts for the year 1895 this work will be better done than heretofore; and that the equipment which will be provided for this very difficult and important municipal work will not be surpassed by any city in this country.

The interest taken by the Committee on Street Cleaning to secure the passage of ordinances to prevent the scattering of waste matter in transit over the streets, and regulating the collection of garbage, will enable the officials of the Bureau of Street Cleaning to better control these works, which are immediately in their charge.

The following is a statement in detail of the operations of the Bureau of Street Cleaning during the year 1894; also the totals for the years 1891, 1892 and 1893 :

*Total work done during the year 1894.*

DISTRICTS.	CLEANED.					REMOVED.			Number of Complaints of all kinds.	
	Squares.	Inlets.	Crossings.	Market Houses.	Snow from Fire Plugs.	Number of Dead Animals.	NUMBER OF LOADS.			
							Dirt.	Ashes.		Garbage.
First .....	185,871	83,715	13,585	412	2,775	1,543	48,031	114,593	12,161	374
Second .....	250,452	100,961	47,930	1,238	2,159	2,563	67,132	112,282	22,849	1,696
Third .....	95,629	24,902	26,806	.....	1,112	389	33,746	43,364	8,712	376
Fourth.....	159,664	79,524	37,316	.....	1,367	3,004	80,077	159,888	26,504	1,069
Fifth.....	107,393	57,802	31,012	.....	1,199	2,620	30,174	101,516	26,297	929
Broad Street .....	20,833	33,968	2,810	.....	80	.....	12,500	.....	.....	44
Totals, 1894.....	819,892	380,872	159,489	1,650	8,692	10,119	271,660	531,643	96,523	3,888
Totals, 1893.....	663,250	311,565	251,596	1,856	21,041	13,906	319,543	578,859	97,536	4,950
Totals, 1892.....	561,608	352,788	180,578	1,872	3,776	9,956	218,213	488,833	71,929	1,963
Totals, 1891.....	709,375	240,546	36,153	1,840	54	14,795	290,680	578,999	84,065	1,844

The total expenses of the Bureau of Street Cleaning for the year 1894 were \$846,950.81.



*Board of Highway Supervisors.*

The Board held during the year 28 meetings, and approved 122 plans for works and improvements authorized by Councils, and for which permits were issued.

The draughting division connected with the Board, charged with making plans for all underground structures authorized by Ordinance of Councils, prior to the issue of permits for same, should have additional facilities and assistants, to keep of record the various underground works placed in the highways from time to time. The plans should be perfected during the progress of the work, while the information is definite and of memory; and should not be left to be completed from note and memoranda, as it must be at present.

The following is a statement of the number of permits authorized to be issued for electrical conduits during the year 1894:

Brush Electric Light Company.....	2
Edison Electric Light Company.....	1
Northern Electric Light and Power Company.....	1
West End Electric Light Company.....	1
Philadelphia Traction Company.....	103
Electric Traction Company.....	56
People's Traction Company.....	4
Hestonville, Mantua and Fairmount Passenger Railway Co.....	10
Girard Avenue Passenger Railway Company.....	1
<hr/>	
Total.....	179

The following is a summary of the transactions of the Board of Highway Supervisors and of the work of the Draughting Department for the years 1891, 1892, 1893 and 1894:

*Transactions of the Board of Highway Supervisors.*

Permits authorized to be issued.	1891.	1892.	1893.	1894.
For vaults.....	3	4	8	3
For railroad tracks, curves, and turnouts.....	70	106	62	197
For underground pipes.....	4	12	4	8
For electrical conduits.....	15	30	217	179
For erecting bridges.....	1			1
For tunnels.....		2		
For miscellaneous.....		2		1
For awnings.....				188

*Work done by the Draughtsmen of the Board of Highway Supervisors.*

	1891.	1892.	1893.	1894.
Correction of street record plans.....	460	526	634	703
New street record plans prepared.....	53	74	41	148
Blue print plans placed on file.....	62	78	79	122

*Receipts and Expenditures.*

	1891.	1892.	1893.	1894.
Receipts.....	\$3,780 00	\$4,521 00	\$4,786 00	\$3,262 25
Expenditures.....	3,427 90	3,600 00	3,977 77	3,998 14
Profit to the City.....	\$352 10	\$921 00	\$1,088 23	*785 89

\* Excess of expenditures over receipts.

*City Ice Boats.*

During the winter of 1893-94 the City Ice Boats were not in commission.

In the year 1892-93 the boats were in service during portions of December, January and February, and without them the river would have been entirely closed to commerce.

With the first flow of ice in the river, the shipping community show decided interest in the boats, and look to them to keep the channel open for the regular coast line steamers and other vessels entering and leaving the port.

During the summer the hulls of the boats will be painted, and the general repairs necessary will be made to place them in condition for service.

The Superintendent of the City Ice Boats during the past year has inspected the construction of the fire boat, and the repairs to machinery, etc., in police boats under the Department of Public Safety; and the Director has commended the attention and ability of the Superintendent in the service rendered his Department.

The following comparative summary is an abstract of the work done by the City Ice Boats and of the receipts for towage and expense of maintenance during the years 1890-91, 1891-92 and 1892-93. The exceedingly mild weather during December of 1893, and which continued throughout January and February, 1894, rendered it unnecessary to place the boats in commission; hence, there were no receipts for the season of 1893-94. The expense of maintenance for this season is set forth in the following table:

	1890 and 1891.		1891 and 1892.		1892 and 1893.	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
Vessels Outward.....	2	1,050	1	1,050	3	4,686
Vessels Inward.....					10	5,639
Vessels Assisted.....	1	2,000			1	528
Total.....	3	3,050	1	1,050	14	10,848

	1890 and 1891.	1891 and 1892.	1892 and 1893.
Amount received for towage and assistance rendered.....	\$423 64	.....	\$2,241 88
Amount received from the sale of old material.....	66 35	\$9 03	178 60
Total paid City Treasurer .....	\$489 99	\$9 03	\$2,420 07

	1891.	1892.	1893.	1894.
Total amount of warrants drawn.....	\$23,441 90	\$18,849 63	\$83,341 75	\$15,634 60
Deduct cash paid City Treasurer.....	489 99	9 03	2,420 07	.....
Actual current expenditure.....	\$22,951 91	\$18,840 60	\$80,921 68	\$15,634 60

*General.*

With the foregoing review of works done, which are without parallel in importance and extent when compared with that of any previous ten years by the Departments of the City, I feel justified in saying that the appropriations which enabled so many permanent improvements to be made were judicious; and the work done will prove efficient and timely in providing those measures which are essential to keep pace with the continuous growth and development of the City.

The execution of these works required a great amount of detail to be followed continuously by the several Bureaus of the Department, in order to secure the best results to the City and to prevent delays in the progress and completion of work.

I express my acknowledgment of the faithful and earnest labor of the Chiefs of the several Bureaus and their Assistants, who have aided in the successful work of these years.

The Department recommend appropriations to be made for the following works during the year 1895 :

For the construction of a highway and railroad bridge at Grays Ferry ; for the construction jointly with the steam railroad companies of bridges; to abolish grade crossings in order of their necessity, for the safety and convenience of the public ; for the extension of main and branch sewers ; for the widening of Delaware avenue and the construction of bulkhead and piers upon the approved plan to the Port Warden's line ; for a filtering plant at the Belmont Pumping Station ; for special mains for the distribution of gas and water ; and for additions to holders at the Point Breeze and Twenty-fifth Ward Gas Works.

*Director's Office.*

The amount of labor required from the office of the Director of the Department of Public Works has increased each year.

The correspondence and papers filed relating to the business in the Bureaus of the Department have increased one hundred per cent. since 1890.

The general accounts of all contracts in the several Bureaus of the Department are audited in this office ; and I wish to commend the Chief Clerk and his assistants for the careful and satisfactory manner in which the many duties of the office have been performed.

This Department has been unjustly criticised for having large balances of its appropriations retained in the Treasury unexpended at the end of the year.

It is right to explain that the large sums unexpended from appropriations during the fiscal year are occasioned by the magnitude of the work, requiring large amounts to be set aside before contracts can be made. As the time required for the completion of a contract may extend beyond the close of the year, an unexpended balance of the monies not yet due cannot be paid, and must necessarily be carried forward to the next year. This occurs

through no neglect or mismanagement by this Department.

If appropriations for any reason are not available immediately after the first of the year, the award of contract for the commencement of the work is delayed and prevents the completion within the year.

To avoid these conditions the Department has prepared plans and advertised for proposals for the work in advance, and while legislation has been pending, in order to facilitate the earliest commencement and completion of its works during the fiscal year, to reduce to the lowest amount the balances which must necessarily be carried over.

With the many responsibilities that must be imposed upon this office, its correspondence and clerical duties, the official has not time to study details which devolve upon the Chiefs of the Bureaus of the Department. He must assemble and direct joint action in the conduct and progress of all work in the several Bureaus.

I am fully convinced that my opinion expressed in 1891, after an inspection of the Departments of Public Works in other cities, is correct: that there should be appointed with the Chiefs of the several Bureaus of this Department an Assistant, chosen on account of his fitness by education and experience, for the special duties of the Bureau to which he should be appointed.

In this way the City will receive the benefit of the advance that is being made in scientific and technical knowledge. As it is to-day, the Chief of a Bureau is held by the monotony and limit of a single experience.

In connection with improvements to the general service, I must state that the eligibles certified for appointment to places seldom have the knowledge required for the positions for which they are designated. The best results in the execution of public works will not be ob-

tained until a higher standard of proficiency shall be required from those designated for appointment.

The following is a comparative statement of the expenditures of the Director's Office during the years 1891, 1892, 1893 and 1894 :

Item.		1891.	1892.	1893.	1894.
1	Salaries.....	\$14,143 62	\$15,920 00	\$17,020 96	\$17,737 10
2	Horsekeep.....	500 00	500 00	500 00	500 00
3	Printing, stationery, etc.....	2,097 12	2,099 18	2,676 43	2,578 52
Total.....		\$16,740 74	\$18,519 18	\$20,197 39	\$20,815 62

Statement of the Appropriations, Expenditures, etc.,  
of the Department of Public Works for the years 1891,  
1892, 1893 and 1894.

*Appropriations, Transfers, etc.*

1891.....	\$10,457,219 62
1892.....	9,194,095 74
1893.....	12,681,530 89
1894.....	13,141,048 75
<b>Total.....</b>	<b>\$45,473,895 00</b>
Deduct amounts transferred from.....	2,656,724 98
	<b>\$42,817,170 02</b>

EXPENDITURES.

*Salaries, Wages, Material, Supplies, Maintenance, etc.*

1891.....	\$4,890,503 00
1892.....	5,092,062 43
1893.....	6,068,028 50
1894.....	6,643,435 52
	<b>\$22,694,029 45</b>

*Extensions or Permanent Improvements.*

1891.....	\$2,951,306 06
1892.....	2,744,380 78
1893.....	5,394,157 45
1894.....	5,724,838 73
	<b>\$16,814,683 02</b>

Total Expenditures..... \$39,508,712 47

*Amount unexpended at close of year and merged.*

1891 .....	\$401,585 77
1892.....	58,866 90
1893.....	72,298 96
1894.....	44,816 07
	<b>\$584,567 70</b>
Amount unexpended Dec. 31, 1894, and carried forward .....	2,723,889 85
	<b>\$42,817,170 02</b>

RECEIPTS.

1891.....	\$6,494,430 42
1892.....	6,725,012 87
1893.....	7,004,756 51
1894.....	6,316,922 50
	<b>\$26,541,122 30</b>





SUMMARY OF APPROPRIATIONS  
PHILADELPHIA, DU

BUREAUS.	Appropriations for 1894.	Balances available from previous year
Director's Office.....	\$20,720 00	
City Ice Boats.....	34 900 00	
Gas .....	2,922,288 00	\$6,534
Highways.....	1,123,691 00	536,141
Board of Highway Supervisors.....	*	
Lighting.....	421,879 00	
Street Cleaning.....	893,393 75	
Surveys.....	293,010 00	1,111,702
District Surveyors.....	†	
Water.....	1,372,554 00	1,197,638
<b>Total, 1894.....</b>	<b>\$7,082,435 75</b>	<b>\$2,852,016</b>
<b>Total, 1893.....</b>	<b>\$7,778,759 88</b>	<b>\$2,306,415</b>
<b>Total, 1892.....</b>	<b>\$7,451,639 93</b>	<b>\$1,131,865</b>
<b>Total, 1891.....</b>	<b>\$7,071,680 00</b>	<b>\$1,225,390</b>

\* Included in the appropriation

*Appropriation, 1895.*

The following is an abstract from the ordinance making appropriations to this Department for the year 1895, with a statement of the balances available from previous years for work ordered :

Bureaus.	Annual Appropriation for the Year 1895.	Balance Available from Previous Years.	Total.
Director's Office.....	\$21,220 00		\$21,220 00
City Ice Boats.....	34,900 00	\$2,161 00	37,061 00
Gas.....	2,885,782 74	30,747 43	2,916 530 17
Highways.....	907,700 93	424 691 56	1,332,392 49
Lighting.....	445,481 00		445,481 00
Street Cleaning.....	783,911 75		783,911 75
Surveys.....	759,910 00	1,602,810 29	2,362,720 29
Water.....	1,031,804 00	663,479 57	1,695,283 57
Total.....	\$6,870,710 42	\$2,723,889 85	\$9,594,600 27

After three years and nine months of service as Director of the Department of Public Works, for which position I was selected by you, I have the satisfaction of knowing that every official duty devolving upon me has been performed conscientiously, with a full knowledge of my responsibility to the public and my obligation to protect the confidence given to me by you in my appointment; and I desire to express my sincere thanks to you for the assistance and support you have given me in the performance of the duties of the office.

Very respectfully submitted,

JAMES H. WINDRIM,

*Director.*



---

---

ANNUAL REPORT  
OF THE  
BUREAU OF WATER  
FOR THE YEAR 1894.

---

---



OFFICERS  
OF THE  
BUREAU OF WATER.

—♦♦—  
*Chief.*

JOHN L. OGDEN.

*Assistants.*

ALLEN J. FULLER,

WILLIAM WHITBY.

*Draughtsmen.*

John E. Codman.

William Farrell,  
John R. Gorman.

Martin Murphy,

*Chief Clerk*—Job T. Hickman.

*Assistant Clerk*—James G. Dixon.

*Correspondence Clerk*—P. DeHaven.

*Search Clerk*—H. J. Johnson.

*Assistant Search Clerk*—William J. Duffy.

*Clerk*—Thomas Spence.

*Assistant Clerk*—K. McNeal.

*Assistant Clerk*—J. J. Barney.

*Time Clerk*—W. J. Innes.

*Pipe Inspector*—Theodore S. S. Baker.

*Pipe Clerk*—George G. Whitby.

*Messenger*—Haines Lewis.

*Telephone Operators,*

Fannie Shields,

Calvin Craner.

*General Superintendent,*

FRANK L. HAND.

*Clerk to General Superintendent*—John A. Hayes.

*Assistant Clerk to General Superintendent*—John B. Wright.

## Works—General.

*Foreman Carpenter*—Henry Guest.

*Foreman Bricklayer*—Frank A. Mooney.

*Foreman Stonemason*—Michael Farrell.

*Foreman Rigger*—James Forrest.

*Foreman Painter*—Charles Ravenor.

*Foreman Laborer*—William Calhoun.

*General Storekeeper*—S. C. Buchanan.

*Electrician*—Henry P. Morgan.

*Superintendent of Shop*—James H. Dean.

*Clerk to Superintendent of Shop*—Jonathan Bonsall.

## Purveyors.

*First District*, John H. Holmes.

*Clerk*, William J. Mackey.

*General Foreman*, Thomas Preston. *Foreman of Repairs*, W. W. Wellington.  
Office, 1120 Wharton street,

*Second District*, David A. Craig.

*Clerk*, Charles H. Green.

*General Foreman*, Michael Young. *Foreman of Repairs*, Edw. Homan.  
Office, 918 Cherry street.

*Third District*, Charles J. Lowry.

*Clerk*, J. A. Spanagle.

*General Foreman*, Elias Abrams. *Foreman of Repairs*, William Magee.  
Office, Beach and Susquehanna avenue.

*Fourth District*, John Montgomery.

*Clerk*, Arthur B. Cook.

*General Foremen*, George W. Showaker, James Hutchinson.  
*Foreman of Repairs*, John Richards.  
Office, Twenty-sixth and Master streets.

*Fifth District*, Henry Dawson.

*Clerk*, F. J. Cornman, *General Foreman*, Charles Frank.  
Office, Lyceum Building, Roxborough.

*Sixth District*, George H. Laut.

*Clerk*, William D. Kinsler. *General Foreman*, Samuel Loeb  
Office, Town Hall, Germantown.



ANNUAL REPORT  
OF THE  
Bureau of Water

For the year 1894.



*Philadelphia, January, 1895.*

MR. JAMES H. WINDRIM,

Director of the Department of Public Works.

SIR:—The following report of the Bureau of Water for the year 1894 is herewith respectfully submitted :

*Receipts.*

The Receiver of Taxes has furnished the following information in regard to the receipts from water rents and other sources properly connected with the work of this Bureau :

*Total Receipts Bureau of Water for the year 1894.*

MONTHS.	Searches.	Delinquent Rents.	Delinquent Penalties.	Rents 1894.	Penalties 1894.	Fractional Rents.	Water Pipe.	Bureau of Water Department of Public Works.	TOTALS.
January.....	\$435 75	\$7,113 25	\$964 82	.....	.....	\$28,069 49	\$10,821 33	\$466 19	\$47,890 83
February.....	373 50	1,096 00	158 41	\$229,045 05	.....	8,275 46	6,870 39	237 00	245,553 81
March.....	505 25	1,222 50	181 44	257,590 46	.....	13,451 46	7,656 78	2,307 23	282,915 12
April.....	485 75	772 15	113 12	405,974 37	.....	27,976 67	9,965 19	324 94	445,612 19
May.....	528 25	1,564 00	231 92	1,057,636 71	.....	19,316 99	8,626 21	529 93	1,084,428 01
June.....	538 50	3,622 50	500 54	30,710 78	\$2,443 38	10,986 96	6,568 04	277 51	104,748 21
July.....	433 50	3,411 50	509 68	27,998 02	1,393 32	23,805 03	14,323 61	305 77	71,880 43
August.....	362 25	2,905 00	435 79	77,362 95	3,639 75	10,761 99	22,998 81	689 97	119,356 51
September.....	409 75	418 50	62 79	26,896 20	3,639 22	6,407 94	19,140 36	326 34	57,561 10
October.....	584 50	614 50	92 18	83,632 65	12,485 56	23,024 22	16,143 52	455 57	136,982 70
November.....	474 75	287 00	43 06	30,166 40	4,494 88	15,538 24	18,425 96	653 80	70,084 09
December.....	495 00	2,076 50	311 48	23,145 00	3,437 88	4,021 37	11,123 11	2,343 21	46,953 55
<b>Totals.....</b>	<b>\$5,571 75</b>	<b>\$25,103 40</b>	<b>\$3,605 23</b>	<b>\$2,360,158 59</b>	<b>\$31,993 99</b>	<b>\$190,453 82</b>	<b>\$152,163 31</b>	<b>\$8,917 46</b>	<b>\$2,717,967 55</b>
Receipts through the office of the City Solicitor, 1894.....									\$41,663 04
Total Receipts of the Bureau of Water, 1894.....									2,759,630 59
Receipts as previously estimated.....									\$2,509,000 00

58

*Comparative Statement of Fractional Rents.*

YEAR.	Rents.	Meter Rents.	Ferrules.	Repairs.	TOTALS.
1894	\$48,370 14	\$99,015 68	\$39,783 00	\$3,285 00	\$190,453 82
1893	57,868 54	140,371 44	33,530 00	4,855 50	237,125 48
<b>Increase.....</b>	.....	.....	<b>6,253 00</b>	.....	.....
<b>Decrease.....</b>	<b>\$9,498 40</b>	<b>41,355 77</b>	.....	<b>1,570 50</b>	<b>\$46,671 66</b>

*Fractional Rents, 1894.*

<b>MONTHS.</b>	<b>Rents.</b>	<b>Ferrules.</b>	<b>Repairs.</b>	<b>Meters.</b>	<b>Totals.</b>
January .....	\$4,145 25	\$561 00	\$156 00	\$23,227 24	\$28,089 49
February .....	3,609 98	431 00	84 00	4,168 48	8,273 46
March .....	6,369 67	6,449 00	197 00	435 79	13,451 46
April.....	7,066 92	6,058 00	258 00	14,593 75	27,976 67
May .....	6,882 23	5,125 00	306 00	7,003 76	19,316 99
June .....	4,852 73	4,019 00	266 00	949 23	10,086 96
July .....	2,585 92	3,661 00	275 00	16,983 11	23,505 08
August .....	2,649 25	3,683 00	310 00	4,119 74	10,761 99
September .....	2,536 21	2,918 00	345 00	618 73	6,407 94
October .....	2,881 23	3,336 00	369 00	16,437 99	23,024 22
November .....	1,838 10	2,902 00	445 00	10,353 14	15,538 24
December .....	2,952 65	645 00	294 00	129 72	4,021 87
<b>Total.....</b>	<b>\$48,370 14</b>	<b>\$39,783 00</b>	<b>\$3,285 00</b>	<b>\$99,015 68</b>	<b>\$190,453 82</b>

The collections for the four years now ending have amounted to \$10,569,124.58.

The expenditures for the same period have been \$8,408,998.20, leaving a profit of \$2,160,126.38.

The increase of 1894 over 1890 has been \$378,592.89, and over 1893 the sum is \$85,355.35.

The unpaid claims sent to the Law Department for collection amount to \$79,062.40.

*Appropriations.*

For current expenses.....	\$1,679,727 04
For extensions.....	702,961 00
Available balance from 1893.....	1,196,617 48
	<hr/>
Total.....	\$3,579,305 52

*Expenditures.*

For current expenses.....	\$1,677,081 03
For extensions.....	1,235,775 01
	<hr/>
Total.....	\$2,912,856 04
Amount merging.....	2,969 91
Amount not merging.....	663,479 57
Amount due on unpaid bills, ninety-seven (97) per cent. of which is for coal.....	65,000 00

*Revenue for Ten Years—1885 to 1894, inclusive.*

YEARS.	Delinquent Water Rents.	Delinquent Penalties.	Water Rents.	Penalties.	Fractional Rents.	Water Pipe.	Searches.	Chief's Office.	City Solicitor's Office.	TOTALS.
1885.....	\$11,267 25	\$1,561 03	\$1,567,031 94	\$22,298 78	\$101,643 88	\$92,182 18	\$1,988 75	\$9,197 00	\$18,993 28	\$1,826,164 04
1886.....	15,049 50	1,964 42	1,637,296 69	21,377 89	97,219 62	122,748 91	2,960 00	10,121 36	24,594 95	1,933,328 84
1887.....	19,040 87	2,705 79	1,721,488 83	24,453 03	115,939 21	106,602 49	3 412 75	7,287 61	29,504 04	2,030,434 61
1888.....	13,995 04	1,948 54	1,793,432 38	23,584 86	113,550 16	123,667 85	4,158 25	7,742 45	22,846 97	2,104,926 50
1889.....	23,407 23	3,332 78	1,848,542 49	24,247 95	143,394 73	149,611 63	5,056 25	11,363 70	33,043 09	2,241,599 85
1890.....	25,472 39	3,622 69	1,958,551 95	26,270 94	171,901 15	141,884 27	5,235 75	9,730 83	38,367 73	2,381,037 70
1891.....	25,183 85	3,495 00	2,057,417 39	29,672 21	200,863 36	138,180 98	5,046 75	6,503 70	34,394 49	2,500,762 73
1892.....	15,422 75	2,092 71	2,147,447 98	27,136 90	214,678 24	152,916 45	5,718 50	10,274 24	58,768 25	2,634,456 02
1893.....	13,745 58	1,874 79	2,220,083 24	30,981 84	237,125 48	114,531 78	5,830 25	5,836 84	44,265 44	2,674,275 24
1894.....	25,103 40	3,605 23	2,300,158 59	31,993 99	190,453 82	152,163 31	5,571 75	8,917 46	41,663 04	2,759,630 59
Totals.....	\$187,687 86	\$26,202 98	\$19,251,451 48	\$262,018 39	\$1,586,774 65	\$1,294,454 84	\$44,979 00	\$86,975 19	\$346,411 23	\$23,087,015 62

*Comparative Statement.*

1894....	\$25,103 40	\$3,605 23	\$2,300,158 59	\$31,993 99	\$190,453 82	\$152,163 31	\$5,571 75	\$8,917 46	\$41,663 04	\$2,759,630 59
1893....	13,745 58	1,874 79	2,220,083 24	30,981 84	237,125 48	114 531 78	5,830 25	5,836 84	44,265 44	2,674,275 24
Increase.....	\$11,357 82	\$1,730 44	\$80,075 35	\$1,012 15	.....	\$37,631 53	.....	\$3,080 62	.....	\$85,355 35
Decrease.....	.....	.....	.....	.....	\$46,671 66	.....	\$258 50	.....	\$2,602 40	.....

*Appropriations and Expenditures.*

Appropriation December 30, 1893.	Amount appropri'd.	Amount expended.	Amount merging.	Amount not merging
<b>Item 1. Salaries:</b>				
Office, Chief of Bureau.....	\$114,304 00			
Fairmount Pumping Station.....	14,310 00			
Spring Garden Pumping Station.....	69,500 00			
Belmont Pumping Station .....	20,350 00			
Roxborough Pumping Station.....	18,620 00			
Mt. Airy Pumping Station.....	3,070 00			
Chest't Hill Pumping Station.....	1,500 00			
Frankford Pumping Station.....	15,900 00			
	<u>\$257,554 00</u>			
Transferred from.....	5,000 00	\$252,554 00	\$252,485 32	\$68 68
<b>Item 2. General supplies, including fuel, oil and small stores.....</b>	<b>\$150,000 00</b>			
Transferred to.....	85,000 00	235,000 00	233,242 50	1,757 50
<b>Item 3. Repairs to machinery, including conveyance of workmen incident thereto.....</b>	<b>\$0,000 00</b>			
Transferred to.....	7,173 04	67,173 04	67,155 99	17 05
<b>Item 4. Maintenance and repairs to buildings, grounds and reservoirs .....</b>	<b>75,000 00</b>			
Transferred from.....	3,000 00			
	<u>\$72,000 00</u>			
Transferred to.....	30,000 00	102,000 00	101,995 99	4 01
<b>Item 5. Repairs and improvement to the distribution, including the purchase of material in connection therewith and expenses incident thereto.....</b>	<b>\$100,000 00</b>			
Transferred to.....	67,500 00	\$167,500 00	\$167,482 19	17 81
<b>Item 6. Supplies and labor at City shop.....</b>	<b>\$75,000 00</b>			
Transferred to.....	16,000 00	91,000 00	90,292 53	707 47
<b>Item 7. General, incidental and contingent expenses, including \$1200 for keep of horse for Chief of Bureau, General Superintendent and Assistant. \$15,000 00</b>				
Transferred to.....	5,000 00	20,000 00	19,983 70	16 30
<b>Item 8. For the purchase of material and cost of labor in connection with the laying of water pipe and expenses incident thereto.....</b>	<b>\$225,000 00</b>			
Transferred to.....	129,500 00	354,500 00	354,449 40	50 60

*Appropriations and Expenditures—Continued.*

Appropriation, December 30, 1893.	Amount appropriat'd.	Amount expended.	Amount merging.	Amount not merg'g.
Item 9. Service pipe.....	40,000 00	40,000 00		
Item 10. Extensions, (mains for Queen Lane)..... \$75,000 00 Transferred from..... 25,000 00	350,000 00	349,993 41	6 59	
Item 9a. Boilers for Spring Garden Station, balance January 1, 1894.....	14,886 66	14,886 66		
Item 9b. Boiler House, Spring Gar- den Station, balance January 1, 1894.....	4,557 00	4,557 00		
Item 9d. High Service, Chestnut Hill, balance January 1, 1894.....	40,239 20	40,239 20		
Item 9l. Supply Main in American street, balance January 1, 1894..	174 60	168 85	5 75	
Item 9m. Supply Main in Kensing- ton avenue, balance January 1, 1894..... \$2,016 42 Transferred from..... 1,020 53	995 89	995 89		
Item 9o. High Service, West Phila- delphia, balance January 1, 1894	14,580 19	14,579 96	23	
Item 10a. Extensions, balance Jan- uary 1, 1894.....	105,096 44	79,405 94		25,690 50
Item 11. Construction of reservoir in the Twenty-eighth Ward, balance January 1, 1894.....	304,451 60	204,582 60		22,862 77
Item 13. Extensions at Spring Gar- den Station, balance January 1, 1894.....	205,511 77	116,297 37		89,214 40
Item 13. Extensions at Frankford Station, balance January 1, 1894	49,100 67	49,100 67		
Item 14. New Pumping Station for Queen Lane reservoir, balance January 1, 1894.....	152,430 00	84,430 00		68,000 00
Item 15. Boilers for Frankford, and engine house, George's Hill, balance January 1, 1894.....	67,636 00	67,636 00		
Item 16. Pumping Engine for Queen Lane Station, balance January 1, 1894.....	75,787 00	37,905 60		37,881 40
Item 10½. Engines and other work at Queen Lane Pumping Sta- tion, appropriation February 20, 1894... \$392,961 00 Transferred from..... 50,000 00	342,961 00	82,569 20	317 92	260,073 88
Item 10½ a. Extensions, appropria- tion, April 4, 1894.....	860,000 00	800,112 38		59,887 62

*Pumpage.*

The total number of gallons pumped was as follows :

Fairmount Station.....	10,632,204,689
Spring Garden Station.....	44,002,084,609
Belmont Station.....	7,174,981,234
Roxborough Station.....	5,305,428,807
Chestnut Hill Station.....	43,506,900
Frankford Station.....	4,279,136,549
<b>Total.....</b>	<b>71,437,342,788</b>

High service or supplementary lift :

Roxborough.....	9,890,450
Mount Airy.....	626,491,000
<b>Total.....</b>	<b>636,381,450</b>

**Grand Total..... 72,073,724,238**

Of this amount 94 per cent. was taken from the Schuylkill river, and the balance from the Delaware river.

*Total Gallons Pumped during 1894.*

Month.	Water Power.	Steam Power.	Totals.	Average gallons per day.
January.....	953,006,031	4,216,242,323	5,169,248,354	166,749,946
February.....	989,044,860	3,856,379,264	4,845,424,125	173,050,861
March.....	1,121,305,675	4,539,824,924	5,661,130,599	182,613,890
April.....	1,065,107,913	4,409,795,855	5,474,903,768	182,496,792
May.....	792,137,097	5,421,792,706	6,213,929,803	200,449,348
June.....	983,801,790	5,419,539,714	6,403,341,504	213,444,716
July.....	602,753,078	5,953,999,624	6,556,752,702	211,508,182
August.....	232,022,001	5,850,833,941	6,082,855,942	196,221,159
September.....	612,557,345	5,722,508,732	6,335,066,077	211,168,868
October.....	983,555,970	5,754,028,593	6,737,584,563	217,341,437
November.....	1,153,436,269	5,217,987,150	6,371,422,419	212,380,747
December.....	1,143,477,660	5,078,586,722	6,222,064,382	200,711,754
<b>Total.....</b>	<b>10,632,204,689</b>	<b>61,441,519,549</b>	<b>72,073,724,238</b>	<b>197,344,806</b>



The following table shows the gallons pumped, the cost per million gallons, and the daily consumption per capita for the ten years from 1885 to 1894, inclusive :

*Pumpage Table for the Years 1885 to 1894, inclusive.*

Year.	No. of gallons pumped to Reservoir.	No. of gallons pumped 100 feet high.	Cost per million gallons pump'd 100 feet high.	Gallons per capita per day.	Estimated population.
1885	25,165,020,072	39,908,901,886	\$4 70	72	953,000
1886	28,653,966,569	46,255,361,203	4 13	80	975,000
1887	32,426,779,765	51,289,948,331	3 99	89	995,000
1888	37,068,763,428	59,483,831,199	4 49	100	1,020,000
1889	42,518,919,781	69,084,118,484	3 87	110	1,050,000
1890	51,698,508,699	84,501,451,686	3 05	131	*1,046,000
1891	55,665,648,000	93,490,106,725	2 99	140	1,071,672
1892	59,787,584,178	102,448,373,631	2 68	143	†1,142,650
1893	65,352,736,978	110,590,708,479	3 22	150	1,190,493
1894	72,078,724,238	121,199,588,387	3 48	159	1,238,112

\* United States Census.

† City Census.

The following table shows the quantity of water pumped at Fairmount from 1883 to 1894, inclusive :

Year.	Gallons per 100 feet.	Repairs.	Cost per million gallons.
1883.....	9,757,096,729	\$2,992 62	\$1 45
1884.....	8,575,107,594	2,795 33	1 35
1885.....	6,847,346,991	7,893 91	2 33
1886.....	7,282,553,795	9,895 87	2 23
1887.....	10,105,736,663	5,582 88	1 18
1888.....	11,241,113,108	6,958 00	1 44
1889.....	11,413,886,469	4,800 44	1 24
1890.....	12,352,987,139	4,900 00	91
1891.....	11,380,824,730	5,900 00	1 14
1892.....	10,401,951,806	4,750 85	1 14
1893.....	9,911,609,325	5,675 46	1 44
1894.....	10,632,204,689	4,013 23	1 35

*Fairmount Pumping Station, 1894.*

Wheels.	Total pumpage.	Hours pumped.	Hours shut down. High water.	Hours shut down. Low water.	Hours shut down. Muddy water.	Hours shut down. Full basin.	Hours shut down. Repairs.
1	604,467,440	6,193	122	2,032	.....	.....	413
3	2,070,481,379	7,837	142	757	.....	.....	24
4	1,989,664,277	7,451	149	1,090	3	25	42
5	1,241,084,924	5,783	9	2,127	.....	46	795
7	1,494,644,225	6,077	128	2,407	.....	12	136
8	1,714,959,015	6,302	113	1,800	.....	9	36
9	1,516,952,929	6,054	141	1,962	54	23	526
Totals	\$10,632,204,689	46,197	804	12,175	57	115	1,972

The increase in the quantity of water has amounted to 9.3 per cent., and represents an eighteen million gallon engine running continuously.

The greatest quantity of water pumped during one day was 234,894,075 gallons.

The total capacity of the machinery is now 311,040,000, or deducting Fairmount, which cannot be depended upon during low water, 277,750,000 gallons.

At Fairmount, 10,632,204,689 gallons were pumped, an increase of 720,595,364 gallons. If this water had been raised with steam engines it would have cost \$29,000 more than it did by water power.

The number of hours when the wheels were stopped on account of low water on the dam was 12,175, or seventy-two (72) days for each turbine, so there was a sufficient height of water in the river to run the wheels more than nine months during 1894.

The cost of pumping has been increased, principally for the reason that we were not able to obtain buckwheat

# A 1894.

JULY	DECEMBER	
------	----------	--

ILLINOIS.

9  
e  
w  
o.  
d  
a:  
b:  
n  
o:  
se  
su  
m:  
fo

coal of a suitable quality and in the required quantity, and were obliged to use pea coal at a cost of about 70 cents per ton more than for buckwheat.

### *Consumption.*

The average daily consumption per capita was 159 gallons, an increase of nine gallons.

The quantity of water pumped during the three summer months was 19,042,950,148 gallons, a daily average of 207,000,000 gallons. During the same period there were 618,289,394 gallons, a daily average of 6,700,000 gallons, drawn from the reservoirs, making the daily average consumption for this period 213,700,000, or 172 gallons per capita.

So much has been said about the cause of this in previous reports, it seems superfluous to repeat that a large per centage is due to waste.

Some experiments have been made for the purpose of determining the consumption per capita in different districts. West Philadelphia is supplied from the Belmont pumping station and the George's Hill reservoir. The engines are of the Worthington type, constructed to give a daily capacity of eighteen millions of gallons. The quantity pumped is reached by keeping a correct register of the number of strokes of each engine, and deducting four per cent. from the theoretical capacity.

The daily average quantity pumped was 19,648,370, which was five (5) per cent. greater than the estimated capacity of the engines. It was necessary to do this in order to keep up the supply. Estimating the population at 120,000 the daily consumption per capita was 164 gallons in this district.

That part of the City below South street between the Delaware and Schuylkill rivers, with an estimated population of 265,100, used but 80 gallons per capita, daily.

In West Philadelphia more water is being used in the winter than in the summer, because with the engines running to their full capacity the water in the reservoir is steadily decreasing.

The following shows the principal appliances for the use of water in this City:

Dwellings with water.....	198,609
Dwellings without water, principally court houses, supplied by a common hydrant.....	12,742
Water closets.....	135,513
Baths.....	134,267
Wash paves.....	73,777
Basins and sinks.....	71,632
Urinals.....	4,491

#### *Extensions.*

At the Spring Garden Station two engines of thirty millions of gallons daily capacity each have been completed. One was started on December 1st; the other is finished, but not yet in working order on account of an accident.

The building in which these engines have been erected was completed in December. Owing to the failure of the contractor to continue the work thereon, it was finished by his sureties.

The new boilers built by the Harlan & Hollingsworth Company were completed and fired on March 29th.

The inlet chamber at the river and the suction mains for the new engines were constructed and laid by employes of this Bureau.

At the Belmont reservoir the high service station has been completed with the exception of the engine and standpipe. The building was finished on October 31st, and the boilers, with the exception of the covering, on November 1st.

The foundation for the standpipe has been ready for some months, and the contractors for the latter are now

engaged in its erection. It is to be completed by February 28, 1895.

The engine (an old one) is being fitted up, and will be ready for service by March 1, 1895.

At the Roxborough reservoir the high service station has been completed with the exception of the standpipe. The building was finished August 1st; the boilers on December 1st, and the engine, which was formerly used at the Spring Garden station, has been ready for service since October 1st. The standpipe will be completed early in 1895.

At the Frankford station the new engine house was completed on September 1st. The boilers were fired on November 1st. The engine is not yet in regular service on account of a broken piston, defective steel castings, etc. It has not yet been tested nor accepted by the City.

The contract for the new pumping station for the Queen Lane reservoir was awarded to I. H. Hathaway & Co., Philadelphia, for the sum of \$150,000. The date of their contract is June 7, 1894. The work was begun on July 14th.

The contract for twenty-four (24) boilers was awarded to Messrs. Ritner & Conley, of Pittsburgh, for the sum of \$84,700. Twelve (12) of the boilers have been delivered and the remainder are well under way.

Four (4) engines of a capacity of twenty (20) millions of gallons each are being constructed by the Southwark Foundry and Machine Company at a cost of \$299,148.

The Queen Lane reservoir was completed by the contractors on December 13th. Water was pumped into it to a depth of ten (10) feet, when a slight loss of water indicated a leak in the bottom. The water was gradually lowered at the request of the contractors in order to enable them to locate and correct the defect.

*Rainfall.*

The rainfall in the eastern counties of Pennsylvania was three and one-half ( $3\frac{1}{2}$ ) inches more than the previous year, and about one tenth ( $\frac{1}{10}$ ) of an inch more than the average of the preceding eleven years.

The automatic rain-gauge belonging to this Bureau and located at Thirty-second and Spruce streets showed a total precipitation of 42.23 inches.

*Flow of the Schuylkill River.*

The total flow for the year has been computed to be 638,858,680,237 gallons, or about 37 per cent. of the rainfall. About one fourth of this went over the dam at Fairmount between May 20th and May 31st. The average daily flow of the river was 1,750,284,055 gallons. This, in view of the above statement, means nothing so far as the available flow is concerned.

The minimum flow occurred during August. During the year there were 241 days when no water passed over the dam. It was nearly all utilized by the turbine wheels and for the water supply of the City.

There is some leakage through the dam, due, I presume, to the decay of the sheathing on the back of the new dam. New timbers should be put on during next summer.

There is also considerable leakage through the canal and locks, owing to their dilapidated condition.

The pumps now drawing water from this river are about equal in capacity to the minimum flow, so that—except for West Philadelphia—it will not be advisable to increase their number unless more large storage reservoirs be constructed.

*Quality of the Water.*

Nothing has been done as yet to improve the appearance and quality of the water by some process of filtra-



tion. The subject is occupying considerable attention in several parts of the City, and a number of meetings have been held for the purpose of advocating the adoption of some suitable plan for removing the mud and other objectionable material which follow all rainstorms.

*Distribution.*

The following shows the number of feet of the several diameters of water pipe laid during 1894 :

48-inch.....	41,218 feet.
36-inch.....	255 feet.
30-inch.....	1,680 feet.
20-inch.....	3,021 feet.
18-inch.....	180 feet.
16-inch.....	5,086 feet.
12-inch.....	25,679 feet.
10-inch.....	9,988 feet.
8-inch.....	17,290 feet.
6-inch.....	165,649 feet.
4-inch.....	13,443 feet.
3-inch.....	80 feet.
<b>Total.....</b>	<b>283,569 feet.</b>

Amounting to 34,690,341 pounds.

The number of feet of pipe of all sizes relaid was 173,376, with a total weight of 5,778,809 pounds.

The old pipes left in the ground for which new ones have been substituted are as follows :

3-inch.....	5,541 feet.
4-inch.....	22,861 feet.
6-inch.....	4,761 feet.
12-inch.....	233 feet.
16-inch.....	36 feet.
<b>Total.....</b>	<b>33,432 feet.</b>

In connection with the paving and repaving of streets by electric railway companies a large quantity of work has been done.

Ninety-nine thousand seven hundred and forty-two (99,742) feet of new pipes have been laid. Nine hundred

and sixty-four (964) new fire hydrants have been set, about one-third thereof in place of old style removed.

Thirteen hundred and eighty-three (1,383) new stop valves were put in or renewed, and five thousand nine hundred and twenty-nine (5,929) lead service pipes laid to the inside of the curbs.

All of this has been done in order that occasions for breaking the new pavements will seldom occur.

A large number of breaks in the pipes have happened during the year, none of which, however, could be traced to electrolysis, although there are now one hundred and eighty-one (181) miles of trolley lines in operation in this city.

The number of feet of water pipes laid by property owners in public streets under the Ordinance of June 19, 1890, was 8,608 feet of six-inch pipe.

#### *Pipe Inspected.*

Cast-iron pipes and special castings have been inspected, rejected, and accepted, as follows :

Sizes.	Ordered.	Inspected.	Rejected.	Accepted.	Cancelled.
3-inch pipe.....	300	334	34	300	
4-inch pipe.....	4,000	4,080	80	4,000	
6-inch pipe .....	17,406	20,496	3,090	17,406	
8-inch pipe.....	4,000	4,553	553	4,000	
10-inch pipe.....	2,000	2,211	211	2,000	
12-inch pipe.....	3,000	3,288	288	3,000	
16-inch pipe.....	500	590	90	500	
20-inch pipe.....	62	92	30	62	
20-inch pipe.....	205	253	48	205	
36-inch pipe.....	100	121	21	100	
48-inch pipe.....	3,097	3,640	483	3,097	} Howard & Harrison.
Small specials.....	12,189	14,285	2,096	12,189	
Large specials.....	415	471	52	415	
Private pipe.....					
4-inch pipe.....	237	369	132	237	
6-inch pipe.....	1,798	2,207	404	1,798	
<b>Total.....</b>	<b>55,309</b>	<b>56,990</b>	<b>7,612</b>	<b>55,309</b>	

*Meters.*

Meters have been placed on a number of saloons in order to determine the quantity of water being used. Twenty of them, located in different parts of the City, pay a total annual water rent of \$816, while the meters show that at the rate of four cents per one thousand gallons they should pay \$3,219.54. They use 80,488,500 gallons

Two dwelling houses, one at 837 north Broad street and the other at Locust avenue and Chew street, Germantown, pay the City \$48.50 annually by schedule rates, while meters show that they use but \$7.24 worth of water.

*Construction and Repair Shop.*

This shop is used for the manufacture of fire plugs, stop valves, and all other articles required in pipe laying, and for repairs to machinery. Seventeen hundred and fourteen fire plugs were made, and the following stop valves:

4-inch.....	37
6-inch.....	2,456
8-inch.....	131
10-inch.....	161
12-inch.....	149
16-inch.....	16
20-inch.....	6
30-inch.....	10
48-inch.....	22

The value of repairs to machinery at shop prices was \$8,194.67.

Respectfully,

JOHN L. OGDEN,  
*Chief of Bureau.*

## APPENDIX A.

*Receipts through the Office of Bureau of Water, Department  
of Public Works, for the year 1894.*

January	2.....	John M. Mack.....	Search for stop.....	\$1 75	
	8.....	Robert Higgins.....	Repairing pipe.....	8 55	
	8.....	David McMahon.....	Replacing 6-inch main.....	40 31	
	10.....	John & James Dobson.....	Fire connection.....	99 62	
	11.....	Philadelphia Traction Co.....	Shifting 16-inch main.....	109 48	
	12.....	Peoples' Traction Co.....	Shifting 16-inch stop.....	49 20	
	12.....	Peoples' Traction Co.....	Changing stop.....	20 68	
	15.....	W. Clements.....	Drawi'g and redriv'g ferrules	9 27	
	22.....	Philadelphia Traction Co.....	Changing location of stop....	77 95	
	26.....	Philadelphia Traction Co.....	Removing stop-box.....	7 63	
	26.....	Cramps S. & E. B. Co.....	Changing location fire hydr't	41 75	
	February	6.....	John T. Pugh.....	Redriving ferrule.....	2 13
		6.....	John T. Pugh.....	Repairing main.....	6 06
		8.....	David McMahon.....	Redriving ferrule.....	8 50
9.....		W. Wharton, Jr., & Co.....	Changing location of stop....	27 28	
9.....		W. Wharton, Jr., & Co.....	Changing location of stop....	42 54	
9.....		W. Wharton, Jr., & Co.....	Changing location of stop....	20 66	
12.....		Franklin Sugar Refinery.....	Repairing pipe.....	55 48	
12.....		Franklin Sugar Refinery.....	Cutting out and plugging pipe	4 65	
12.....		Franklin Sugar Refinery.....	Removing fire hydrant.....	6 28	
12.....		Franklin Sugar Refinery.....	Cutting out fire hydrant.....	5 76	
23.....		E. P. Young.....	Supply connection.....	62 66	
March		5.....	H. A. Hitner & Son.....	Old iron.....	2,000 00
	19.....	Hoopes & Townsend.....	Fire and supply connection...	49 34	
	24.....	Philadelphia Traction Co.....	Renewing stop.....	17 21	
	24.....	Philadelphia Traction Co.....	Renewing stop.....	36 42	
	24.....	Philadelphia Traction Co.....	Shifting stop.....	26 00	
	24.....	David McMahon.....	Cutting out 4-inch pipe.....	64 76	
	24.....	David McMahon.....	Shutting off for repairs.....	8 75	
	26.....	David McMahon.....	Shutting off and redriv. fer...	8 75	

*Receipts through the Office of Bureau of Water, Department  
of Public Works, for the year 1894—Continued.*

March	26....	V. Skipton.....	Oil barrels.....	\$22 50
	29....	John Hebener.....	Six mos.' rent of Farm No. 3..	78 50
April	5....	Philadelphia Traction Co.....	Changing stop.....	81 53
	10....	David McMahon.....	Shutting off and redriv. fer...	3 75
	10....	David McMahon.....	Shutting off and redriv. fer...	3 00
	10....	David McMahon.....	Shutting off and redriv. fer..	3 00
	12....	Quaker City Croquet Club....	Rent of ground.....	10 00
	13....	David McMahon.....	Shutting off and redriv. fer...	3 75
	13....	Sullivan Brothers.....	Removing pipe.....	6 88
	18....	Pennsylvania Railroad Co.....	Repairing break.....	12 23
May	24....	Joseph Leidy.....	Stone.....	50 80
	26....	H. M. Harris.....	Six mos.' rent of Farm No. 1..	100 00
	26....	John W. Harris.....	Six mos.' rent of Farm No. 2..	100 00
	3....	David McMahon.....	Shutting off and redriv. fer...	3 00
	3....	David McMahon.....	Shutting off and redriv. fer...	3 00
	3....	David McMahon.....	Repairing 6-inch main.....	10 69
	5....	Philadelphia Traction Co.....	Repairing 6-inch stop.....	24 96
	7....	R. H. Forderer.....	Supply connection.....	32 26
	7....	J. & B. McHugh.....	Redriving ferrules.....	26 25
	8....	Bureau of Water.....	Overdrawn warrant No. 1,742.	4 35
	15....	Howard R. Slocum.....	For stone.....	5 00
	15....	John Swager.....	For stone.....	3 00
June	18....	Pennsylvania Railroad Co.....	Repairing stop.....	2 20
	22....	Bergner & Engel B'w'g Co. ...	Supply connection.....	15 22
	23....	Henry Snyder.....	Six months' rent of saloon....	400 00
	18....	George Good & Co.....	Cutting out 6-inch main.....	61 56
	22....	Howell & Bro.....	Supply connection.....	57 73
	23....	Philadelphia Traction Co.....	Changing location of stop....	6 28
	23....	Philadelphia Traction Co.....	Supply connection.....	46 10
	25....	V. S. Kipton.....	Oil barrels.....	10 00
July	25....	Schleicher, Schumm & Co.....	Fire connection.....	25 25
	26....	W. Spink.....	Fire connection.....	46 91
	28....	Franklin Sugar Refinery.....	Fire connection.....	18 55
	28....	Franklin Sugar Refinery.....	Cutting off fire connection...	5 13
	16....	David McMahon.....	Shut'g off and red'v'g ferrule.	9 75

*Receipts through the Office of Bureau of Water, Department  
of Public Works, for the year 1894—Continued.*

July	16.....	David McMahon.....	Repairing main.....	\$9 49	
	16.....	John Pugh.....	Removing pipe.....	11 60	
	18.....	Philadelphia Traction Co.....	Shifting stop.....	89 38	
	18.....	Philadelphia Traction Co.....	Shifting stop.....	28 96	
	18.....	Philadelphia Traction Co.....	Shifting stop.....	36 33	
	18.....	Philadelphia Traction Co.....	Shifting stop.....	57 88	
	23.....	James D. Thompson.....	Supply connection.....	35 68	
	25.....	Boston and Phila. S. S. Co.....	Screw for stop.....	2 70	
	28.....	Continental New Van Stable..	Service pipe.....	25 00	
	28.....	Pepper & Register.....	Repairing service pipe.....	5 00	
August	1.....	C. D. Land.....	Redriving ferrule.....	3 00	
	2.....	Franklin Sugar Refinery.....	Laying pipe.....	17 75	
	2.....	Franklin Sugar Refinery.....	Laying pipe.....	21 25	
	4.....	Murphy & Donahue.....	Redriving ferrule.....	13 90	
	7.....	William Douglas.....	For stone.....	100 00	
	15.....	Charles McCall.....	Material furnished.....	123 02	
	15.....	David McMahon.....	Shut'g off and red'v'g ferrule.	3 75	
	15.....	David McMahon.....	Shut'g off and red'v'g ferrule.	3 60	
	15.....	David McMahon.....	Shut'g off and red'v'g ferrule.	3 00	
	15.....	David McMahon.....	Shut'g off and red'v'g ferrule.	3 00	
	15.....	David McMahon.....	Shutting off & redriv. ferrule.	3 00	
	17.....	Balt. & Ohio R. R. Co.....	Fire hydrant.....	40 97	
	17.....	Philadelphia Traction Co.....	Moving stop.....	27 53	
	17.....	Philadelphia Traction Co.....	Moving stop.....	69 18	
	17.....	Philadelphia Traction Co.....	Moving stop.....	12 44	
	17.....	Philadelphia Traction Co.....	Moving stop.....	25 23	
	17.....	Philadelphia Traction Co.....	Moving stop.....	78 12	
	17.....	Philadelphia Traction Co.....	Moving stop.....	26 70	
	17.....	Philadelphia Traction Co.....	Moving stop.....	26 40	
	17.....	Philadelphia Traction Co.....	Moving stop.....	27 60	
	20.....	Franklin Sugar Refinery.....	Laying 6-inch pipe.....	12 34	
	21.....	Sparks and Evans.....	Relaying pipe.....	37 62	
	23.....	W. H. Achuff.....	Repairing main.....	11 17	
	September	3.....	Mercantile Club.....	Supply connection.....	50 21
		14.....	Philadelphia Traction Co.....	Moving stop.....	24 72

*Receipts through the Office of Bureau of Water, Department  
of Public Works, for the year 1894—Continued.*

September 14.....	Philadelphia Traction Co.....	Moving stop.....	27 21
14.....	Philadelphia Traction Co.....	Moving stop.....	23 30
14.....	Philadelphia Traction Co.....	Moving stop.....	24 62
14.....	Philadelphia Traction Co.....	Moving stop.....	22 31
14.....	Philadelphia Traction Co.....	Moving stop.....	21 44
14.....	Philadelphia Traction Co.....	Moving stop.....	24 17
17.....	Philadelphia Traction Co.....	Moving stop.....	6 68
17.....	Philadelphia Traction Co.....	Moving stop.....	33 68
18.....	David McMahon.....	Shutting off & redriv. ferrule.....	3 00
18.....	David McMahon.....	Shutting off & redriv. ferrule.....	13 50
19.....	Pennsylvania R. R. Co.....	Moving fire hydrant.....	6 90
20.....	Henry C. Ayres.....	Shutting off & redriv. ferrule.....	3 00
20.....	Henry C. Ayres.....	Shutting off & redriv. ferrule.....	6 00
21.....	M. & W. H. Nixon.....	Moving stop.....	8 41
25.....	People's Traction Co.....	Removing stop.....	18 06
28.....	Frank McCullough.....	Shutting off & redriv. ferrule.....	9 13
October 1.....	John Hebener.....	Six mos. rent Farm No. 3.....	78 50
2.....	David McMahon.....	Shutting off & redriv. ferrule.....	3 00
5.....	John Pugh.....	Removing pipe.....	18 75
5.....	Philadelphia Traction Co.....	Removing stop.....	23 89
8.....	W. H. Harris.....	Six mos. rent Farm No. 1.....	100 00
9.....	People's Traction Co.....	Repairing stop.....	3 63
12.....	Platt & Bro.....	Stop box.....	4 60
13.....	People's Traction Co.....	Repairing service pipe.....	54 93
16.....	Philadelphia Traction Co.....	Moving stop.....	23 45
16.....	Philadelphia Traction Co.....	Moving stop.....	32 82
16.....	Philadelphia Traction Co.....	Moving stop.....	27 68
22.....	Wm. Miller.....	Fire hydrant.....	6 37
22.....	Chas. A. Porter.....	Repairing main.....	9 52
25.....	Hestonville P. R. W. Co.....	Removing stop.....	32 47
27.....	David McMahon.....	Shutting off & redriv. ferrule.....	5 25
29.....	P. & R. R. R. Co.....	Renewing stop.....	5 10
31.....	Philadelphia Traction Co.....	Moving stop.....	25 61
November 2.....	Henry Snyder.....	Six mos. rent of saloon.....	400 00
16.....	Philadelphia Traction Co.....	Shifting stop.....	57 36

*Receipts through the Office of Bureau of Water, Department  
of Public Works, for the year 1894—Continued.*

November	19.....	John W. Harris.....	Six mos. rent Farm No. 2.....	100 00
	21.....	Philadelphia Traction Co.....	Shifting stop.....	28 83
	21.....	Philadelphia Traction Co.....	Shifting stop.....	24 53
	21.....	Howell & Bro.....	Plugging pipe.....	12 80
	23.....	Clyde & Co.....	Fire hydrant.....	30 28
December	5.....	Philadelphia Traction Co.....	Moving stop.....	29 74
	5.....	Philadelphia Traction Co.....	Moving stop.....	32 06
	10.....	Philadelphia Traction Co.....	Moving stop.....	29 04
	11.....	John Bonhage.....	Repairing main.....	39 93
	11.....	John Bonhage.....	Repairing main.....	15 70
	11.....	John Bonhage.....	Repairing main.....	32 93
	17.....	V. Skipton.....	Empty oil barrels.....	27 50
	19.....	Friends Insane Asylum.....	Fire hydrant and branch.....	37 67
	26.....	Philadelphia Traction Co.....	Lowering fire connection.....	45 51
	26.....	Philadelphia Traction Co.....	Moving stop.....	53 13
	28.....	Hitner & Son.....	Old scrap iron.....	2,000 00





UNIVERSITY OF ILLINOIS



INDIAN TERRITORY



UNIVERSITY OF ILLINOIS



INVESTIGATION OF THE  
RECORDS OF THE  
STATE OF ILLINOIS.



WA						Total.
16	17	18	34	36	37	
2	6			3	2	103
				2	1	37
1	2		2	3	3	166
						17
1	1					9
	1		6	9	4	165
			1			10
	1		2	1	1	51
						32
					1	10
	2		3	2	1	74
	32	1	26	17	14	681
1	2		1	3	2	127
30	68	9	18	46	52	2,544
	1		2	1		52
	12	9	35	21		958
						241
				1		14
						36
						2
1	2		1	2		51
	1		1	1	1	42
2	4	1	272	161	98	3,931
	1		1	2		22
3			106	20	106	3,391
46	72	1	382	310	218	8,777
15	21		12	14	4	951
						136
				12		25

15

15

APPENDIX B.

---

REPORT OF CHIEF CLERK.

---

BUREAU OF WATER.

*Philadelphia, January 19, 1895.*

MR. JOHN L. OGDEN,

Chief of Bureau of Water.

SIR:—I have the honor to transmit herewith a detailed statement of the expenditures of this Bureau for the year 1894.

Respectfully,

J. T. HICKMAN,

*Chief Clerk.*

## Detailed Expenditures of the Bureau for 1894.

General Appropriation.	Amount appropriat'd.	Amount expended.	Amount merging.	Amount not merg'g.
An Ordinance to make an appropriation to the Bureau of Water, approved Dec. 30, 1893.....	\$1,372,551 00			
Balance from books of 1893 .....	1,197,638 01			
Increased by extra appropriations.....	1,318,134 04			
	\$3,888,326 05			
Diminished by transfer... 309,020 53				
Net appropriation.....	\$3,579,305 52			
Item 1. Salaries.....	\$257,554 00			
Diminished by transfer... 5,000 00				
Net appropriation to item.....	252,554 00			
For Salary Chief of Bureau.....	\$6,000 00	\$6,000 00		
Chief clerk.....	2,000 00	2,000 00		
Assistant clerk.....	1,200 00	1,200 00		
Correspondence clerk.....	900 00	900 00		
Time clerk.....	1,000 00	1,000 00		
Messenger.....	720 00	720 00		
Draughtsmen.....	4,700 00	4,700 00		
General superintendent..	3,500 00	3,500 00		
Clerks to general superintendent.....	2,000 00	2,000 00		
Assistants to chief.....	3,600 00	3,600 00		
Pipe inspector and clerk..	2,200 00	2,200 00		
Search clerks.....	2,200 00	2,200 00		
Assistant clerks.....	2,750 00	2,750 00		
Chief inspector.....	1,200 00	1,200 00		
Inspectors.....	18,000 00	18,939 80		
Permit clerks.....	2,300 00	2,300 00		
Purveyors.....	9,200 00	9,200 00		
Clerks to purveyors.....	4,800 00	4,800 00		
Assistant clerks to purveyors.....	4,500 00	4,423 69		
Hydrant inspectors.....	7,050 00	6,218 33		
General foremen.....	6,634 00	6,634 00		
Foremen of repairs.....	3,900 00	3,900 00		
Superintendent of shop..	1,500 00	1,500 00		
Clerk to superintendent of shop.....	900 00	900 00		
Watchmen (offices and yards).....	6,075 00	6,001 26		
Storekeepers.....	1,400 00	1,273 41		
Foreman machinists.....	1,500 00	1,500 00		
“ bricklayers.....	1,100 00	1,100 00		
“ carpenters.....	1,000 00	1,100 00		
“ stonemasons.....	900 00	900 00		
“ painters.....	900 00	900 00		
“ riggers.....	900 00	900 00		
“ laborers.....	840 00	840 00		
Janitor (main office).....	720 00	720 00		
Lineman.....	1,000 00	1,000 00		
Telephone operators.....	1,100 00	1,100 00		
Electrician.....	1,200 00	1,200 00		
General storekeeper.....	1,000 00	1,000 00		
Yardkeeper (Fourth District).....	915 00	915 00		

## Detailed Expenditures of the Bureau for 1894.

General Appropriation.	Amount appropriat'd	Amount expended.	Amount merging.	Amount not merging
<b>SALARIES AT PUMPING STATIONS.</b>				
Fairmount engineers, oilers, etc.....	14,310 00	14,212 52		
Spring Garden engineers, oilers, etc...	69,500 00	66,662 21		
Belmont engineers, oilers, etc.....	20,350 00	20,258 43		
Roxborough engineers, oilers, etc.....	18,820 00	18,566 63		
Mt. Airy engineers, oilers, etc.....	3,070 00	3,070 00		
Chestnut Hill engineers, oilers, etc....	1,500 00	1,500 00		
Frankford engineers, oilers, etc.....	15,900 00	15,080 04		
		\$252,485 32	68 68	
Item 2. For general supplies, includ- ing fuel, oil, and small stores, \$150,000 00				
Increased by transfer..... 85,000 00				
Net appropriation to Item.....	235,000 00			
<b>Deficiencies of 1893:</b>				
Hauling ashes..... \$271 20				
Oil..... 1,024 40				
Coal..... 37,947 94				
		39,243 54		
Chandlery.....		185 76		
Car service.....		34 00		
<b>COAL FOR OFFICES, ETC.</b>				
2 tons nut, at \$6.50..... \$13 00				
3 tons stove, at \$6.75..... 20 25				
5 tons bituminous, at \$5.00.. 25 00				
7 tons stove, at \$6.00..... 42 00				
8 tons stove, at \$6.25 ..... 50 00				
8 tons stove, at \$7.50..... 60 00				
16 tons stove, at \$5.00..... 80 00				
48.9 tons stove, at \$5.69..... 275 81				
101.1 tons bituminous, at \$3.67 370 54				
336.1 tons pea, at \$3.27..... 1,100 60				
		\$2,037 10		
<b>COAL FOR STATIONS.</b>				
Fairmount, 100 tons egg, at \$4.73..... \$473 00				
Spring Garden, 20,516.02 tons buck, at \$1.89..... 38,775 44				
Spring Garden, 19,555 03 tons pea, at \$2.59..... 50,647 83				
Belmont, 6,426.17 tons buck, at \$1.89..... 12,146 75				
Belmont, 6,486.09 tons pea, at \$2.59.. 16,670 37				
Roxborough, 6,328.11 tons buck, at \$1.91..... 12,077 99				
Roxborough, 11,298.14 tons pea, at \$2.60..... 29,763 62				
Mt. Airy, 154.18 tons buck, at \$1.91..... 295 86				
Mt. Airy, 1,236.18 tons pea, at \$2.15 ..... 2,670 08				
Chestnut Hill, 204.19 tons buck, at \$2.85..... 501 51				
Frankford, 6,526.14 tons buck, at \$1.95..... 12,727 03				
Frankford, 1,897.11 tons pea, at \$2.65..... 5,028 51				
		181,377 99		

## Detailed Expenditures of the Bureau for 1894.

General Appropriation.	Amount appropriat'd.	Amount expended.	Amount merging.	Amount not merg'g.
Coke .....		1,769 00		
Hauling ashes and coal:				
26 tons coal, Roxborough to Auxillary, at 48 $\frac{3}{4}$ c. ....	\$12 68			
182 tons coal, Chestnut Hill to Mt. Airy, at 38 $\frac{3}{4}$ cts.....	70 64			
2,909.05 tons ashes, Rox- borough, at 21 $\frac{1}{4}$ cts.....	617 02			
		700 34		
OIL.				
52 gallons Arctic, at 8 $\frac{1}{2}$ cts. ....	\$4 42			
105 gallons black, at 7 cts....	7 35			
52 gallons common, at 5 $\frac{1}{2}$ c. ....	2 86			
51 gallons castor, at \$1.00....	51 00			
52 $\frac{1}{2}$ gals. castor, at 98c.....	51 45			
759 gals. cylinder, at 40c....	303 60			
6,454 gals. cylinder, at 35c....	2,258 76			
9,878 $\frac{1}{2}$ gals. engine, at 40c....	3,951 40			
566 gals. gasoline, at 8c.....	45 24			
4,337 $\frac{1}{2}$ gals. headlight, at 6 $\frac{1}{2}$ c.....	292 56			
187 $\frac{1}{2}$ gals. lard, at 75c.....	140 40			
304 $\frac{1}{2}$ gals. lard, at 70c.....	213 07			
380 $\frac{1}{2}$ gals. linseed, at 49c....	186 64			
		7,508 75		
Tallow.....		244 12		
Wood.....		142 00		
<b>Total.....</b>		<b>\$288,242 50</b>	<b>\$1,757 50</b>	
Item 3. For repairs to ma- chinery and the convey- ance of workmen incident thereto.....	\$60,000 00			
Increased by transfer.....	7,173 04			
Net appropriation.....		\$67,173 04		
Deficiencies of 1893:				
Fire brick.....	\$17 00			
Iron fittings.....	7 90			
		24 90		
Babbitt metal.....		25 75		
Belting.....		136 92		
Brass fittings.....		1,988 94		
Chandlery.....		2,000 00		
Crank-pin forgings.....		27 50		
Donkey pumps, 3 at \$480.....		1,440 00		
Fire brick.....		196 51		
Gum goods.....		1,500 00		
Hardware.....		2,000 00		
Hauling.....		500 00		
Iron fittings.....		2,100 19		
Jet heads.....		40 00		
Lumber.....		2,000 71		
Packing.....		192 60		
Repairs to boilers:				
Fairmount.....	\$29 00			
Spring Garden.....	4,521 74			
Belmont.....	2,400 42			

## Detailed Expenditures of the Bureau for 1894.

General Appropriation.	Amount appropria'd.	Amount Expended.	Amount merging.	Amount not merg'g.
<b>Item 3—Continued.</b>				
Roxborough .....	\$3,654 54			
Frankford .....	139 69			
Shop .....	34 10			
		\$10,779 49		
<b>Repairs to engines:</b>				
Spring Garden.....	\$293 03			
Roxborough.....	1,572 93			
Frankford.....	60 42			
		1,926 38		
<b>Repairs to hoisting engine.....</b>				
		124 01		
<b>Repairs to pattern.....</b>				
		45 90		
<b>Repairs to pipe covering:</b>				
Spring Garden.....	\$584 97			
Belmont.....	87 33			
Roxborough.....	307 52			
Frankford.....	205 38			
		1,185 15		
<b>Steam trap.....</b>				
		35 00		
<b>Steel.....</b>				
		28 50		
<b>Transportation.....</b>				
		2,906 16		
<b>Wages:</b>				
Bricklayers.....	\$7,316 40			
Carpenters.....	2 952 50			
Helpers.....	632 60			
Machinists.....	14,668 89			
Laborers.....	4,995 82			
Stone-mason.....	4,875 17			
		35,941 38		
<b>Total.....</b>		\$67,155 99	\$17 05	
<b>Item 4. Maintenance and repairs to buildings, grounds and reservoirs... \$75,000 00</b>				
Increased by transfer.....	30,000 00			
	\$105,000 00			
Diminished by transfer.....	3,000 00			
Net appropriation to item.....	\$102,000 00			
Asphalt paving.....		\$533 38		
Awnings (window).....		15 00		
Belgian blocks.....		1,078 05		
Belting.....		51 01		
Bricks and lime.....		2,177 69		
Car service.....		5 00		
Carts and wheels.....		293 00		
Cement.....		1,991 40		
Chandlery.....		2,002 34		
Cleaning cesspool.....		88 50		
Coping stone.....		482 20		
Curbing.....		118 60		
Disinfector (rental).....		108 00		
Electric light.....		55 00		
Electric supplies.....		1,315 46		
Fire clay.....		19 75		
Forage.....		1,620 85		
Gum goods.....		1,000 00		
Hardware.....		2,436 93		
Harness.....		51 00		
Horses (3, at \$126).....		378 00		
Horseshoeing.....		178 73		
Iron.....		171 02		
Lumber.....		4,000 00		
Manure.....		2 50		

## Detailed Expenditures of the Bureau for 1894.

General Appropriation.	Amount appropriat'd.	Amount expended.	Amount merging.	Amount not merging
<b>Item 4—Continued.</b>				
Masonry, etc .....		\$259 65		
Oil 54 gallons Electric, at 25c.....		13 50		
Paints.....		448 51		
Paper hang'ng.....		54 00		
Peerless color.....		24 50		
Plants.....		143 55		
Professional services, vet. surgeon.....		25 00		
Repairs:				
To electric plant.....	\$48 75			
To harness.....	38 30			
To jack.....	5 80			
To pump.....	30 00			
To roof.....	\$2,466 28			
To siding.....	938 9-			
To wagons.....	77 20			
		3,605 31		
Sand.....		940 00		
Services of diver.....		120 40		
Flag.....		86 00		
Stone.....		17 50		
Telephone, rental.....		1,305 00		
Telephone, supplies.....		50 00		
Tin.....		587 30		
Wages:				
Queen lane reservoir.....	\$1,244 91			
Bricklayers.....	2,045 10			
Horses and carts.....	2,227 50			
Stone-masons.....	2,241 83			
Machinists.....	3,873 44			
Painters.....	5,399 00			
Carpenters.....	10,002 00			
Helpers.....	10,708 95			
Laborers.....	36,151 98		78,944 71	
<b>Total.....</b>		<b>\$101,995 99</b>	<b>\$4 01</b>	
<b>Item 5. For repairs and improve-</b>				
<b>ment to the distribution, including</b>				
<b>the purchase of material in con-</b>				
<b>nection therewith and expenses in-</b>				
<b>cident thereto.....</b>				
	\$100,000 00			
Increased by transfer.....	67,500 00			
<b>Net appropriation to Item.....</b>	<b>\$167,500 00</b>			
Brass fittings.....		\$1,074 11		
Bricks.....		1,000 00		
Cement.....		500 00		
Chandlery.....		166 88		
Corporation cocks:				
591 1/2-inch, at 49 cts.....	\$289 59			
108 3/4-inch, at 56 cts.....	60 40			
10 3/4-inch, at 69 cts.....	6 90			
69 1-inch, at \$1.....	69 00			
		425 89		
Fire clay.....		53 50		
Flagstone.....		8 03		
Forage.....		1,500 00		
Glazing.....		3 00		
Gum goods.....		1,742 56		
Hauling.....		500 00		
Hardware.....		1,015 60		
Iron fittings.....		2,335 52		
Iron and steel.....		1,933 46		



## Detailed Expenditures of the Bureau for 1894.

General Appropriation.	Amount appropriat'd.	Amount expended.	Amount merging.	Amount not merging
<b>Item 5—Continued.</b>				
Iron special castings:				
2,081 lbs., at 2 $\frac{1}{2}$ cts.....	\$42 65			
8,275 lbs., at 2 $\frac{3}{4}$ cts.....	202 74			
118,935 $\frac{1}{2}$ lbs., at 2 cts.....	2,318 71			
601,913 lbs., at 1 $\frac{9}{10}$ cts.....	11,978 08			
		\$14,542 18		
<b>Iron pipe:</b>				
5,034 lengths 6-in., 1,859,409 lbs., at 1 c.....	\$18,594 09			
1,628 lengths 8-in., 794,214 lbs., at 1.0084 cts.....	8,008 85			
475 lengths 12-inch, 433,460 lbs., at 1.0084 cts.....	4,371 07			
52 lengths 20-inch, 94,475 lbs., at 1.015 cts.....	959 56			
68 lengths 30-inch, 226,739 lbs., at 1.015 cts.....	2,301 40			
		34,234 97		
Lumber.....		4,000 00		
Machine work.....		36 30		
Paints.....		30 90		
Plumbing.....		56 50		
Repairs to pavement.....		4 50		
Shop castings, 261,521 lbs., at 1.25 cts..		3,269 03		
<b>Stop valves:</b>				
17 6-inch 2 way, at \$15.....	\$255 00			
6 6-inch 3 way, at \$28.50.....	1,738 50			
		1,993 50		
Tin.....		260 00		
Transportation.....		74 30		
Traveling expenses.....		255 78		
Wood.....		8 00		
<b>Wages:</b>				
Improvement.....	\$6,070 88			
First District.....	13,349 47			
Second District.....	14,611 02			
Third District.....	22,173 48			
Fourth District.....	18,483 10			
Fifth District.....	10,003 74			
Sixth District.....	11,766 19			
		\$96,457 88		
<b>Total.....</b>		\$167,482 19	\$17 81	
<b>Item 6. For supplies, including the purchase of fuel and labor at city construction and repair shop.</b>				
	\$75,000 00			
Increased by transfer.....	16,000 00			
Net appropriation to Item.....	\$91,000 00			
<b>Deficiencies of 1893:</b>				
Castings.....		\$1,137 08		
Beltling.....		32 60		
<b>Brass castings, etc.:</b>				
11,448 lbs. lead coating at 4 cts.....	\$457 92			
5,894 lbs. Ajax metal at 22 cts.....	1,296 68			
18,361 lbs. yellow brass at 9 $\frac{1}{2}$ cts.....	1,812 93			
28,548 lbs. red brass at 11 9-10 cts.....	3,397 27			
	\$6,964 80			

## Detailed Expenditures of the Bureau for 1894.

General Appropriation.	Amount appropriat'd.	Amount expended.	Amount merging.	Amount not merg'g.
CR.				
5,120 lbs. scrap brass at 4 cts.....	\$204 80			
5,200 lbs. turnings at 5c. 260 00				
	\$464 80			
Brass fittings.....		\$6,500 00		
Chandlery.....		58 28		
Forage.....		1,994 51		
Gun goods.....		200 00		
Hardware.....		581 60		
Horse-shoeing.....		2,130 14		
Iron and steel.....		28 00		
Listing.....		2,661 75		
Lead pipe, 6,834 2-5 lbs. at 5 cts.....		15 00		
Lumber.....		341 72		
Machine work.....		3,000 00		
Paints.....		8 70		
Plug valves:		9 80		
75 large at \$4.00.....	\$300 00			
1,251 small at \$2.50.....	3,127 50			
		3,427 50		
Shop castings:				
118,619 lbs. at 1½ cts.....	\$1,482 74			
162,859 lbs. at 1.74 cts. . .	2,833 76			
524,820 lbs. at 1.60 cts.....	8,394 15			
689,269 lbs. at 1.90 cts.....	13,096 11			
		25,806 76		
Tools.....		1,585 00		
Traveling expenses.....		11 85		
Wages.....		40,762 24		
<b>Total.....</b>		<b>\$90,292 53</b>	<b>\$707 47</b>	
Item 7 For general, incidental, and contingent expenses, including \$1,200 for keep of horse for Chief of Bureau, General Superintendent, and assistant.....	\$15,000 00			
Increased by transfer.....	5,000 00			
Net appropriation to Item.....	\$20,000 00			
Deficiencies of 1893:				
Printing.....		\$877 68		
Advertising.....		183 30		
Carriage hire.....		45 00		
Chairs and desk.....		225 75		
Ground rent.....		26 66		
Ice.....		317 88		
Incidentals.....		999 62		
Incidentals Hydrographic Corps.....		211 52		
Keep of horses.....		1,200 00		
Meals (Water Committee).....		365 63		
Maps.....		411 28		
Papers (daily).....		36 16		
Printing notice.....		27 60		
Stationery.....		11,069 48		
Subscriptions (Periodicals).....		26 00		
Transportation.....		118 50		
Traveling expenses.....		203 40		
Washing towels.....		84 00		
Writing duplicates.....		1,994 24		
Wages.....		1,560 00		
<b>Total.....</b>		<b>\$19,983 70</b>	<b>\$16 30</b>	

## Detailed Expenditures of the Bureau for 1894.

General Appropriation.	Amount appropriat'd.	Amount expended.	Amount merging.	Amount not merging
Item 8. For the purchase of material and cost of labor in connection with the laying of water pipe and expenses incident thereto, \$225,000 00				
Increased by transfer.....	129,500 00			
Net appropriation to Item.....	\$354,500 00			
Deficiencies of 1893:				
Repairs to pipe.....	\$9 69			
Hardware.....	28 25			
Wood.....	14 00			
Horse shoeing.....	16 50			
Repairs to wagons.....	22 35			
Spars.....	30 00			
Forage.....	155 00			
Excavating pipe trench..	424 81			
Lumber.....	431 59			
		\$1,132 19		
Belling.....		76 72		
Brass fittings.....		2,037 34		
Bricks.....		993 51		
Cement.....		500 00		
Chandlery.....		2,011 25		
Corporation cocks:				
13,085 1/2-inch, at 49c.....	\$6,415 57			
392 5/8-inch, at 56c.....	219 52			
190 3/4-inch, at 69c.....	131 10			
181 1-inch, at \$1.....	181 00			
50 2-inch, at \$3.12.....	156 00			
		7,103 19		
Curb stops:				
1986 1/2-inch, at 45c.....	\$893 70			
100 3/4-inch, at 50c.....	50 00			
		943 70		
Dynamite.....		463 75		
Flagstone.....		5 68		
Forage.....		2,158 99		
Freight.....		1,528 26		
Gum goods.....		5,050 31		
Hardware.....		3,185 71		
Harness.....		362 84		
Hauling.....		1,500 00		
Horse.....		126 00		
Horse shoeing.....		535 26		
Iron pipe and specials:				
300 lengths 3-inch, 40,846 lbs., at 1.075c.....	\$439 12			
4,000 lengths 4-in., 876,957 lbs., at 1.075c.....	9,133 69			
12,454 lengths 6-inch, 4,460,176 lbs., at 1.084c...	44,601 76			
2,372 lengths 8-inch, 1,151,256 lbs., at 1.084c...	11,639 52			
1,698 lengths, 10 inches, 1,160,578 lbs., at 1.084c...	11,703 27			
2,524 lengths, 12 inches, 2,298,624 lbs., at 1.084c...	23,180 31			
492 lengths, 16 inches, 662,625 lbs., at 1.015c....	6,725 64			
50 lengths, 30 inches, 212,534 lbs., at 1.015c....	2,157 23			
15 lengths, 48 inches, 1,310,114 lbs., at 2 1/2 cts...	1,162 55			
537 lbs. specials at 2 1/2 c... 252,837 1/2 lbs. specials, at 2 cts.....	11 28			
5,116 75				
603,637 lbs. specials, at 1.99 cts.....	11,932 87			
		127,803 99		

## Detailed Expenditures of the Bureau for 1894.

General Appropriation.	Amount appropriat'd.	Amount expended.	Amount merging.	Amount not merg'g.
<b>Item 8—Continued.</b>				
Iron and steel.....		\$864 21		
Lead pipe, 10,816 lbs., at 5 cts.....		540 80		
Linseed oil.....		21 75		
Lumber.....		5,467 49		
Machine work.....		200 00		
Paints.....		236 04		
Plug valves, 258, at \$2.50.....		645 00		
Professional services V. S.....		232 50		
Rent of office.....		100 00		
Repairs to pipe..... \$1 25				
Repairs to pumps..... 16 00				
Repairs to roofs..... 61 00				
Repairs to boilers..... 138 00				
Repairs to wagons..... 1,970 72				
		2,186 97		
Red clay.....		56 00		
Sand.....		430 80		
Services of Asst. Pipe Inspector.....		194 25		
Services of diver.....		430 00		
Shop castings:				
52,485 lbs. at 1.69 cts..... \$839 76				
86,092 lbs. at 1.90 cts..... 1,076 16				
		1,915 92		
Spars.....		214 00		
Stable supplies.....		256 84		
Stop valves:				
11 6-in. 2 way, at \$15.00..... \$165 00				
64 6-in. 3 way, at \$28.50..... 1,824 00				
		1,989 00		
Stone.....		72 39		
Supporting tracks.....		61 39		
Transportation.....		693 45		
Traveling expenses.....		195 36		
Tin.....		130 00		
Trackage.....		12 00		
Tolls.....		1 12		
Wheels.....		28 00		
Winch head.....		10 00		
Wages:				
Improvement..... \$6,018 75				
First District..... 25,315 60				
Second District..... 37,684 73				
Third District..... 59,224 33				
Fourth District..... 20,546 42				
Fifth District..... 12,249 40				
Sixth District..... 18,706 19				
		179,745 43		
<b>Total.....</b>		<b>\$354,449 40</b>	<b>\$50 60</b>	
<b>Item 9. For service pipe brass fittings.....</b>				
	\$40,000 00	\$809 83		
Corporation cocks:				
7,184 1/4-in., at 49 cts..... \$3,520 16				
100 3/4-in., at 56 cts..... 112 00				
100 3/4-in., at 69 cts..... 69 00				
100 1-in., at \$1.00..... 100 00				
		3,801 16		
Curb stops:				
7,200 3/4-inch, at 45 cts..... \$3,240 00				
100 3/4-inch, at 50 cts..... 50 00				
100 1-inch, at 60 cts..... 60 00				
100 1 1/4-inch, at 90 cts..... 90 00				
		3,440 00		
Hauling.....		500 00		
Lead pipe, 398,975 1/2 lbs., at 5 cts.....		19,949 01		
Wages.....		11,500 00		
<b>Total.....</b>		<b>\$40,000 00</b>		

## Detailed Expenditures of the Bureau for 1894.

General Appropriation.	Amount appropriat'd.	Amount expended.	Amount merging.	Amount not merging
Item 10. Extensions (Mains for Queen Lane).....\$375,000 00				
Diminished by transfer..... 25,000 00				
Net appropriation to item.....	\$350,000 00			
Brass fittings.....		\$4,000 00		
Cement.....		500 00		
Chandlery.....		1,999 46		
Fitting up fire hydrants.....		1,100 00		
Fitting up stops.....		3,150 00		
Fitting up valves.....		1,100 00		
Hardware.....		75 85		
Hauling.....		3,498 40		
Iron.....		11 00		
<b>Iron pipe and specials:</b>				
400 lengths 10-in., 205,489 lbs., at 1.084 cts.....	\$2,072 15			
8 lengths 16-inch, 10,726 lbs., at 1.015 cts.....	108 87			
9 lengths 20-inch, 15,972 lbs., at 1.015 cts.....	161 48			
50 lengths 30-in., 167,927 lbs., at 1.015 cts.....	1,704 46			
99 lengths 36-in., 491,621 lbs., at 1.015.....	4,989 95			
592 lengths 48-in., 4 408,613 lbs., at 1.0767 cts.....	47,467 42			
1,361 lengths 48-inch, 12,506,663 lbs. at 1.10 c.,	117,635 27			
103,205 lbs. breeches pipe, at 2 <sup>3</sup> / <sub>4</sub> cts.....	2,893 16			
114,629 lbs. specials, at 2 cts.....	2,292 58			
528,008 lbs. specials, at 2.35 cts.....	12,408 20			
		191,733 54		
Lumber.....		2,000 00		
Machine work.....		255 60		
Powder.....		798 40		
Services of assistant pipe inspectors.....		1,166 09		
Shop castings, 432,780 lbs., at 2 <sup>3</sup> / <sub>8</sub> cts.....		10,275 99		
Steel rails.....		505 85		
<b>Stop valves:</b>				
34 6-inch, 2 way, at \$15....	\$510 00			
74 6-inch, 3 way, at \$28.50..	2,109 00			
6 4-inch, 4 way, at \$62.....	372 00			
		2,991 11		
Stone.....		358 80		
Traveling expenses (pipe inspectors).....		1,320 72		
<b>Wages:</b>				
Third District.....	\$9,128 63			
Fourth District.....	67 520 47			
Fifth District.....	32,057 61			
Sixth District.....	14,446 09			
		123,152 80		
<b>Totals.....</b>		\$349,993 41	\$6 59	

## Detailed Expenditures of the Bureau for 1894.

General Appvopriation.	Amount appropria'd	Amount expended.	Amount merging,	Amount not merging
<b>Item 9a. Boilers Spring Garden Station.</b>				
Balance Jan. 1, 1894.....	\$14,886 66	\$14,886 66		
<b>Item 9b. Boiler house, Spring Garden Station.</b>				
Balance Jan. 1, 1894.....	4,557 00	4,557 00		
<b>Item 9d. High service, Chestnut Hill.</b>				
Balance Jan. 1, 1894.....	40,239 20	40,239 20		
<b>Item 9l. Supply main, American st.</b>				
Balance Jan. 1, 1894.....	174 60	168 85	\$5 75	
<b>Item 9m. Supply main, Kensington avenue.</b>				
Balance Jan. 1, 1894.....	\$2,016 42			
Diminished by transfer.....	1,020 53			
Net appropriation to item.....	995 89	995 89		
<b>Item 9o. High service, West Philadelphia.</b>				
Balance Jan. 1, 1894.....	14,580 19			
Boilers, George's Hill.....		12,760 00		
Excavating pipe trench, retained per cent.....		1,819 96		
<b>Totals.....</b>		\$14,579 96	23	
<b>Item 10a. Extensions.</b>				
Balance Jan. 1, 1894.....	105,096 44			
Asphalt walks.....		23,148 66		
Engines Spring Garden Station.....		53,024 00		
Excavating pipe trench.....		3,233 28		
<b>Item 11. Construction of a reservoir in the Twenty-eighth Ward.</b>		\$79,405 94		25,690 50
Balance Jan. 1, 1894.....	304,451 60	204,582 60		99,869 00
<b>Item 11a. Completion of Queen Lane Reservoir.</b>				
Balance Jan. 1, 1894.....	161,170 46	138,307 69		22,862 77
<b>Item 12. Extensions at Spring Garden Station.</b>				
Balance Jan. 1, 1894.....	205,511 77			
Asphalt walks.....		1,381 34		
Bell crank castings.....		868 68		
Boilers.....		41,508 00		
Boiler-house.....		4,869 60		
Engine-house.....		29,277 60		
Engines (pumping).....		29,200 00		
Excavating pipe trench, retained per cent.....		3,014 14		
Grates.....		4,912 46		
Services of diver.....		70 00		
Services of experts.....		286 43		
Stone.....		55 70		
Wages, buildings, grounds, and reservoirs.....		853 42		
<b>Totals.....</b>		\$116,297 37		89,214 40

## Detailed Expenditures of the Bureau for 1894.

General Appropriation.	Amount appropriat'd.	Amount expended.	Amount merging.	Amount not merging
<b>Item 13. Extensions at Frankford Station.</b>				
Balance Jan. 1, 1894.....	\$49,100 67			
Engine-house.....		\$33,380 00		
Excavating pipe trench, retained per cent.....		4,783 89		
Wages:				
Third District.....	\$6,913 52			
Fourth District.....	4,023 26			
		10,936 78		
		\$49,100 67		
<b>Item 14. New pumping station for Queen Lane reservoir:</b>				
Balance January 1, 1894.....	152,430 00			
House.....		82,000 00		
Testing bricks.....		4 50		
Wages, buildings, grounds and reservoirs.....		2,425 50		
<b>Total.....</b>		<b>\$84,430 00</b>		<b>\$68,000 00</b>
<b>Item 15. Boilers for Frankford station and engine house, Georges Hill.</b>				
Balance January 1, 1894.....	67,636 00			
Boilers.....		30,240 00		
Engine house.....		37,396 00		
<b>Total.....</b>		<b>67,636 00</b>		
<b>Item 16. Pumping engine for Queen Lane station:</b>				
Balance January 1, 1894.....	75,787 00			
Engines.....		37,905 60		37,881 40
<b>Item 10½. For engines and other work at Queen Lane station:</b>				
<b>Appropriation February 20, 1894.....</b>	<b>\$342,961 00</b>			
Diminished by transfer..	50,000 00			
<b>Net appropriation to Item.....</b>	<b>\$42,961 00</b>			
Boilers.....		11,293 32		
Engines.....		44,128 80		
Lumber.....		1,414 83		
Services of experts.....		725 50		
Stone.....		7,499 99		
<b>Wages.</b>				
Buildings, grounds and reservoirs.....	\$494 01			
Fifth District.....	2,888 07			
Engineer corps.....	14,094 66			
		17,476 74		
<b>Total.....</b>		<b>\$82,569 20</b>	<b>\$317 92</b>	<b>\$260,073 88</b>
<b>Item 10½. Extensions:</b>				
Appropriation April 4, 1894.....	\$360,000 00			
Increased by transfer.....	225,000 00			
	\$585,000 00			

## Detailed Expenditures of the Bureau for 1894.

General Appropriation.	Amount appropriat'd	Amount expended.	Amount merging.	Amount not merging
Item 10 $\frac{1}{2}$ —Continued.				
Diminished by transfer.....\$225 000 00				
Net appropriation to item.....	\$360,000 00			
Brass castings:				
4,9 $\frac{3}{8}$ lbs. lead coating at 4 cents.....	\$198 32			
1,995 lbs. Ajax metal at 22 cents.....	438 90			
7,803 lbs. red brass at 11 $\frac{1}{16}$ cents.....	928 56			
10,421 $\frac{1}{4}$ lbs. yellow brass at 9 $\frac{7}{8}$ cents.....	1,038 96			
	\$2,604 74			
CR.				
6,500 lbs. yellow brass at 5 cents.....	\$325 00			
6,900 lbs. turnings at 4 cents..	240 00			
Defective castings returned...	35 82			
	\$600 82			
Brass fittings.....		\$2,003 92		
Belting.....		102 98		
Cement.....		5 13		
Corporation cocks, 1,632 $\frac{1}{2}$ -inch at 49c.....		7,401 10		
Dynamite.....		799 68		
Granite.....		680 00		
Hauling.....		2,575 07		
Iron pipe and specials, 1142 lengths 48 inch 8,888,793 lbs. at 89-100.....	\$79,999 99		7,999 67	
345,546 lbs. specials, at 2.35 cents.....	\$8,120 32		88,120 31	
Lead, 1,398,601 lbs., at 4.29c.....			59,999 93	
Lumber.....			5,000 00	
Machine Work.....			973 95	
Sal Ammoniac.....			7 88	
Sand.....			1,118 43	
Services of diver.....			50 00	
Services of experts.....			256 74	
Services of assistant pipe inspectors.....			300 00	
Shop castings:				
54,982 lbs. at 1 $\frac{1}{4}$ c.....	687 28			
30,336 lbs. at 1.74c.....	527 84			
168,738 lbs., at 1.60c.....	2,699 80			
250,648 lbs., at 1.90.....	4,762 31			
			8,677 23	
Stand pipes.....			5,520 00	
Stop valves, 13, 6-in. 2 way, at \$15.....			195 00	
Spars.....			50 00	
Supporting tracks.....			1,064 01	
Traveling expenses, pipe inspectors.....			430 85	
Wages:				
Third District.....	\$9,764 59			
Fourth District.....	38,688 95			
Fifth District.....	24,704 82			
Sixth District.....	25,649 96			
Buildings, grounds, and reservoirs.....	\$7,972 18			
			\$106,780 50	
Totals.....		\$800,112 38		\$59,887 62



*Detailed Expenditures of the Bureau for 1894.*

## RECAPITULATION.

General Appropriation.	Amount 'appropriat'd			
Balance from books of 1893 .....	1,197,638 01			
Special appropriations and transfers..	1,318,134 04	2,515,772 05		
Annual appropriation.....		1,372,554 00	3,888,326 05	
Transferred to other Bureaus.....	309,020 53			
Expended for deficiencies.....	42,415 39			
Expended for maintenance.....	1,684,665 64			
Expended for extensions .....	1,235,775 01			
		3,221,876 57		
Amount merging.....	2,969 91			
Amount not merging.....	663,479 57	666,449 48	3,888,326 05	

# APPENDIX C.

---

## REPORT

OF THE

## GENERAL SUPERINTENDENT

OF

Work done during 1894 to Buildings, Grounds and Reservoirs, and Boilers and Machinery of the Several Pumping Stations.

---

OFFICE OF THE GENERAL SUPERINTENDENT,  
BUREAU OF WATER.

*Philadelphia, January 19, 1895.*

MR. JOHN L. OGDEN,  
Chief, Bureau of Water.

SIR:—I have the honor to submit the following report of work performed under my direction during the year 1894:

There were pumped during the year 72,073,724,238 gallons of water, an increase of 6,720,987,260 gallons over the pumpage of 1893.

The maximum daily pumpage was 234,894,075 gallons, an increase of 12,375,230 over the maximum pumpage of the preceding year. The average daily pumpage was 197,344,806 gallons, an increase of 18,296,212 gallons over the average of 1893.

Increased pumping facilities being required at the Spring Garden Pumping Station, a new engine house has

been added for the accommodation thereof, and in it a thirty million (30,000,000) gallon engine has been built by the Holly Manufacturing Company of Lockport, New York. We began to pump with this engine December 1st.

Six new boilers, built by the Southwark Foundry and Machine Company of Philadelphia, and six, built by the Harlan and Hollingsworth Company of Wilmington, Del., were also introduced at this Station during the past year into a house erected for their reception.

At the Frankford Station a new engine and boiler house was completed, and a new fifteen million (15,000,000) gallon engine, built by the Southwark Foundry and Machine Company, was added. This engine has not been accepted by the Bureau. Six new boilers have also been built at this Station by the same Company.

At the Roxborough Auxiliary Works a new engine and boiler house was built, a five million (5,000,000) gallon engine taken from the Spring Garden Station erected therein, and four new boilers, built by the Edge Moor Iron Works, of Wilmington, Del., were introduced.

At the Belmont Reservoir an entire new station has been erected. Four new boilers, built by the Edge Moor Iron Works, were placed in position. These boilers are now ready for firing.

A detailed report on additions to boilers and machinery will be found in the description of boilers and machinery accompanying this report.

The Queen Lane Reservoir was completed and water first pumped in on November 29th.

At the New Roxborough Reservoir evidence of a leak manifested itself by the appearance of small streams of water coming up through the ground at the head of a valley and on the north side of Port Royal avenue about four hundred (400) feet from the inside of the reservoir.

These streams were watched to see if any portion of them represented the natural drainage of the surrounding land. When the water in the reservoir rose to such a height that the leakage was observed by the gauge, the water began to run in the meadow, and increased as the depth of the water in the reservoir became greater. When the basin was drawn down the water in the meadow ran for a day or two and finally stopped, showing that the water came from the reservoir. A number of holes 15 feet deep were dug along the northwest side of Port Royal avenue, on a line between the reservoir and the point of the meadow from which the water came. These holes covered a distance of eighty (80) feet along the avenue, and were intended to intercept the flow of water from the basin, but developed nothing.

The inside slope on Port Royal avenue was closely inspected, and a slight sinkage was observed in the brick lining. The lining was taken out at a point about three hundred and fifty (350) feet east from the northwest corner, covering a space of fifty-five (55) feet long and from seven (7) to thirteen (13) feet wide. After removing the brick lining a hole six (6) inches in diameter and extending down in the rock was discovered. This hole had washed through the clay. Water was pumped into it, and in a short time a second hole was discovered in the rock. Water was pumped into these holes for two hours and a half ( $2\frac{1}{2}$ ) before they could be filled. The clay was then removed from the rock on both sides of these openings and an open fissure, several inches in width, was found to extend parallel with and from eight (8) to ten (10) feet back from the toe of the bank. This fissure was followed eastward along the bank and downward to a level below the bottom covering of the reservoir, varying from one (1) to five (5) feet. This developed many smaller cracks and seams in the rock, and it was

finally decided to remove all portions that showed any evidence of being shattered or in which a clayey scum was found, the result of percolation of water through the clay lining. After removing all the shattered material the excavation was brought to sub-grade of the clay lining by filling with a solid body of concrete, composed of the best Portland cement one part, sharp sand two parts, and broken stone four parts. About three hundred and fifty (350) cubic yards of concrete were used, and all irregularities around the edge of the excavations were carefully grouted. The clay lining was then replaced by ramming it thoroughly in thin layers. The brick and concrete lining on slope and bottom are now being put on as the weather permits.

Extensive and much needed repairs are now being made to the greater part of the overworked machinery of the Bureau.

The second thirty million (30,000,000) gallon engine at the Spring Garden Station will be ready to start about February 1, 1895.

Recapitulation, expense account and pumpage at the several stations will be found in the following tables.

Respectfully,

F. L. HAND,  
*General Superintendent.*

Total Capacity, 60,000,000 Gallons per day. **NEW SPRING GARDEN STATION.**

No. 3.—Vertical Triple Expansion.—Capacity, 30,000,000 gallons per day.  
 No. 9.—Worthington Duplex.—Capacity, 15,000,000 gallons per day.  
 No 10.—Worthington Duplex.—Capacity, 15,000,000 gallons per day.

1894.	Running Time of each Engine in Hours.			Gallons Pumped by each Engine.			Total Pumpage of each Month.	Average Pumpage per Day.	Coal.		Percentage of Ashes.	Oil.		Mean Water Pressure and Mean Suction Lift in Pounds per Square Inch.			Gallons Raised 100 Feet per Pound of Coal.
	No. 3.	No. 9.	No. 10.	No. 3.	No. 9.	No. 10.	Gallons.	Gallons.	Tons.	Lbs.		Qts.	Qts.	No. 3.	No. 9.	No. 10.	
January .....		737	737		521,112,907	498,780,280	1,019,873,187	32,899,135	1,710	155	.20	587	70	.....	65	65	400.9
February.....		668	662		481,220,200	464,845,930	946,036,130	33,788,076	1,406	578	.20	532	61	.....	65	60	452.3
March.....		670	743		502,203,150	503,077,790	1,005,280,940	32,428,417	1,990	.....	.20	580	66	.....	66	66	339.6
April.....		624	685		448,779,621	460,178,390	908,958,011	30,131,933	1,382	176	.20	529	60	.....	68	68	308.3
May.....		679	735		494,600,340	508,998,430	1,003,598,770	32,374,153	1,417	.....	.20	592	64	.....	68	68	476.1
June.....		710	655		525,086,760	461,843,560	986,930,320	32,897,677	1,369	476	.20	545	66	.....	66	66	365.4
July.....		738	730		554,939,400	523,867,310	1,078,856,710	34,801,829	1,460	276	.20	607	76	.....	62	62	496.7
August.....		734	735		560,774,595	514,947,527	1,075,722,122	34,700,713	1,406	832	.20	583	83	.....	60	60	514.2
September.....		713	690		550,333,580	473,012,040	1,023,345,620	31,111,520	1,352	161	.20	570	86	.....	60	60	508.8
October.....		740	683		568,436,230	474,373,200	1,042,809,430	33,639,013	1,591	2,172	.20	561	81	.....	63	63	440.3
November.....		701	716		494,659,380	472,109,09	966,768,470	32,225,615	1,728	1,769	.20	574	81	.....	76	76	375.9
December.....	325	721	736	324,871,500	530,463,990	472,450,289	1,327,785,779	42,831,799	1,633	1,478	.20	656	85	50	64	61	546.4
Totals & Averages...	325	8,485	8,507	324,871,500	6,227,660,153	5,828,483,836	12,381,015,489	33,902,490	18,447	1,380	.20	6,916	879	50	65	64	468.7

- No. 4.—Worthington Duplex, Capacity, 20,000,000 gallons per day.  
 No. 5.—Vertical Compound, Capacity, 20,000,090 gallons per day.  
 No. 6.—Simpson Rotary Compound, Capacity, 10,000,000 gallons per day.  
 No. 7.—Marine Rotary Compound, Capacity, 20,000,000 gallons per day.  
 No. 8.—Worthington Duplex, Capacity, 10,000,000 gallons per day.  
 No. 11.—Gaskill Compound, Capacity, 20,000,000 gallons per day.

Coal.		Percentage of Ashes.	OIL.		Mean Water Pressure and Mean Suction Lift in Pounds per Square Inch.						Gallons Raised 100 ft. per Pound of Coal.
			Cylinder.	Engine.							
Fons.	Lbs.		Qts.	Qts.	No. 4.	No. 5.	No. 6.	No. 7.	No. 8.	No. 11.	
2,152	1,571	.20	551	672	.....	50	50	54	65	50	605.2
2,035	318	.20	563	574	.....	50	50	60	65	50	586.2
2,570	1,183	.20	643	714	53	50	50	54	65	50	585.7
2,737	88	.20	792	723	50	50	50	54	68	50	540.6
3,312	320	.20	865	1,025	50	50	50	54	68	50	598.1
3,101	1,203	.20	1,049	981	50	50	50	54	66	50	636.5
3,421	1,061	.20	1,036	1,139	50	50	50	54	62	50	616.4
3,683	1,123	.20	1,200	1,104	50	50	50	54	60	50	575.4
3,707	1,789	.20	1,165	1,199	50	50	50	54	60	50	560.3
3,387	82	.20	1,190	1,161	50	50	50	54	65	50	546.8
3,882	2,065	.20	966	1,011	72	50	50	54	74	50	478.7
3,460	1,999	.20	783	781	52	50	.....	54	65	50	560.7
37,452	1,602	.20	10,803	11,085	52	50	50	54	65	50	574.2

No. 3.—Vertical Triple Expansion.—Capacity,

1887  
CHICAGO, ILLINOIS.



Jonval Turbines— No. 1—2,000,000 gallons  
 horizontal plungy.  
 Total capacity, 33 Nos. 3, 4 and 5—5,300,000  
 lons per day. Nos. 7, 8 and 9—5,100,000  
 per day.

1894.	Runni		Average Pumpage per Day.	OILS.	
	No. 1	allons per month.		Castor. Quarts.	Engine. Quarts.
January .....	693	6,031	30,742,130	25	200
February.....	150	4,860	35,323,030	17	163
March.....	741	5,675	36,171,150	28	206
April.....	719	7,913	35,503,597	22	211
May.....	620	7,097	25,552,809	36	218
June.....	718	1,790	32,793,393	35	236
July.....	333	3,078	19,413,648	35	183
August.....	37	2,001	7,484,581	12	77
September.....	278	7,345	20,418,578	30	157
October.....	443	5,970	31,727,511	26	190
November.....	719	5,269	38,417,842	31	226
December.....	744	7,660	36,886,376	27	219
Totals & Average	6,195	7,848	29,207,895	327	2,286

No. 3.—Vertical Triple Expansion.—Capacity,

UNIVERSITY OF TORONTO

Total Capacity—18,000,000 gallons per day.

BELMONT PUMPING STATION.

No. 1—Worthington Duplex—Capacity,  
5,000,000 gallons per day.  
No. 2—Worthington Duplex—Capacity,  
5,000,000 gallons per day.  
No. 3—Worthington Duplex—Capacity,  
8,000,000 gallons per day.

1894.	Running Time of each Engine in Hours.			Gallons Pumped by each Engine.			Total Pumpage of each Month.	Average Pumpage per Day.	Coal.		Percentage of Ashes.	Oil.		Mean Water Pressure and Mean Suction Lift in Pounds per Square Inch.			Gallons Raised 100 Feet per Pound of Coal.
	No. 1.	No. 2.	No. 3.	No. 1.	No. 2.	No. 3.	Gallons.	Gallons.	Tons.	Lbs.		Qts.	Qts.	No. 1.	No. 2.	No. 3.	
January.....	416	722	699	93,790,500	178,394,384	247,250,440	519,435,324	16,755,978	1,277	1,835	20	187	52	88	88	88	399.9
February.....	376	672	672	80,484,900	170,506,130	245,598,075	496,589,105	17,735,325	1,180	1,658	20	172	49	88	88	88	411.9
March.....	390	744	744	92,905,800	191,927,736	274,678,880	558,612,416	18,019,755	1,324	435	20	188	55	88	88	88	415.0
April.....	381	711	711	90,670,800	186,090,378	265,184,420	541,945,598	18,064,853	1,257	1,950	20	183	52	88	88	88	423.9
May.....	514	636	785	128,847,000	165,847,022	283,685,230	578,379,252	18,657,395	1,329	955	20	188	54	88	88	88	428.0
June.....	719	665	711	184,975,200	182,673,125	270,368,100	638,016,425	21,267,214	1,462	920	20	210	60	88	88	88	429.2
July.....	728	646	720	191,067,000	174,084,584	282,919,415	648,070,999	20,905,516	1,510	562	20	212	60	88	88	88	422.2
August.....	743	741	742	190,040,900	197,076,048	278,515,130	665,632,078	21,472,003	1,544	980	20	217	62	88	88	88	424.0
September.....	677	720	716	173,957,100	193,178,238	260,303,525	636,438,863	21,214,629	1,509	1,600	20	210	60	88	88	88	414.7
October.....	743	740	737	189,457,800	195,318,552	271,910,930	656,687,282	21,183,400	1,583	1,925	20	217	62	88	88	88	407.9
November.....	678	714	720	168,398,000	184,774,824	260,629,655	613,797,479	20,459,915	1,528	1,480	20	207	59	88	88	88	395.0
December.....	730	742	698	179,301,000	190,734,960	251,340,453	621,376,113	20,044,400	1,682	825	20	216	62	88	88	88	363.4
Totals and averages.	7,095	8,483	8,605	1,762,991,000	2,210,605,981	3,201,384,253	7,174,981,234	19,648,370	17,191	1,685	20	2,407	687	88	88	88	411.2

Total Capacity—24,500,000 gallons per day.

## ROXBOROUGH PUMPING STATION.

No. 1—Vertical Compound.—Capacity, 12,000,000 gallons per day.  
 No. 2—Worthington Duplex.—Capacity, 5,000,000 gallons per day.  
 No. 3—Worthington Duplex.—Capacity, 7,500,000 gallons per day.

1894.	Running Time of Each Engine in Hours.			Gallons Pumped by each Engine.			Total Pumpage of each Month.	Average Pumpage per day.	Coal.		Percentage of Ashes.	Oil.		Mean water pressure and suction lift in pounds per square inch.			Gallons Raised 100 Feet per Pound of Coal.
												Cylinder.	Engine.				
	No. 1.	No. 2.	No. 3.	No. 1.	No. 2.	No. 3.	Gallons.	Gallons.	Tons.	lbs.		Qts.	Qts.	No. 1.	No. 2.	No. 3.	
January.....	551	254	100	262,558,184	55,953,830	28,922,892	347,429,906	11,207,416	1,205	1,732	.25	463	805	140	154	140	448.9
February.....	549	162	.....	248,720,964	30,076,865	.....	278,797,829	9,957,065	869	680	.25	289	548	140	154	.....	499.6
March.....	363	463	249	159,609,120	103,060,290	69,599,975	332,269,385	10,718,367	1,288	648	.25	294	403	140	149	140	401.8
April.....	501	45	483	218,750,460	11,067,515	127,840,731	357,658,706	11,921,956	1,359	1,128	.25	315	527	156	145	156	413.1
May.....	601	.....	561	301,831,630	.....	163,326,458	465,158,088	15,005,009	1,593	2,100	.25	426	637	160	.....	160	453.5
June.....	599	343	286	315,614,200	77,161,560	62,908,818	456,684,578	16,189,485	1,552	612	.25	451	839	160	150	160	454.4
July.....	728	165	596	415,356,780	37,893,170	166,932,983	620,182,933	20,005,901	1,900	.....	.25	477	911	154	145	160	508.5
August.....	539	691	516	218,521,866	159,548,195	141,573,126	519,643,187	16,762,683	1,916	1,882	.25	552	674	160	160	160	422.3
September.....	688	673	585	230,397,034	153,964,090	156,608,456	540,969,580	18,032,319	2,107	1,604	.25	572	688	160	160	160	399.8
October.....	316	689	744	80,536,120	148,572,325	227,852,375	456,960,820	14,740,349	1,990	2,024	.25	378	387	156	156	156	357.6
November.....	260	654	713	67,838,520	144,955,870	228,343,380	441,137,770	14,704,592	1,970	1,268	.25	381	397	140	150	140	348.7
December.....	647	433	623	221,009,265	86,273,020	182,253,740	489,536,025	15,791,484	1,106	790	.25	496	650	140	150	140	381.5
Totals and Averages...	6,342	4,572	5,406	2,740,739,143	1,008,526,730	1,556,162,934	5,805,428,807	14,503,059	18,861	1,028	.25	5,094	7,466	150	152	152	424.1

Total Capacity—500,000 Gallons per day.

## ROXBOROUGH AUXILIARY STATION.

No. 2.—Knowles.—Capacity 250,000 Gallons per day.  
 No. 3.—Knowles.—Capacity 250,000 Gallons per day.

8

1894.	Running Time of each Engine in Hours.		Gallons Pumped by each Engine.		Total pumpage of each Month.	Average Pumpage per Day.	Coal.		Percentage of Ashes.	Cylinder Oil.	Mean Water Pressure.		
	No. 2.	No. 3.	No. 2.	No. 3.	Gallons.	Gallons.	Tons.	Lbs.			Qts.	No. 2.	No. 3.
January.....	24	53	253,440	567,420	820,860	26,479	5	1,255	.20	3	36	36	
February.....	36	37	370,920	340,620	711,540	25,412	5	1,350	.20	3	36	36	
March.....	32	53	331,650	557,700	889,350	28,688	4	1,485	.20	4	36	36	
April.....	37	44	365,200	470,700	835,900	27,863	5	1,130	.20	3	36	36	
May.....	37	50	401,720	522,780	924,500	29,822	4	1,600	.20	4	36	36	
June.....	31	59	321,200	625,080	946,280	31,542	4	1,100	.20	4	36	36	
July.....		90		941,100	941,100	30,358	4	410	.20	4	.....	36	
August.....		87		918,120	918,120	29,617	4	1,210	.20	4	.....	36	
September.....		72		755,100	755,100	25,170	4	.....	.20	3	.....	36	
October.....		81		795,820	795,820	25,671	4	550	.20	3	.....	36	
November.....		70		721,800	721,800	24,060	5	811	.20	3	.....	36	
December.....		66		630,080	630,080	20,325	5	1,710	.20	3	.....	36	
<b>Totals and averages.....</b>	<b>197</b>	<b>762</b>	<b>2,044,130</b>	<b>7,846,320</b>	<b>9,890,450</b>	<b>27,084</b>	<b>58</b>	<b>1,491</b>	<b>.20</b>	<b>41</b>	<b>36</b>	<b>36</b>	

101

Total Capacity—3,000,000  
Gallons per day.

## MOUNT AIRY PUMPING STATION.

No. 1.—Davidson Rotary.—  
Capacity 1,000,000 Gallons  
per day.

No. 2.—Davidson Rotary.—  
Capacity 1,000,000 Gallons  
per day.

No. 3.—Knowles.—Capacity  
1,000,000 Gallons per day.

1894.	Running Time of each Engine in Hours.		Gallons Pumped by each Engine.		Total Pumpage each Month.	Average Pumpage per Day.	Coal.		Percentage of Ashes.	OIL.		Mean Water Pressure and Mean Suction Lift in Lbs. per sq. in.		Gallons Raised 100 ft. per lb. of Coal.
	No. 1.	No. 2.	No. 1.	No. 2.	Gallons.	Gallons.	Tons.	Lbs.		Qts.	Qts.	No. 1.	No. 2.	
January .....	741	484	32,272,500	18,884,500	51,157,000	1,650,225	113	380	.20	62	62	60	70	298.6
February.....	672	464	29,162,500	18,253,750	47,416,250	1,693,437	106	1,060	.20	56	56	60	70	294.1
March .....	744	469	32,695,500	18,389,750	51,085,250	1,647,911	120	1,700	.20	62	62	60	70	316.4
April.....	718	467	31,627,500	19,266,250	50,893,750	1,696,458	121	.....	.20	60	60	60	70	388.6
May .....	744	600	34,235,000	26,335,000	60,570,000	1,953,870	144	.....	.20	62	62	60	60	277.1
June.....	642	709	28,494,250	32,512,000	61,006,250	2,034,541	150	500	.20	60	60	60	60	268.4
July.....	699	436	30,249,000	18,157,250	48,406,250	1,561,492	127	2,020	.20	62	62	70	70	250.0
August.....	736	437	31,674,750	17,987,750	49,662,500	1,602,016	127	1,820	.20	62	62	70	70	378.5
September .....	712	356	31,818,750	14,425,000	46,243,750	1,541,458	119	1,440	.20	60	60	70	70	255.3
October.....	738	495	31,990,000	20,013,750	52,003,750	1,677,540	130	1,300	.20	62	62	60	70	263.9
November .....	716	719	29,726,250	27,851,250	57,577,500	1,919,250	160	100	.20	60	60	60	60	237.6
December .....	744	511	31,268,150	19,170,600	50,438,750	1,627,056	140	1,500	.20	62	62	60	60	236.6
<b>Totals and averages.....</b>	<b>8,606</b>	<b>6,147</b>	<b>375,214,150</b>	<b>251,276,850</b>	<b>626,491,000</b>	<b>1,717,104</b>	<b>1,562</b>	<b>1,020</b>	<b>.20</b>	<b>730</b>	<b>730</b>	<b>62</b>	<b>66</b>	<b>288.7</b>

Total Capacity—750,000 gallons per day.

### CHESTNUT HILL STATION.

No. 2—Knowles—Capacity, 250,000 gallons per day.  
 No. 3—Worthington Duplex—500,000 gallons per day.

1894.	Running time of each engine in hours.		Gallons pumped by each engine.		Total Pumpage of each month.	Average Pumpage per day.	Coal.		Percentage of Ashes.	OIL. Cylinder. Qts.	Mean Water pressure and mean suct'n lift in lbs. per sq. in.		Gallons raised 100 feet per pound of coal.
	No. 2.	No. 3.	No. 2.	No. 3.	Gallons.	Gallons.	Tons.	Lbs.			No. 2.	No. 3.	
January.....	2		68,880		68,880	2,221	8	580	.22	1	53		4.5
February.....	15		516,600		516,600	18,450	9	640	.22	3	53		30.4
March.....	62		2,135,280		2,135,280	68,880	14		.36	7	53		83.4
April.....	52		1,794,800		1,794,800	59,826	13	165	.34	7	53		75.0
May.....	191		6,263,160		6,263,160	202,034	21	520	.32	14	53		161.3
June.....	171	92	5,879,520	3,160,680	9,040,200	301,340	26	530	.32	25	53	53	188.2
July.....	110		3,862,200		3,862,200	124,587	15	1,525	.31	12	53		131.8
August.....	81		2,637,120		2,637,120	85,068	14	1,140	.25	9	53		99.3
September.....	59		1,928,640		1,928,640	64,288	12	1,937	.25	9	53		81.9
October.....	230		7,201,060		7,201,060	232,292	26	525	.26	22	53		150.1
November.....	198		5,874,480		5,874,480	195,816	24	2,005	.25	20	53		129.0
December.....	74		2,184,480		2,184,480	70,467	14	1,483	.26	8	53		81.4
Totals and Averages.....	1,245	92	40,346,220	3,160,680	43,506,900	118,772	200	2,090	.28	137	53	53	101.3

No. 1.—Marine Compound Rotary.—  
Capacity, 10,000,000 gallons per day.  
No. 2.—Corliss Compound Rotary.—  
Capacity, 10,000,000 gallons per day.  
No. 3.—Vertical Compound Rotary.—  
Capacity, 15,000,000 gallons per day.

FRANKFORD PUMPING STATION.

Total Capacity—35,000,000 gal-  
lons per day.

1894.	Running time of each Engine in hours			Gallons pumped each month.			Total Pump- age each Month.	Average pumpage per day.	Coal.		Percentage of ashes.	Oil.		Mean Water Pressure and Mean Suc- tion Lift in lbs. per sq. inch.			Gallons Raised 100 Ft. per Pound of Coal.	
	No. 1.		No. 2.		No. 3.				Tons.	Lbs.		Cylinder.	Qts.	Engine.	No. 1.	No. 2.		No. 3.
	No. 1.	No. 2.	No. 3.	No. 1.	No. 2.	No. 3.												
January.....	708	659	.....	221,319,638	118,227,128	.....	339,546,766	10,958,121	682	60	.25	270	321	85	85	.....	467.1	
February.....	630	647	.....	200,050,509	111,664,202	.....	311,714,711	11,132,868	619	40	.25	245	480	85	85	.....	470.0	
March.....	702	689	.....	230,954,871	119,096,962	.....	350,051,833	11,291,994	649	1,740	.25	275	351	84	84	.....	504.8	
April.....	705	645	.....	243,528,855	108,107,085	.....	351,635,940	11,721,196	626	1,760	.25	267	362	84	84	.....	525.7	
May.....	692	721	.....	222,005,137	137,839,419	.....	359,934,556	11,610,792	712	820	.25	261	344	84	84	.....	473.5	
June.....	666	668	.....	205,186,346	126,117,795	.....	331,304,141	11,043,471	646	160	.25	232	313	82	82	.....	480.5	
July.....	681	672	.....	216,723,892	133,250,940	.....	349,974,832	11,289,611	699	1,040	.25	236	322	82	82	.....	547.0	
August.....	702	692	.....	200,167,624	183,470,040	.....	383,637,564	12,375,405	726	1,160	.25	270	376	75	75	.....	494.8	
September.....	711	684	.....	131,387,595	251,063,584	.....	382,441,179	12,748,089	699	940	.25	331	537	64	76	.....	512.3	
October.....	715	646	50	129,986,324	226,591,960	31,869,547	388,097,831	12,519,284	717	820	.25	314	554	62	70	50	506.9	
November.....	551	579	119	97,534,207	196,690,112	72,696,932	365,921,251	12,230,708	710	500	.25	362	526	63	65	68	484.1	
December.....	162	627	394	28,007,059	188,061,664	152,808,272	363,875,985	11,737,935	638	.....	.25	441	598	65	72	68	534.5	
Totals and averages..	7,625	7,832	503	2,136,991,967	1,894,869,841	257,374,751	4,279,136,549	11,721,177	8,027	80	.25	3,494	5,074	76	78	62	500.1	



YEAR 1894.

STATE	Lift in feet, including suction and friction.	Gallons pumped 100 feet high, suction and friction included.	Cost of raising one million gallons 100 feet.	Percentage of work done at each station.	Height of surface of basins above pumps in feet.
Fairmount....	100.0	10,632,204,689	\$1 35	8.70	90.00 115.00 120.00
Spring Garden	150.6	66,267,139,421	3 30	54.60	102.00 179.00 *114.00 †215.00
Belmont.....	220.4	15,813,658,639	4 15	13.00	198.08
Roxborough...	349.0	18,515,946,536	.....	15.20	317.00 366.00
			388		
Roxborough A	83.2	8,228,854	.....	.06	180.00
Mount Airy..	148.0	927,206,680	9 07	.70	‡128.00
Chestnut Hill	122.5	53,295,952	46 45	.40	128 00
Frankford.....	209.9	8,981,907,616	4 44	7.34	108.53
Totals & deducted from	168.1	121,199,538,387	\$3 48	100.00	

Repumpage from Mount Airy.

Total Capacity—35,000,000 gal-  
lons per day.

## FRANKFORD PUMPING STATION.

No. 1.—Marine Compound Rotary.—  
Capacity, 10,000,000 gallons per day.  
No. 2.—Corliss Compound Rotary.—  
Capacity, 10,000,000 gallons per day.  
No. 3.—Vertical Compound Rotary.—  
Capacity, 15,000,000 gallons per day.

1894.	Running time of each Engine in hours			Gallons pumped each month.			Total Pump- age each Month.	Average pumpage per day.	Coal.		Percentage of ashes.	Oil.		Mean Water Pressure and Mean Suction Lift in lbs. per sq. inch.			Gallons Raised 100 ft. per Pound of Coal.
												Cylinder.	Engine.				
	No. 1.	No. 2.	No. 3.	No. 1.	No. 2.	No. 3.	Gallons.	Gallons.	Tons.	Lbs.		Qts.	Qts.	No. 1.	No. 2.	No. 3.	
January.....	708	659	.....	221,319,638	118,227,128	.....	339,546,766	10,953,121	682	60	.25	270	321	85	85	.....	467.1
February.....	630	647	.....	200,050,509	111,664,202	.....	311,714,711	11,132,668	619	40	.25	245	480	85	85	.....	470.0
March.....	702	689	.....	230,954,871	119,096,962	.....	350,051,833	11,291,994	649	1,740	.25	275	351	84	84	.....	504.8
April.....	705	645	.....	243,528,855	108,107,035	.....	351,635,890	11,721,196	626	1,760	.25	267	362	84	84	.....	525.7
May.....	692	724	.....	222,095,137	137,839,419	.....	359,934,556	11,610,792	712	820	.25	261	344	84	84	.....	473.5
June.....	666	668	.....	205,186,346	126,117,795	.....	331,304,141	11,043,471	646	160	.25	232	313	82	82	.....	480.5
July.....	681	672	.....	216,723,892	133,250,940	.....	349,974,832	11,289,511	599	1,040	.25	236	322	82	82	.....	547.0
August.....	702	692	.....	200,167,524	183,470,040	.....	383,637,564	12,375,405	726	1,160	.25	270	376	75	75	.....	494.8
September.....	711	684	.....	131,387,595	251,053,584	.....	382,441,179	12,748,039	699	940	.25	331	537	64	75	.....	512.3
October.....	715	646	50	129,936,324	226,291,960	31,869,547	388,097,831	12,519,284	717	820	.25	314	554	62	70	50	506.9
November.....	551	579	119	97,534,207	196,690,112	72,696,932	366,921,251	12,230,708	710	500	.25	352	526	63	65	68	484.1
December.....	162	527	334	28,007,059	183,061,664	152,808,272	363,875,995	11,737,935	638	.....	.25	441	598	65	72	68	534.5
<b>Totals and averages..</b>	<b>7,625</b>	<b>7,832</b>	<b>503</b>	<b>2,126,991,957</b>	<b>1,894,869,841</b>	<b>257,374,751</b>	<b>4,279,136,549</b>	<b>11,721,177</b>	<b>8,027</b>	<b>80</b>	<b>.25</b>	<b>3,494</b>	<b>5,074</b>	<b>76</b>	<b>78</b>	<b>62</b>	<b>500.1</b>

YEAR 1894.

STAT	Lift in feet, including suction and friction.	Gallons pumped 100 feet high, suction and friction included.	Cost of raising one million gallons 100 feet.	Percentage of work done at each station.	Height of surface of basins above pumps in feet.
Fairmount.....	100.0	10,632,204,689	\$1 35	8.70	90.00 115.00 120.00
Spring Garden	150.6	66,267,139,421	3 30	54.60	102.00 179.00 *114.00 †215.00
Balmont.....	220.4	15,813,658,639	4 15	13.00	198.08
Roxborough...	349.0	18,515,946,536	.....	15.20	317.00 366.00
			388		
Roxborough A	83.2	8,228,854	.....	.06	†80.00
Mount Airy...	148.0	927,206,680	9 07	.70	‡128.00
Chestnut Hill	122.5	53,295,952	46 45	.40	128 00
Frankford.....	209.9	8,981,907,616	4 44	7.34	108.53
Totals as deducted from	168.1	121,199,588,387	\$3 48	100.00	

Repumpage from Mount Airy.

No. 1.—Marine Compound Rotary.—  
Capacity, 10,000,000 gallons per day.  
No. 2.—Corliss Compound Rotary.—  
Capacity, 10,000,000 gallons per day.

FRANKFORD PUMPING STATION.

Total Capacity—35,000,000 gal-

1894.

umpage.	Average per day.
,248,354	166,749,94
,424,125	173,050,86
,130,599	182,613,86
,903,768	182,496,74
,929,803	200,449,34
,341,504	213,444,71
,752,702	211,508,11
,857,942	196,221,11
,066,077	211,168,86
,584,563	217,341,41
,422,419	212,380,71
,064,382	200,711,71
<hr/>	
724,238	197,344,8
<hr/>	
987,260	18,296,2
<hr/>	
<hr/>	
<hr/>	

No. 1 - Marine Commercial Papers

DEPARTMENT OF REVENUE  
ST. LOUIS, MO.

DEP.

	(through valves).								
	Speed (feet per second) through Valves.	Mean Pressure on Pumps at Pressure Control (pounds per square inch).	Length of Steam Drum (feet).	Length of Grate (feet).	Area of Grate (square feet).	Area of Heating Surface (square feet).	Estimated Horse-power, at 10 Square Feet for Shell and Fire Flues, 15 Square Feet for Tubes, and 12 Square Feet for Drums.	Height of Stack (feet).	Section of Stack (square feet).
84	4.05		14	6	40½	1,371	95.9	95	25
50	4.4		12½	6⅙	42	1,551	113	100	49
12	3.8		.....	6⅙	42	1,116	100	150	27
50	4.2		14	5½	36	1,371	95.9	110	25
61	6.09		.....	6⅙	42	1,116	100	100	25
82	2.91		4	5	33¾	1,215	87	100	20¼
29	4.22		11½	6⅙	37½	.....	.....	100	.....
53	5.97		.....	6½	42	1,116	80	100	25
56	5.97		.....	4	16⅔	455	33	50	7⅝
.....	.....		.....	5	15	293	25	50	1½

DEPARTMENT OF THE ARMY  
HEADQUARTERS  
WASHINGTON, D. C.



# APPENDIX D.

---

## REPORT

ON THE

OPERATIONS IN CONNECTION WITH THE

# DISTRIBUTION SYSTEM,

DURING 1894.

---

BUREAU OF WATER,

*Philadelphia, January 19, 1895.*

MR. JOHN L. OGDEN,  
Chief of Bureau.

SIR:—The following report on the work performed for the Distribution System is respectfully submitted.

Pumping and supply mains have been laid as follows :

A forty-eight inch pumping main from Frankford Pumping Station to Wentz Farm reservoir ; connections completed.

A forty-eight inch pumping main from No. 4 engine at Spring Garden Station to East Park reservoir.

A forty-eight inch supply main from Standpipe Hill to lower stop house at Queen Lane reservoir.

A forty-eight inch supply main from Twenty-ninth and York streets to lower stop house at Queen Lane reservoir.

A twenty and thirty (suction) supply main from the forty-eight inch main at intersection of Ann street and Shawmont avenue to twenty (20) inch main in Bean

street, and connection to pumps at new station, corner of Ann and Minerva streets.

Two (2) forty-eight (48) inch supply mains (suction) from the Schuylkill river to Nos. 3 and 4 engines at Spring Garden Station.

A thirty (30) inch pumping main from the new pumping station at Ann and Minerva streets to the thirty inch main in Shawmont avenue southwest of Bean street.

A thirty (30) inch supply main (suction) from the thirty (30) inch pumping main southeast of George's Hill reservoir to George's Hill pumping station.

A twenty (20) inch pumping main from George's Hill pumping station to dead end laid in 1893.

A twenty (20) inch supply main in Snyder avenue from Broad to Sixteenth street.

Six thousand three hundred and ninety-five (6,395) feet of the forty-eight (48) inch pumping main from Queen Lane Works to Queen Lane reservoir have been laid during the year, leaving a balance of seven hundred (700) feet and the connections at the works to complete the line. Eight hundred and seventy-five (875) feet were also laid on the second line.

The forty-eight (48) inch pumping main from No. 3 engine at the Spring Garden station to East Park reservoir has also been laid, and is ready for the connections at the works and reservoir.

The total quantity of large mains laid during 1894 is as follows :

48-inch.....	41,218 feet.
36-inch.....	255 feet.
30-inch.....	1,680 feet.
20-inch.....	3,021 feet.
Total.....	<u>46,174 feet.</u>

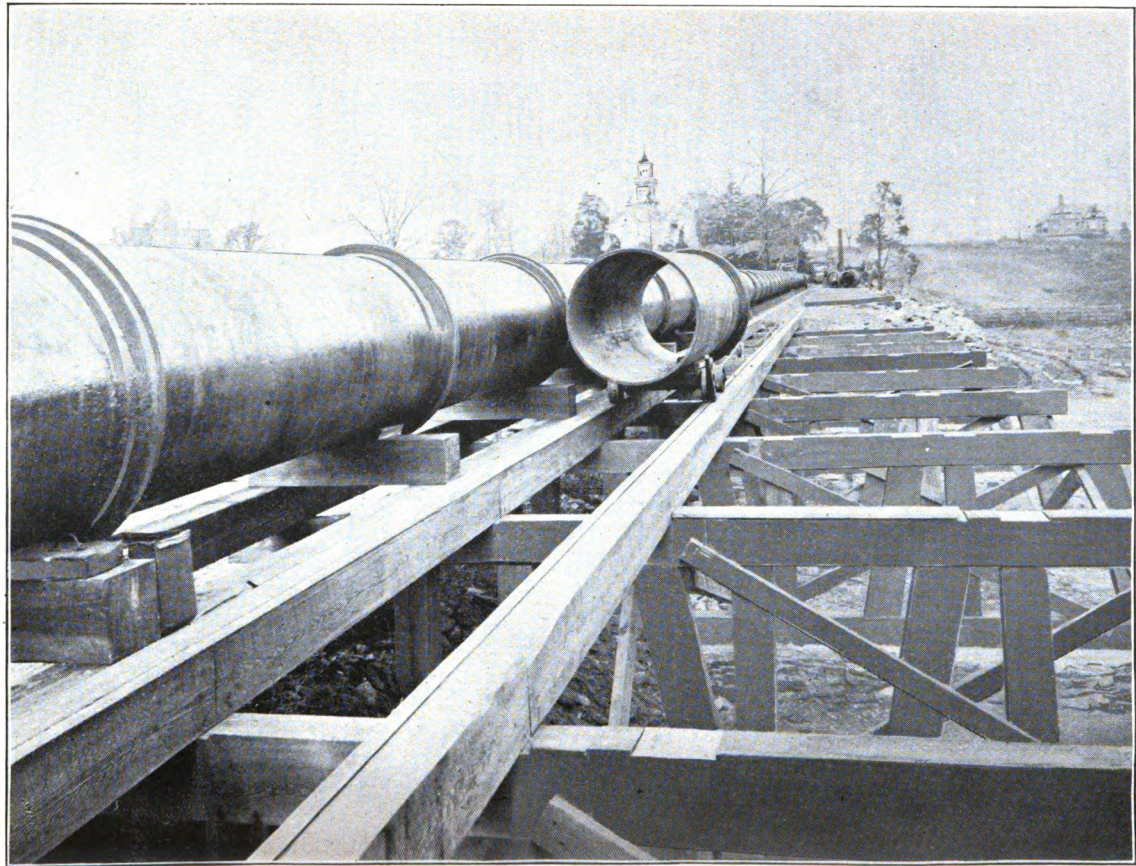
As stated, two lines of forty-eight (48) inch supply mains from the Queen Lane reservoir have been com-



EXCAVATING MACHINE









pleted. Two more are to be laid in the near future. They will be put in side by side from the reservoir to Thirty-second street and Hunting Park avenue, and then continue to different parts of the City.

A portion of this line extends over a trestle seven hundred and eleven (711) feet long and through cuts from three (3) to twenty-four (24) feet deep. The trestle is completed for the four lines, and a large part of the excavation is done for the two lines yet to be laid.

On Ridge avenue from Penn to Church street, where part of the forty-eight (48) inch Queen Lane pumping main was laid, it was necessary to excavate nearly the whole space between the car tracks and curb from eight (8) to twenty (20) feet deep, and we were compelled to do this without interfering with the trolley cars or blocking the sidewalk. This was accomplished in the following manner:

Heavy timbers were placed across the trench at intervals of fourteen (14) feet, and stringers carrying T rails placed thereon. On this track a tram car was run, having an overhead horizontal timber projecting at one end, to which a pulley was attached by means of which one-half ( $\frac{1}{2}$ ) cubic yard dump buckets were raised and lowered, the power being obtained from a crab-winch carried on the car.

In order to propel the car backward and forward, a crank, provided with sprocket wheels and link belts extending to corresponding sprocket wheels on the car axle at the rear end, was used. The method of operating was to raise the bucket when full, then run the car to a point where the pipe was laid, empty, and return. With medium runs, fifteen men, and not more than fifteen feet depth of trench, an average of 250 cubic yards per day can be excavated by this method and dumped at the required points along the line, besides avoiding the an-

noyance of piling dirt on the sidewalk or street and carting therefrom.

The construction of a new "intake" on the river front, Spring Garden Station, was begun early in the year and completed sufficiently for use by December 5, 1894.

While making the excavation an old wharf was discovered, the tie-logs of which extended inland eighteen (18) feet, and from ten (10) feet below the water line to near the surface, the filling being large loose stones.

A cofferdam was built in the river, with wings extending to the shore and continued by sheet piling to form a rectangular enclosure in which to build the work. It was found to be a difficult matter to keep the water out, as it would find its way through the bottom between the stones, etc., both in the river portion and on the bank, also where the sheet piling did not fit tight to the wharf, etc. Notwithstanding all the efforts to make the enclosure tight, it required one eight (8) inch and two ten (10) inch pumps to keep the water down sufficiently for the work to proceed.

After completing the excavation the bottom was covered with concrete, the latter being at first lowered through the water in iron dump buckets. These were soon discarded for bags, which were found to be more suitable for the purpose. When the bottom was finished the walls were rapidly run up, and the work is now completed, with the exception of a few courses of stone and the covering over the well.



*Electric Railway Streets.*

Where electric power has been substituted for horse power on street car lines, the following work was done :

Character of Work.	DISTRICTS.						Total.	Grand Total.
	First.	Second.	Third.	Fourth.	Fifth.	Sixth.		
Service mains.....	9,597	10,469	5,724	4,978	2,189	3,878	36,835	
Supply mains.....					965	1,211	2,176	
Service main connect'ns.						125	125	
Supply main connect'ns.						138	138	
Service supply connect'ns	366	671	1,093	1,245	131	406	3,912	
Fire hydrant connect'ns.	1,271	4,435	1,694	2,858	22	315	10,595	
Pipe relaid ....	3,032	9,877	8,902	5,989		8,646	36,446	
Repairs, general.....	2,686	2,862	1,465	2,284		218	9,515	
<b>Total feet of pipe.....</b>								<b>99,742</b>
New fire hydrants.....	97	169	162	178	3	23	632	
Fire hydrants renewed	42	137	93	39		21	332	
<b>Total new fire hyd'ts.</b>								<b>964</b>
New stops.....	120	333	182	206	5	62	908	
Stops renewed.....	131	163	174	4		3	475	
<b>Total new stops.....</b>								<b>1,383</b>
Lead service connect'ns.	1,056	999	1,723	658	182	1,361		5,929

*Mains.*

Two hundred and three thousand one hundred and twenty-seven (203,127) feet of service mains, thirty-two thousand five hundred and fifty-two (32,552) feet of supply mains, and fourteen thousand four hundred and nineteen (14,419) feet of pumping mains have been laid, which, in addition to the connections and other new work, make a total of two hundred and eighty-three

thousand five hundred and sixty-nine (283,569) feet, or fifty-three (53) miles and three thousand seven hundred and twenty-nine (3,729) feet added to the distribution system, and a total of one thousand one hundred and thirty-five (1,135) miles and seven hundred and twenty-seven (727) feet of service mains now in use.

Eighty-nine thousand five hundred and fifty-eight (89,558) feet of pipe have been used for relaying old and defective service mains, sixty-two thousand three hundred and seventy-one (62,371) feet were taken up and thirty-three thousand four hundred and thirty-two (33,432) feet were disconnected from the water system and abandoned.

The total quantity used for relays and repairs was one hundred and seven thousand five hundred and fifteen (107,515) feet, and of that taken up, lowered, raised and shifted, three thousand four hundred and ninety (3,490) feet, making the total quantity handled for repairs, one hundred and seventy-three thousand three hundred and seventy-six (173,376) feet.

The total quantity handled for all purposes throughout the year was four hundred and fifty-six thousand nine hundred and forty-five (456,945) feet, weighing forty millions four hundred and sixty-nine thousand one hundred and fifty (40,469,150) pounds

#### *Abandoned Pipes.*

Thirty-three thousand four hundred and thirty-two (33,432) feet of pipe have been cut off from the distribution system and abandoned, as follows :

3-inch.....	5,541 feet.
4-inch.....	22,861 feet.
6-inch.....	4,761 feet.
12-inch.....	233 feet.
16-inch.....	36 feet.
Total.....	<u>33,432 feet.</u>

*Fire Hydrants.*

One thousand two hundred and forty-eight (1,248) new style and one old style fire hydrants have been put in new locations, four hundred and ninety-seven (497) new and nine (9) old style have been substituted for defective ones of the old pattern, making a total of one thousand seven hundred and forty-five (1,745) new and ten (10) old style put in during the year.

There were removed four hundred and fifteen (415) old and two hundred and seventy-four (274) new style fire hydrants. The total number added to the distribution system was five hundred and sixty (560). The total number in use December 31, 1894, was nine thousand four hundred and forty-four (9,444), of which two thousand two hundred and seventy-six (2,276) are of the old pattern, and seven thousand one hundred and sixty-eight (7,168) of the new pattern, equal to seventy-six (76) per cent. of the total in use.

*Drills and Shut-Offs.*

Eleven thousand five hundred and sixty-nine (11,569) new attachments have been made as follows:

$\frac{1}{2}$ -inch,	10,891 area of openings.....	2,138 square inches.
$\frac{3}{8}$ -inch,	307 area of openings.....	94 square inches.
$\frac{3}{4}$ -inch,	147 area of openings.....	65 square inches.
1-inch,	134 area of openings.....	105 square inches.
1 $\frac{1}{2}$ -inch,	42 area of openings.....	74 square inches.
2-inch.	48 area of openings.....	151 square inches.

Total.....11,569

Total.....2,627 square inches.

In addition to the above, eight thousand four hundred and ten (8,410)  $\frac{1}{2}$ -inch, fifty (50)  $\frac{3}{8}$ -inch, nine (9)  $\frac{3}{4}$ -inch, and four (4) 1-inch, or a total of eight thousand four hundred and seventy-three (8,473) attachments were laid from the main to the curb to provide for a water supply where it may be needed in the future, and thus avoid the breaking of street pavements.

*Broken Mains.*

Breaks, for which no special reason can be assigned, occurred in the following named mains :

Districts.	Size in inches.											Total.	
	3	4	6	8	10	12	16	18	20	30	36		48
First.....	1	1	4										6
Second.....	4	5	18										27
Third.....		8	40	5	6		1	1					65
Fourth.....			15				1						17
Fifth.....									2	2	1		5
Sixth.....		2	11			3			1	3			20
Total.....	5	16	88	5	6	3	2	1	3	5	1	5	140

The following breaks were caused by sewer contractors, street cleaners using fire hydrants, and three (3) defective pipe castings :

	Size in inches.								Total.
	3	4	6	10	16	20	22	48	
Total.....	1	17	46	1	3	4	1	1	74

*Meters.*

One hundred and nineteen (119) meters have been set in new locations. Sixty-six (66) that were defective, or where a different size or style was required, have been renewed, and thirty-five (35) taken out where the use of water by meter was discontinued.

The total number of meters in use December 31, 1894, was one thousand one hundred and ninety-five (1,195) ; the number in stock two hundred and fifty-six (256), making a total of one thousand four hundred and fifty-one (1,451) in use and on hand.

Respectfully,

ALLEN J. FULLER,  
*Assistant Engineer in Charge of Distribution.*

## IRON SERVICE AND SUPPLY MAINS LAID IN 1894.

## FIRST DISTRICT.

Comprising the First, Second, Third, Fourth, Twenty-sixth, Thirtieth, and Thirty-sixth Wards.

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains.</i>			
Alder street, from 3 feet south of south house line of Wolf street, north.....		6	26
Alter street, from 11 feet west of east curb line of Eighteenth street, west.....		6	16
Bancroft street, from south house line of Porter street, north.....		6	60
Bancroft street, from south house line of Ritner street, north.....		6	60
Bancroft street, from south house line of Wolf street, north.....		6	55
Baton street, from south house line of McKean street, north.....		6	25
Belt place, from east house line of Second street, west.....		6	25
Bland street, from south house line of McKean street, north.....		6	25
Carlisle street, from south house line of Porter street, north.....		6	60
Carlisle street, from south house line of Ritner street, north.....		6	60
Carlilse street, from south house line of Wolf street, north.....		6	60
Carlilse street, from south house line of Jackson street to Snyder avenue.....		6	461
Caroline street, from centre of Wharton street, north.....		6	25
Caroline street, from south house line of McIlwain street, north.....		6	15
Chadwick street, from south house line of Porter street, north.....		6	60
Chadwick street, from south house line of Ritner street, north.....		6	60
Chadwick street, from south house line of Wolf street, north.....		6	55
Chubb street, from centre of Eneu s reet, north.....		6	18
Clarion street, from south house line of Porter street, north.....		6	60
Clarion street, from south house line of Ritner street, north.....		6	30
Clarion street, from 8 feet north of south curb line of Wolf street, north.....		6	39
Cross street, from Effingham street to Seventh street.....		6	297
Cross street, from centre of Twenty-first street, west.....		6	23
Daly street, from east house line of Second street, west.....		6	28
Daly street, from east house line of Eleventh street, west.....		6	25

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Daly street, from east house line of Twelfth street, west...		6	50
Darien street, from 8 feet north of south curb line of Wolf street, north.....		6	25
Dean street, from centre of Porter street, north.....		6	30
Dean street, from south house line of Ritner street, north		6	30
Dean street, from dead end north house line of Jackson to dead end south house line of Snyder avenue.....		6	388
Dickinson street, from east house line of Twenty-eighth street, west.....		6	50
Dillmore street, from dead end south curb line of Wolf street, north to connect.....		6	18
Dudley street, from east house of Sixth street, west.....		6	25
Dudley street, from west house line of Eighteenth street, to dead end, east house line of Nineteenth street.....		6	396
Dudley street, from dead end west house line of Nineteenth street to east curb line of Twentieth street.....		6	408
Durfor street, from centre of Twelfth street, west.....		6	25
Durfor street, from east house line of Thirteenth street, west.....		6	25
Earp street, from east house line of Twenty-sixth street, west.....		6	50
Earp street, from centre of Twenty-seventh street, west...		8	25
Edgar street, from centre of Eighteenth street, west.....		6	25
Eighteenth street, from south house line of Ritner street to dead end 100 feet south of south house line of Wolf street.....		6	360
Eleventh street, from 12 feet south of northwest house line of Moyamensing avenue to dead end 12 feet south of north house line of Ritner.....		6	205
Eleventh street, west side, from 8 feet south of south curb line of Reed street, north.....		6	60
Emily street, from dead end, west house line of Fifteenth street to Sixteenth street.....		6	422
Ernest street, from centre of Ninth street, west.....		6	25
Ernest street, from south house line of Ellsworth street, north.....		6	25
Evans street, from 6 feet north of south curb line of Federal street, north.....		6	32
Farrell street, from 3 feet south of south house line of Wolf street, north.....		6	26
Fernon street, from east curb line of Twenty-second street, west.....		6	46
Fifteenth street, from south house line of Porter street to north house line of Snyder avenue.....		6	1,903
Fitzgerald street, from Eleventh street to west house line of Twelfth street.....		6	471
Fitzgerald street, from east house line of Thirteenth street, west.....		6	25
Garrett street, from dead end, west house line of Twenty-third street to east curb line of Twenty-fourth street..		6	427

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Gerhard street, from south house line of Ritner street, north.....		6	30
German street, from centre of Fifth street, west.....		6	25
German street, from southeast house line of Passyunk avenue, west.....		6	25
Getz street, from south house line of Ritner street, north..		6	30
Grafton court, from east house line of Fifth street, west...		6	25
Grove street, from centre of Wharton street, north.....		6	25
Hall street, from centre of Ninth street, west.....		6	13
Harmony street, from 38 feet south of south house line of Gray's Ferry road north to connect.....		6	53
Hays street, from centre of Sixth street, west.....		6	25
Hays street, from east house line of Seventh street, west...		6	21
Hicks street, from south house line of Porter street, north		6	60
Hicks street, from south house line of Ritner street, north		6	60
Hicks street, from 8 feet south of south curb line of Wolf street, north.....		6	25
Hicks street, from 12 feet south of south house line of Jackson street to Snyder avenue.....		6	421
Hoffman street, from dead end west house line of Nineteenth street to east curb line of Twentieth street....		6	408
Jackson street, from west house line of Broad street to west house line of Fifteenth street.....		6	446
Jackson street, from east house line of Sixteenth street, west .....		6	50
Jackson street, from centre of Eighteenth street, west.....		6	26
Juniper street, from centre of Shunk street, north.....		6	15
Juniper street, from south house line of Porter street, north .....		6	60
Juniper street, from south house line of Ritner street, north.....		6	30
Juniper street, from 8 feet north of south curb line of Wolf street, north.....		6	39
Juniper street, from 2 feet south of southeast house line of Passyunk avenue, north.....		6	28
Juniper street, from centre of Wharton street, north.....		6	25
Juniper street, from south house line of Ellsworth street, north .....		6	25
Lancaster street, from 7 feet north of south curb line of Wharton street, north.....		6	31
Latona street, from dead end west house line of Twenty-sixth street to Twenty-seventh street.....		6	421
Lawrence street, from Eighteenth street, west.....		6	25
Lawrence street, from 4 feet east of east house line of Nineteenth street, west.....		6	29
Little Medina street, from centre of Seventh street, west..		6	13
McKean street, from west house line of Nineteenth street to west house line of Twentieth street.....		8	446
McKean street, from east house line of Twenty-eighth street, west.....		6	50

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Manton street, from east house line of Twenty-first street, west .....		6	25
Margaretta street, from Wharton to Mary streets.,.....		6	263
Marriott street, from centre of Passyunk avenue, west....		6	25
Marriott street, from east house line of Seventh street, west .....		6	25
Mendenhall street, from south house line of Ritner street, north .....		6	60
Mendenhall street, from south house line of Wolf street, north .....		6	62
Mitlin street, from east house line of Twenty-eighth street, west .....		6	50
Mole street, from south house line of Porter street, north		6	60
Mole street, from south house line of Ritner street, north		6	60
Mole street, from south house line of Wolf street, north...		6	30
Mole street, from centre of Wharton street, north.....		6	25
Morris street, from dead end, west house line of Twenty-first street, to Long lane.....		6	736
Morris street, from east house line of Twenty-eighth street, west.....		6	50
Morris street, from east house line of Thirty-fifth street, west.....		8	50
Moore street, from east house line of Twenty-eighth street, west.....		6	50
Moore street, from east curb line of Thirty-fifth street, west.....		8	26
Mountain street, from east curb line of Twenty-second street, west.....		6	46
Moyamensing avenue, from south house line of Porter street to east house line of Twelfth street.....		6	130
Myrtlewood avenue, from north curb line of Reed street to dead end south house line of Wharton street.....		6	412
Nicholas street, from south house line of Wharton street, north .....		6	50
Nineteenth street, from south house line of Ritner street, north .....		6	60
Ninth street east side, from Wharton street to Federal street .....		6	458
Oakford street, from 4 feet east of east house line of Twenty-first street, west.....		6	29
Oakford street, from dead end, west house line of Twenty-sixth street, west to connect.....		6	210
Pallas street, from centre of Porter street, north.....		6	30
Pallas street, from south house line of Ritner street, north.....		6	30
Passyunk avenue, from centre of Christian street to Sixth street .....		6	210
Penn street, from 194 feet south of south curb line of South street, north.....		4	208



Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Penn street, from 135 feet 6 inches north of north house line of Bainbridge street, northwest.....		6	22
Perkins street, from centre of Third street, west.....		6	25
Peter street, from centre of Ellsworth street, north.....		6	25
Porter street, from east curb line of Twelfth street, to dead end east house line of Broad street.....		6	951
Porter street, from dead end, west house line of Broad street, to west house line of Seventeenth street.....		6	1,338
Prime street, from east house line of Third street, west....		6	25
Redwood street, from centre of Twenty-fourth street, west.		6	25
Reed street, from centre of Thirty-first street, west.....		6	25
Ristine street, from 8 feet north of south curb line of Wolf street, north.....		6	25
Ritner street, from east house line of Eleventh street, to east house line of Broad street.....		6	1,458
Ritner street, from 6 feet east of west house line of Broad street to east curb line of Penrose Ferry road.....		6	2,292
Rosewood street, from south house line of Porter street, north.....		6	60
Rosewood street, from south house line of Ritner street, north.....		6	60
Rosewood street, from south house line of Wolf street to Snyder avenue.....		6	921
Rosewood street, from centre of Christian street, north....		6	33
Rye street, from south house line of Wharton street, north.....		6	50
Sears street, from east house line of Twenty-sixth street, west.....		6	50
Sears street, from centre of Twenty-seventh street, west....		8	25
Second street, from south house line of Wolf street, north.		6	66
Seibold street, from south house line of Ritner street, north.....		6	60
Seibold street, from south house line of Wolf street, north.		6	60
Seigel street, from east curb line of Fifth street, west.....		6	13
Seventeenth street, from south house line of Porter street, north.....		6	60
Seventeenth street, from south house line of Ritner street, north.....		6	60
Seventeenth street, from south house line of Wolf street, north.....		6	60
Seventh street, from 2 feet south of south house line of Wolf street, north.....		6	64
Shunk street, from northwest curb line of Moyamensing avenue to dead end east house line of Broad street ..		6	300
Sixteenth street, from south house line of Porter street to Passyunk avenue.....		6	1,927
Sixth street, from dead end 57 feet north of north house line of Queen street to dead end 80 feet south of south house line of Catharine street.....		6	55

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Snyder avenue, south side, from dead end 3 feet east of west house line of Broad street to west house line of Sixteenth street.....		6	889
Snyder avenue, south side, from dead end west house line of Ward street, west.....		8	88
Snyder avenue, south side, from east house line of Twenty-eighth street, west.....		6	50
Snyder avenue, north side, from dead end west house line of Broad street to west house line of Sixteenth street.....		8	892
Snyder avenue, north side, from dead end west house line of Ward street to 12 feet west of east house line of Dorrance street.....		8	110
Snyder avenue, north side, from Twenty-eighth street, west.....		6	50
Stewart street, from dead end south curb line of Wolf street north to connect.....		6	21
Tanner street, from centre of Wharton street, north.....		6	25
Tanner street, from south house line of McIlwain street, north.....		6	15
Tasker street, from east house line of Twenty-eighth street, west.....		6	50
Tasker street, from east house line of Thirty-third street to west house line of Thirty-fifth street.....		8	708
Tenth street, from Moyamensing avenue to dead end north curb line of Wolf street.....		6	472
Thirteenth street, from 12 feet south of northwest house line of Moyamensing ave to 2 feet north of south curb line of Wolf street.....		6	1,181
Thirty-fifth street, from south house line of Moore street to north house line of Tasker street.....		8	966
Thirty-first street, from south house line of Reed street, north.....		6	24
Thirty-fourth street, from south curb line of Tasker street, north.....		8	26
Tree street, from east house line of Second street, west.....		6	28
Twelfth street, from southeast house line of Moyamensing avenue to dead end north curb line of Ritner street..		6	489
Twentieth street, from south house line of McKean street, north.....		6	50
Twenty-first street, from Tasker street, north.....		6	223
Twenty-fourth street, from north curb line of Oakford to south house line of Federal street.....		6	302
Twenty-eighth street, from south house line of Jackson to dead and south house line of Reed street.....		6	3,730
Twenty-second street, from south house line of Morris street to dead end north house line of Tasker street...		12	500
Twenty-second street, west side, from Pemberton to Bainbridge streets.....		6	175
Twenty seventh street, from south house line of Earp to dead end south curb line of Wharton street.....		8	294

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Twenty-sixth street, from 2 feet south of south curb line of Earp street to dead end south house line of Wharton street.....		8	276
Twenty-third street, from Pemberton to Bainbridge street.....		6	177
Ward street, from south house line of Ritner street, north Washington avenue, south side, from east house line of Seventeenth street, west.....		6	60
Washington avenue, south side, from east house line of Eighteenth street, west.....		6	50
Washington avenue, south side, from east house line of Nineteenth street, west.....		6	25
Watts street, from centre of Shunk street, north.....		6	25
Watts street, from south house line of Porter street, north.....		6	30
Watts street, from south house line of Ritner street, north.....		6	30
Wharton lane, from centre of Otsego street, west.....		6	25
Wilder street, from dead end west house line of Twenty-third street to east curb line of Twenty-fourth street.....		6	427
Wolf street, north side, from east house line of Second street, west.....		6	48
Wolf street, north side, from Ninth street to west house line of Tenth street.....		6	471
Wolf street, centre, from dead end east curb line of Eleventh street, west.....		6	12
Wolf street, center, from west house line of Broad street to west house line of Mendenhall street.....		6	1,615
Wolf street, centre, from Eighteenth street to 2 feet west of east house line of Penrose Ferry road.....		6	326
Wolf street, south side, from 12 feet east of east house line of Seventh street, west.....		16	328
Wolf street, south side, from east house line of Eighth street to 2 feet west of east house line of Broad street.....		16	2,797
Total.....			42,015
<i>Supply Mains.</i>			
Snyder avenue, south side, from dead end 30 feet west of west curb line of Broad street to west house line of Sixteenth street.....		20	587
<i>Service Main Connections.</i>			
Wolf and Ninth streets, between 16-inch main on Wolf street and 6-inch main on Ninth street.....		10	9
Wolf and Tenth streets, between 16-inch main on Wolf and 6-inch main on Tenth street.....		10	9

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Main Connections—Continued.</i>			
Wolf and Eleventh streets, between 16-inch main on Wolf and 6-inch main on Eleventh street.....		10	16
Wolf and Twelfth streets, between 16-inch main on Wolf and 6-inch main on Twelfth street.....		10	16
Wolf and Thirteenth streets, between 16-inch main on Wolf and 6-inch main on Thirteenth street.....		10	16
Wolf street, 6 feet east of east house line of Broad street, between 16 and 6-inch mains on Wolf street. ....		6	12
Total.....			78
<i>Service Supply Connections.</i>			
Eighteenth street, east side, 6 feet north of north house line of Catharine.....		4	16
Eighteenth street, east side, 6 feet south of south house line of Fitzwater street.....		4	16
Eighteenth street, east side, 6 feet north of north house line of Fitzwater street.....		4	16
Eighteenth street, east side, 6 feet south of south house line of Bainbridge street.....		4	16
Fifteenth street, east side, 6 feet north of north house line of Porter street.....		4	15
Fifteenth street, west side, 6 feet north of north house line of Porter street.....		4	15
Fifteenth street, east side, 6 feet south of south house line of Ritner street.....		4	15
Fifteenth street, west side, 6 feet south of south house line of Ritner street.....		4	15
Fifteenth street, east side, 6 feet north of north house line of Ritner street.....		4	15
Fifteenth street, west side, 6 feet north of north house line of Ritner street.....		4	15
Fifteenth street, east side, 6 feet south of south house line of Wolf street.....		4	15
Fifteenth street, west side, 6 feet south of south house line of Wolf street.....		4	15
Fifteenth street, east side, 6 feet north of north house line of Wolf street.....		4	15
Fifteenth street, west side, 6 feet north of north house line of Wolf street.....		4	15
Fifteenth street, east side, 6 feet south of south house line of Jackson street.....		4	12
Fifteenth street, west side, 6 feet south of south house line of Jackson street.....		4	12
Hicks street, west side, 6 feet south of south house line of Jackson street.....		4	12
Hicks street, west side, 6 feet north of north house line of Jackson street.....		4	12

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
McKean street, north side, 5 feet west of west house line of Nineteenth street.....		4	15
McKean street, north side, 5 feet east of east house line of Twentieth street.....		4	15
Morris street, south side, 6 feet west of west house line of Twenty-first street.....		4	15
Morris street, north side, 72 feet west of west house line of Twenty-first street.....		4	15
Morris street, south side, 6 feet east of east house line of Twenty-second street.....		4	8
Morris street, north side, 6 feet east of east house line of Twenty-second street.....		4	20
Morris street, south side, 6 feet west of west house line of Twenty-second street.....		4	8
Morris street, north side, 6 feet west of west house line of Twenty-second street.....		4	20
Morris street, south side, 10 feet east of southeast house line of Point Breeze avenue.....		4	15
Morris street, north side, 10 feet east of southeast house line of Point Breeze avenue.....		4	15
Moyamensing avenue, east side, 6 feet north of north house line of McKean street.....		4	10
Moyamensing avenue, southeast side, 6 feet southwest of south house line of Mifflin street.....		4	9
Ritner street, north side, 6 feet west of west house line of Broad street.....		4	19
Ritner street, south side, 6 feet west of west house line of Broad street.....		4	19
Ritner street, north side, 6 feet east of east house line of Fifteenth street.....		4	19
Ritner street, south side, 6 feet east of east house line of Fifteenth street.....		4	19
Second street, west side, 6 feet north of north house line of McKean street.....		4	15
Second street, west side, 5 feet south of south house line of Mifflin street.....		4	15
Seventeenth street, west side, 6 feet north of north house line of Catharine street.....		4	16
Seventeenth street, west side, 6 feet south of south house line of Fitzwater street.....		4	16
Sixteenth street, east side, 6 feet north of north house line of Porter street.....		4	15
Sixteenth street, west side, 6 feet north of north house line of Porter street.....		4	15
Sixteenth street, east side, 6 feet north of north house line of Ritner street.....		4	15
Sixteenth street, west side, 6 feet north of north house line of Ritner street.....		4	15
Sixteenth street, east side, 6 feet south of south house line of Ritner street.....		4	15

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Sixteenth street, west side, 6 feet south of south house line of Ritner street.....		4	15
Sixteenth street, east side, 10 feet south of south house line of Wolf street.....		4	15
Sixteenth street, west side, 10 feet south of south house line of Wolf street.....		4	15
Sixteenth street, east side, 6 feet north of north house line of Wolf street.....		4	15
Sixteenth street, west side, 6 feet north of north house line of Wolf street.....		4	15
Sixteenth street, east side, 19 feet south of south house line of Jackson street.....		4	15
Sixteenth street, west side, 10 feet south of south house line of Jackson street.....		4	15
Sixteenth street, east side, 10 feet north of north house line of Jackson street.....		4	15
Sixteenth street, west side, 10 feet north of north house line of Jackson street.....		4	15
Sixteenth street, east side, 6 feet south of south house line of Snyder avenue.....		4	15
Sixteenth street, west side, 6 feet south of south house line of Snyder avenue.....		4	15
Snyder avenue, south side, 6 feet west of west house line of Eighteenth street.....		4	9
Thirteenth street, east side, 6 feet north of north house line of Ritner street.....		4	15
Thirteenth street, west side, 6 feet north of north house line of Ritner street.....		4	15
Thirteenth street, east side, 8 feet south of south house line of Wolf street.....		4	15
Thirteenth street, west side, 8 feet south of south house line of Wolf street.....		4	15
Thirty-first street, east side, 6 feet north of north house line of Reed street.....		4	16
Thirty-first street, east side, 6 feet south of south house line of Wharton street.....		4	16
Twenty-eighth street, east side, 6 feet north of north house line of Jackson street.....		4	14
Twenty-eighth street, west side, 6 feet north of north house line of Jackson street.....		4	14
Twenty-eighth street, east side, 6 feet south of south house line of Snyder avenue.....		4	14
Twenty-eighth street, west side, six feet south of south house line of Snyder avenue.....		4	14
Twenty-eighth street, east side, 6 feet north of north house line of Snyder avenue.....		4	14
Twenty-eighth street, west side, 6 feet north of north house line of Snyder avenue.....		4	14
Twenty-eighth street, east side, 4 feet south of south house line of McKean street.....		4	14

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Twenty-eighth street, west side, 4 feet south of south house line of McKean street.....		4	14
Twenty-eighth street, east side, 4 feet north of north house line of McKean street.....		4	14
Twenty-eighth street, west side, 4 feet north of north house line of McKean street.....		4	14
Twenty-eighth street, west side, 4 feet north of north house line of McKean street.....		4	14
Twenty-eighth street, east side, 4 feet south of south house line of Mifflin street.....		4	14
Twenty-eighth street, west side, 4 feet south of south house line of Mifflin street.....		4	14
Twenty-eighth street, east side, 10 feet north of north house line of Mifflin street.....		4	14
Twenty-eighth street, west side, 10 feet north of north house line of Mifflin street.....		4	14
Twenty-eighth street, east side, 4 feet south of south house line of Moore street.....		4	14
Twenty-eighth street, west side, 4 feet south of south house line of Moore street.....		4	14
Twenty-eighth street, east side, 10 feet north of north house line of Moore street.....		4	14
Twenty-eighth street, west side, 10 feet north of north house line of Moore street.....		4	14
Twenty-eighth street, east side, 4 feet south of south line of Morris street.....		4	14
Twenty-eighth street, west side, 4 feet south of south house line of Morris street.....		4	14
Twenty-eighth street, east side, 10 feet north of north house line of Morris street.....		4	14
Twenty-eighth street, west side, 10 feet north of north house line of Morris street.....		4	14
Twenty-eighth street, east side, 4 feet south of south house line of Tasker street.....		4	14
Twenty-eighth street, west side, 4 feet south of south house line of Tasker street.....		4	14
Twenty-eighth street, east side, 10 feet north of north house line of Tasker street.....		4	14
Twenty-eighth street, west side, 10 feet north of north house line of Tasker street.....		4	14
Twenty-eighth street, east side, 4 feet south of south house line of Dickinson street.....		4	14
Twenty-eighth street, west side, 4 feet south of south house line of Dickinson street.....		4	14
Twenty-eighth street, east side, 10 feet north of north house line of Dickinson street.....		4	14
Twenty-eighth street, west side, 10 feet north of north house line of Dickinson street.....		4	14
Twenty-eighth street, east side, 4 feet south of south house line of Reed street.....		4	14

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Twenty-eighth street, west side, 4 feet south of south house line of Reed street.....		4	14
Twenty-fifth street, west side, 6 feet north of north house line of Washington avenue.....		4	19
Twenty-fifth street, west side, 6 feet south of south house line of Carpenter street.....		4	19
Wolf street, north side, 6 feet west of west house line of Fifteenth street.....		4	18
Wolf street, north side, 6 feet east of east house line of Sixteenth street.....		4	19
Total .....			1,429
Fire hydrant connections.....		6	2,769
<i>Fire Connections (Private).</i>			
Bainbridge street, south side, west house line of Penn street, for Franklin Sugar Refining Co.....		6	4
<i>Supply Connections (Private).</i>			
Broad street, north side, 202 feet north of north curb line of Washington avenue, for Pennsylvania Railroad Company.....		6	15
Riggs street, north side, 128 feet west of west house line of Verner street, for Philadelphia Traction Co.....		6	11
Twenty-first street, west side, 150 feet north of Washington avenue, for Howell & Brother.....		4	16
Total.....			42
<i>Pipe Relaid.</i>			
Afton street, from east house line of Seventeenth street, west.....		6	50
Afton street, from 3 feet east of east house line of Eighteenth street, west.....		6	28
Annin street, from centre of Nineteenth street, west.....		6	27
Annin street, from 6 feet east of east house line of Twentieth street, west.....		6	30
Annin street, from 10 feet west of east curb line of Twenty-first street, west.....		6	30
Annin street, from 2 feet east of east house line of Twenty-second street, west.....		6	32
Bailey street, from centre of Ninth street, west.....		6	27



Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Bainbridge street, from east house line of Penn street, west.....		6	54
Bancroft street, from 2 feet south of south house line of Wharton street, north.....		6	29
Barlow street, from 2 feet south of south house line of Wharton street, north.....		6	27
Birch street, from north house line of Catharine street to south house line of Fitzwater.....		6	322
Borden street, from Third street, west.....		6	19
Borden street, from west house line of Fourth street to centre of Fifth street.....		6	433
Byard street, from 9 feet east of west curb line of Seventh street, west.....		6	23
Canal street, from east house line of Fifth street, west.....		6	25
Canal street, from 2 feet west of southwest curb line of Moyamensing avenue, west.....		6	26
Cantrell street, from centre of Ninth street, west.....		6	25
Chadwick street, from 2 feet south of south house line of Wharton street, north.....		6	27
Corn street, from south house line of Wharton street, north.....		6	52
Cross street, from 2 feet east of east house line of Ninth street, west.....		6	44
Denmark street, from 2 feet east of east house line of Second street, west.....		6	29
Dickinson street, from 2 feet west of southeast house line of Moyamensing avenue, west.....		6	100
Doak street, from Wyoming street to south house line of Bainbridge street.....		6	359
Dudley street, from centre of Fifth street, west.....		6	27
Dudley street, from centre of Sixth street, west.....		6	27
Dudley street, from centre of Seventh street, west.....		6	23
Dudley street, from 2 feet east of east house line of Ninth street, west.....		6	54
Earp street, from 1 foot east of east house line of Ninth street, west.....		6	22
Ellsworth street, from Passyunk avenue to Ninth street..		6	366
Emily street, from centre of Fifth street, west.....		6	25
Emily street, from two feet east of east house line of Sixth street, west.....		6	54
Emily street, from 2 feet east of east house line of Ninth street, west.....		6	26
Emmett street, from centre of Third street, west.....		6	27
Eneu street, from west house line of Eighth street to Passyunk avenue.....		6	350
Enterprise street, from east house line of Fifth street, west		6	52
Enterprise street, from 2 feet east of east house line of Sixth street, west.....		6	27
Enterprise street, from Moyamensing avenue, west.....		6	27
Fallon street, from centre of Christian street, north.....		6	26

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Fernon street, from 2 feet east of east house line of Ninth street, west.....		6	44
Fisher street, from centre of Sixth street, west.....		6	25
Fisher street, from 2 feet east of east house line of Seventh street, west.....		6	23
Godfrey street, from centre of Second street, west.....		6	27
Godfrey street, from 2 feet east of southeast house line of Moyamensing avenue, west.....		6	27
Greenwich street, from southeast house line of Moyamensing avenue, west.....		6	26
Hazel street, from 2 feet east of east house line of Second street, west.....		6	27
Hicks street, from 2 feet south of south house line of Wharton street, north.....		6	27
Hoffman street, from east house line of Fifth street, west		6	50
Hoffman street, from 6 feet east of east house line of Sixth street, west.....		6	56
Hoffman street, from 2 feet east of east house line of Seventh street, west.....		6	46
Hoffman street, from centre of Ninth street, west.....		6	27
Holly street, from north house line of Catharine street to south house line of Fitzwater street.....		6	322
Horstman street, from 2 feet south of south house line of Borden street, north.....		6	15
Jackson street, from centre of Ellsworth street, north.....		6	30
Jamison street, from 23 feet east of west house line of Seventh street, to east house line of Eighth street.....		6	412
Jarvis street, from 3 feet east of southeast house line of Moyamensing avenue, west.....		6	57
Jarvis street, from east house line of Second street, west.....		6	50
Juniata street, from 2 feet south of south house line of Borden street, north.....		6	15
Kimball street, from centre of Nineteenth, west.....		6	25
Kimball street, from 2 feet east of east house line of Twentieth street, west.....		6	54
Kimball street, from 2 feet east of east house line of Twenty-first street, west.....		6	27
Kimball street, from centre of Twenty-second street, west		6	32
Kimball street, from 3 feet east of east house line of Twenty-third street, west.....		6	27
Latona street, from 4 feet east of east house line of Seventeenth street, west.....		6	57
Latona street, from east house line of Eighteenth street, west.....		6	50
Latona street, from 2 feet east of east house line of Nineteenth street, west.....		6	54
Latona street, from 2 feet east of east house line of Twentieth street, west.....		6	54
Lancaster street, from 2 feet south of south house line of Wharton street, north.....		6	21

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
League street, from centre of Twenty-second street, west..		6	32
League street, from 3 feet east of east house line of Twenty-third street, west.....		6	27
Leon street, from centre of Ellsworth, north.....		6	27
Lindsay street, from north house line of Fitzwater to south house line of Bainbridge.....		6	307
Lingo street, from 2 feet south of south house line of Wharton street, north.....		6	27
Linnard street, from 1 foot east of east house line of Ninth street, west.....		6	22
McClellan street, from 2 feet east of southeast house line of Moyamensing avenue, west.....		6	27
McClellan street, from centre of Sixth street, west.....		6	27
McClellan street, from 2 feet east of east house line of Seventh street, west.....		6	46
McClellan street, from 2 feet east of east house line of Ninth street, west.....		6	46
McIlwain street, from west house line of Fourth street, to centre of Sixth street.....		6	877
Mount Holly street, from 2 feet south of south house line of Reed street, north.....		6	54
Mount Holly street, from 2 feet south of south house line of Wharton street, north.....		6	27
Manton street, from east house line of Eighteenth street, west.....		6	50
Manton street, from 2 feet east of east house line of Nineteenth street, west.....		6	54
Manton street, from east house line of Twentieth street, west.....		6	25
Mercy street, from centre of Fifth street, west.....		6	25
Mercy street, from 2 feet east of east house line of Sixth street, west.....		6	54
Mole street, from 2 feet south of south house line of Wharton street, north.....		6	27
Moore street, south side, from 2 feet east of east house line of Second street, west.....		6	52
Moore street, south side, from southeast house line of Moyamensing avenue, west.....		6	26
Moore street, south side, from east house line of Fifth street, west.....		6	53
Moore street, south side, from 2 feet east of east house line of Sixth street, west.....		6	52
Moore street, south side, from 2 feet east of east house line of Seventh street, west.....		6	54
Moss street, from 9 feet east of west curb line of Seventh street, west.....		6	23
Mountain street, from 2 feet east of east house line of Ninth street, west.....		6	44

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Moyamensing avenue, southeast side, from centre of Dickinson street to south house line of Reed street.....		6	427
Moyamensing avenue, southeast side, from south house line of Wharton street, north.....		6	25
Moyamensing avenue, northwest side, from south house line of Enterprise street to south house line of Reed street.....		6	577
Napa street, from 6 feet south of south house line of Wharton street, north.....		6	58
Ninth street, east side, from north curb line of Moore street to Morris street.....		6	439
Owen street, from centre of Fifth street, west.....		6	27
Owen street, from 2 feet east of east house line of Sixth street, west.....		6	54
Owen street, from 2 feet east of east house line of Seventh street, west.....		6	23
Paxton street, from centre of Fifth street, west.....		6	25
Penn street, from centre of Bainbridge street, north.....		6	143
Pierce street, from 3 feet east of east house line of Fifth street, west.....		6	56
Pierce street, from 2 feet east of east house line of Sixth street, west.....		6	54
Pierce street, from 2 feet east of east house line of Seventh street, west.....		6	23
Pierce street, from 9 feet west of west curb line of Seventh street, west.....		6	23
Pierce street, from east house line of Ninth street, west.....		6	18
Pierce street, from Ninth street, west.....		6	20
Pierce street, from centre of Passyunk avenue, west.....		6	30
Prime street, from 2 feet east of east house line of Second street.....		6	27
St. Alban's place (south), from centre of Twenty-third street, west.....		6	27
St. Alban's place (north), from centre of Twenty-third street, west.....		6	27
Sanderson street, from 2 feet east of east house line of Seventeenth street, west.....		6	54
Saranac street, from southeast curb line of Moyamensing avenue, northwest.....		6	30
Scott street, from east house line of Ninth street, west.....		6	21
Sears street, from centre of Sixth street, west.....		6	27
Sears street, from 2 feet east of east house line of Seventh street, west.....		6	23
Seigel street, from 2 feet east of southeast house line of Moyamensing avenue, west.....		6	27
Seigel street, from centre of Sixth street, west.....		6	27
Seigel street, from 2 feet east of east house line of Seventh street west.....		6	46
Sixth street, from centre of Queen street to Passayunk avenue.....		6	82

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Starr street, from 2 feet 6 inches south of south house line of McKean street, north.....		6	25
Sylvester street, from centre of Fifth street, west.....		6	32
Sylvester street, from 2 feet east of east house line of Sixth street, west.....		6	54
Sylvester street, from 2 feet east of east house line of Seventh street, west.....		6	23
Taylor street, from Ninth street, west.....		6	23
Third street, west side, from south house line of Reed street to 25 feet north of north house line of Borden street.....		6	243
Tiernan street, from 2 feet south of south house line of Wharton street, north.....		6	33
Tiernan street, from 2 feet south of south house line of Ellsworth street, north.....		6	27
Titan street, from centre of Seventeenth street, west.....		6	28
Titan street, from east house line of Eighteenth street, west.....		6	56
Titan street, from 2 feet east of east house line of Nineteenth street, west.....		6	54
Titan street, from east house line of Twentieth street, west.....		6	52
Watkins street, from 4 feet east of east house line of Second street, west.....		6	56
Watkins street, from 2 feet east of southeast house line of Moyamensing avenue, west.....		6	26
Watkins street, from 3 feet east of east house line of Fifth street, west.....		6	56
Watkins street, from 6 feet east of east house line of Sixth street, west.....		6	58
Watkins street, from 2 feet east of east house line of Seventh street, west.....		6	23
Watkins street, from 9 feet east of west curb line of Seventh street, west.....		6	23
Watkins street, from 2 feet east of east house line of Ninth street, west.....		6	20
Watkins street, from Ninth street, west.....		6	20
Webster street, from centre of Seventeenth street, west.....		6	27
Webster street, from east house line of Eighteenth street, west.....		6	52
Webster street, from centre of Nineteenth street, west.....		6	27
Webster street, from east house line of Twentieth street, west.....		6	50
Webster street, from 2 feet east of east house line of Twenty-first street, west.....		6	55
Webster street, from 6 feet east of east house line of Twenty-second street, west.....		6	36
Wharton street, from centre of Front street to Moyamensing avenue.....		6	873

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Wheat street, from 7 feet north of south curb line of Wharton street, north.....		6	33
Wilder street, from centre of Fifth street, west.....		6	26
Wilder street, from east house line of Sixth street, west...		6	27
Wilder street, from centre of Sixth street, west.....		6	27
Wilder street, from 8 feet east of east house line of Seventh street, west.....		6	29
Williamson street, from 2 feet east of southeast house line of Moyamensing avenue, west.....		6	21
Winton street, from centre of Ninth street, west.....		6	27
Worth street, from east house line of Fifth street, west...		6	52
Worth street, from east house line of Sixth street, west...		6	25
Worth street, from northwest curb line of Moyamensing avenue, west.....		6	25
Watt street, from 2 feet east of west curb line of Seventh street, west.....		6	16
Wyoming street, from centre of Second street, west.....		6	27
Wyoming street, from north house line of Fitzwater street to Bainbridge street.....		6	305
Total.....			11,875
Fire hydrant connections relaid.....		6	865
Repairs, general.....		6	1,925
“ “ .....		8	17
“ “ .....		10	37
“ “ .....		12	57
“ “ .....		16	15
Total.....			2,051
<i>Pipe Taken Up.</i>			
Afton street, from east house line of Seventeenth street, west.....		4	50
Afton street, from 3 feet east of east house line of Eighteenth street, west.....		4	28
Annin street, from centre of Nineteenth street, west.....		4	27
Annin street, from 6 feet east of east house line of Twentieth street, west.....		4	30
Annin street, from centre of Twenty-first street, west.....		4	30
Annin street, from 2 feet east of east house line of Twenty-second street, west.....		4	32
Bailey street, from centre of Ninth street, west.....		4	20
Bainbridge street, from east house line of Penn street, west.....		4	54

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up—Continued.</i>			
Bancroft street, from 2 feet south of south house line of Wharton street, north.....		4	29
Barlow street, from 2 feet south of south house line of Wharton street, north.....		4	27
Birch street, from north house line of Catharine street to south house line of Fitzwater.....		4	322
Borden street, from Third street, west.....		4	19
Borden street, from west house line of Fourth street to centre of Fifth street.....		4	433
Byard street, from 9 feet east of west curb line of Seventh street, west.....		4	23
Canal street, from east house line of Fifth street, west.....		4	25
Canal street, from 2 feet west of northwest curb line of Moyamensing avenue, west.....		4	25
Cantrell street, from centre of Ninth street, west.....		4	27
Chadwick street, from 2 feet south of south house line of Wharton street, north.....		4	27
Corn street, from south house line of Wharton street, north.....		4	52
Cross street, from 2 feet east of east house line of Ninth street, north.....		4	44
Daly street, from centre of Eleventh street, west.....		6	12
Denmark street, from 4 feet east of east house line of Second street, west.....		4	29
Dickinson street, from 2 feet west of southeast house line of Moyamensing avenue, west.....		4	100
Doak street, from centre of Wyoming street to south house line of Bainbridge street.....		4	350
Dudley street, from centre of Fifth street, west.....		4	27
Dudley street, from centre of Sixth street, west.....		4	25
Dudley street, from Seventh street, west.....		4	23
Dudley street, from 2 feet east of east house line of Ninth street, west.....		4	54
Earp street, from 1 foot east of east house line of Ninth street, west.....		4	22
Ellsworth street, from Passyunk avenue, west.....		4	20
Emily street, from centre of Fifth street, west.....		4	25
Emily street, from 2 feet east of east house line of Sixth street, west.....		4	54
Emily street, from Moyamensing avenue, west.....		4	27
Emmett street, from centre of Third street, west.....		4	27
Eneu street, from west house line of Eighth street to Passyunk avenue.....		4	350
Enterprise street, from east house line of Fifth street, west.....		4	51
Enterprise street, from 2 feet east of east house line of Sixth street, west.....		4	27
Enterprise street, from Moyamensing avenue, west.....		4	27
Fallon street, from centre of Christian street, north.....		4	25
Fernon street, from 2 feet east of east house line of Ninth street, west.....		4	44

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up—Continued.</i>			
Fisher street, from centre of Sixth street, west.....		4	25
Fisher street, from 2 feet east of east house line of Seventh street, west.....		4	23
Godfrey street, from centre of Second street, west.....		4	27
Godfrey street, from 2 feet east of southeast house line of Moyamensing avenue, west.....		4	27
Greenwich street, from east house line of Fifth street, west.....		4	25
Greenwich street, from southeast house line of Moyamensing avenue, west.....		4	26
Hazel street, from 2 feet east of east house line of Second street, west.....		3	27
Hicks street, from 2 feet south of south house line of Wharton street, north.....		4	27
Hoffman street, from east house line of Fifth street, west..		4	50
Hoffman street, from 6 feet east of east house line of Sixth street, west.....		4	56
Hoffman street, from 2 feet east of east house line of Seventh street, west.....		4	46
Hoffman street, from centre of Ninth street, west.....		4	27
Holly street, from north house line of Catharine to south house line of Fitzwater street.....		4	322
Horstmann street, from 2 feet south of south house line of Borden street, north.....		3	15
Jackson street, from centre of Ellsworth, north.....		4	30
Jamison street, from 23 feet east of west house line of Seventh street to east house line of Eighth street.....		4	412
Jarvis street, from 3 feet east of southeast line of Moyamensing avenue, west.....		4	33
Jarvis street, from centre of Moyamensing avenue, west..		3	24
Jarvis street, from east house line of Second street, west..		4	52
Juniata street, from 2 feet south of south house line of Borden street, north.....		3	15
Kimball street, from centre of Nineteenth street, west....		4	25
Kimball street, from east house line of Twentieth street, west.....		4	54
Kimball street, from 2 feet east of east house line of Twenty-first street, west.....		4	27
Kimball street, from centre of Twenty-second street, west..		4	32
Kimball street, from 3 feet east of east house line of Twenty-third street, west.....		4	26
Latona street, from 4 feet east of east house line of Seventeenth street, west.....		4	57
Latona street, from 2 feet east of east house line of Eighteenth street, west.....		4	54
Latona street, from 2 feet east of east house line of Nineteenth street, west.....		4	54
Lancaster street, from 2 feet south of south house line of Wharton street, north..		4	21
League street, from centre of Twenty-second street, west..		4	32
League street, from 3 feet east of east house line of Twenty-third street, west.....		4	26



Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up—Continued.</i>			
Leon street,	from centre of Ellsworth street, north.....	4	27
Lindsay street,	from north house line of Fitzwater street to south house line of Bainbridge street.....	3	307
Lingo street,	from 2 feet south of south house line of Wharton street, north.....	4	27
Linnard street,	from 1 foot east of east house line of Ninth street, west.....	4	22
McClellan street,	from 2 feet east of southeast house line of Moyamensing avenue, west.....	4	25
McClellan street,	from centre of Sixth street, west.....	4	27
McClellan street,	from 2 feet east of east house line of Sev- enth street, west.....	4	46
McClellan street,	from 2 feet east of east house line of Ninth street, west.....	4	46
McIlwain street,	from west house line of Fourth street, to centre of Sixth street.....	4	875
Mount Holly street,	from 2 feet south of south house line of Reed street, north.....	4	54
Mount Holly street,	from 2 feet south of south house line of Wharton street, north.....	4	27
Manton street,	from east house line of Eighteenth street, west.....	4	50
Manton street,	from 2 feet east of east house line of Nine- teenth street, west.....	4	54
Manton street,	from east house line of Twentieth street, west.....	4	25
Mercy street,	from centre of Fifth street, west.....	4	25
Mercy street,	from 2 feet east of east house line of Sixth street, west.....	4	54
Mole street,	from 2 feet south of south house line of Whar- ton street, north.....	4	27
Moore street,	south side, from 2 feet east of east house line of Second street, west.....	4	52
Moore street,	from southeast house line of Moyamensing avenue, west.....	4	25
Moore street,	from east house line of Fifth street, west....	4	53
Moore street,	from 2 feet east of east house line of Sixth street, west.....	4	52
Moore street,	from 2 feet east of east house line of Sev- enth street west.....	4	54
Moss street,	from 9 feet east of west curb line of Seventh street, west.....	4	23
Mountain street,	from 2 feet east of east house line of Ninth street west.....	4	44
Moyamensing avenue,	southeast side, from centre of Dick- inson street to south house line of Reed street.....	4	27
Moyamensing avenue,	southeast side, from south house line of Wharton street, north.....	4	25
Moyamensing avenue,	northwest side, from south house line of Enterprise street to south house line of Reed street.....	4	577

Street.	Location.	Size in Inches.	Distance in feet.
<i>Pipe Taken Up—Continued.</i>			
Napa street, from 6 feet south of south house line of Wharton street, north.....		4	58
Ninth street, east side, from north curb line of Moore street to Morris street.....		4	439
Owen street, from centre of Fifth street, west.....		4	26
Owen street, from 2 feet east of east house line of Sixth street, west.....		4	54
Owen street, from 2 feet east of east house line of Sev- enth street, west.....		4	24
Paxton street, from centre of Fifth street, west.....		4	27
Penn street, from centre of Bainbridge street, north.....		4	143
Pierce street, from 3 feet east of east house line of Fifth street, west.....		4	56
Pierce street, from 2 feet east of east house line of Sixth street, west.....		4	54
Pierce street, from 2 feet east of east house line of Sev- enth street, west.....		4	23
Pierce street, from 9 feet east of west curb line of Seventh street, west.....		4	23
Pierce street, from east house line of Ninth street, west...		4	18
Pierce street, from Ninth street, west.....		4	24
Pierce street, from centre of Passyunk avenue, west.....		4	30
Prime street, from 2 feet east of east house line of Second street, west.....		3	27
St. Alban's place (South), from centre of Twenty-third street, west.....		4	27
St. Alban's place (North), from centre of Twenty-third street, west.....		4	27
Sanderson street, from 2 feet east of east house line of Seventeenth street, west.....		4	54
Saranac street, from southeast line of Moyamensing ave- nue, west.....		4	29
Scott street, from east house line of Ninth street, west.....		4	21
Sears street, from centre of Sixth street, west.....		4	27
Sears street, from 2 feet east of east house line of Seventh street, west.....		4	23
Seigel street, from 2 feet east of southeast house line of Moyamensing avenue, west.....		4	27
Seigel street, from centre of Sixth street, west.....		4	27
Seigel street, from 2 feet east of east house line of Seventh street, west.....		5	46
Sixth street, from centre of Queen street, north.....		4	12
Starr street, from 2 feet 6 inches south of south house line of McKean street, north.....		4	25
Sylvester street, from centre of Fifth street, west.....		2	32
Sylvester street, from centre of Sixth street, west.....		4	54
Sylvester street, from 2 feet east of east house line of Seventh street, west.....		4	23
Taylor street, from Ninth street, west.....		4	23
Tiernan street, from 2 feet south of south house line of Wharton street, north.....		4	30

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up—Continued.</i>			
Tiernan street, from 2 feet south of south house line of Ellsworth street, north.....		4	27
Titan street, from centre of Seventeenth street, west.....		4	28
Titan street, from east house line of Eighteenth street, west.....		4	55
Titan street, from 2 feet east of east house line of Nineteenth street, west.....		4	54
Titan street, from east house line of Twentieth street, west.....		4	51
Ward street, from south house line of Ritner street, north.....		6	60
Watkins street, from 4 feet east of east house line of Second street, west.....		4	56
Watkins street, from 2 feet east of southeast house line of Moyamensing avenue, west.....		4	25
Watkins street, from 3 feet east of east house line of Fifth street, west.....		4	55
Watkins street, from 6 feet east of east house line of Sixth street, west.....		4	58
Watkins street, from 2 feet east of east house line of Seventh street, west.....		4	23
Watkins street, from 9 feet east of west curb line of Seventh street, west.....		4	23
Watkins street, from 2 feet east of east house line of Ninth street, west.....		4	20
Watkins street, from Ninth street, west.....		4	20
Webster street, from centre of Seventeenth street, west.....		4	28
Webster street, from east house line of Eighteenth street, west.....		3	52
Webster street, from centre of Nineteenth street, west.....		4	27
Webster street, from east house line of Twentieth street, west.....		4	50
Webster street, from 2 feet east of east house line of Twenty-first street, west.....		4	50
Webster street, from 6 feet east of east house line of Twenty-second street, west.....		4	35
Wharton street, from 358 feet west of west house line of Second street to Moyamensing avenue.....		4	40
Wheat street, from 7 feet north of south curb line of Wharton street, north.....		4	33
Wilder street, from center of Fifth street, west.....		4	26
Wilder street, from east house line of Sixth street, west.....		4	27
Wilder street, from center of Sixth street, west.....		4	27
Wilder street, from 8 feet east of east house line of Seventh street, west.....		4	29
Williamson street, from 2 feet east of southeast house line of Moyamensing avenue, west.....		4	21
Winton street, from center of Ninth street, west.....		4	27
Worth street, from east house line of Fifth street, west.....		4	52
Worth street, from east house line of Sixth street, west.....		4	25

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up—Continued.</i>			
Worth street, from northwest curb line of Moyamensing avenue, west.....		4	25
Wyatt street, from 2 feet east of west curb line of Seventh street, west.....		4	16
Wyoming street, from centre of Second street, west.....		4	25
Wyoming street, from north house line of Fitzwater street to Bainbridge street.....		4	305
Total.....			10,407
<hr/>			
Fire hydrant connections taken up.....		4	661
<hr/>			
<i>Pipe Lowered.</i>			
Twenty-first street, from 140 feet north of north house line of Tasker street to south house line of Dickinson street. ....		6	260
<hr/>			
<i>Pipe Cut Off and Abandoned.</i>			
Bainbridge street, south side, from 262 feet east of south-east curb line of Passyunk avenue, west.....		3	275
Ellsworth street, from 20 feet west of center of Passyunk avenue to Ninth street.....		4	346
Passyunk avenue, from north curb line of Ellsworth street to south house line of Washington avenue. ....		4	329
Ritner street, north side, 6 feet west of west house line of Broad street.....		4	18
Ritner street, south side, 6 feet west of west house line of Broad street.....		4	18
Ritner street, north side, 6 feet east of east house line of Fifteenth street.....		4	18
Ritner street, south side, 6 feet east of east house line of Fifteenth street.....		4	18
Sixth street, from 12 feet north of center of Queen street to Passyunk avenue.....		4	70
Third street, west side, from south house line of Reed street, to 25 feet north of north house line of Borden street.....		4	243
Wharton street, from center of Front street to east house line of Moyamensing avenue.....		4	833
Total.....			2,168
<hr/>			
Fire hydrant connections cut off and abandoned.....		3	9
Fire hydrant connections cut off and abandoned.....		4	433
Fire hydrant connections cut off and abandoned.....		6	248

## Recapitulation of First District.

	SIZE—INCHES.								Total in feet and pounds.	
	3	4	6	8	10	12	16	20		
Purposes for which Used.										
New pipe or feet added	Service mains.....		208	34,250	3,932		500	3,125		42,015
	Supply mains.....								887	887
	Service main connections.....			12		66				78
	Service supply connections.....		1,429							1,429
	Fire hydrant connections.....			2,769						2,769
	Fire connections, (private).....			4						4
	Supply connections, (private).....		16	26						42
Total.....		1,653 31,407	37,061 1,223,013	8,932 163,144	66 3,630	500 36,000	3,125 343,750	887 141,033	47,224 1,943,977	
Pipe used but adding nothing to feet in the ground.	Pipe relaid.....			12,740					12,740	
	Repairs general.....			1,925	17	37	57	15	2,051	
	Pipe taken up.....	447	10,549	72					11,068	
	Pipe lowered.....			260					260	
	Total.....	447 6,705	10,549 200,431	14,997 494,901	17 714	37 2,035	57 4,104	15 1,650	26,119 141,033	26,119 710,540
Total.....	447 6,705	12,202 231,838	52,058 1,179,914	8,949 165,858	103 5,665	557 40,104	3,140 345,400	887 141,033	73,343 2,654,517	
Pipe cut off and abandoned.....	284	2,326							2,858	

## SECOND DISTRICT.

Comprising the Fifth, Sixth, Seventh, Eighth, Ninth, Tenth, Twenty-fourth, Twenty-seventh and Thirty-fourth Wards.

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains.</i>			
Albion street, from 3 feet south of south house line of Sansom street, north.....		6	49
Albion street, from centre of Race street, north.....		6	25
Arch street, from east house line of Twenty-third street, west .....		6	31
Arch street, from 4 feet west of east house line of Sixtieth street, west.....		6	52
Arch street, from east house line of Sixty-two-and-one-half street, west.....		6	50
Aspen street, from Markoe street, west.....		6	27
Aspen street, from centre of Haverford street, north.....		6	40
Aspen street, from west house line of Markoe street to Forty-eighth street.....		8	592
Baltimore avenue, from centre of Fifty-eighth street to 76 feet west of west house line of Sixty-first street.....		12	2,082
Barker street, from centre of Twentieth street, west.....		6	25
Barker street, from centre of Twenty-first street to east house line of Twenty-third street.....		6	759
Belmont avenue, from centre of Crestline avenue to City avenue .....		12	3,647
Caldwell street, from east house line of Twenty-fourth street, west.....		6	25
Callowhill street, from east to west house line of Sixty-three-and-one-half street.....		6	50
Callowhill street, from east house line of Sixty-fifth street, west .....		6	60
Catharine street, from centre of Baltimore avenue, north..		6	59
Centre street, from centre of Thirty-nine-and-one-quarter street to centre of Thirty-nine-and-one-half street.....		6	194
Chancellor street, from east house line of Thirty-fourth street, west.....		6	30
Chancellor street, from east house line of Fortieth street, west .....		6	30
Chapel street, from south house line of Belmont avenue, north.....		6	30
City avenue, southeast side, from Baltimore avenue to southwest house line of Bryn Mawr avenue.....		12	3,459
Columbia avenue, from east house line of Sixty-third street, west.....		6	100
Cowley street, from east house line of Perry street, west...		6	13
Cuthbert street, from centre of Seventeenth street, west...		6	27
Cuthbert street, from east house line of Eighteenth street, west .....		6	50

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Cuthbert street, from east house line of Nineteenth street, west .....		6	25
Dean street, from dead end north house line of Steadman to dead end south house line of Arizona avenue.....		6	162
Drury street, from dead end west house line of Thirteenth street to centre of Juniper street.....		6	264
Eaglefield street, from east house line of Forty-second street, west.....		6	17
Filmslie street, from centre of Second street, west.....		6	28
Elmwood street, from 150 feet southwest of southwest house line of Seventy-second street, northeast.....		8	220
English street, from centre of Powell street, north.....		6	20
Fairmount avenue, from centre of Fortieth street, west...		6	30
Fairmount avenue, from centre of Forty-sixth street to Markoe street. ....		8	248
Fairmount avenue, from east house line of Preston street, north.....		6	25
Fiftieth street, from south house line of Paschall to dead end south house line of Woodland avenue.....		6	505
Fiftieth street, from centre of Baltimore avenue, north....		6	40
Fiftieth street, from south house line of Haverford street, north.....		6	40
Fifty-and-one-half street, from south house line of Kershaw avenue, north.....		6	20
Fifty-first street, from centre of Baltimore avenue, north..		6	40
Fifty-first street, from south house line of Haverford avenue, north.....		6	80
Fifty-first street, from south house line of Kershaw avenue, north.....		6	40
Fifty-second street, from south house line of Baltimore avenue, north.....		6	40
Fifty-second street, from south house line of Haverford street, north.....		6	78
Fifty-third street, from centre of Haverford street, north		6	40
Fifty-third street, from centre of Wyalusing avenue to 4 feet north of south house line of Girard avenue.....		6	674
Fifty-fourth street, from south house line of Vine street, north.....		6	40
Fifty-fourth-and-one-half street, from centre of Pennsgrove street to centre of Wyalusing avenue.....		6	298
Fifty-fifth street, from south house line of Vine street, north, to connect dead end.....		6	171
Fifty-fifth street, from centre of Haverford street to centre of Westminster avenue.....		6	269
Fifty-sixth street, from south house line of Vine street, north .....		6	80
Fifty-sixth street, from south house line of Haverford street, north.....		6	40
Fifty-sixth-and-one-half street, from south house line of Vine street, north.....		6	40

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Fifty-seventh street, from south house line of Vine street, north.....		6	80
Fifty-seventh street, from south house line of Haverford street, north.....		6	80
Fifty-eighth street, from south house line of Vine street, north.....		6	74
Fifty-eighth street, from south house line of Haverford street, north.....		6	70
Fifty-ninth street, from south house line of Baltimore avenue, north.....		6	80
Fifty-ninth street, from south house line of Vine street, north.....		6	80
Fifty-ninth street, from south house line of Haverford street, north.....		6	80
Filbert street, from 3 feet west of east house line of Sixtieth street, west.....		6	54
Fillmore street, from Pine street, north.....		6	33
Florence avenue, from south house line of Baltimore avenue to west house line of Forty-ninth street.....		6	505
Forty-first street, from centre of Chestnut street to Ludlow street.....		6	278
Forty-second street, from south house line of Eaglefield to Girard avenue.....		8	300
Forty-three-and-one-half street, from Aspen street to Brown street.....		6	416
Forty-fourth street, from 2 feet 6 inches north of south house line of Baltimore avenue, north.....		6	72
Forty-fifth street, from centre of Spruce street to centre of Walnut street.....		6	872
Forty-sixth street, from centre of Baltimore avenue, north.....		6	40
Forty-sixth street, from south house line of Haverford street, north.....		6	40
Forty-sixth and one-quarter street, from centre of Parrish street to centre of Westminster street.....		6	577
Forty-sixth-and-three-quarters street, from dead end northwest house line of Linmore street to dead end southeast house line of Woodland avenue.....		6	394
Forty-seventh street, from centre of Baltimore avenue, north.....		6	40
Forty-seventh street, from centre of Haverford street, north.....		6	40
Forty-seventh street, from south house line of Aspen street, north.....		6	60
Forty-eighth street, from centre of Baltimore avenue, north.....		6	40
Forty-ninth street, from south house line of Florence avenue, north.....		6	80
Forty-ninth street, from Parrish street to Westminster avenue.....		6	525
Ford street, from centre of Lombard street, north.....		6	25



Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Ford street, from south house line of Pine street, north...		6	19
Foster street, from east house line of Thirty-third street, west.....		6	62
"G" street, from centre of Twenty-second street, west.....		6	30
"G" street, from east house line of Twenty-third street, west.....		6	25
Garden street, from centre of Ogden street, north.....		6	25
Girard avenue, from east house line of Sixty-fifth street, west.....		6	60
Greenway avenue, from dead end west house line of Fifty-first street to 1 foot 8 inches east of east house line of Fifty-first street.....		6	398
Hamilton street, from dead end west house line of Sixty-fourth street to west house line Sixty-four-and-one-half street.....		6	279
Hampton street, from centre of Twentieth street, west.....		6	31
Hazel avenue, from dead end west house line of Sixty-first street to 24 feet west of east house line of Sixty-second street.....		6	524
Howell street, from east house line of Thirty-third street, west.....		6	60
Irving street, from centre of Thirty-eighth street, west.....		6	30
Irving street, from 1 foot west of east house line of Fortieth st., west.....		6	29
Jefferson street, from dead end west house line of Fifty-five-and-one-half street to dead end east house line of Fifty-sixth street.....		6	209
Jefferson street, from east house line of Sixty-third street, west.....		6	100
Jones street, from centre of Nineteenth street, west.....		6	25
Jones street, from east house line of Twentieth street, west.....		6	51
Kent street, from centre of Twenty-second street, west.....		6	30
Kent street, from east house line of Twenty-third street, west.....		6	50
Lancaster street, from dead end south house line of Market street, north.....		6	38
Lansdowne avenue, from east house line of Sixty-third street, west.....		6	100
Lebanon avenue, from east house line of Sixty-third street, west.....		6	25
Lee street, from dead end 284 feet west of west house line of Eighteenth street, west.....		6	42
Locust street, from centre of Thirty-third street, west.....		6	29
Locust street, from east house line of Thirty-fourth street, west.....		6	30
Locust street, from centre of Forty-second street, west.....		16	40
Locust street, from 9 feet east of east house line of Forty-fifth street, west.....		16	65
Lodge street, from centre of Second street, west.....		6	30

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Lombard street, from 4 feet east of east house line Front street, west.....		6	34
Lombard street, from centre of Forty-fifth street, west.....		6	30
Lombard street, from 200 feet east of east house line of Sixty-first street, west.....		6	200
Lydia street, from centre of Fairmount avenue, north.....		6	30
Madison street, from dead end north 283 feet north of north house line of Race street.....		6	353
Madison street, from south house line of Vine st., north...		6	25
Malvern street, from east house line of Sixty-third street, west.....		6	100
Manning street, from centre of Twenty-third street, west..		6	25
Mantua avenue, from dead end west house line of Thirty-fifth street to centre of Thirty-eighth street.....		6	1,381
Markoe street, from centre of Haverford street, north.....		6	40
Markoe street, from north house line Fairmount avenue to centre of Aspen street.....		6	381
Market street, south side, from 306 feet west of west house line of Sixtieth street to centre of Sixty-third street...		6	1,372
Market street, north side, from dead end 306 feet west of west house line of Sixtieth to Sixty-third street.....	10		1,371
Master street, from east house line of Sixtieth street to west house line of Sixty-first street.....		6	506
Master street, from east house line of Sixty-third st., west.		6	39
Melrose street, from centre of Fifty-fifth street, west.....		6	30
Merion avenue, from dead end 18 feet west of north curb line of Fiftieth street, west.....		6	264
Miller or Rockland street, from south house line of Lancaster avenue, north.....		6	40
Moravian street, from centre of Nineteenth street, west...		6	25
Moravian street, from 2 feet east of east house line of Twentieth street, west.....		6	27
Moss street, from centre of Haverford street, north.....		6	40
Naudain street, from east house line of Twenty-second street, west.....		6	25
Ogden street, from east house line of Forty-ninth street, west.....		6	60
Osborn street, from east house line of Twenty-second street, west.....		6	25
Osage avenue, from centre of Forty-fifth street, west.....		6	30
Oxford (or Heston), from west house line of Fifty-one-and-a-half street to Fifty-second street.....		6	270
Oxford street, from east house line of Sixty-third street, west.....		6	74
Palo Alto, from south house line of Pine street, north.....		6	19
Paschall avenue, from dead end 12 feet west of east house line of Fiftieth street, west.....		6	58
Paschall avenue, from 10 feet 8 inches east of centre of Sixty-third street, west.....		6	20
Path street, from centre of Race street, north.....		6	25

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Peach street, from centre of Master street to dead end south house line of Lancaster avenue.....		6	1,075
Pearl street, from east house line of Thirty-third street, west .....		6	30
Pennsgrove, from 37 feet east of centre of Fortieth street, west .....		6	37
Pennsgrove, from east house line of Fifty-four-and-a-half street, west.....		6	30
Perry street, from centre of Race to dead end of south house line of Winslow .....		6	125
Poplar street, from centre of Forty-first street, west.....		6	33
Proctor square, from east house line of Thirty-eighth street, west .....		6	60
Race street, from east house line of Sixty-two-and-half street, west.....		6	50
Radcliffe street, from centre of Lombard street, north.....		6	25
Ringgold street, from Nineteenth street, west.....		6	25
Rodney street, from east house line of Nineteenth street, west .....		6	25
Sansom street, from Thirty-eighth street, west.....		6	32
Saybrook street, from dead end 5 feet 6 inches west of east house line of Fiftieth street west to connect.....		6	15
Saybrook street, from 26 feet east of centre of Sixty-third street, west.....		6	40
Seventeenth street, from centre of Helmuth street to Pine street.....		6	127
Seventy-second street, from southeast house line of Grays avenue to dead end of southeast house line of Elmwood .....		6	581
Simes street, from east house line of Twenty-second street, west.....		6	30
Simes street, from east house line of Twenty-third street, west.....		6	21
Sixtieth street, from south house line of Baltimore avenue, north.....		6	66
Sixtieth street, from Market street to dead end south house line of Race.....		10	1,112
Sixtieth street, from south house line of Master st., north		6	60
Sixty and-one-half street, from south house line of Vine street, north.....		6	80
Sixty-first street, from 10 feet south of centre of Baltimore avenue, north.....		6	50
Sixty-first street, from south house line of Market street, north .....		6	100
Sixty-first street, from south house line of Haverford street, north.....		6	46
Sixty-first street, from south house line of Vine st., north		6	80
Sixty-first street, from 1 foot north of south house line of Master street, north.....		6	59

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Sixty-one-and-one-half-street, from 4 feet south of north curb line of Market street, north.....		6	24
Sixty-one-and-one-half street, from south house line of Vine street, north.....		6	80
Sixty-one-and-one-half-street, from 3 feet north of south house line of Haverford street, north.....		6	74
Sixty-second street, from south house line of Market street, north.....		6	100
Sixty-second street, from south house line of Vine street, north.....		6	80
Sixty-second street, from 3 feet north of south house line of Haverford street, north.....		6	74
Sixty-two-and-one-half street, from 4 feet south of north curb line of Market street, north.....		6	9
Sixty-two-and-one-half street, from 5 north of south house line of Arch street to dead end 90 feet north of north house line of Race street.....		6	678
Sixty-two-and-one-half street, from center of Vine street, north.....		6	40
Sixty-two-and-one-half street, from 3 feet north of south house line of Haverford street, north.....		6	37
Sixty-third street, from 5 feet north of south house line of Market street north.....		6	51
Sixty-third street, from 4 feet south of north curb line of Market street north to connect dead end.....		8	12
Sixty-third street, east side, from Haverford street to 12 feet north of south house line of Lancaster avenue....		6	4,776
Sixty-third street, west side, from Haverford street to 425 feet north of center of Malvern street.....		6	4,712
Sixty-third street, from southeast house line of Paschall avenue to northwest house line of Woodland avenue.		10	582
Sixty-three-and-one-half street, from Callowhill street to 5 feet south of north house line of Hamilton street....		6	588
Sixty-three-and-one-half street, from south house line of Haverford street, north.....		6	80
Sixty-fourth street, from center of Haverford street, north		6	40
Sixty-four-and-one-half street, from south house line of Vine street, north.....		6	80
Sixty-four-and-one-half street, from south house line of Hamilton street, north.....		6	60
Sixty-fifth street, from center of Girard avenue to south house line of Callowhill street.....		8	1,075
Sixty-fifth street, from south house line of Haverford street, north.....		6	80
Sixty-sixth street, from 2 feet north of south house line of Haverford street, north.....		6	75
Spring street, from east house line of Twentieth street, west.....		6	25
Spruce street, from dead end west house line of Twenty-fifth street, to center of Twenty-sixth street.....		6	306

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Stiles street, from Leidy to Forty-second street.....		6	419
Stiles street, from 2 feet east of east house line of Belmont avenue, west.....		6	50
Supplee street, from east house line of Fifty-third street to east house line of Fifty-fourth street.....		6	429
Supplee street, from 2 feet east of east house line of Fifty-fourth street, west.....		6	64
Thirtieth street, from about 8 feet north of center of Marston street to dead end 3 feet south of south house line of Spruce street.....		6	327
Thirtieth street, from north house line of Locust street, north.....		6	302
Thirty-first street, from 2 feet south of south house line of Spring Garden street, north.....		6	64
Thirty-fourth street, from south house line of Haverford street north.....		6	25
Thirty-fifth street, from south house line of Lancaster avenue north.....		6	40
Thirty-six-and-one-half street, from Brown street to Mantua avenue.....		6	20
Thirty-seventh street, from 6 feet south of south house line of Mantua avenue, north.....		6	25
Thirty-nine-and-one-quarter street, from center of Centre street to center of Warren street.....		6	152
Thirty-nine-and-one-half street, from dead end center of Sloan street to 109 feet south of south house line of Warren street.....		6	99
Thompson street, from Fifty-second street, west.....		6	48
Thompson street, from center of Haverford street, north..		6	30
Twentieth street, from dead end north house line of Chestnut street to Johnson street.....		6	177
Twenty-sixth street, from 2 feet south of south house line of Lombard street, north.....		6	27
Twenty sixth street, from dead end 10 feet south of center of Spruce street, north to connect.....		6	10
Toland street, from east house line of Twentieth street, west.....		6	25
Warren street, from center of Master street to center of Fifty-first street.....		6	220
Waverly street, from east house line of Nineteenth street, west.....		6	25
Waverly street, from Seventeenth street, west.....		6	18
Wharton street, from 10 feet south of center of Baltimore avenue, north.....		6	36
Whitby avenue, from south house line of Baltimore avenue, north.....		6	40
Windsor street, from center of Forty-eighth street to 24 feet east of west house line of Forty-ninth street....		6	467
Winter street, from east house line of Seventeenth street, west.....		6	25

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Winter street, from dead end east house line of Twentieth street, west.....		6	25
Wyota or Centre street, from south house line of Ogden street, north.....		6	52
Wyalusing avenue, from corner of Havertord street, north.....		6	35
Wyalusing avenue, from dead end 8 feet west of west house line of Belmont avenue to Merion avenue.....		6	487
Wyalusing avenue, from east line of Fifty-third street, west.....		6	30
Wyalusing avenue, from south house line of Lancaster avenue, north.....		6	80
Wyalusing avenue, from dead end northeast house line of Lancaster avenue to Merion avenue.....		6	260
Wyoming or Preston street, from south house line of Lancaster avenue, north.....		6	40
<b>Total</b> .....			<b>51,298</b>
<i>Supply Mains.</i>			
Crestline avenue, from a point on the west side of Belmont Reservoir, 75 feet north of Standpipe, to west house line of Belmont avenue.....		12	2,819
George's Hill, from old 30-inch main, north to pumping station (suction-pipe).....		30	252
<i>Pumping Mains.</i>			
George's Hill, for new pumping station, west to dead end laid in 1893 opposite division bank, north side of Belmont Reservoir.....		20	700
George's Hill Reservoir, west side from 20-inch pumping main west to connect with Standpipe.....		20	26
<b>Total</b> .....			<b>727</b>
<i>Service Main Connections.</i>			
Market street, south side, 306 feet west of west house line of Sixtieth street, between 10-inch main in centre and 6-inch main south side of Market street.....		6	24
Market street, north side, 307 feet west of west house line of Sixtieth street, between 10-inch main in center and 6-inch main north side of Market street.....		10	27
Sixty-third street, 2 feet south of south house line of Lancaster avenue, between 6-inch mains on Sixty-third street.....		6	47
<b>Total</b> .....			<b>98</b>

Street.	Location.	Size in inches.	Distance in feet.
<i>Supply Main Connections.</i>			
George's Hill Reservoir, northwest corner, between 20-inch pumping main and 12-inch service main.....		12	11 F
Lancaster avenue and Forty-ninth street, between 20-inch and 6-inch mains on Lancaster avenue.....		6	8
Lancaster avenue and Wyalusing avenue, between 20-inch and 6-inch mains on Lancaster avenue.....		6	9
Lansdowne avenue and Sixty-third street, between 20-inch and 6-inch mains on Lansdowne avenue.....		10	11
<b>Total.....</b>			<b>139</b>
<i>Service Supply Connections.</i>			
Aspen street, south side, 10 feet west of west house line of Forty-seventh street .....		4	19'
Aspen street, north side, 10 feet west of west house line of Forty-seventh street.....		4	19
Aspen street, south side, 11 feet east of east house line of Forty-eighth street.....		4	19
Aspen street, north side, 11 feet east of east house line of Forty-eighth street.....		4	19
Baltimore avenue, northwest side, 126 feet southwest of southwest house line of Forty-second street.....		4	24
Baltimore avenue, south side, 36 feet west of west house line of Forty-third street.....		4	25
Baltimore avenue, north side, 15 feet west of west house line of Forty-third street.....		4	25
Baltimore avenue, northwest side, northeast house line of Forty-third street.....		4	25
Baltimore avenue, south side, 3 feet 6 inches east of east house line of Forty-fourth street.....		4	25
Baltimore avenue, north side, 2 feet west of west house line of Forty-fourth street.....		4	24
Baltimore avenue, north side, 2 feet 6 inches east of east house line of Forty-fourth street .....		4	25
Baltimore avenue, north side, 10 feet east of east house line of Forty-fifth street.....		4	25
Baltimore avenue, south side, 3 feet west of west house line of Forty-seventh street.....		4	25
Baltimore avenue, north side, 4 feet west of west house line of Forty-eighth street.....		4	25
Baltimore avenue, northwest side, 9 feet southwest of west house line of Forty-ninth street.....		4	24
Baltimore avenue, north side, 6 feet west of west house line of Fiftieth street.....		4	25
Baltimore avenue, northwest side, 6 feet northeast of northeast house line of Fiftieth street.....		4	25
Baltimore avenue, north side, 3 feet west of west house line of Fifty-first street.....		4	25

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Baltimore avenue, north side, 7 feet east of east house line of Fifty-second street.....		4	25
Fifty-second street, west side, 2 feet south of south house line of Media street.....		4	39
Fifty-third street, east side, 2 feet north of north house line of Wyalusing avenue.....		4	19
Fifty-second street, west side, 2 feet north of north house line of Wyalusing avenue.....		4	19
Fifty-second street, east side, 5 feet south of south house line of Supplee street.....		4	19
Fifty-second street, west side, 5 feet south of south house line of Supplee street.....		4	19
Fifty-second street, east side, 5 feet north of north house line of Supplee street.....		4	19
Fifty-second street, west side, 5 feet north of north house line of Supplee street.....		4	19
Fifty-second street, east side, 2 feet south of south house line of Girard avenue.....		4	19
Fifty-second street, west side, 2 feet south of south house line of Girard avenue.....		4	19
Fifty-sixth street, west side, 10 feet north of north house line of Vine street.....		4	19
Fifty-sixth street, west side, 16 feet south of south house line of Haverford street.....		4	19
Fifty-sixth street, west side, 118 feet north of north house line of Lansdowne avenue.....		4	18
Fifty-sixth street, west side, 8 feet south of south house line of Jefferson street.....		4	18
Fifty-eighth street, west side, south house line of Ashland avenue.....		4	22
Fifty-eighth street, west side, 6 feet north of north house line of Thomas avenue.....		4	22
Sixty-fifth street, west side, 4 feet north of north house line of Vine street.....		4	19
Sixty-fifth street, west side, 62 feet south of south house line of Callowhill street.....		4	19
Sixty-fifth street, west side, 7 feet north of north house line of Callowhill street.....		4	19
Sixty-fifth street, east side, 114 feet north of north house line of Girard avenue.....		4	19
Sixty-fifth street west side, 8 feet north of north house line of Girard avenue.....		4	19
Sixty-fifth street, west side, 5 feet south of south house line of Girard avenue.....		4	19
Sixty-fifth street, east side, 63 feet south of south house line of Haverford street.....		4	19
Sixty-fifth street, west side, 139 feet south of south house line of Haverford street.....		4	19
Spring Garden street, north side, 6 feet west of west house line of Thirty-third street.....		4	13



Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Spring Garden street, north side, 2 feet east of east house line of Thirty-fourth street.....		4	14
Supplee street, south side, 2 feet west of west house line of Fifty-third street.....		4	14
Supplee street, north side, 2 feet west of west house line of Fifty-third street.....		4	14
Supplee street, south side, 4 feet east of east house line of Fifty-fourth street.....		4	16
Supplee street, north side, 4 feet east of east house line of Fifty-fourth street.....		4	16
Thirty-third street, west side, 6 feet north of north house line of Spruce street.....		4	22
Thirty-third street, west side, south house line of Locust street .....		4	22
Total.....			1,040
<i>Fire Connections (private).</i>			
Thirty-third street, east side, 25 feet north of north house line of Walnut street, for Schleicher, Schumm & Co..		4	8
<i>Supply Connections (private).</i>			
Broad street, east side, 11 feet north of north house line of Chestnut street. Girard building.....		4	7
Crown street, east side, 50 feet north of north house line of Race street. J. Smith & Co.....		6	15
Cuthbert or Benezet street, south side, 6 feet east of east house line of Eleventh street. Harrison building.....		3	12
Fourth street, west side, 49 feet south of south house line of Appletree alley. J. L. Ketterlinus.....		4	16
Sansom street, south side, 148 feet east of east house line of Ninth street. Traction Railway Co.....		4	13
Total.....			63
<i>Drains.</i>			
George's Hill Pumping Station, east front, 66 feet south of north house line of boiler house and engine room..		4	11
George's Hill Pumping Station, east front, 40 feet south of north house line of boiler house and boiler room....		4	13

Street.	Location.	Size in inches.	Distance in feet.
<i>Drains—Continued.</i>			
George's Hill Pumping Station, in front of new engine and boiler house, from 12 feet south of south building line, north.....		6	209
George's Hill Pumping Station, inside of engine room, south side, from east to west front of building.....		6	69
George's Hill Pumping Station, inside of boiler room, north side, from east to west front of building.....		6	56
Seventh street, 18 feet south of south house line of Chestnut street, from 10-inch main.....		4	7
Total.....			365
<i>Pipe Relaid.</i>			
Adelphia street, from east house line of Fleet street to east house line of Sixth street.....		6	195
Addison street, from centre of Seventeenth street, west.....		6	27
Addison street, from 5 feet east of east house line of Eighteenth street, west.....		6	60
Albion street, from centre of Lombard street, north.....		6	27
Albion street, from 3 feet south of south house line of Pine street, north.....		6	22
Ann street, from centre of Seventeenth street to Eighteenth street .....		6	423
Ann street, from 2 feet east of east house line of Eighteenth street, west.....		6	27
Ann street, from west house line of Nineteenth street to east house line of Twentieth street.....		6	398
Ann street, from 2 feet east of east house line of Twentieth street, west.....		6	27
Ashburton street, from centre of Twenty-third street, west		6	27
Ashburton street, from 3 feet east of east house line of Twenty-fifth street west.....		6	56
Aspen street, from 3 feet south of south house line of Barker street, north.....		6	15
Baring street, from Thirty-fifth street to Thirty-sixth street.....		6	382
Barnwell street, from 1 foot south of south house line of Lombard street, north.....		6	52
Bell street, from Powelton avenue, north.....		6	41
Bennett street, from Seventh street, west.....		6	18
Blight street, from centre of Pine street, north.....		6	27
Blight street, from 2 feet south of south house line of Budd street, north.....		4	12
Budd street, from 2 feet west of west house line of Twelfth street to east house line of Dean street .....		4	176
Budd street, from 2 feet west of west house line of Dean street to 2 feet east of east house line of Thirteenth street.....		4	174

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Budd street, from west house line of Thirteenth street to 16 feet east of east house line of Juniper street.....		4	234
Budd street, from 16 feet east of east house line of Juniper street, west.....		6	16
Budd street, from west house line of Juniper street to east house line of Broad street.....		4	250
Buddens alley, from west house line of Twelfth street to east house line of Thirteenth street.....		4	396
Burton street, from 2 feet east of east house line of Seventeenth street, west.....		6	27
Burton street, from 6 feet east of east house line of Eighteenth street, west.....		6	26
Carver street, from 6 feet east of east house line of Eighteenth street, west.....		6	26
Chancellor street, from 2 feet east of east house line of Seventeenth street, west.....		6	54
Chancellor street, from 2 feet east of east house line of Eighteenth street, west.....		6	27
Chippewa street, from South street to Lombard street.....		6	378
Claymont street, from 2 feet south of south house line of Race street, north.....		6	27
Cowley street, from centre of Perry street, west.....		6	13
Cuthbert street, from 171 feet east of east house line of Eleventh street, west.....		6	171
Cuthbert street, from 4 feet east of west house line of Twelfth street to east house line of Thirteenth street.....		6	400
Cuthbert street, from west house line of Thirteenth street to east house line of Juniper street.....		6	250
Cuthbert street, from west house line of Fifteenth street to east house line of Sixteenth street.....		6	397
Cuthbert street, from west house line of Sixteenth street to Seventeenth street.....		6	420
Cuthbert street, from 2 feet east of east house line of Twentieth street, west.....		6	54
Cuthbert street, from 3 feet east of east house line of Twenty-second street, west.....		6	27
Dean street, from centre of Lombard street north.....		6	27
Dean street, from 2 feet south of south house line of Pine street, north.....		6	27
Dobbins street, from centre of Eighteenth street, west.....		6	27
Dobbins street, from 2 feet east of east house line of Nineteenth street, west.....		6	27
Dugan street, from 6 feet north of south curb line of Pine street, north.....		6	33
Erety street, from 2 feet east of east house line of Seventeenth street, west.....		6	27
Exeter street, from 2 feet east of east house line of Eighteenth street, west.....		6	27
"F" street, from centre of Twenty-second street to east house line of Twenty-third street.....		6	306

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
"F" street, from 5 feet east of east house line of Twenty-third street, west.....		6	30
Forty-first street, from 2 feet south of south house line of Lancaster avenue, north.....		6	42
Friedlander street, from north house line of Cherry street to Race street.....		6	316
Goodwill Court, from 2 feet south of south house line of Race street, north.....		6	27
Granville street, from 2 feet east of east house line of Twenty-second street, west.....		6	32
Hand street, from centre of Twentieth street, west.....		6	28
Harmstead street, from 2 feet east of east house line of Twentieth street, west.....		6	54
Harmstead street, from 3 feet east of east house line of Twenty-second street, west.....		6	27
Haverford street, from Thirty-third street to Thirty-seventh street.....		6	1,777
Helmuth street, from 2 feet east of east house line of Seventeenth street, west.....		6	27
Hunter street, from west house line of Tenth street to east house line of Eleventh street.....		6	396
Irving street, from east house line of Thirty-eighth street, west.....		6	30
Iseminger street, from 2 feet south of south house line of Budd street, north.....		4	12
Johnson street, from centre of Twentieth street, west.....		6	28
Jones street, from centre of Eighteenth street, west.....		6	27
Kelton street, from center of Race street, north.....		6	27
Kershaw street, from 4 feet south of south house line of Race street, north.....		6	29
Kerr street, from center of Lombard street, north.....		6	27
Kerr street, from 3 feet south of south house line of Pine street, north.....		6	22
Lambert street, from east house line of Perry street, west.....		6	25
Lancaster avenue, from east house line of Thirty-third street, northwest.....		6	31
Latimer street, from 2 feet east of east house line of Seventeenth street, west.....		6	54
Leaf street, from center of Orange street, north.....		4	15
Levant street, from 2 feet south of south house line of Pear street, north.....		6	17
Lewis street, from center of Thirty-sixth street, west.....		5	33
Linton street, from center of Twentieth street, west.....		4	276
Locust street, from 7 feet east of east house line of Forty-second street, west.....		16	47
Lombard street, from Front to east house line of Second street.....		6	391
Lombard street, from 10 feet east of east house line of Second street, west.....		6	28

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Lombard street, from 6 feet east of east house line of Barnwell street to Twenty-seventh street.....		6	194
Ludlow street, from center of Thirty-third street, west.....		6	31
Ludlow street, from 5 feet east of east house line of Thirty-sixth street, west .....		6	69
Ludlow street, from center of Thirty-ninth street to east house line of Fortieth street.....		6	639
Ludlow street, from 2 feet east of east house line of Fortieth street, west.....		6	64
Ludlow street, from east house line of Forty-first street, west.....		6	24
Ludlow street, from Forty-second street, west.....		6	24
Madison street, from center of Race street, north.....		6	310
Manning street, from center of Twenty-second street, west.....		6	32
Manning street, from 5 feet east of east house line of Twenty-third street, west.....		6	30
Manning street, from 4 feet east of east house line of Twenty-fourth street, west.....		6	56
Moravian street, from center of Seventeenth to east house line of Eighteenth street.....		6	423
Moravian street, from 2 feet east of east house line of Eighteenth street, west.....		6	27
Mt. Vernon street, from east house line of Fortieth street, west.....		6	30
Mt. Vernon street, from center of Preston street to west house line of Fairmount avenue.....		6	143
Mt. Vernon street, from east house line of Forty-first street, west.....		6	38
Nassau street, from Ninth street, west.....		6	27
Naudain street, from 7 feet west of east curb line of Eighteenth street, west.....		6	36
Naudain street, from 2 feet east of east house line of Twentieth street, west.....		6	54
Naudain street, from Twenty-second street, west.....		6	38
Naudain street, from 3 feet east of east house line of Twenty-third street, west.....		6	56
Orange street, from 22 feet east of west house line of Seventh street, west.....		6	22
Orange street, from west house line of seventh street to east house line of Eighth street.....		4	396
Orion street, from center of Wallace street, north.....		6	25
Pear street, from 2 feet east of east house line of Third street to 7 feet east of southwest curb line of Dock street.....		6	378
Perry street, from 9 feet north of north house line of Winslow street to south house line of Vine street.....		6	511
Perry street, from 2 feet south of south house line of Vine street, north.....		6	27
Porcelain street, from center of Twentieth street, west.....		6	27
Powell street, from west house line of Fifth street to east house line of Sixth street.....		6	399

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Ranstead street, from 2 feet east of east house line of Fifth street, west.....		6	27
Richard street, from 2 feet east of east house line of Seventeenth street, west.....		6	27
Rittenhouse street, from center of Seventeenth street, west		6	27
Rittenhouse street, from 2 feet east of east house line of Eighteenth street, west.....		6	27
Rockland street, from centre of Thirty-third street, west..		6	25
Sansom street, from west house line of Broad street to east house line of Fifteenth street.....		6	398
Sansom street, from west house line of Fifteenth street to east house line of Sixteenth street.....		6	397
Sansom street, from west house line of Sixteenth street to east house line of Seventeenth street.....		6	397
Sansom street, from 2 feet east of east house line of Seventeenth street, west.....		6	27
Sansom street, from 7 feet east of west curb line of Seventeenth street, west.....		6	22
Sansom street, from west house line of Seventeenth street to east house line of Eighteenth street.....		6	396
Sansom street, from 7 feet east of east house line of Eighteenth street west.....		6	59
Sansom street, from west house line of Eighteenth street to centre of Nineteenth street.....		6	421
Senneff street, from centre of Twenty-third street west...		6	27
Seventh street, from 3 feet south of north house line of Walnut street to Chestnut street.....		10	533
Sheaff street, from centre of Madison street, west.....		6	23
Sloan street, from south house line of Powelton avenue, north.....		6	80
Spring street, from 2 feet east of east house line of Seventeenth street, west.....		6	54
Summer street, from 3 feet west of west curb line of Fifteenth street to east house line of Sixteenth street.....		6	410
Summer street, from centre of Twentieth street, west.....		6	27
Summer street, from 2 feet east of east house line of Twenty-first street, west.....		6	54
Summer street, from 2 feet east of east house line of Twenty-second street, west.....		6	29
Thirty-third street, from 20 feet south of south house line of Ludlow street, north.....		6	109
Thirty-sixth street, from 3 feet south of south house line of Haverford street, north.....		6	33
Truxton street, from 2 feet south of south house line of Budd street, north.....		4	12
Tryon street, from 3 feet east of east house line of Twenty-second street, west.....		6	27
Twenty-third street, from Arch to Vine.....		12	1351
Twenty-sixth street, from 4 feet north of north house line of Lombard street, north.....		6	29

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Vasey street, from 7 feet east of west curb line of Seventeenth street, west.....		6	21
Warren street, from 1 foot east of centre of Thirty-eighth street, west.....		6	31
Watts street, from 2 feet east of east house line of Twentieth street, west.....		6	27
Wetherell street, from centre of Lombard street, north.....		6	27
Wetherell street, from 5 feet south of south house line of Pine street, north.....		6	30
Wilcox street, from 2 feet east of east house line of Twentieth street, west.....		6	27
Willings alley, from centre of Third street, west.....		6	27
Winter street, from centre of Seventeenth street, west.....		6	27
Winter street, from centre of Twentieth street, west.....		6	27
Winter street, from 2 feet east of east house line of Twenty-first street, west.....		6	54
Total.....			19,238
Fire hydrant connection relaid.....		6	1912
Repairs, general.....		3	20
“ “ .....		4	54
“ “ .....		6	2936
“ “ .....		8	276
“ “ .....		10	204
“ “ .....		12	586
“ “ .....		20	11
“ “ .....		30	10
Total.....			4097
<i>Pipe Taken Up.</i>			
Adelphia street, from east house line of Fleet street to east house line of Sixth street.....		4	195
Addison street, from center of Seventeenth street, west.....		3	27
Addison street, from 5 feet east of east house line of Eighteenth street, west.....		3	60
Albion street, from center of Lombard street, north.....		3	27
Albion street, from 3 feet south of south house line of Pine street, north.....		3	22
Ann street, from center of Seventeenth street, west.....		3	27
Ann street, from west house line of Seventeenth street to east house line of Eighteenth street.....		3	396
Ann street, from 2 feet east of east house line of Eighteenth street, west.....		4	27

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up—Continued.</i>			
Ann street, from west house line of Nineteenth street to east house line of Twentieth street, west.....		4	27
Ann street, from west house line of Nineteenth street to east house line of Twentieth street.....		3	398
Ann street, from 2 feet east of house line of Twentieth street, west.....		3	27
Ashburton street, from center of Twenty-third street, west.....		4	27
Ashburton street, from 3 feet east of east house line of Twenty-fifth street, west.....		4	56
Aspen street, from 3 feet south of south house line of Barker street, north.....		4	16
Baring street, from center of Thirty-fifth street to Thirty-sixth street.....		4	385
Barnwell street, from 1 foot south of south house line of Lombard street, north.....		3	52
Bell street, from Powelton avenue, north.....		4	41
Bennett street, from Seventh street, west.....		3	18
Blight street, from center of Pine street, west.....		3	27
Blight street, from 2 feet south of south house line of Budd street, north.....		3	12
Budd street, from 2 feet west of west house line of Twelfth street, to east house line of Dean street.....		3	176
Budd street, from 2 feet west of west house line of Dean street, to 2 feet east of east house line of Thirteenth street.....		3	174
Budd street, from west house line of Thirteenth street to east house line of Juniper street.....		3	250
Budd street, from West house line of Juniper street to east house line of Broad street.....		3	250
Buddins alley, from west house line of Twelfth street to east house line of Thirteenth street.....		3	396
Burton street from 2 feet east of east house line of Seventeenth street, west.....		3	27
Burton street, from 6 feet east of east house line of Eighteenth street, west.....		3	26
Carver street, from 6 feet east of east house line of Eighteenth street west.....		3	26
Chancellor street, from 2 feet east of east house line of Seventeenth street, west.....		3	54
Chancellor street, from 2 feet east of east house line of Eighteenth street, west.....		3	27
Claymont street, from 2 feet south of south house line of Race street, north.....		4	27
Cowley street, from center of Perry street, west.....		3	13
Cuthbert street, from 171 feet east of east house line of Eleventh street, west.....		3	171
Cuthbert street, from 4 feet east of west house line of Twelfth street, to east house line of Thirteenth street		3	400



Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up—Continued.</i>			
Cuthbert street, from west house line of Thirteenth street to east house line of Juniper street.....		3	250
Cuthbert street, from west house line of Fifteenth street to east house line of Sixteenth street.....		3	397
Cuthbert street, from west house line of Sixteenth street, west.....		3	25
Cuthbert street, from 2 feet east of east house line of Seventeenth street, west.....		3	27
Cuthbert street, from 2 feet east of east house line of Twentieth street, west.....		3	54
Cuthbert street, from 3 feet east of east house line of Twenty-second street, west.....		4	27
Dean street, from center of Lombard street, north.....		3	27
Dean street, from 2 feet south of south house line of Pine street, north.....		3	27
Dobbins street, from center of Eighteenth street, west.....		3	27
Dobbins street, from 2 feet east of east house line of Nineteenth street, west.....		3	27
Erety street, from 2 feet east of east house line of Seventeenth street, west.....		3	27
Exeter street, from 2 feet east of east house line of Eighteenth street, west.....		3	27
"F" street, from center of Twenty-second street, west.....		3	33
F street, from west house line of Twenty-second street to east house line of Twenty-third street.....		3	273
F street, from 5 feet east of east house line of Twenty-third street, west.....		3	30
Forty-first street, from 2 feet south of south house line of Lancaster avenue, north.....		4	42
Friedlander street, from north house line of Cherry street to Race street.....		3	316
Goodwill court, from 2 feet south of south house line of Race street, north.....		4	27
Granville street, from 2 feet east of east house line of Twenty-second street, west.....		4	32
Hand street, from centre of Twentieth street, west.....		3	28
Harmstead street, from 2 feet east of east house line of Twentieth street, west.....		3	54
Harmstead street, from 3 feet east of east house line of Twenty-second street, west.....		4	27
Helmuth street, from 2 feet east of east house line of Seventeenth street, west.....		4	27
Hunter street, from west house line of Tenth street to east house line of Eleventh street.....		3	396
Irving street, from east house line of Thirty-eighth street, west.....		4	30
Iseminger street, from 2 feet south of south house line of Budd street, north.....		3	12
Johnson street, from centre of Twentieth street, west.....		4	28
Jones street, from centre of Eighteenth street, west.....		3	27

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up—Continued.</i>			
Kerr street, from 3 feet south of south house line of Pine street, west.....		3	22
Kerr street, from centre of Lombard street, north.....		4	27
Kelton street, from centre of Race street, north.....		3	27
Kershaw street, from 4 feet south of south house line of Race street, north.....		3	29
Lancaster street, from east house line of Thirty-third street, northwest.....		4	31
Lambert street, from east house line of Perry street, west.		3	25
Latimer street, from 2 feet east of east house line of Seventeenth street, west.....		3	54
Levant street, from 2 feet south of south house line of Pear street, north.....		3	17
Lewis street, from centre of Thirty-sixth street, west.....		3	33
Linton street, from centre of Twentieth street, west.....		3	276
Locust street, from 7 feet east of east house line of Forty-second street, west.....		6	47
Lombard street, from Front street to east house line of Second street.....		4	391
Lombard street, from 10 feet east of east house line of Second street, west.....		4	28
Ludlow street, from centre of Thirty third street, west.....		4	31
Ludlow street, from 5 feet east of east house line of Thirty-sixth street, west.....		4	69
Ludlow street, from centre of Thirty-ninth street to east house line of Fortieth street.....		4	639
Ludlow street, from 2 feet east of east house line of Fortieth street, west.....		4	64
Ludlow street, from east house line of Forty-first street, west.....		4	24
Ludlow street, from Forty-second street, west.....		6	24
Madison street, from centre of Race street, north.....		4	310
Manning street, from centre of Twenty-second street, west.		3	32
Manning street, from 5 feet east of east house line of Twenty-third street, west.....		3	30
Manning street, from centre of Twenty-fourth street, west		3	27
Manning street, from 4 feet east of east house line of Twenty-fourth street, west.....		4	29
Moravian street, from centre of Seventeenth street, west..		3	27
Moravian street, from 2 feet east of east house line of Eighteenth street, west.....		3	27
Moravian street, from west house line of Seventeenth street to east house line of Eighteenth street.....		3	396
Mt. Vernon street, from east house line of Fortieth street, west.....		4	30
Mt. Vernon street, from centre of Preston to west house line of Fairmount avenue.....		4	148
Mt. Vernon street, from east house line of Forty-first street, west.....		4	38
Nassau street, from centre of Ninth street, west.....		3	27

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up—Continued.</i>			
Naudain street, from 7 feet west of east curb line of Eighteenth street, west.....		3	36
Naudain street, from 2 feet east of east house line of Twentieth street, west.....		3	54
Naudain street, from Twenty-second street, west.....		4	38
Naudain street, from 3 feet east of east house line of Twenty-third street, west.....		4	56
Orion street, from centre of Wallace street, north.....		4	25
Pear street, from 2 feet east of east house line of Third street to 7 feet east of southwest curb line of Dock street.....		3	377
Perry street, from 2 feet south of south house line of Vine street, north.....		3	27
Perry street, from 88 feet south of south house line of Cowley street to south house line of Vine street.....		2	200
Porcelain street, from centre of Twentieth street, west.....		3	27
Powell street, from west house line of Fifth street to east house line of Sixth street.....		3	399
Ranstead street, from 2 feet east of east house line of Fifth street, west.....		4	27
Richard street, from 2 feet east of east house line of Eighteenth street, west.....		3	27
Rittenhouse street, from centre of Seventeenth street, west.....		3	27
Rittenhouse street, from 2 feet east of east house line of Eighteenth street, west.....		4	27
Rockland street, from centre of Thirty-third street, west.....		4	25
Sansom street, from west house line of Broad street to east house line of Fifteenth street.....		4	398
Sansom street, from west house line of Fifteenth street to east house line of Sixteenth street.....		4	397
Sansom street, from west house line of Sixteenth street, to east house line of Seventeenth street.....		4	397
Sansom street, from west house line of Seventeenth street, to east house line of Eighteenth street.....		4	396
Sansom street, from 2 feet east of east house line of Seventeenth street, west.....		4	27
Sansom street, from 7 feet east of west curb line of Seventeenth street, west.....		4	22
Sansom street, from 7 feet east of east house line of Eighteenth street west.....		4	59
Sansom street, from west house line of Eighteenth street to centre of Nineteenth street.....		4	421
Senneff street, from centre of Twenty-third street, west.....		3	27
Seventh street, from Sansom street to Chestnut street.....		6	283
Sheaff street, from centre of Madison street, west.....		4	28
Sloan street, from south house line of Powelton avenue, north.....		4	80
Spring street, from 2 feet east of east house line of Seventeenth street, west.....		3	54

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up—Continued.</i>			
Summer street, from 3 feet west of west curb line of Fifteenth street to east house line of Sixteenth street.....		3	410
Summer street, from centre of Twentieth street, west.....		3	27
Summer street, from 2 feet east of east house line of Twenty-first street, west.....		3	54
Summer street, from 2 feet east of east house line of Twenty-second street, west.....		4	29
Thirty-sixth street, from 3 feet south of south house line of Haverford street, north.....		4	33
Truxton street, from 2 feet south of south house line of Budd street, north.....		3	12
Tryon street, from 3 feet east of east house line of Twenty-second street, west.....		4	27
Twenty-sixth street, from 4 feet north of north house line of Lombard street, north.....		3	29
Vasey street, from 7 feet east of north curb line of Seventeenth street, west.....		3	21
Watt street, from 2 feet east of east house line of Twentieth street, west.....		3	27
Warren street, from 1 foot east of centre of Thirty-eighth street, west.....		4	31
Wetherill street, from centre of Lombard street, north.....		3	27
Wetherill street, from 5 feet south of south house line of Pine street, north.....		3	30
Wilcox street, from 2 feet east of east house line of Twentieth street, west.....		3	27
Willings alley, from centre of Third street, west.....		3	27
Winter street, from centre of Seventeenth street, west.....		3	27
Winter street, from centre of Twentieth street, west.....		3	27
Winter street, from 2 feet east of east house line of Twenty-first street, west.....		3	54
Total .....			14,042
Fire hydrant connections taken up.....		3	46
Fire hydrant connections taken up.....		4	225
Fire hydrant connections taken up.....		6	91
Total.....			362
<i>Pipe Lowered.</i>			
Wyalusing avenue, from 40 feet west of west house line of Fifty-third street, west.....		6	290

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Shifted.</i>			
West Fairmount Park, north side of Belmont Reservoir, from opposite centre of division bank, west.....		20	124
<i>Pipe cut off and Abandoned.</i>			
Chippewa or Twenty-seventh street, from South street to Lombard street.....		3	405
Cuthbert street, from 25 feet west of west house line of Sixteenth street to east house line of Seventeenth st..		3	368
Dugan street, from 6 feet north of south curb line of Pine street, north.....		6	33
Haverford street, from 2 feet west of west curb line of Thirty-third street to centre of Thirty-sixth street.....		4	1,365
Haverford street, from Thirty-sixth street to Thirty-Seventh street.....		4	412
Leaf street, from centre of Orange street, north.....		3	15
Lombard street, from 6 feet east of east house line of Barnwell street to Twenty-seventh street.....		3	194
Orange street, from Seventh street to east house line of Eighth street..		3	418
Perry street, from 9 feet north of north house line of Winslow street to 88 feet south of south house line of Cowley street.....		3	311
Seventh street, from 3 feet south of north house line of Walnut street to Sansom street.....		6	250
Twenty-third street, from Arch to Vine streets.....		4	1,351
Vine street, from west house line of Broad street to east house line of Fifteenth street.....		4	396
Fire hydrant connections cut off and abandoned.....		3	160
Fire hydrant connections cut off and abandoned.....		4	1,691
Fire hydrant connections cut off and abandoned.....		6	245
			2,096

Recapitulation of Second District.

Purpose for which Used.	SIZE IN INCHES.										Total feet and pounds.
	3	4	6	8	10	12	16	20	30		
Service mains.....			36,493	2,447	3,065	9,188	105				51,298
Supply mains.....						2,819					3,071
Pumping mains.....									252		727
Service main connections.....			71					727			
Service supply connections.....			17		27						98
Fire hydrant connections.....		1,040			11	111					139
Fire connections (private).....			4,488								1,040
Supply connections (private).....	12	8									4,488
Drains.....		36	15								8
		31	334								63
											865
Total..... { Feet.....	12	1,115	41,418	2,447	3,103	12,118	105	727	252		61,297
{ Pounds.....	180	21,185	1,366,794	102,774	170,665	872,496	11,550	115,693	83,664		2,744,901
Pipe relaid.....		1,941	17,278	533							21,150
Repairs, general.....	20	54	2,985	276	204	586		11	10		4,097
Pipe taken up.....	8,466	7,199	480								16,145
Pipe lowered.....											290
Pipe shifted.....			290					124			124
Total..... { Feet.....	8,486	9,194	20,964	809	204	1,937	47	135	10		41,806
{ Pounds.....	127,250	174,686	632,472	33,978	11,220	139,464	5,170	21,465	3,320		1,209,065
Pipe used but adding nothing in ground.....											
Total handled..... { Feet.....	8,498	10,309	62,402	3,255	3,307	14,055	152	862	252		103,103
{ Pounds.....	127,470	195,871	2,050,266	136,752	181,885	1,011,870	16,720	137,058	86,984		3,963,966
Pipe cut off and abandoned.....	1,871	5,324	528								7,723

## THIRD DISTRICT.

Comprising the Eleventh, Twelfth, Sixteenth, Seventeenth, Eighteenth, Nineteenth, Twenty-third, Twenty-fifth, Thirty-fifth, and part of the Thirty-third Ward.

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains.</i>			
Abigail street, from 3 feet 2 inches southeast of southeast house line of Amber street, northwest.....		6	16
Adams road, from northwest curb line of Arrott street to "L" street.....		8	1,722
Adrian street, from Jefferson street, north.....		6	25
Agate street (Pearce), from Somerset street to southwest house line of Auburn street.....		6	364
Allegheny avenue, southwest side, from 48 feet southeast of northwest house line of Cooper street to Richmond street.....		6	599
Allegheny avenue, southwest side, from 23 feet southeast of northwest house line of Kensington avenue, northwest.....		6	23
Allegheny avenue, south side, from west curb line of Potter street to west house line "G".....		6	325
Allegheny avenue, south side, from east house line of Fifth street, west.....		6	60
Allegheny avenue, northeast side, from southeast house line of Richmond street, northwest.....		6	30
Allegheny avenue, northeast side, from 23 feet southeast of northwest house line of Kensington avenue, northwest.....		6	23
Allegheny avenue, north side, from east house line of Fifth street, west.....		6	30
Allen street, from Leiper street, northwest.....		6	16
Allengrove street, from east house line of Frankford avenue, west.....		6	35
Almond street, from south house line of Weiser st., north.....		6	26
Altmier street, from Howard street, west.....		6	25
Amber street, from southwest to northeast Monmouth st..		6	19
American street, east side, from Columbia avenue, north..		6	26
American street, east side, from south house line of Susquehanna avenue, north.....		6	50
American street, east side, from south house line of Dauphin street, north.....		6	50
American street, east side, from south house line of York street, north.....		6	50
American street, east side, from south house line of Cumberland street, north..		8	56
American street, east side, from south house line of Huntington street, north.....		8	50
American street, west side, from south house line of Dauphin street, north.....		6	50

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
American street, west side, from south house line of York street, north.....		6	50
American street, west side, from south house line of Cumberland street, north.....		8	58
American street, west side, from south house line of Huntingdon street, north.....		8	50
Aramingo street, east side, from southwest house line of Huntingdon street, north.....		6	77
Aramingo street, west side, from 5 feet 6 inches south of southwest house line of Huntingdon street, north.....		6	26
Aramingo street, west side, from 20 feet north of southwest house line of Huntingdon street, north.....		6	38
Arrott street, from dead end northwest house line of Castor road, northwest.....		6	406
Arrott street, from 6 feet southwest of northeast curb line of Adams road, northeast.....		8	50
Berks street, south side from centre of Howard street to centre of Fourth street.....		6	1,820
Berks street, south side, from centre of Manor street to centre of Fifth street.....		6	220
Berks street, north side, from Philip street to 25 feet west of east house line of Third street.....		6	550
Berges street, from southeast house line of Amber street, northwest.....		6	23
Bethlehem avenue, from centre of Venango street, northeast.....		6	31
Bonner street, from centre of Laurel street north.....		6	21
Bodine street, from south house line of Huntingdon street, north.....		8	50
Boudinot street, from centre of Indiana avenue, north.....		6	26
Boudinot street, from south house line of Clearfield street, north.....		6	50
Butler street from 10 feet southeast of southeast house line of Kensington avenue, northwest.....		6	63
Butler street, from southeast house line of Frankford avenue, northwest.....		6	30
Butler street, from east house line of Fifth street, west.....		6	32
Byron street, from 11 feet 6 inches northwest of southeast house line of Richmond street, northwest.....		6	19
"C" street, from centre of Cambria street to 13 feet north of north curb line of Indiana avenue.....		6	580
Camelia street, from centre of Palmer street to centre of Deal street.....		6	420
Canal street, from southeast house line of Beach street, northwest.....		6	50
Canal street, from centre of Frankford avenue, west.....		6	37
Cedar street, from south house line to north house line of Somerset street.....		6	59
Cedar street, from southwest house line of Dyre street, northeast.....		6	38



Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Cemetery street, from centre of Malvern street, northwest		6	31
Chatham street, from south house line to centre of Somerset street.....		6	30
Cherry street, from centre of Harrison street to centre of Wakeling street.....		6	499
Clearfield street, from east house line of Fifth street to west house line of Sixth street.....		16	617
Clearfield street, from east house line to west house of Marshall street....		16	50
Clearfield street, from east house line of Darien street, west.....		16	30
Clearfield street, from southeast house line of D street, northwest.....		12	25
Clementine street, from centre of F street to west house line of E street.....		6	575
Columbia avenue, from east house line of Fifth street, west		6	30
Commerce street, from 25 feet south of northeast house line of Huntingdon street, northeast.....		6	25
Commerce street, from south house line of Wrecken street, north.....		6	30
Como street, from centre of Hancock street to dead end east house line of Palethorp street.....		6	135
Cooper street, from centre of Ontario street, north.....		6	25
Cornwall street, from southeast house line of Kensington avenue, northwest.....		6	25
Coral street, from southwest to northeast house line of Auburn street.....		6	50
Colville street, from 16 feet south of centre of Cumberland street, north.....		8	16
Court alley, from south house line of Brown street, north		6	25
Cottage street, from southwest house line of Van Kirk street to southwest house line of Comly street.....		12	860
Coville street, from east house line of Front street, west...		6	30
Culvert street, from centre of Lawrence street, northeast..		6	12
Culvert street, from Frankford avenue, northwest.....		6	62
"D" street, from south house line of Clearfield street, north.....		6	50
Darien street, from north house line of Indiana avenue to 13 feet north of centre of Clearfield street.....		6	544
Dittman street, from southwest house line of Van Kirk street to southwest house line of Comly street.....		6	864
Dyre street, from southeast house line of Willow street to west curb line of Frankford avenue.....		6	995
"E" street, from centre of Indiana avenue, north.....		6	25
"E" street, from south house line of Clementine street, north.....		6	30
Edgemont street, from south house line of Somerset street, north.....		8	23
Edmund street, from east house line of Frankford street, west.....		6	50

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Eighth street, from dead end south house line of Indiana avenue to dead end 13 feet north of south house line of Clearfield street.....		6	513
Ellen street, from east house line of New Market street, west.....		6	15
Elkart street, from southeast house line of Richmond street, northwest.....		6	30
Emory street, from centre of Richmond street northwest..		6	29
Erie avenue, southwest side, from southeast house line of Frankford avenue, northwest.....		12	60
Erie avenue, southwest side, from centre of Kensington avenue, northwest.....		12	49
Erie avenue, southwest side, from centre of Fifth street, west.....		12	30
Erie avenue, northeast side, from southeast house line of Frankford avenue, northwest.....		6	60
Erie avenue, northeast side from centre of Kensington avenue, northwest.....		6	36
Erie avenue, northeast side, from 10 feet west of east house line of Fifth street, northwest.....		6	50
Erie avenue, northeast side, from east house line of Sixth street, northwest.....		6	50
"F" street, from 22 feet southeast of northwest house line of Kensington avenue, north.....		6	36
"F" street, from dead end northeast house line of Clearfield street to southwest curb line of Allegheny avenue		6	530
Fernberger avenue, from 22 feet east of centre of Fifth street, west.....		6	22
Fisher street, from centre of Cumberland street, north....		6	31
Fisher street, from southwest house line of Huntingdon street, northeast.....		6	48
Flower street, from centre of New Market street, west.....		6	16
Frankford avenue, from dead end 4 feet north of north house line of Harrison street to north house line of Dyre street....		12	982
Frankford street, from Tacony to northwest house line of Edmund street.....		12	1,221
Galloway street, from centre of George street to centre of Canal street.....		4	471
Geary avenue, from 14 feet southeast of centre of Richmond street, northwest..		6	14
Geiss street, from south house line of York street, north..		6	25
Glenat street, from centre of Beech street, north.....		6	14
Glenwood street, from 22 feet 7 inches northwest of southeast house line of Kensington avenue, northeast.....		10	44
Glenwood street, from southeast house line of Frankford avenue, northwest.....		10	63
Grausback street, from south house line of Indiana avenue, north.....		6	50

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Gray street, from centre of Poplar street, north 128 feet; thence west 137 feet; thence south to centre of Poplar street 132 feet.....		4	397
Gurney street, from dead end north house line, Cambria street to dead end east house line of Front street.....		6	173
Gurney street, from 27 feet south of north house line of Lehigh avenue, north.....		6	21
"H" street, from 23 feet southeast of northwest house line of Kensington avenue, northwest.....		6	32
Hancock street, from south house line of Columbia avenue, north.....		6	25
Hancock street, from 120 feet south of south house line of Ontario street, north.....		6	145
Harrison street, from centre of Front street, west.....		6	30
Harrison street, from centre of Mascher street to centre of Hancock street.....		6	260
Harrowgate street, from southeast house line of Kensington avenue, northwest.....		6	46
Harrowgate street, from centre of Frankford avenue, northwest.....		6	31
Hart lane, from centre of Indiana avenue, north.....		6	25
Hartville street, from south house line of Indiana avenue, north.....		6	50
Helen street, from south house line of Orleans street, north.....		6	25
Hilton street, from centre of Jasper street, northwest.....		6	25
Hilton street, from southeast house line of Kensington avenue, northwest.....		6	22
Horrocks street, from southwest house line of Orthodox street, northeast.....		6	50
Howard street, from 23 feet east of centre of Frankford avenue, west.....		6	23
Howard street, from south house line of Ontario st., north.....		8	50
Howell street, from east house line of Jackson street, west.....		6	50
Howell street, from southeast house line of Cottage street, northwest.....		6	50
Howell street, from southeast house line of Dittman street, northwest.....		6	50
Howell street, from east house line of Walker street, west.....		6	50
Howell street, from southeast house line of Torresdale avenue, northwest.....		6	80
Howell street, from southeast house line of Melrose street, northwest.....		6	25
Huntingdon street, from centre of Tulip street to centre of Sepviva street.....		8	280
Huntingdon street, from west house line of Aramingo avenue to east house line of Commerce street.....		8	180
"I" street, from 23 feet southwest of northwest house line of Kensington avenue, northwest.....		6	24
Innes street, from 14 feet southeast of centre of Richmond street, northwest.....		6	14

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
"J" street, from 22 feet 9 inches southeast of northwest house line of Kensington avenue, northwest.....		6	25
Jackson street, from 200 feet southwest of southwest house line of VanKirk street to Comly street.. .....		6	1,060
James street, from southwest house line of Frankford st., northeast .....		6	50
Jasper street, from southwest house line of Westmoreland street, northeast.....		8	60
Jasper street, from southwest house line of Orleans street, northeast.....		8	50
Jasper street, from 36 feet southwest of northeast house line of Allegheny avenue, northeast.....		6	218
Johnson street, from southwest house line of Ridge street, street, northeast.....		6	15
Joyce street, from southwest house line of Venango street, northeast .....		6	30
Juniata street, from southeast house line of Kensington avenue, northwest .....		6	46
Kensington avenue, southeast side, from 16 feet 6 inches northeast of southwest house line of old Front street, northeast.....		12	273
Kensington avenue, southeast side, from southwest to northeast abutment of bridge over Frankford creek.....		12	195
Kensington avenue, northwest side, from 7 feet northeast of southwest curb line of old Front street, northeast..		6	305
Kensington avenue, northwest side, from southwest to northeast abutment of bridge over Frankford creek...		6	195
Kettlewell street, from 6 feet 6 inches northwest of southeast house line of Kensington avenue, northwest.....		6	16
Kettlewell street, from centre of Frankford avenue, northwest.....		6	31
"L" street, from 23 feet southeast of northwest house line Kensington avenue, northwest.....		6	25
Lambert street, from southwest house line of Allegheny avenue, northeast.....		6	20
Large street, from southwest house line of Orthodox street, northeast .....		6	50
Lawrence street, from centre of Oxford street, north.....		6	24
Leamy street, from dead end 140 feet north of north house line of Indiana avenue to dead end south curb line Clearfield street.....		6	360
Lee street, from dead end north curb line of Tioga street, north.....		6	350
Lefevre street, from southeast house line of Salmon street, northwest .....		6	40
Leithgow street, from Berks street, north.....		6	25
Lehigh avenue, southwest sid , from centre of Richmond street, northwest.....		6	30
Linda street, from Hancock street to east house line of Palethorp street.....		6	135

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Lippincott street, from centre of "F" street to "E" st...		6	552
Little Butler street, from southeast house line of Frankford avenue, northwest.....		6	65
Luzerne street, from 23 feet 6 inches southeast of northwest house line of Kensington avenue, northwest.....		6	34
"M" street, from 23 feet southeast of northwest house line of Kensington avenue, northwest.....		6	27
Margaret street, from southeast house line of James street, northwest.....		6	50
Margaretta street, from southwest house line of Melrose street, northeast.....		12	50
Marshall street, from centre of Indiana avenue to north curb line of Clearfield street.....		6	567
Mascher street, from south house line of Ontario street, north.....		6	50
Master street, from centre of Adrian street to centre of Front street.....		6	140
Meadow street, from 17 feet east of west house line of Paul street, northwest.....		6	18
Mercer street, from centre of Neff street, northeast to dead end.....		6	97
Melrose street, from centre of Orthodox street, southwest.		8	17
Mintzer street, from centre of Fairmount avenue, north...		6	16
Monmouth street, from west curb line of Trenton avenue to west curb line of Amber street.....		6	545
Monmouth street, from southeast house line of Kensington avenue, west.....		6	19
Montgomery avenue, from east house line of Hancock street, west.....		6	50
Montgomery avenue, from centre of Howard street, west....		6	25
Mutter street, from south curb line of Berks street, north.		6	10
Mutter street, from 25 feet south of north house line of Lehigh avenue to centre of Somerset street.....		6	550
"N" street, from 23 feet 3 inches southeast of northwest house line of Kensington avenue, northwest.....		6	32
New street, from southeast house line of Cherry street, northwest.....		8	26
Newkirk street, from centre of Cumberland street, north..		6	31
"O" street, from 23 feet 4 inches southeast of southeast house line of Kensington avenue, northwest.....		6	33
Oakland street, from southwest house line of Orthodox street, northeast.....		6	50
Oakland street, from southwest house line of Ridge street, northeast.....		6	30
Ontario street, from 23 feet southeast of northwest house line of Kensington avenue, northwest.....		6	23
Ontario street, from Howard street to 580 feet west of centre of Mascher street.....		16	846
Ontario street, from Front street, west.....		16	241

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Ontario street, from west house line of Mascher street to 52 feet 7 inches west of east house line of Second street		12	611
Orchard street, from southwest house line of Franklin street, northeast .....		6	17
Ormes street, from dead end 145 feet north of north house line of Indiana avenue to dead end south house line of Clearfield street.....		6	355
Orthodox street, from 5 feet northwest of southeast house line of Oakland street to Large street .....		6	1,057
Orthodox street, from centre of Large street to 16 feet northwest of southeast house line of Asylum pike ...		6	342
Orthodox street, from Paul street, northwest.....		6	17
Old Front street, from 20 feet northwest of southeast house line of Kensington avenue, northwest.....		10	80
Oxford street, from 21 feet 4 inches west of east house line of American street, west.....		6	69
O'Neil street, from centre of Howard street to Girard avenue.....		4	447
Pacific street, from southeast house line of Kensington avenue, northeast.....		6	25
Palethorp street from centre of Oxford street, north.....		6	25
Palethorp street, from south house line of Columbia avenue, north.....		6	50
Palethorp street, from south house line of Berks street, north.....		6	26
Palethorp street, from centre of Ontario street north.....		6	25
Peel street, from centre of Vanhorn street to centre of Lydia street.....		6	192
Peters alley, from dead end west house line of Charlotta street to centre of Fourth street.....		4	167
Philip street, from centre of Huntingdon street, north.....		8	25
Philip street, from centre of Mestmoreland street, north..		6	89
Pike street, from southeast house line of Kensington avenue, west.....		6	56
Pike street, from centre of Frankford avenue, northwest..		8	33
Pink street, from centre of Master street, north.....		6	25
Pink street, from dead end north house line of Master street, to south house line of Jefferson street.....		4	432
Rawle street, from 5 feet west of east house line of Fifth street, west.....		6	25
Reese street, from 4 feet north of south house line of Clearfield street, north.....		6	18
Ridge street, from centre of Johnson street to 13 feet northwest of centre of Oakland street.....		6	404
Rohrer street, from centre of Indiana avenue, north .....		6	269
Romain street, from centre of Adams street, to dead end southwest house line of Green street.....		6	357
Romain street, from dead end northeast house line of Green street, to dead end southwest house line of Rowan street.....		6	368

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Rowan street, from 16 feet 6 inches southeast of northwest house line of Paul street, northwest.....		6	17
Salmon street, from 31 feet southwest of southwest house line of Westmoreland street, northeast.....		6	61
Salmon street, from centre of Orthodox street to southeast house line of Lefevre street.....		6	902
Salmon street, from centre of Ash street to dead end southwest house line of Kirkbride street.....		6	374
Saxon street, from southeast house line of Richmond street, west.....		6	30
Sedgely avenue, from east house line of Fifth street, west		8	69
Sedgely avenue, from southeast house line of Kensington avenue, northwest.....		12	53
Sedgely avenue, from southeast house line of Kensington avenue, northwest.....		6	36
Sedgely avenue, from centre of Frankford avenue, northwest.....		8	32
Silver street, from centre of Frankford avenue, west.....		6	30
Somerset street, south side, from 11 feet 6 inches west of west house line of Helen street to centre of Garnet street.....		4	446
Spangler street, from centre of Wreckin street, northeast.		6	15
Sterner street, from southeast house line of Gurney street to centre of Leamy street.....		6	177
Stiles street, from 260 feet southwest of southwest house line of Tucker street, northeast.....		6	310
Sutton street, from centre of Fifth street, west.....		6	30
Tamarind street, from centre of Green street, north.....		6	18
Tamarind street, from dead end 7 feet south of north house line of Green street to dead end south house line of Fairmount avenue.....		4	302
Tamarind street, from south house line of Fairmount avenue, north.....		6	25
Thayer street, from southeast house line of Kensington avenue, northwest.....		6	24
Third street, from centre of Montgomery avenue to 10 feet 6 inches north of north house line of Berks street		6	527
Thompson street, from southwest house line of Somerset street, northeast.....		8	16
Tioga street, from southeast house line of Kensington avenue, northwest.....		6	87
Tioga street, from dead end northwest house line of Joyce street to centre of Clarion street.....		6	118
Tivoli street, from centre of Hancock street to east house line of Palethorp street.....		6	135
Torresdale avenue, from southwest house line of Vankirk street to southwest house line of Comly street.....		12	850
Torpin street, from southwest house line of Allegheny avenue, northeast.....		6	22

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Trenton avenue, from southwest house line of Huntingdon street, northeast.....		6	60
Trenton avenue, east side, from centre of Cumberland street, north.....		6	29
Trenton avenue, west side, from centre of Cumberland street, north.....		6	29
Trenton avenue, from south house line of Auburn street, northeast.....		6	50
Trenton avenue, west side, from south house line of Huntingdon street, north.....		6	60
Tucker street, from dead end east house line of Stiles street to centre of Melrose street.....		6	275
Tucker street, from centre of Melrose street, northwest...		6	25
Tusculum street, from 10 feet 4 inches northwest of southeast house line of Kensington avenue, northwest...		6	11
Vankirk street, from southeast house line of Torredale avenue, northwest.....		6	80
Vankirk street, from southeast house line of Dittman st., northwest.....		6	50
Vankirk street, from east house line of Jackson street, west.....		6	50
Vankirk street, from southeast house line of Cottage street, northwest.....		6	50
Vankirk street, from southwest house line of Walker st., northeast.....		6	50
Vienna street, from centre of Frankford avenue, west....		6	32
Vincent street, from centre of Green street, north.....		6	20
Wager street, from centre of Fifth street, west.....		6	34
Wager street, from east house line of Randolph st., west..		6	40
Wakeling street, from east curb line of Frankford avenue, west.....		6	58
Walker street, from southwest house line of Vankirk street to southwest house line of Comly street.....		6	917
Waterloo street, from centre of Jefferson street, north....		6	25
Waterloo street, from centre of Somerset street, north....		8	24
Waterloo street, from south house line of Ontario street north.....		8	50
Weiser street, from dead end east curb line of Almond street, west.....		6	34
Westmoreland street, from southeast house line of Salmon street, northwest.....		6	28
Westmoreland street, from southeast house line of Fisher street, northwest.....		6	28
Westmoreland street, from 23 feet 10 inches southeast of northwest house line of Kensington ave., northwest..		6	72
Westmoreland street, from 86 feet northwest of northwest house line of Emerald street, to southeast house line of Kensington avenue.....		8	878
Westmoreland street, from east house line of Fifth street, west.....		6	30



Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Wildey street, from southeast house line of Frankford avenue, northwest.....		6	30
Willard avenue, from southeast house line of Kensington avenue, northwest.....		6	25
Willard avenue, from east curb line of Fifth street, west..		6	47
Willard avenue, from east house line of Sixth street, west.		6	25
Willow street, from northeast house line of Howard street to northeast curb line of Dyre street.....		6	234
William street, from centre of Richmond street, northwest.....		6	30
Wilt street, from 17 feet east of west house line of Sixth street, west.....		6	17
Worrell street, from southeast house line of Frankford avenue, northwest.....		6	36
Worth street, from east house line of Frankford avenue, west.....		6	50
Wrecken street, from centre of Commerce street, northwest.....		6	20
Total.....			43,516
<i>Pumping Mains.</i>			
48-inch Pumping Main from Lardner's Point Pumping Station to Wentz Farm Reservoir.			
Robbin's avenue, from dead end, laid 1893, northwest house line of Tulip street to Torresdale avenue.....		48	855
Torresdale avenue, from Robbin's avenue to Devereaux street.....		48	761
Devereaux street, from dead end southeast house line of Mulberry street to dead southeast house line of "Y" street.....		48	2,450
Devereaux street, from dead end 244 feet 5 inches northwest of northwest house line of "Y" street northwest to connect.....		48	12
Devereaux street, from dead end 13 feet northwest of southeast house line of "W" street northwest to connect.....		48	57
Devereaux street, from dead southeast house line of "V" street to dead end 80 feet northwest of northwest house line of "T" street.....		48	1,373
Devereaux street, from dead end 34 feet northwest of southeast house line of "R" street northwest to connect.....		48	11
Devereaux street, from dead end northeast house line of Oxford pike to dead end 27 feet southeast of southeast house line of "N" street.....		48	83

Street.	Location.	Size in inches.	Distance in feet.
<i>Pumping Mains—Continued.</i>			
Wentz Farm Reservoir, southeast side, from dead end 65 feet northwest of northwest house line of old Second street and 340 feet 5 inches southwest of southwest house line of Devereaux street, northwest to connect.		48	7
Wentz Farm Reservoir, southeast side, from dead end 435 feet northwest of northwest house line of old Second street, and 340 feet 5 inches southwest of southwest house line of Devereaux street, northwest.....		48	82
Wentz Farm Reservoir, southeast side, from dead end 972 feet 5 inches southwest of southwest house line of Devereaux street and 358 feet northwest of northwest house line of old Second street, southwest .....		48	97
Total.....			5,797
<i>Service Main Connections.</i>			
Firth and Amber streets, between 6-inch main on Firth street, and 10 and 6-inch mains on Amber street.....		6	11
Kensington avenue, north house line of Adams street between 6-inch mains on southeast and northwest side of Kensington avenue.....		6	28
Kensington avenue, 8 feet south of south house line of Huntingdon street between 6-inch mains on southeast and northwest side of Kensington avenue.....		6	29
Kensington avenue and Ontario streets, between 6-inch main on southeast side and 6-inch main on northwest side of Kensington avenue.....		6	26
Ontario street, 29 feet 2 inches west of west house line of Third street, between 16 and 6-inch mains.....		6	13
Richmond and Palmer streets, between 10 and 6-inch mains on Richmond street and 6-inch main on Palmer street.....		5	12
Total.....			119
<i>Supply Main Connections.</i>			
Wentz Farm Reservoir, southeast side, 360 feet 9 inches northwest of northwest house line of old Second street, and 38 feet northeast of northeast house line of Comly street, between 18 and 30-inch mains.....		30	54
Wentz Farm Reservoir, southeast side, 220 feet northwest of northwest house line of "H" street, and 22 feet 5 inches northeast of northeast house line of Comly street, between 48 and 30-inch mains.....		30	16
Total.....			70

Street.	Location.	Size in inches.	Distance in feet.
<i>Pumping Main Connections.</i>			
Lardner's Point pumping station, northwest side, from 30 inch main, 23 feet northwest of northwest house line, and 42 feet 2 inches northeast of southwest house line of engine house, northwest 110 feet; thence southwest 92 feet 4 inches connecting with 48-inch main on Robbin's avenue, at a point 105 feet northwest of northwest house line of engine house.....		30	202
Lardner's Point pumping station, northwest side, from 30-inch pumping main connection, 32 feet 4 inches northwest of northwest house line, and 30 feet 2 inches northeast of southwest house line of engine house, west 98 feet 8 inches, connecting with 48-inch main on Robbin's avenue at a point 97 feet 5 inches northwest of northwest house line of engine house .....		30	99
Lardner's Point pumping station, northwest side, from 48-inch main on Robbin's avenue, 117 feet northwest of northwest house line of engine house, north 64 feet 5 inches, connecting with 30-inch main at a point 140 feet northwest of northwest house line of engine house.....		30	64
Wentz Farm Reservoir, southeast side, 400 feet northwest of northwest house line of Old Second street, and 108 feet northeast of northeast house line of Benner street, between 30 and 48-inch mains.....		30	37
Total.....			402
<i>Bye-pass Connections.</i>			
Devereaux street, southwest side, 81 feet southeast of southeast fence line of Bristol Pike.....		6	15
Devereaux street, southwest side, 12 feet 4 inches northwest of northwest fence line of Old Second street.....		6	18
Devereaux street, southwest side, 487 feet northwest of northwest house line of Castor road (on 48-in. pumping main).....		6	15
Total.....			48
<i>Service Supply Connections.</i>			
Arrott street, northeast side, 36 feet southeast of southeast house line of Asylum road.....		4	15
Arrott street, northeast side, 26 feet northwest of northwest house line of Castor road.....		4	15
Arrott street, southwest side, 26 feet northwest of northwest house line of Castor road.....		4	15
Arrott street, southwest side, 42 feet southeast of southeast house line of Asylum road.....		4	15

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Auburn street, northeast side, 181 feet southeast of south-east house line of Amber street.....		4	15
Auburn street, northeast side, 18 feet southwest of north-west house line of Trenton avenue.....		4	15
Beach street, east side, 24 feet north of north house line of Green street.....		4	17
Berks street, south side, 7 feet west of west house line of Howard street.....		4	11
Berks street, south side, 14 feet east of east house line of Mascher street.....		4	11
Berks street, south side, 111 feet west of west house line of Mascher street.....		4	11
Berks street, south side, 63 feet east of east house line of Hancock street.....		4	11
Berks street, south side, 15 feet west of west house line of Third street.....		4	10
Berks street, south side, 25 feet east of east house line of Fourth street.....		4	10
"C" street, east side, 207 feet north of north house line of Cambria street.....		4	14
"C" street, east side, 24 feet south of south house line of Indiana avenue .....		4	14
Clearfield street, north side, 17 feet west of west house line of D street.....		4	15
Clearfield street, north side, 135 feet 6 inches west of west house line of D street.....		4	15
Clearfield street, north side, 22 feet east of east house line of Rosehill street.....		4	15
Clearfield street, south side, 9 feet 7 inches east of west house line of Sixth street.....		4	16
Darien street, east side, 171 feet 6 inches north of north house line of Indiana avenue .....		4	9
Darien street, east side, 24 feet south of south house line of Clearfield street .....		4	9
Eighth street, east side, 28 feet north of north house line of Indiana avenue .....		4	15
Eighth street, west side, 175 feet north of north house line of Indiana avenue .....		6	15
Eighth street, east side, 30 feet south of south house line of Clearfield street.....		4	14
Eighth street, west side, 30 feet south of south house line of Clearfield street .....		4	14
Jasper street, southeast side, 44 feet northeast of north-east house line of Allegheny avenue.....		4	15
Jasper street, northwest side, 44 feet northeast of north-east house line of Allegheny avenue .....		4	15
Jasper street, northwest side, 14 feet southwest of south-west house line of Hilton street.....		4	15
Jasper street, southeast side, 122 feet 6 inches southwest of southwest house line of Madison avenue .....		4	15

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Kensington avenue, northwest side, 287 feet 6 inches southwest of southwest house line of Clearfield street.....		4	14
Kensington avenue, northwest side, 24 feet northeast of northeast house line of "F" street.....		4	11
Kensington avenue, northwest side, 24 feet northeast of northeast house line of "G" street.....		4	12
Kensington avenue, northwest side, 308 feet northeast of northeast house line of "G" street.....		4	12
Kensington avenue, northwest side, 24 feet southwest of southwest house line of Westmoreland street.....		4	12
Kensington avenue, northwest side, 24 feet northeast of northeast house line of "H" street.....		4	13
Kensington avenue, northwest side, 24 feet southwest of southwest house line of Allegheny avenue.....		4	12
Kensington avenue, northwest side, 258 feet southwest of southwest house line of Allegheny avenue.....		4	12
Kensington avenue, northwest side, 24 feet northeast of northeast house line of "I" street.....		4	12
Kensington avenue, northwest side, 24 feet southwest of southwest house line of Ontario street.....		4	11
Kensington avenue, northwest side, 24 feet northeast of northeast house line of "J" street.....		4	12
Kensington avenue, northwest side, 329 feet northeast of northeast house line of "J" street.....		4	12
Kensington avenue, southeast side, 166 feet northeast of northeast house line of Kettlewell street.....		4	13
Kensington avenue, southeast side, 24 feet southwest of southwest house line of Airdrie street.....		4	12
Kensington avenue, northwest side, 24 feet southwest of southwest house line of Butler street.....		4	12
Kensington avenue, northwest side, 24 feet northeast of northeast house line of "M" street.....		4	12
Kensington avenue, southeast side, 24 feet southwest of southwest house line of Butler street.....		4	10
Kensington avenue, southeast side, 24 feet northeast of northeast house line of Sedgley street.....		4	11
Kensington avenue, southeast side, 24 feet northeast of northeast house line of Buckius street.....		4	11
Kensington avenue, southeast side, 24 feet southwest of southwest house line of Pike street.....		4	12
Kensington avenue, northwest side, 24 feet northeast of northeast house line of "O" street.....		4	12
Kensington avenue, northwest side, 24 feet southwest of southwest house line of Luzerne street.....		4	11
Kensington avenue, southeast side, 24 feet northeast of northeast house line of Pike street.....		4	11
Kensington avenue, southeast side, 24 feet southwest of southwest house line of Juniata street.....		4	11
Kensington avenue, southeast side, 24 feet northeast of northeast house line of Airdrie street.....		4	11

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Kensington avenue, northwest side, 24 feet northeast of northeast house line of "N" street.....		4	12
Kensington avenue, southeast side, 117 feet northeast of northeast house line of Butler street.....		4	11
Kensington avenue, southeast side, 24 feet southwest of southwest house line of Buckius street.....		4	12
"F" street, northwest side, 19 feet southwest of southwest house line of Allegheny avenue.....		4	15
"F" street southeast side, 19 feet southwest of southwest house line of Allegheny avenue.....		4	15
"F" street, northwest side, 60 feet northeast of northeast house line of Lippincott street.....		4	15
"F" street, southeast side, 61 feet 6 inches northeast of northeast house line of Clearfield street.....		4	15
Fifth street, east side, 69 feet north of north house line of Jefferson street.....		4	19
Fifth street, east side, 24 feet south of south house line of Oxford street.....		4	19
Fourth street, east side, 24 feet north of north house line of Montgomery avenue.....		4	15
Fourth street, east side, 25 feet south of south house line of Berks street.....		4	15
Frankford avenue, northwest side, 24 feet northeast of northeast house line of Cambria street.....		4	20
Frankford avenue, northwest side, 117 feet southwest of southwest house line of Orleans street.....		4	20
Frankford avenue, northwest side, 24 feet northeast of northeast house line of Culvert street.....		4	19
Frankford avenue, southeast side, 24 feet northeast of northeast house line of Culvert street.....		4	19
Frankford avenue, northwest side, 24 feet southwest of southwest house line of Westmoreland street.....		4	19
Frankford avenue, southeast side, 24 feet southwest of southwest house line of Westmoreland street.....		4	19
Frankford avenue, northwest side, 38 feet northeast of northeast house line of Tioga street.....		4	19
Frankford avenue, southeast side, 35 feet 6 inches northeast of northeast house line of Tioga street.....		4	19
Frankford avenue, southeast side, 24 feet south of south house line of Venango street.....		4	19
Frankford avenue, northwest side, 415 feet northeast of northeast house line of Venango street.....		4	20
Frankford avenue, southeast side, 24 feet northeast of northeast house line of Venango street.....		4	19
Frankford avenue, northwest side, 24 feet south of southeast house line of Harrowgate lane.....		4	19
Frankford avenue, northwest side, 24 feet southwest of southwest house line of Erie avenue.....		4	19
Frankford avenue, southeast side, 24 feet southwest of southwest house line of Erie avenue.....		4	19

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Frankford avenue, northwest side, 24 feet northeast of northeast house line of Erie avenue.....		4	19
Frankford avenue, northwest side, 24 feet southwest of southwest house line of Glenwood avenue.....		4	20
Frankford avenue, northwest side, 24 feet northeast of northeast house line of Glenwood avenue.....		4	20
Frankford avenue, northwest side, 24 feet southwest of southwest house line of Sedgely avenue.....		4	21
Front street, east side, 24 feet north of north house line of Jasper street.....		4	19
Front street, east side, 24 feet south of south house line of York street.....		4	19
Huntingdon street, southwest side, 24 feet southeast of east house line of Aramingo avenue.....		4	18
Huntingdon street, southwest side, 24 feet northwest of northwest house line of Thompson street.....		4	19
Leamy street, west side, 25 feet north of north house line of Indiana avenue.....		4	15
Leamy street, west side, 25 feet south of south house line of Clearfield street.....		4	15
Lee street, east side, 40 feet north of north house line of Tioga street.....		4	13
Lee street, east side, 321 feet north of north house line of Tioga street.....		4	13
Lehigh avenue, south side, 24 feet west of west house line of Leamy street.....		4	10
Lehigh avenue, south side, 24 feet east of east house line of Front street.....		4	10
Leiper street, northwest side, 8 feet northeast of northeast house line of Orthodox street.....		4	16
Leiper street, northwest side, 112 feet northeast of northeast house line of Orthodox street.....		4	16
Leiper street, northwest side, 24 feet northeast of northeast house line of Foulkrod street.....		4	14
Leiper street, northwest side, 62 feet southwest of southwest house line of Oxford street.....		4	14
Leiper street, southeast side, 25 feet northeast of northeast house line of Orthodox street.....		4	14
Leiper street, southeast side, 104 feet southwest of southwest house line of Allen street.....		4	14
Leiper street, northwest side, 33 feet southwest of southwest house line of Arrott street.....		4	16
Leiper street, northwest side, 25 feet northeast of northeast house line of Arrott street.....		4	16
Leiper street, northwest side, 35 feet southwest of southwest house line of Foulkrod street.....		4	16
Marshall street, east side, 24 feet south of south house line of Clearfield street.....		4	14
Marshall street, west side, 24 feet south of south house line of Clearfield street.....		4	14

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued</i>			
Marshall street, east side, 365 feet south of south house line of Clearfield street.....		4	14
Marshall street, west side, 53 feet north of north house line of Indiana avenue.....		4	14
Mutter street, west side, 24 feet south of south house line of Somerset street.....		4	9
Mutter street, west side, 208 feet 9 inches north of north house line of Lehigh avenue.....		4	9
Norris street, southwest side, 331 feet north of northwest house line of Richmond street.....		4	25
Norris street, southwest side, 24 feet north of northwest house line of Richmond street.....		4	20
Ontario street, north side, 26 feet west of west house line of Mascher street.....		4	15
Ontario street, south side, 34 feet west of west house line of Mascher street.....		4	15
Ontario street, south side, 12 feet east of east house line of Howard street.....		4	15
Ontario street, north side, 10 feet east of east house line of Cooper street.....		4	15
Ontario street, north side, 15 feet west of west house line of Cooper street.....		4	15
Ontario street, north side, 63 feet east of east house line of Second street.....		4	15
Ormes street, east side, 38 feet south of south house line of Clearfield street.....		4	15
Ormes street, west side, 38 feet south of south house line of Clearfield street.....		4	15
Ormes street, west side, 255 feet north of north house line of Indiana avenue.....		4	15
Ormes street, east side, 168 feet north of north house line of Indiana avenue.....		4	15
Orthodox street, northeast side, 24 feet southeast of southeast house line of Asylum road.....		4	15
Orthodox street, southwest side, 24 feet southeast of southeast house line of Asylum road.....		4	15
Orthodox street, northeast side, 24 feet northwest of northwest house line of Large street.....		4	15
Orthodox street, southwest side, 24 feet northwest of northwest house line of Large street.....		4	15
Orthodox street, northeast side, 24 feet southeast of southeast house line of Large street.....		4	15
Orthodox street, southwest side 24 feet southeast of southeast house line of Large street.....		4	15
Orthodox street, northeast side 24 feet northwest of northwest house line of Horrocks street.....		4	15
Orthodox street, southwest side 24 feet northwest of northwest house line of Horrocks street.....		4	15
Orthodox street, northeast side 24 feet southeast of southeast house line of Horrocks street.....		4	51



Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Orthodox street, southwest side, 24 feet southeast of southeast house line of Horrocks street.....		4	15
Orthodox street, northeast side, 24 feet northwest of northwest house line of Oakland street.....		4	15
Orthodox street, southwest side, 24 feet northwest of northwest house line of Oakland street.....		4	15
Romain street, southeast side, 94 feet southwest of southwest house line of Ruan street.....		4	13
Romain street, southeast side, 42 feet northeast of northeast house line of Green street.....		4	13
Romain street, northwest side, 94 feet southwest of southwest house line of Ruan street.....		4	13
Romain street, northwest side, 42 feet northeast of northeast house line of Green street.....		4	13
Romain street, northwest side, 32 feet southwest of southwest house line of Green street.....		4	13
Romain street, northwest side, 41 feet northeast of northeast house line of Adams street.....		4	13
Romain street, southeast side, 32 feet southwest of southwest house line of Green street.....		4	13
Romain street, southeast side, 41 feet northeast of northeast house line of Adams street.....		4	13
Salmon street, southeast side, 13 feet northeast of northeast house line of Orthodox street.....		4	12
Salmon street, northwest side, 13 feet northeast of northeast house line of Orthodox street.....		4	12
Salmon street, southeast side, 476 feet southwest of southwest house line of Lefevre street.....		4	12
Salmon street, northwest side, 476 feet southwest of southwest house line of Lefevre street.....		4	12
Sixth street, east side, 5 feet north of northwest house line of Glenwood avenue.....		4	15
Sixth street, west side, 33 feet 6 inches north of northwest house line of Glenwood avenue.....		4	15
Sixth street, east side, 24 feet south of southwest house line of Sedgely avenue.....		4	15
Sixth street, west side, southwest house line of Sedgely avenue.....		4	15
Stiles street, southeast side, 41 feet southwest of southwest house line of Tucker street.....		4	15
Third street, east side, 24 feet north of north house line of Montgomery avenue.....		4	7
Third street, east side, 24 feet south of south house line of Berks street.....		4	7
Third street, west side, 24 feet north of north house line of Montgomery avenue.....		4	20
Third street, west side, 24 feet south of south house line of Berks street.....		4	20
Total.....			2,219

Street.	Location.	Size in inches.	Distance in feet.
Fire hydrant connections.....		6	4,815
<i>Fire Connections (Private).</i>			
Columbia avenue, south side 35 feet west of west house line of Howard street, for O'Neill Bros.....		4	15
<i>Supply Connections (Private).</i>			
Beach street, southeast side, 407 feet northeast of northeast house line of Poplar street, for Electric Traction Co.		4	17
Delaware avenue, west side, 106 feet south of south house line of Fairmount avenue, for People's Traction Co..		4	28
Indiana avenue, north side, 63 feet west of west house line of C street, for John Carruth.....		4	18
Lehigh avenue, north side, 303 feet west of west house line of Trenton avenue, for P. and R. R.....		4	15
Third street, east side, 39 feet south of south house line of Dauphin street, for Enterprise Manufacturing Co.		3	19
Total .....			97
<i>New Check Valves Put In.</i>			
Devereaux street, southwest side, 74 feet southeast of southeast fence line of Bristol pike.....		48	12
Devereaux street, southwest side, 12 feet 4 inches northwest of northwest fence line of old Second street.....		48	33
Devereaux street, southwest side, 490 feet 4 inches northwest of northwest house line of Castor road .....		48	12
Total.....			57
<i>Drains.</i>			
Devereaux street, 14 feet east of west house line of U street, from 48-inch main.....		6	5
Frankford avenue, northwest side, 3 feet southwest of southwest house line of old Front street, from 12-inch main .....		6	25
Lardner's Point Pumping Station, from 48-inch main on Robbin's avenue 111 feet northwest of northwest house line of engine house, southeast.....		8	132
Lardner's Point, from 48-inch main on Robbin's avenue 44 feet 4 inches southeast of northwest house line of engine house, southeast.....		6	55

Street.	Location.	Size in inches.	Distance in feet.
<i>Drains—Continued.</i>			
Lardner's Point Pumping Station, from 48-inch main on Robbin's avenue 63 feet 4 inches southeast of northwest house line of engine house, southwest.....		6	4
Robbin's avenue 157 feet southeast of southeast house line of Milnor street to drain marshy ground on line of 48-inch main.....		18	180
Total.....			401
<i>Pipe Relaid.</i>			
Adrian street, from 2 feet south of south house line of Master street, north.....		6	22
Adrian street, from 20 feet 3 inches south of north house line of Jefferson street, north.....		6	20
Allegheny avenue, northeast side, from northwest house line of Trenton avenue, northwest.....		8	56
Allen street, from southeast house line of Frankford avenue, northwest.....		6	43
American street, east side, from south house line of Oxford street, north.....		6	53
American street, west side, from south house line of Oxford street, north.....		6	56
American street, east side, from centre of Jefferson street, north.....		6	27
American street, west side, from centre of Jefferson street, north.....		6	27
American street, east side, from south house line of Columbia avenue, north.....		6	26
American street, west side, from south house line of Columbia avenue, north.....		6	53
Ann street, from southeast house line of Kensington avenue, west.....		6	21
Ash street, from centre of Richmond street, northwest.....		6	26
Auburn street, from Trenton avenue, to southeast house line of Frankford avenue.....		8	1,066
Auburn street, from southeast house line of Frankford avenue, northwest.....		6	31
Bra'dock street, from Huntingdon street, northeast.....		6	33
Bodine street, from Jefferson street, north.....		6	44
Bodine street, from south house line of Oxford street, north.....		6	26
Bodine street, from Columbia avenue, north.....		6	26
Bodine street, from south house line of Susquehanna avenue, north.....		6	66
Bodine street, from south house line of Dauphin street, north.....		6	28
Bodine street, from York street, north.....		6	25
Brinton street, from Master street to south house line of Jefferson street.....		6	483

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Brooks street, from south curb line of Green street, north.		6	33
Brooks street, from 12 feet 6 inches north of south house line of Fairmount avenue, north.....		6	32
Brooks street, from south curb line of Brown street, north.		6	15
Cadwallader street, from south house line of Thompson street, north.....		6	47
Cadwallader street, from south house line of Master street, north.....		6	52
Cadwallader street, from Oxford street, north.....		6	32
Cadwallader street, from Columbia avenue, northwest.....		6	34
Cadwallader street, from south house line of Montgomery avenue, northwest.....		6	27
Cambria street, from southeast house line of Frankford avenue, northwest.....		6	31
Canal street, from south house line of Thompson street, north.....		6	21
Chatham street, from north house line of Buttonwood street to Green street.....		6	642
China street, from 3 feet south of south house line of Green street, north.....		6	28
Crease street, from 3 feet 6 inches southeast of southeast house line of Thompson street, northwest.....		6	58
Crown street, from north house line of Vine street to south house line of Callowhill street.....		6	499
Culvert street, from east house line of Third street, west....		6	23
Culvert street, from southwest curb line of Lawrence street, north.....		6	13
Cumberland street, from 59 feet 1 inch northwest of north-west house line of Thompson street, northwest.....		6	117
Curran place, from east house line of Fourth street to Fairmount avenue.....		6	218
Davis street, from centre of Howard street, west.....		6	27
Davis street, from centre of Hancock street, west.....		6	27
Deal street, from east house line of Frankford avenue, west		6	30
Earl street, from Thompson street, northwest.....		6	29
Edgemont street, from 11 feet northeast of southwest house line of Huntingdon street, northeast.....		6	49
Ella street, from 23 feet east of west house line of Trenton avenue, west.....		6	11
Ella street, from 4 feet southeast of southeast house line of Amber street, northwest.....		6	48
Ella street, from southeast house line of Coral street, northwest.....		6	54
Ella street, from east house line of Emerald street, west....		6	13
Ella street, from centre of Emerald street, west.....		6	25
Fairhill street, from centre of Susquehanna avenue, north		6	35
Firth street, from centre of Amber street, west.....		6	23
Firth street, from east house line of Coral street, west.....		6	50
Fiimore street, from west side of Kensington avenue, northeast.....		6	11

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Fitler street, from 20 feet southwest of west house line of Hancock street, northeast.....		6	44
Fitler street, from east house line of Second street, west...		6	58
Fox street, from south house line of Huntingdon street, northeast.....		8	25
Fox street, from centre of Cumberland street, northeast...		8	22
Frankford street, from southeast house line of Melrose street, northwest.....		12	50
Front street, from south house line of Richmond street, north.....		6	50
George street, from centre of Second street, west.....		6	34
George street, from east house line of Third street, west...		6	25
Germantown avenue, from 90 feet northwest of west house line of Second street, northwest.....		6	353
Hale street, from centre of Columbia avenue, north.....		6	23
Haydock street, from centre of Front street, west.....		6	31
Hazzard street, from southeast house line of Kensington avenue, west.....		6	21
Hazzard street, from centre of Coral street, northwest....		6	26
Harrison street, from east house line of Front street, west		6	41
Harrison street, from centre of Frankford avenue, west...		6	36
Hewson street, from centre of Thompson street, northwest		6	30
Holman street, from York street, north.....		6	14
Holman street, from south house line of Cumberland street, north.....		6	29
Holman street, from south curb line of Adams street, north.....		6	45
Hope street, from south house line of York street, north..		6	50
Hope street, from 12 feet north of south house line of Thompson street, north.....		6	16
Hope street, from centre of Dauphin street, north.....		6	24
Hope street, from south house line of Oxford street, north		6	37
Hope street, from centre of Jefferson street, north.....		6	27
Hope street, from 3 feet south of south house line of Susquehanna avenue, north .....		6	89
Hope street, from 18 feet south of centre of Cumberland street, north.....		8	36
Hope street, from south house line of Huntingdon street, north.....		8	50
Howard street, from centre of Oxford street, north.....		6	27
Howard street, from centre of Jefferson street, north.....		6	25
Huntingdon street, northeast side from Pulp street to Seppiva street.....		6	280
Huntingdon street, northeast side, from 13 feet southeast of west house line of Aramingo avenue, to south house line of Commerce street.....		6	193
Huntingdon street, southwest side, from 12 feet east of east house line of Aramingo avenue, west.....	}	6	28
		8	87
Jefferson street, from Frankford road to east curb line of Front street.....		6	245

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Kerr street, from east house line of Fifth street, west.....		6	29
Lawrence street, from south house line of Thompson street, north.....		6	38
Lawrence street, from Norris street to south house line of Diamond street.....		8	531
Lawrence street, from west house line of Diamond street to Susquehanna avenue.....		6	565
Leithgow street, from 3 feet south of south house line of Thompson street, north.....		6	23
Leithgow street, from south house line of Susquehanna avenue north.....		6	61
Leopard street, from 2 feet southeast of southeast house line of Thompson street, northwest.....		6	27
Leopard street, from Richmond street, north.....		6	9
Letterly street, from centre of Amber street, northwest...		6	27
Letterly street, from east house line of Coral street, west..		6	50
Letterly street, from east house line of Emerald st., west..		6	40
Lee street, from south house line of Huntingdon street, north.....		8	25
Lynd street, from east curb line of Fifth street, west.....		6	16
Manakin street, from 2 feet 6 inches south of south house line of Susquehanna avenue, north.....		6	31
Maria street, from east curb line of Fifth street, west.....		6	34
Marlborough street, from centre of Belgrade street, northwest.....		6	20
Marlborough street, from southeast house line of Frankford avenue, west.....		6	33
Melcher street, from 1 ft. 6 inches south of south house line of Susquehanna avenue, north.....		6	30
Memphis street, from 4 feet 6 inches northeast of northeast house line of York street, northeast.....		6	19
Montgomery avenue, from centre of Frankford avenue, west.....		6	32
Montgomery avenue, from east house line of Sixth street, west.....		6	32
Moore street, from centre of Amber street, northwest.....		6	28
Moore street, from southeast house line of Coral street, northwest.....		6	52
Neff street, from southeast house line of Melvale street, to Richmond street.....		6	271
Norris street, from southeast house line Richmond street, northwest.....		6	25
Ontario street, from 1 foot east of west curb line of American street, west.....	16	371	
Ontario street, from centre of Third street, west.....	16	357	
Orianna street, from 21 feet north of south house line of Berks street, north.....	6	23	
Orianna street, from south house line of Susquehanna avenue, north.....	6	63	
Otter street, from east house line of Second street, west...	6	30	

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Oxford street, from centre of Frankford avenue, west.....		6	30
Palethorp street, from south house line of Thompson st., north.....		6	55
Palethorp street, from south house line of Master street, north.....		6	26
Palethorp street, from centre of Jefferson street, north.....		6	27
Palethorp street, from south house line of Oxford street, north.....		6	24
Palethorp street, from 25 feet south of north house line of Berks street, north.....		6	31
Palethorp street, from south house line of Dauphin street, north.....		6	52
Palethorp street, from south house line of York street, north.....		6	48
Palethorp street, from south house line of Cumberland street, north.....		8	44
Palethorp street, from south house line of Huntingdon street, north.....		8	26
Peach street, from centre of Green street, north.....		6	20
Peach street, from south house line of Fairmount avenue, north.....		6	16
Philip street, from centre of Master street to Jefferson st.		6	425
Philip street, from north house line of Jefferson street to Oxford street.....		6	376
Philip street, from centre of Columbia avenue, north.....		6	27
Philip street, from south house line of Susquehanna avenue, north.....		6	60
Philip street, from south house line of York street, north.		6	54
Philip street, from south house line of Cumberland street, north.....		8	25
Philip street, from south house line of Dauphin street, north.....		6	53
Rachel street, from centre of Brown street, north.....		6	34
Randolph street, from centre of Brown street to south house line of Parrish street.....		6	502
Randolph street, from north house line of Parrish street to south house line of Girard avenue.....		6	1,586
Richmond street, from 286 feet east of southeast house line of Leopard street to Front street.....		6	547
Ritter street, from south house line of Dauphin st., north.		6	27
Rohrer street, from south house line of Indiana avenue, north.....		6	26
Ross street, from center of Richmond street, north-west.....		6	25
Rush street, from southeast house line of Frankford avenue, northwest.....		6	28
Rush street, from southeast house line of Amber street, northwest.....		8	52
Salmon street, from south house line of Cumberland street, north.....		6	31

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Salmon street, from southwest house line of Neff street, northeast.....		6	50
Sarah street, from center of Richmond street, northwest..		6	28
Savery street, from 5 feet southeast of southeast house line of Thompson street, northwest.....		6	57
Savery street, from east house line of Frankford avenue, west.....		6	30
Sixth street, east side, from 22 feet south of north house line of Girard avenue, to Diamond street.....		12	4,639
Sixth street, west side, from 2 feet 6 inches south of north house line of Girard avenue to Diamond street.....		6	4,594
Second street, east side, from center of Fairmount avenue, north.....		6	26
Second street, east side, from south house line of Brown street, north.....		6	55
Second street, west side, from Fairmount avenue to 9 feet north of south house line of Poplar street.....		8	833
Slossman street, from east house line of Third street, west.....		6	24
Sophia street, from southeast house line of Edward street, northwest.....		6	23
Stella avenue, from Frankford avenue, northwest.....		6	28
Taggart street, from southwest house line of Dauphin street, northeast.....		6	26
Taylor street, from center of Amber street, northwest....		6	28
Taylor street, from southeast house line of Kensington avenue, west.....		6	20
Taylor street, from east house line of Coral street, west...		6	55
Taylor street, from east house line of Emerald street, west.....		6	38
Thompson street, from 27 feet west of east house line of Germantown avenue, west.....		6	6
Thompson street, from west curb line of Cadwallader street, west.....		6	6
Thompson street, from 9 feet east of west house line of Cadwallader street to 27 feet west of east house line of Germantown avenue.....		8	252
Thompson street, from west house line of Fourth street to east house line of Fifth street.....		8	486
Thompson street, from 149 feet east of east house line of Fourth street, west.....		8	151
Thompson street, from northeast curb line of Somerset street, northeast.....		8	13
Thouron street, from 2 feet 3 inches south of south house line of Su-quehanna avenue, north.....		6	31
Third street, from 21 feet north of south house line of Ontario street, north.....		6	26
Tilton street, from center of Cumberland street, north....		6	30
Tilton street, from southwest house line of Huntingdon street, northeast.....		6	30



Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Trenton avenue, east side, from 50 feet south of north house line of York street, northeast.....		6	67
Trenton avenue, west side, from 35 feet south of south house line of York street, northeast.....		6	53
Trenton avenue, east side, from south house line of Ella street to Frankford avenue.....		6	52
Trenton avenue, east side, from south house line of Cumberland street, north.....		6	29
Trenton avenue, west side, from south house line of Cumberland street, north.....		6	30
Trenton avenue, from center of York street, northeast....		6	50
Tyson street, from center of Sixth street, west.....		6	25
Vincent street, from 5 feet north of south house line of Green street, north .....		6	20
Warren street, from southeast house line of Richmond street, northwest.....		6	25
Waterloo street, from center of Columbia avenue, north...		6	29
Waterloo street, from south house line of Dauphin street, north.....		6	53
Waterloo street, from 1 foot south of south house line of York street, north.....		6	52
Waterloo street, from south house line of Cumberland street, north.....		8	45
Waterloo street, from south house line of Huntingdon street, north.....		8	50
Waterloo street, from south house line of Lehigh avenue, north .....		6	24
Wager street, from east house line of Sixth street, west...		6	50
Weaver street, from Green street to Fairmount avenue...		6	424
Wood street, from 1 foot 6 inches east of east house line of Crown street west.....		6	52
Wood street, from east house line of Fifth street, west....		6	56
York street, south side, from 2 feet southeast of southeast house line of Richmond street, northwest.....		6	28
York street, from west house line of Cedar street to Frankford avenue.....		12	1,400
<b>Total.....</b>			<b>27,766</b>
<hr/>			
Fire hydrant Connections relaid.....		6	1,222
<hr/>			
Repairs, general.....		4	11
Repairs, general.....		6	6,492
Repairs, general.....		8	37
Repairs, general.....		10	298
Repairs, general.....		12	114
Repairs, general.....		30	34
<b>Total.....</b>			<b>6,986</b>

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up.</i>			
Adrian street, from 2 feet south of south house line of Master street, north.....		4	22
Adrian street, from 20 feet 3 inches south of north house line of Jefferson street, north.....		4	20
Allegheny avenue, northeast side, from northwest house line of Trenton avenue, northwest.....		6	56
Allen street, from southeast house line of Frankford avenue northwest.....		4	43
American street, east side, from south house line of Oxford street, north.....		4	53
American street, west side, from south house line of Oxford street, north.....		4	56
American street, east side, from centre of Jefferson street, north.....		4	27
American street, west side, from centre of Jefferson street north.....		4	27
American street, east side, from south house line of Columbia avenue, north.....		4	26
American street, west side, from south house line of Columbia avenue, north.....		4	53
Ann street, from southeast house line of Kensington avenue, west.....		4	21
Ash street, from centre of Richmond street, northwest....		4	26
Auburn street, from Trenton avenue to southeast house line of Frankford avenue.....		4	1,066
Auburn street, from southeast house line of Frankford avenue, northwest.....		4	31
Braddock street, from Huntingdon street, northeast.....		4	33
Bodine street, from Jefferson street north.....		4	44
Bodine street, from south house line of Oxford street, north.....		4	26
Bodine street, from south house line of Columbia avenue, north.....		4	26
Bodine street, from south house line of Susquehanna avenue, north.....		4	66
Bodine street, from south house line of Dauphin street, north.....		4	28
Bodine street, from York street, north.....		4	25
Brinton street, from Master street to south house line of Jefferson street.....		6	483
Brooks street, from south curb line of Green street, north		4	33
Brooks street, from 12 feet 6 inches north of south house of Fairmount avenue, north.....		4	32
Brooks street, from south curb line of Brown street, north		4	15
Cadwallader street, from south house line of Thompson street, north.....		4	47
Cadwallader street, from south house line of Master street, north.....		4	52
Cadwallader street, from Oxford street, north.....		4	32
Cadwallader street, from Columbia avenue, northwest.....		4	34

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up—Continued.</i>			
Cadwallader street, from southwest house line of Montgomery avenue, northwest.....		4	27
Cambria street, from southeast house line of Frankford avenue, northwest.....		4	31
Canal street, from south house line of Thompson street, north.....		4	21
Chatham street, from north house line of Bultonwood street to Green street.....		4	642
China street, from 3 feet south of south house line of Green street, north.....		4	28
Crease street, from 3 feet 6 inches southeast of southeast house line of Thompson street, northwest.....		4	58
Crown street, from north house line of Vine street to south house line of Callowhill street.....		3	499
Culvert street, from east house line of Third street, west...		4	28
Culvert street, from southwest curb line of Lawrence street, north.....		4	13
Cumberland street, from 59 feet 1 inch northwest of northwest house line of Thompson street, northwest.....		6	117
Curran place, from 4 feet 6 inches south of south house line of Fairmount avenue, north.....		3	32
Davis street, from centre of Howard street, west.....		4	27
Davis street, from centre of Hancock street, west.....		4	27
Deal street, from east house line of Frankford avenue, west.....		4	30
Earl street, from Thompson street, northwest.....		4	29
Edgemont street, from 11 feet northeast of southwest house line of Huntingdon street, northeast.....		4	49
Ella street, from 23 feet east of west house line of Trenton avenue, west.....		4	11
Ella street, from 4 feet southeast of southeast house line of Amber street, northwest.....		4	48
Ella street, from southeast house line of Coral street, northwest.....		4	54
Ella street, from east house line of Emerald street, west...		4	13
Ella street, from centre of Emerald street west.....		4	25
Fairhill street, from centre of Susquehanna avenue, north		4	35
Firth street, from centre of Amber street, west.....		4	28
Firth street, from east house line of Coral street, west.....		4	50
Fitler street, from 20 feet southwest of west house line of Hancock street, northeast.....		4	44
Fitler street, from east house line of Second street, west...		4	58
Fox street, from south house line to centre of Huntingdon street....		4	25
Fox street, from centre of Cumberland street, northeast...		4	22
Frankford avenue, from southeast house line of Melrose street, northwest.....		4	50
Front street from south house line of Richmond street, north.....		4	50
George street, from centre of Second street, west.....		4	34

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up—Continued.</i>			
George street, from east house line of Third street, west...		4	25
Germantown avenue, from 90 feet northwest of west house line of Second street, northwest.....		6	355
Hale street, from centre of Columbia avenue, north.....		4	28
Haydock street, from centre of Front street, west.....		4	31
Hazzard street, from southeast house line of Kensington avenue, west.....		4	21
Hazzard street, from centre of Coral street, northwest.....		4	26
Harrison street, from east house line of Front street, west		4	41
Harrison street, from center of Frankford avenue, west...		4	36
Hewson street, from center of Thompson street, northwest		4	30
Holman street, from York street, north.....		4	14
Holman street, from south house line of Cumberland street, north.....		4	29
Holman street, from south curb line of Adams, street north		4	45
Hope street, from south house line of York street, north..		4	50
Hope street, from 12 feet north of south house line of Thompson street, north.....		4	16
Hope street, from center of Dauphin street, north.....		4	24
Hope street, from south house line of Oxford street, north		4	37
Hope street, from center of Jefferson street, north.....		4	27
Hope street, from 3 feet south of south house line of Susquehanna avenue, north.....		4	89
Hope street, from 18 feet south of center of Cumberland street, north.....		4	36
Hope street, from south house line of Huntingdon street, north.....		4	50
Howard street, from center of Oxford street, north.....		4	27
Howard street, from center of Jefferson street, north.....		4	25
Huntingdon street, northeast side, from 13 feet southeast of west house line of Aramingo avenue, to south house line of Commerce street..		6	193
Huntingdon street, southwest side, from 12 feet east of east house line of Aramingo avenue, west.....	{	6	28
		8	87
Kerr street, from east house line of Fifth street, west.....		4	29
Lawrence street, from south house line of Thompson street north.....		4	38
Lawrence street, from Norris street to south house line of Diamond street.....		4	531
Lawrence street, from north house line of Diamond street to Susquehanna avenue.....		4	565
Leithgow street, from 3 feet south of south house line of Thompson street, north.....		4	23
Leithgow street, from south house line of Susquehanna avenue, north.....		4	61
Leopard street, from 2 feet southeast of southeast house line of Thompson street, northwest.....		4	27
Letterly street, from center of Amber street, northwest...		4	27
Letterly street, from east house line of Coral street, west..		4	50

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up—Continued.</i>			
Letterly street, from east house line of Emerald street, west		4	40
Lee street, from south house line of Huntingdon street, north.....		4	25
Lynd street, from east curb line of Fifth street, west.....		4	16
Manakin street, from 2 feet 6 inches south of south house line of Susquehanna avenue, north.....		4	31
Maria street, from east curb line of Fifth street, west.....		4	34
Marlborough street, from center of Belgrade street, north-west.....		4	20
Marlborough street, from southeast house line of Frankford avenue, west.....		4	33
Melcher street, from 1 foot 6 inches south of south house line of Susquehanna avenue, north.....		4	30
Memphis street, from 4 feet 6 inches northeast of north-east house line of York street, northeast.....		4	19
Montgomery avenue, from center of Frankford avenue, west.....		4	32
Montgomery avenue, from east house line of Sixth street, west.....		4	32
Moore street, from center of Amber street, northwest.....		4	28
Moore street, from southeast house line of Coral street, northwest.....		4	52
Neff street, from southeast house line of Melvale street to Richmond street.....		4	271
Norris street, from southeast house line of Richmond street, northwest.....		4	25
Ontario street, from east house line of Third street, west...		6	382
Ontario street, from 1 foot west of east curb line of American street, west.....		6	47
Orianna street, from 21 feet north of south house line of Berks street, north.....		4	23
Orianna street, from south house line of Susquehanna street, north.....		4	63
Otter street, from east house line of Second street, west...		4	30
Oxford street, from centre of Frankford avenue, west.....		4	30
Palethorp street, from south house line of Thompson street, north.....		4	55
Palethorp street, from south house line of Master street, north.....		4	26
Palethorp street, from centre of Jefferson street, north...		4	27
Palethorp street, from south house line of Oxford street, north.....		4	24
Palethorp street, from 25 feet south of north house line of Berks street, north.....		4	31
Palethorp street, from south house line of Dauphin street, north.....		4	52
Palethorp street, from south house line of York street, north.....		4	48
Palethorp street, from south house line of Cumberland street, north.....		4	44

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up—Continued.</i>			
Palethorp street, from south house line of Huntingdon street, north.....		4	26
Peach street, from centre of Green street, north.....		4	20
Peach street, from south house line of Fairmount avenue, north.....		4	16
Philip street, from centre of Master street to Jefferson street.....		4	425
Philip street, from north house line of Jefferson street to Oxford street.....		4	376
Philip street, from centre of Columbia avenue, north.....		4	27
Philip street, from south house line of Susquehanna avenue, north.....		4	60
Philip street, from south house line of York street, north.....		4	54
Philip street, from south house line of Cumberland street, north.....		4	25
Philip street, from south house line of Dauphin street, north.....		4	53
Rachel street, from centre of Brown street, north.....		4	34
Randolph street, from centre of Brown street to Poplar street.....		4	855
Randolph street, from 464 feet north of north house line of Poplar street to Wager street.....		4	400
Randolph street, from 18 feet south of Girard avenue, north.....		4	18
Ritter street, from south house line of Dauphin street, north.....		4	27
Rohrer street, from south house line of Indiana avenue, north.....		4	26
Ross street, from centre of Richmond street, northwest...		4	25
Rush street, from southeast house line of Frankford avenue, northwest.....		4	28
Rush street, from southeast house line of Amber street, northwest.....		4	52
Salmon street, from south house line of Cumberland street, north.....		4	31
Salmon street, from southwest house line of Neff street, northeast.....		4	50
Sarah street, from centre of Richmond street, northwest..		4	28
Savery street, from 5 feet southeast of southeast house line of Thompson street, northwest.....		4	57
Savery street, from east house line of Frankford avenue, west.....		4	30
Sixth street, east side, from 22 feet south of north house line of Girard avenue to Diamond street.....		4	4,639
Sixth street, west side, from 2 feet 6 inches south of north house line of Girard avenue to Thompson street.....		4	426
Sixth street, west side, from 268 feet north of north house line of Thompson street to Diamond street.....		4	3,900
Second street, east side, from centre of Fairmount avenue, north.....		4	26

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up—Continued.</i>			
Second street, east side, from south house line of Brown street, north.....		4	55
Second street, west side, from south house line of Brown street to 9 feet north of south house line of Poplar street.....		4	499
Slossman street, from east house line of Third street, west		4	24
Sophia street, from southeast house line of Edward street, northwest.....		4	23
Stella avenue, from Frankford avenue, northwest.....		4	28
Taggart street, from southwest house line of Dauphin street, northeast.....		4	26
Taylor street, from centre of Amber street, west.....		4	28
Taylor street, from southeast house line of Kensington avenue, west.....		4	20
Taylor street, from east house line of Coral street, west....		4	55
Taylor street, from east house line of Emerald street, west		4	38
Thompson street, from 27 feet west of east house line of Germantown avenue, west.....		4	6
Thompson street, from 149 feet east of east house line of Fourth street, west.....		4	151
Thompson street, from northeast curb line of Somerset street, northeast.....		4	13
Thouron street, from 2 feet 3 inches south of south house line of Susquehanna avenue, north.....		4	31
Third street, from 20 feet north of south house line of Ontario street, north.....		4	26
Tilton street, from centre of Cumberland street, north....		4	30
Tilton street, from southwest house line of Huntingdon street, northeast.....		4	30
Trenton avenue, southeast side, from southwest house line of York street, northeast.....		4	30
Trenton avenue, southeast side, from south house line of Cumberland street, northeast.....		4	29
Trenton avenue, southeast side, from south house line of Ella street north 35 feet, thence east 35 feet to Frankford avenue.....		4	35
Trenton avenue, southwest side, from centre of York street, northeast.....		4	50
Trenton avenue, southwest side, from south house line of Cumberland street, northeast.....		4	30
Tyson street, from centre of Sixth street, west.....		4	25
Vincent street, from 5 feet north of south house line of Green street, north.....		4	20
Warren street, from southeast house line of Richmond street, northwest.....		4	25
Waterloo street, from centre of Columbia avenue, north....		4	29
Waterloo street, from south house line of Dauphin street, north.....		4	53
Waterloo street, from 1 foot south of south house line of York street, north.....		4	52

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up—Continued.</i>			
Waterloo street, from south house line of Cumberland street, north.....		4	45
Waterloo street, from south house line of Huntingdon street, north.....		4	50
Waterloo street, from south house line of Lehigh avenue, north.....		4	24
Wager street, from east house line of Sixth street, west....		3	50
Weaver street, from Green street to Fairmount avenue....		4	424
Wood street, from 1 foot 6 inches east of east house line of Crown street, west.....		4	52
Wood street, from east house line of Fifth street, west....		4	56
York street, south side, from 2 feet southeast of southeast house line of Richmond street, northwest.....		4	28
York street, south side, from west house line of Cedar street to Frankford avenue.....		4	1,400
Total .....			24,321
Fire hydrant connections taken up.....		4	1,343
Fire hydrant connections taken up.....		6	153
Total.....			1,496
<i>Pipe Lowered.</i>			
Kensington avenue, southeast side, from 24 feet southwest of southwest house line of Clearfield street, southwest.....		30	138
<i>Pipe Raised.</i>			
Allegheny avenue, from southeast house line of Tulip street to northwest house line of Janney street.....		6	380
Weikel street, from 13 feet northeast of southwest house line of Allegheny avenue, northeast.....		6	15
Total.....			395
<i>Pipe Shifted.</i>			
Somerset street, from 11 feet 6 inches west of west house line of Helen street, west. ....		6	396



Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Cut Off and Abandoned.</i>			
Curran place, from east house line of Fourth street to south house line of Fairmount avenue.....		3	186
Fillmore street, from Cumberland street, northeast.....		6	25
Jefferson street from west curb line of Frankford road to east curb line of Front street.....		4	224
Ontario street, from 1 foot west of west house line of American street, west.....		6	299
Randolph street, from center of Poplar street, north.....		4	480
Randolph street, from center of Wager street to 18 feet south of south house line of Girard avenue.....		4	328
Richmond street, from 286 feet east of east house line of Leopard street to Front street.....		4	547
Second street, west side, from north house line of Fairmount avenue to south house line of Brown street....		4	334
Sixth street, west side, from 150 feet south of south house line of Master street, south.....		4	268
Thompson street, from west curb line of Cadwallader street to Germantown avenue.....		4	264
Thompson street, from west house line of Fourth street to east house line of Fifth street.....		4	486
Trenton avenue, east side, from 35 feet northeast of south house line of Ella street to Frankford avenue.....		4	83
Trenton avenue, east side, from centre of York street, northeast .....		5	55
Trenton avenue, west side, from 63 feet southwest of center of York street, northeast.....		4	63
Total .....			3,642
<i>Fire Hydrant Connections Cut Off—Abandoned.</i>			
Fire hydrant connections cut off and abandoned .....		4	1,297
Fire hydrant connections cut off and abandoned.....		6	213
Total.....			1,510

### Recapitulation Third District.

Purposes for which used.	SIZE IN INCHES.										Totals, feet and pounds.	
	3	4	6	8	10	12	16	18	30	48		
New pipe or feet added.	Service mains.....		2,662	28,325	4,699	187	5,259	1,784				43,516
	Pumping mains.....										5,797	5,797
	Service main connections.....			107	12							119
	Supply main connections.....								70			70
	Pumping main connections.....								402			402
	By-pass connections.....			48								48
	Service supply connections.....		2,204									2,219
	Fire hydrant connections.....			4,815								4,815
	Supply connections (private).....	19	78									97
	New check valves.....										57	57
Drains.....			89	132				180			401	
Total.....	{ Feet.....	19	4,944	33,999	4,843	187	5,259	1,784	180	472	5,854	57,541
	{ Pounds.....	285	93,936	1,121,967	203,406	10,285	878,648	196,240	25,200	156,704	3,424,590	5,611,261
Pipe used, but adding nothing to feet in the ground.	Pipe relaid.....			18,296	3,875		6,089	728				28,988
	Repairs (general).....		11	6,492	37	298	114		34			6,986
	Pipe taken up.....	581	22,393	1,756	87							24,817
	Pipe lowered.....											138
	Pipe raised.....			395						138		395
	Pipe shifted.....			396								396
	Total handled	{ Feet.....	581	22,404	27,335	3,999	298	6,203	728		172	
{ Pounds.....		8,715	425,676	902,055	167,958	16,390	446,616	80,080		57,104		2,104,594
Total.....	{ Feet.....	600	27,348	61,334	8,842	485	11,462	2,512	180	644	5,854	119,261
	{ Pounds.....	9,000	517,612	2,024,022	371,364	26,675	825,264	276,320	25,200	213,808	3,424,590	7,715,855
Pipe cut off and abandoned.....	86	4,429	537									5,152

## FOURTH DISTRICT.

*Comprising the Thirteenth, Fourteenth, Fifteenth, Twentieth, Twenty-ninth, Thirty-second and part of the Twenty-eighth Ward.*

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains.</i>			
Allegheny avenue, south side, from 2 feet west of east house line of Damon street to Ridge avenue.....		6	592
Allegheny avenue, north side, from 4 feet east of east house line of Thirty-fifth street to Ridge avenue.....		6	427
Alley (no name), 100 feet north of Spring Garden street from centre of Twenty-first street, west.....		6	25
Alley (no name), 83 feet west of Eleventh street from corner of Montgomery avenue, north.....		6	26
Alley (no name), 78 feet east of Twelfth street from centre of Montgomery avenue, north.....		6	26
Alroy street, from Ridge avenue, west.....		6	26
Alroy street, from 2 feet 7 inches east of southwest house line of Ridge avenue to Pemberton street.....		4	293
Amboy street, from Columbia avenue, north.....		6	17
Arizona street, from Twenty-seventh street, west.....		6	25
Arizona street, from Thirty-second street to Thirty-second-and-one-half street .....		6	227
Arlington street, from Thirtieth street, west .....		6	25
Arlington street, from east house line of Thirty-and-one-half street to dead end east house line of Thirty-and-three-quarter street.....		6	133
Arlington street, from east house line of Thirty-and-three-quarter street.....		6	133
Arlington street, from corner of Thirty-second street, west .....		6	26
Bambrey street, from Poplar street, north .....		6	37
Barnhurst place, from Francis street, northwest.....		6	26
Becket street, from Seventeenth street, west.....		6	26
Berks street, from 29 feet 6 inches east of west house line of Eleventh street to east house line of Twelfth street .....		8	370
Berks street, from Thirtieth street, west.....		8	14
Bouvier street, from dead end north house line of Huntingdon street to Glenwood avenue.....		6	435
Bowers street, from Perkiomen street, northeast.....		6	25
Brown court, from Twenty-third street, west .....		4	26
Calvin place, from 1 foot east of east house line of Seventh street, west.....		4	26
Camac street, from dead end 32 feet south of north house line of Susquehanna avenue, north.....		6	32
Camac street, from south house line of Dauphin street, north .....		6	25
Capitol street, from corner of Fairmount avenue, north...		6	42
Carlton street, from Twenty-second street, west.....		6	30

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Carlton street, from 1 foot east of east house line of Twenty-third street, west.....		6	26
Catchell place, from Poplar street, north.....		4	15
Chambers avenue, from Carlton street, north.....		4	5
Charlesse avenue, from east house line of Nineteenth street, west.....		6	25
Clearfield street, from east house line of Twentieth street to dead end 151 feet 8 inches west of west house line of Twenty-first street.....		8	732
Cleveland avenue, from dead end at north house line of Cumberland street to dead end at south house line of Huntingdon street.....		6	500
Clementine street, from 1 foot west of west house line of Thirteenth street to east house line of Park avenue..		6	202
Colorado street, from dead end at north house line of Huntingdon street to 18 feet north of southeast house line of Glenwood avenue.....		6	509
Corlies street, from Cumberland street, north.....		6	25
Cumberland street, from Twenty seventh street to dead end east house line of Twenty-ninth street.....		8	830
Cumberland street, from Twenty-seventh street east of west house line of Twenty-ninth street to east house line of Thirtieth street.....		6	427
Cumberland street, from west house line of Thirtieth street, west.....		6	121
Cumberland street, from west house line of Corlies street to west house line of Thirty-first street.....		6	299
Cumberland street, from east house line of Thirty second street, west.....		6	50
Cumberland street, from 1 foot east of east house line of Thirty-third street, west.....		6	21
Cumberland street, from 19 feet 6 inches west of east house line of Thirty third street, west.....		12	20
Cumberland street, from 39 feet 6 inches west of east house line of Thirty-third street, west.....		8	38
Cumberland street, from 77 feet 1 inch west of east house line of Thirty-third street, west.....		6	25
Damon street, from 4 feet north of south house line of Allegheny avenue, north.....		6	25
Dauphin street, from dead end 4 feet east of west house line of Twenty-second street, west.....		8	305
Dauphin street, from Sedgley avenue, west.....		6	35
Dauphin street, north side, from east house line of Twenty-fifth street, west.....		6	25
Diamond street, south side, from east house line of Twenty-fifth street to dead end 6 feet west of east house line of Twenty-five-and-one-half street.....		6	183
Diamond street, south side, from southeast house line of Sedgley avenue, west.....		6	30

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Diamond street, south side, from dead end west house line of Thirty-first street to dead end east house line of Thirty-second street.....		6	400
Diamond street, north side, from southeast house line of Sedgley avenue, west.....		6	30
Diamond street, north side, from west house line of Thirty-second street to dead end east house line of Thirty-two-and-one-half street.....		6	131
Diamond street, north side, from dead end west house line Thirty-two-and-one-half street to Thirty-two-and-three-quarters street.....		6	78
Dover street, from 9 feet south of south house line of Oxford street to 9 feet north of south house line of Columbia avenue.....		6	475
Dover street, from dead end 10 feet north of south house line of Montgomery avenue, north.....		6	41
Dover street, from dead end south house line of Cumberland street, north.....		6	25
Drum street, from 100 feet south of south house line of Buttonwood street, north.....		4	125
Earp street, from 31 feet 3 inches east of west house line of Nineteenth street, west.....		6	30
Earp street, from 2 feet east of east house line of Twentieth street, west.....		6	27
Eighteenth street, from Vine to Pearl street.....		12	173
Erdman street, from Perkiomen street, northeast.....		6	25
Euclid avenue, from Sedgley avenue to 27 feet 2 inches west of center of Thirty-first street.....		6	489
Euclid avenue, from east house line of Thirty-second street, west.....		6	50
Fields street, from Francis street northwest.....		6	28
Fifteenth street, west side, from Cumberland to Huntingdon street.....		6	550
Firth street, from Fifteenth street west to connect dead end Fletcher street, from 2 feet east of east house line of Thirty-first street, west.....		6	6
Fletcher street, from east house line of Thirty-first street, west.....		6	2
Fletcher street, from east house line of Thirty-first street, west.....		8	25
Florence street, from 2 feet north of south house line of Fairmount avenue, north.....		6	38
Folsom street, from 11 feet 9 inches west of east house line of Twenty-seventh street, west.....		6	13
Fox street, from Fifteenth street west to connect dead end Frederick street, from Montgomery avenue, north.....		6	6
Frederick street, from Montgomery avenue, north.....		6	26
Frederick street, from south house line of Berks street, north.....		6	26
Garnet street, from York street to dead end south house line of Cumberland street.....		6	528
Geary street, from southeast house line of Vineyard street, northwest.....		6	61

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Geary street, from 9 feet 2 inches southeast of south house line of Poplar street, north.....		6	34
Glenwood avenue, from 22 feet southwest of center of Bouvier street, northeast.....		10	36
Glenwood avenue, from west house line of Nineteenth street, northeast.....		10	60
Glenwood avenue, from west house line of Twenty-second street, northeast.....		8	85
Gratz street, from dead end 5 feet north of south house line of Dauphin street north to connect.....		6	10
Gratz street, from dead end 10 feet 6 inches south of north house line of Dauphin street north to connect.....		6	11
Gratz street, from dead end north house line of Cumberland street to dead end south house line of Huntingdon street.....		6	500
Greenhill street, from 3 feet south of south house line of Master street, north.....		6	28
Hammond street, from Seventeenth street, west.....		6	27
Hammond street, from east house line of Eighteenth street, west.....		6	25
Hammond street, from Nineteenth street, west.....		6	25
Hare street, from Taney to Pennsylvania avenue.....		6	307
Heights avenue, from south house line of Callowhill st. north.....		6	25
Hollywood avenue, from dead end 162 feet north of north house line of Master to Jefferson street.....		6	314
Huntingdon street, from dead end 2 feet west of east house line of Ninth street, west.....		6	23
Ingersoll street, from centre of Eighteenth street, west....		6	25
Ingersoll street, from east house line of Nineteenth street, west.....		4	20
Jay street, from south house line of Fairmount ave., north		6	26
Lehigh avenue, south side, from east house line of Twenty-second street, west.....		6	23
Lehigh avenue, south side, from 24 feet 7 inches east of west house line of Twenty-second street, west.....		6	25
Lehigh avenue, south side, from east house line of Twenty-third street, west.....		6	50
Lehigh avenue, south side, from east house line of Twenty-fourth street, west.....		6	50
Lehigh avenue, south side, from east house line of Twenty-fifth street, west.....		6	50
Lehigh avenue, south side, from centre of Twenty-sixth street, west.....		6	25
Lehigh avenue, south side, from east house line of Twenty-eighth street, west.....		6	60
Lehigh avenue, south side, from centre of Twenty-ninth street, west.....		6	31
Lehigh avenue, north side, from east house line of Twenty-second street, west.....		6	23

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Lehigh avenue, north side, from 24 feet 4 inches east of west house line of Twenty-second street, west.....		6	24
Lehigh avenue, north side, from east house line of Twenty-third street, west.....		6	50
Lehigh avenue, north side, from east house line of Twenty-fourth street, west.....		6	50
Lehigh avenue, north side, from east house line of Twenty-fifth street, west.....		6	50
Lehigh avenue, north side, from east house line of Twenty-sixth street, west.....		6	50
Lehigh avenue, north side, from dead end west house line of Twenty-seventh to west house line of Twenty-ninth street.....		6	885
Linden street, from centre of Green street, north.....		6	26
Lippincott street, from dead end 1 foot west of west house line of Thirteenth street to dead end west house line of Park avenue.....		6	202
Lorain street, from Wallace street to Fairmount avenue.....		6	368
McFall street, from north house line of Saulner st., north, to dead end.....		6	88
Margie (or Lamb Tavern road), from dead end 2 feet west of east house line of Nineteenth street.....		6	41
Markham street, from Seventeenth street, west.....		6	29
Marston street, from dead end south house line of Cumberland street, north.....		6	25
Master street, north side, from Twenty-sixth to Twenty-seventh street.....		6	450
Monroe street, from Poplar street, north.....		6	31
Monroe street, from 1 foot south of south house line of Girard avenue, north.....		6	29
Monterey street, from Nineteenth street, west.....		6	30
Monterey street, from east house line of Twentieth street, west.....		6	25
Montgomery avenue, from Twenty-eighth street to west house line of Twenty-ninth street.....		6	495
Monument avenue, from centre of Thirty-second st., west..		6	26
Morse street, from 3 feet 2 inches east of east house line of Thirty-second street, west.....		6	15
Myrtlewood avenue, from Master to Jefferson street.....		6	505
Natrona street, west side, from Engleside avenue to Columbia avenue.....		6	270
Nelson place, from centre of Marshall street, west.....		6	25
Nevada street, from 3 feet 3 inches east of east house line of Thirty-first street, west.....		6	3
Nevada street, from east house line of Thirty-first street, west.....		8	25
Newbold street, from 7 feet 9 inches south of south house line of Callowhill street, north.....		6	69
Newkirk street, from 9 feet south of south house line of Oxford street to 9 feet north of south house line of Columbia avenue.....		6	475

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Newkirk street, from dead end 3 feet north of south house line of Montgomery avenue, north.....		6	48
Newkirk street, from dead end south house line of Cumberland street, north.....		6	50
Nineteenth street, from Vine to Callowhill street.....		10	559
Nineteenth street, from dead end north house line of Cumberland street to Glenwood avenue.....		6	562
Ninth street, west side, from Buttonwood to Spring Garden street.....		8	295
Noble street, from Ninth street, west.....		6	21
Norris street, from dead end west house line of Thirty-second street to dead end east house line of Thirty-third street.....		8	400
Ontario street, from center of Columbia avenue, north.....		6	29
Opal street, from York street to dead end south house line of Cumberland street.....		6	527
Outlet street, from centre of Twenty-first street, west.....		6	25
Outlet street, from east house line of Twenty-second street, west.....		6	22
Owen street, from McNally to Biddle street.....		6	305
Park avenue, from 4 feet south of south house line of Dauphin street, north.....		6	53
Park avenue, from centre of Susquehanna avenue, north..		6	28
Park avenue, from 15 feet south of northwest house line of Sedgley avenue to Clearfield street.....		6	229
Park terrace, from 11 feet 9 inches west of east house line of Twenty-seventh street, west.....		6	13
Pearl street, from east house line of Seventeenth street, west		6	22
Pearl street, from Twenty-second street, west.....		6	33
Pearl street, from east house line of Twenty-third street, west.....		6	26
Pembroke street, from centre of Dauphin street, north....		6	29
Penn avenue, from centre of Seventh street, west.....		4	26
Pennsylvania avenue, from 9 feet southeast of south house line of Hare street, northwest.....		6	75
Perth street, from centre of Jefferson street, north.....		6	105
Pleasant Retreat, from centre of Seventh street, west.....		4	29
Poplar street, from Edwin to Vineyard street.....		6	185
Portland street, from Ridge avenue, west.....		6	31
Portland street, from southwest house line of Ridge avenue to dead end 3 feet 6 inches east of east house line of Eleventh street.....		4	284
Potts street, from 135 feet east of east house line of Twelfth street, west.....		4	161
Pott's court, from centre of Seventh street, west.....		4	25
Prospect street, from 2 feet south of south house line of Master street, north.....		6	55
Quarry Court, from south house line of Hamilton street, north.....		6	33



Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Ralston street, from east house line of Twenty-third street, west.....		6	26
Reno street, from east house line Seventeenth street, west		6	25
Rentshler street, from south house line of Fairmount avenue, north.....		6	26
Ridge avenue, from York street, northwest.....		6	57
Rochford street, from 31 feet 6 inches east of west house line of Nineteenth street, west.....		6	30
Rochford street, from 1 foot east of east house line of Twentieth street, west.....		6	27
Rush street, from Park avenue to Broad street.....		6	328
Sargent street, from Fifteenth street west, to connect dead end.....		6	6
Scott street, from east house line of Twenty-eighth street, west.....		6	26
Sedgely avenue, from Park avenue to dead end 8 feet west of east house line of Broad street.....		6	386
Seventeenth street, from Vine street to Pearl street.....		6	168
Sharpe street, from east house line of Twentieth street, west		6	25
Showaker street, from east house line of Twenty-fourth street, to 212 feet west of west house line of Twenty-fifth street.....		6	712
Stanley street, from center of York street, north.....		6	25
Stanley street, from south house line of Cumberland street, north.....		6	50
Stephens street, from Twenty-sixth street, west.....		6	27
Stephens street, from 1 foot east of east house line of Taney street, west.....		6	21
Street (no name), 88 feet west of Eleventh street, from south house line of Berks street, north.....		6	24
Street (no name) 101 feet west of Eleventh street from Berks street, north.....		6	25
Street (no name), 88 feet east of 12th street, from 11 feet north of south house line of Berks street, north..		6	14
Tapper place, from center of Green street, north.....		6	26
Thirtieth street, from dead end north house line of Master street to south house line of Jefferson street.....		10	455
Thirtieth street, from north house line of Jefferson street to south house line of Oxford street.....		10	467
Thirtieth street, from dead end north house line of Oxford street to dead end of south house line of Columbia avenue.....		10	456
Thirtieth street, from dead end northwest house line of Sedgely avenue to dead end south house line of Norris street.....		12	652
Thirty-fifth street, from 29 feet north of south house line of Allegheny avenue, north to connect.....		6	122
Thirty-first street, from Dauphin street, north.....		6	27
Thirty-first street, from 27 feet north of center of Dauphin street to 3 feet south of south house line of Dakota...		8	75

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Thirty-first street, from dead end 12 feet south of north house line of York street, to 1 foot north of north house line of Cumberland street.....		6	563
Thirty-second street, from dead end north house line of Susquehanna avenue, to dead end 11 feet south of southwest house line of Ridge avenue.....		6	140
Thirty-second street, from 20 feet 9 inches south of north house line of Dakota street, north.....		6	21
Twenty-second street, from north house line of Dakota street, to Herman street.....		8	138
Thirty-second street, from center of York street, north....		6	26
Twenty-second street, from south house line of Cumberland street, north.....		12	27
Twenty-second street, from center of Cumberland street, north.....		6	25
Thirty-third street, east side, from 9 feet south of southwest house line of Ridge avenue, north.....		12	38
Thirty-third street, from 9 feet south of southwest house line of Ridge avenue, north to connect.....		12	13
Thirty-third street, east side, from south house line of York street, north.....		12	50
Thirty-third street, west side, from south house line of York street, north.....		12	50
Thirty-third street, east side, from south house line of Cumberland street, north.....		12	51
Thirty-third street, west side, from south house line of Cumberland street, north.....		6	51
Thirty-and-one-half street, from dead end of north house line of Berks street, to Arlington street.....		6	231
Thirty-one-and-one-half street, from center of York street, north.....		6	25
Thirty-one-and-three-quarters street, from dead end 1 foot south of north house line of Berks street to Norris street.....		6	527
Thirty-one and-three-quarters street, from center of York street, north.....		6	25
Thirty-two-and-one-half street, from 2 feet south of south house line of Norris street, north.....		6	52
Thirty-two-and-one-half street, from dead end 6 feet 6 inches south of north house line of Herman street to north house line of York street.....		6	278
Thirty-two-and-three-quarters street, from 2 feet south of south house line of Norris street, north.....		6	54
Thirty-two-and-three-quarters street, from 10 feet south of north house line of Diamond street, north.....		6	13
Thirty-two-and-three-quarters street, from York to 6 feet north of south house line of Cumberland street..		6	536
Twentieth street, from north curb line of Girard avenue to south College avenue.....		6	158

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Twentieth street, from dead end south house line of Clearfield street, north.....		8	50
Twenty-eighth street, from centre of Montgomery avenue, north.....		6	25
Twenty-eighth street, from dead end south house line of Cumberland street, north.....		6	50
Twenty-eighth street, from dead end 67 feet south of north house line of Lehigh avenue, north.....		6	70
Twenty-fifth street, from 7 feet south of north house line of Harrold street to north house line of Showaker.....		6	167
Twenty-fifth street, from south house line of Lehigh avenue, north.....		6	80
Twenty-first street, from south house line of Clearfield street, north.....		8	50
Twenty-fourth street, from dead end south house line of Columbia avenue, north.....		6	57
Twenty-fourth street, from south house line of Showaker street, north.....		6	40
Twenty-fourth street, from south house line of Lehigh avenue, north.....		6	82
Twenty-ninth street, from dead end 10 feet south of north house line of Oxford street to dead end south house line of Columbia avenue.....		8	464
Twenty-ninth street, from dead end 2 feet 6 inches south of south house line of Montgomery avenue, north....		6	53
Twenty-ninth street, from 1 foot south of south house line of Lehigh avenue, north.....		6	84
Twenty-nine-and-one-half street, from 1 foot south of south house line of Cumberland street, north.....		6	51
Twenty-nine-and-three quarters street, from 1 foot south of south house line of Cumberland street, north.....		6	51
Twenty-sixth street, from south house line of Lehigh avenue, north.....		6	82
Twenty-third street, from south house line of Lehigh avenue, north.....		6	80
Twenty-two-and-one-half street (Croskey), from Dauphin street to 7 feet north of southeast house line of Glenwood avenue.....		6	197
Wagner's Court, from centre of Seventh street, west.....		4	27
Watts' Court, from 9 feet west of east house line of Twenty-fourth street, west.....		4	16
Wilcox street, from Nineteenth street, west.....		6	30
Wilcox street, from east house line of Twentieth street, west.....		6	26
Wilcox street, from Twenty-first street, west.....		6	25
Wilcox street, from east house line of Twenty-second street, west.....		6	24
Wilt street, from 1 foot 3 inches east of east house line of Thirty-second street, west.....		6	53
York street, from centre of Thirty-second street, west.....		6	26

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
York street, from west house line of Thirty-second street to 5 feet 6 inches east of east house line of Thirty-third street.....		8	389
York street, from 5 feet 6 inches east of east house line of Thirty-third street, west.....		6	25
York street, from 19 feet 6 inches west of east house line of Thirty-third street, west.....		12	26
York street, from 45 feet 6 inches west of east house line of Thirty-third street, west.....		8	32
York street, from 77 feet 6 inches west of east house line of Thirty-third street, west.....		6	25
York street, from 5 feet 6 inches west of west house line of Thirty-third street to Ridge avenue.....		8	45
Total.....			31,103
<i>Supply Mains.</i>			
<i>Forty-eight (48) inch supply main from Queen Lane Reservoir to Thirty-third and Master Street.</i>			
Thirty-third street, from 33 feet north of north house line of Master street to Cumberland street.....			
Cumberland street, from Thirty-third street to Twenty-ninth street.....			
Twenty-ninth street, from Cumberland street to south house line of Allegheny avenue.....		48	11,914
<i>Forty-eight (48) inch supply main from Queen Lane Reservoir to Twenty-ninth and York streets.</i>			
Twenty-ninth street, from 4 feet 4 inches south of south house line of York street to north house line of Allegheny avenue.....		48	4,619
<i>Forty-eight (48) inch main from Queen Lane Reservoir to Broad Street.</i>			
Twenty-ninth street, from 6 feet 5 inches south of south house line of Lehigh avenue, north.....		48	107
Total.....			16,640

Street.	Location.	Size in inches.	Distance in feet.
<i>Pumping Mains.</i>			
<i>Forty eight (48) inch pumping mains (2 lines), from No. 2 and 3 engines, Spring Garden Station to East Park Reservoir.</i>			
Mifflin lane, East Park, from dead end of pipe laid 1893 northeast across roadbed of Philadelphia and Reading R. R. to connect.....		48	503
East Park, from dead end laid 1893 north of East Park drive at East Park Reservoir, north to No. 11 main..		48	122
Total.....			625
<i>Service Main Connections.</i>			
Cumberland street, 15 feet 3 inches east of west house line of Thirtieth street, between 48-inch main on Cumberland and 12-inch main on Thirtieth street.....		12	16
Cumberland street, 38 feet west of east house line of Thirty-first street, between 48-inch main on Cumberland street and 6-inch main on Thirty-first street.....		10	12
Nineteenth and Pearl streets, between 10-inch main on Nineteenth street and 6-inch main on Pearl street....		6	15
Nineteenth and Wood streets, between 10-inch main on Nineteenth street and 6-inch main on Wood street....		6	13
Nineteenth and Carlton streets, between 10-inch main on Nineteenth street and 6-inch main on Carlton street...		6	15
Thirty-second street, south house line of Cumberland street, between 12-inch main on Thirty-second street and 48-inch main on Cumberland street.....		12	15
Thirty-third street, south house line of Berks street, between 48-inch and 12-inch mains on Thirty-third street.....		12	75
Thirty-third street, south house line of Montgomery avenue, between 48-inch and 12-inch mains on Thirty-third street.....		12	63
Thirty-third street, south house line of Diamond street, between 48-inch and 12-inch mains on Thirty-third street.....		12	41
Thirty-third street, north house line of Susquehanna avenue, between 48-inch pumping main and 12-inch service main on east side of Thirty-third street.....		12	41
Thirty-third street, 6 feet south of north house line of Dauphin street, between 48-inch pumping main and pipe not yet laid on east side of Thirty-third street...		12	42
Thirty-third and York streets, between 48-inch main on Thirty-third street and 12-inch main intersection of York street.....		12	19
Thirty-third and Cumberland streets, between 48-inch main on Thirty-third street and 12-inch main intersection of Cumberland street.....		12	9

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Main Connections—Continued.</i>			
Twenty-ninth street,	12 feet 6 inches north of south house line of Cumberland street, between 6-inch main on Twenty-ninth street and 48-inch main on Cumberland street.....	10	8
Twenty-ninth street,	south house line of Lehigh avenue, between 48-inch main on Twenty-ninth street and 6-inch main on Lehigh avenue.....	10	12
Twenty-ninth street,	7 feet south of north house line of Lehigh avenue, between 48-inch main on Twenty-ninth street and 6-inch main on Lehigh avenue.....	10	8
Total.....			404
<i>Supply Main Connections.</i>			
Thirty-third and Master streets,	from a point 64 feet 9 inches west of east house line of Thirty-third street, and 12 feet 6 inches south of north house line of Master street, northwest 175 feet 10 inches to a point, 207 feet west of east house line of Thirty-third street, and 33 feet north of north house line of Master street, connection between 30 inches, 36 inches and 48 inches main from Queen Lane reservoir.....	48	196
Twenty-ninth street,	west side, 20 feet south of north house line of Clearfield street, between 48-inch main on Twenty-ninth street and 6-inch main on Clearfield street.....	10	10
Twentieth and Scott streets,	between 16-inch main on Twentieth street and 6-inch main on Scott street.....	8	10
Twentieth and Cambridge streets,	between 16-inch main on Twentieth street and 6-inch main on Cambridge street.....	8	11
Total.....			227
<i>Pumping Main Connections.</i>			
East Park,	from 48-inch main at a point 908 feet west of west house line of Thirty-third street, and 187 feet north of north house line of Oxford street, northwest	48	24
Spring Garden Pumping Station,	46 feet 6 inches north of north front of No. 11 engine house, between No. 4 and No. 11 48-inch mains.....	36	24
Spring Garden Pumping Station	(stand pipe lot), 68 feet north of north house line of Pennsylvania avenue and 320 feet west of east house line of Thirty-third street, between No. 5 and No. 11 48-inch mains.....	48	7

Street.	Location.	Size in inches.	Distance in feet.
<i>Pumping Main Connections--Continued.</i>			
Spring Garden Pumping Station (stand pipe lot), from dead end of pipe laid 1892, 293 feet 6 inches west of east house line of Thirty-third street, and 88 feet north of north side of Philadelphia and Reading Railroad to 33 feet north of north house line of Master street.		48	360
Total.....			415
<i>Service Supply Connections.</i>			
Bouvier street, west side, 107 feet north of north house line of Jefferson street.....		4	11
Bouvier street, west side, 103 feet south of south house line of Oxford street.....		4	13
Columbia avenue, south side, 12 feet west of northwest house line of Glenwood avenue.....		4	19
Columbia avenue, south side, 64 feet 6 inches east of east house line of Thirty-first street.....		4	18
Cumberland street, north side, 12 feet west of west house line of Twenty-seventh street.....		4	14
Cumberland street, north side, 12 feet east of east house line of Twenty-eighth street.....		4	14
Dauphin street, north side, 12 feet 6 inches west of west house line of Eleventh street.....		4	15
Dauphin street, north side, from east house line of Twelfth street.....		4	14
Dauphin street, north side, 19 feet east of east house line of Broad street.....		4	15
Dauphin street, south side, 12 feet west of west house line of Twenty-second street.....		4	15
Dauphin street, south side, 12 feet west of west house line of Thirty-second street (extended).....		4	5
Dauphin street, south side, 27 feet east of northeast house line of Ridge avenue.....		4	14
Green street, north side, 12 feet west of west house line of Broad street.....		4	14
Green street, south side, 132 feet 6 inches west of west house line of Broad street.....		4	14
Green street, north side, 12 feet east of east house line of Fifteenth street.....		4	15
Green street, south side, 38 feet east of east house line of Fifteenth street.....		4	14
Hare street, south side, 12 feet west of west house line of Taney street.....		4	14
Hare street, north side, 12 feet west of west house line of Taney street.....		4	14
Hare street, south side, 12 feet east of east house line of Twenty-seventh street.....		4	14

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Hare street, north side, 12 feet east of east house line of Twenty-seventh street.....		4	14
Jefferson street, south side, 12 feet west of west house line of Twenty-sixth street.....		4	15
Jefferson street, south side, 12 feet east of east house line of Twenty-seventh street.....		4	15
Jefferson street, north side, 12 feet west of west house line of Twenty-eighth street.....		4	17
Jefferson street, north side, 12 feet east of east house line of Twenty-ninth street.....		4	16
Lehigh avenue, south side, 147 feet west of west house line of Twelfth street.....		4	10
Lehigh avenue, south side, 12 feet east of east house line of Thirteenth street.....		4	10
Lehigh avenue, north side, 12 feet west of west house line of Thirteenth street.....		4	9
Lehigh avenue, north side, 12 feet east of east house line of Park avenue.....		4	8
Lehigh avenue, north side, 90 feet east of east house line of Twenty-sixth street.....		6	11
Lorain street, west side, 13 feet north of north house line of Wallace.....		4	5
Lorain street, west side, 13 feet 7 inches south of south house line of Fairmount avenue.....		4	5
Master street, south side, 196 feet 10 inches west of west house line of Nineteenth street.....		4	15
Master street, south side, 63 feet 9 inches east of east house line of Twentieth street.....		4	14
Master street, north side, 12 feet west of west house line of Twenty-sixth street.....		4	7
Master street, 12 feet east of east house line of Twenty-seventh street.....		4	7
Natrona street, west side, 10 feet 8 inches south of north house line of Montgomery avenue.....		4	24
Nineteenth street, west side, 12 feet north of north house line of Cumberland.....		4	13
Nineteenth street, west side, 12 feet north of north house line of Margie.....		4	14
Oxford street, south side, 12 feet east of east house line of Thirty-third street.....		4	17
Oxford street, north side, 12 feet east of east house line of Thirty-third street.....		4	25
Oxford street, south side, 12 feet west of west house line of Natrona.....		4	16
Oxford street, north side, 12 feet west of west house line of Natrona.....		4	26
Perot street, south side, 12 feet east of east house line of Twenty-sixth street.....		4	10
Perot street, south side, 248 feet east of east house line of Twenty-sixth street.....		4	10



Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Poplar street, north side, 12 feet west of west house line of Twenty-second street.....		4	10
Poplar street, north side, 12 feet east of east house line of Twenty-third street.....		4	12
Poplar street, north side, 12 feet west of west house line of Twenty-third street.....		4	9
Poplar street, north side, 12 feet east of east of house line of Twenty-fourth street.....		4	10
Ridge avenue, northeast side, 12 feet northwest of north house line of Seybert street.....		4	44
Ridge avenue, northeast side, 37 feet southeast of south house line of Master street.....		4	35
Sedgely avenue, northwest side, 12 feet northeast of northeast house line of Ridge avenue.....		4	18
Sedgely avenue, northwest side, 12 feet northeast of northeast house line of Ridge avenue.....		4	18
Sedgely avenue, southeast side, 126 feet 6 inches northeast of northeast house line of Ridge avenue.....		4	23
Sedgely avenue, northwest side, 213 feet 6 inches northeast of northeast house line of Ridge avenue.....		4	19
Sedgely avenue, northwest side, 12 feet 6 inches west of west house line of Twenty-eighth street.....		4	20
Sedgely avenue, southeast side, 31 feet northeast of northeast house line of Twenty-eighth street.....		4	21
Sedgely avenue, southeast side, 13 feet east of east house line of Twenty-seventh street.....		4	22
Sedgely avenue, northeast side 12 feet north of north house line of Susquehanna avenue.....		4	21
Sedgely avenue, northeast side, 12 feet south of south house line of Susquehanna avenue.....		4	21
Sedgely avenue, southwest side, 12 feet north of north house line of Fletcher street.....		4	17
Sedgely avenue, northeast side, 21 feet south of south house line of Dauphin street.....		4	23
Sedgely avenue, southeast side, north house line of Dauphin street.....		4	23
Sedgely avenue, northwest side, 14 feet northeast of north house line of Dauphin street.....		4	17
Sedgely avenue, northwest side, 168 feet northeast of north house line of Dauphin street.....		4	17
Sedgely avenue, northwest side, 12 feet west of west house line of Twenty-fifth street.....		4	17
Sedgely avenue, southeast side, 119 feet southwest of south house line of York street.....		4	21
Sedgely avenue, southeast side, 104 feet northeast of north house line of York street.....		4	19
Sedgely avenue, northwest side, 12 feet northeast of north house line of York street.....		4	17
Sedgely avenue, northwest side, west house line of Twenty-third street.....		4	16

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Sedgely avenue, northwest side, 12 feet northeast of east house line of Twenty-third street.....		4	17
Sedgely avenue, northwest side, 12 feet southwest of south house line of Cumberland street.....		4	18
Sedgely avenue, southeast side, 12 feet west of west house line of Twenty-second street.....		4	16
Sedgely avenue, southeast side, 14 feet east of east house line of Broad street.....		4	8
Sedgely avenue, southeast side, 12 feet west of west house line of Park avenue.....		4	8
Somerset street, south side, 11 feet west of west house line of Twelfth street.....		4	13
Somerset street, south side, 12 feet east of east house line of Thirteenth street.....		4	14
Somerset street, south side, 12 feet west of west house line of Park avenue.....		4	13
Somerset street, south side, 12 feet east of east house line of Broad street.....		4	15
Susquehanna avenue, south side, 12 feet west of west house line of Tenth street.....		4	17
Susquehanna avenue, south side, 18 feet east of property line of P. & R. R.....		4	17
Susquehanna avenue, north side, 12 feet west of west house line of Uber street.....		4	22
Susquehanna avenue, north side, 12 feet east of east house line of Twentieth street.....		4	22
Susquehanna avenue, north side, from Thirty-second street, west.....		4	29
Susquehanna avenue, north side, from east house line of Thirty-third street, west.....		4	30
Taney street, west side, 111 feet 10 inches south of south house line of Mt. Pleasant.....		4	12
Taney street, west side, 12 feet south of south house line of Mt. Pleasant.....		4	11
Thirtieth street, west side, 12 feet north of north house line of Master street.....		4	14
Thirtieth street, west side, 12 feet south of south house line of Jefferson street.....		4	14
Thirtieth street, east side, 12 feet north of north house line of Jefferson street.....		4	15
Thirtieth street, west side, 12 feet north of north house line of Jefferson street.....		4	15
Thirtieth street, east side, 12 feet south of south house line of Oxford street.....		4	15
Thirtieth street, west side, 12 feet south of south house line of Oxford street.....		4	15
Thirtieth street, west side, 30 feet north of north curb line of Oxford street.....		4	15
Thirtieth street, east side 30 feet north of north curb line of Oxford street.....		4	15

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Thirtieth street, west side, 15 feet 6 inches south of south house line of Columbia avenue.....		4	16
Thirtieth street, east side, 15 feet 6 inches south of south house line of Columbia avenue.....		4	15
Thirtieth street, east side, 12 feet north of north house line of Berks street.....		4	17
Thirtieth street, east side, 12 feet south of south house line of Norris street. ....		4	15
Thirty-first street, west side, 12 feet north of north house line of York street.....		4	15
Thirty-first street, east side, 78 feet north of north house line of York street.....		4	15
Thirty-first street, east side, 12 feet south of south house line of Cumberland street.....		4	16
Thirty-first street, west side, 12 feet south of south house line of Cumberland street.....		4	13
Twentieth street, west side, 12 feet north of north house line of Hamilton street.....		4	15
Twentieth street, west side, 163 feet south of south house line of Spring Garden street.....		4	14
Twentieth street, east side, 12 feet north of north house line of Susquehanna avenue.....		4	14
Twentieth street, east side, 12 feet south of south house line of Dauphin street.....		4	20
Twenty-eighth street, west side, 12 feet north of north house line of Parrish street.....		4	13
Twenty-eighth street, west side, 312 feet north of north house line of Parrish street.....		4	13
Twenty-fourth street, west side, 190 feet south of south house line of Poplar street.....		3	13
Twenty-fourth street, west side, 12 feet south of south house line of Poplar street.....		3	14
Twenty-fifth street, west side, 5 feet south of north house line of Dauphin street.....		4	15
Twenty-ninth street, west side, 12 feet south of south house line of Ogden street.....		4	26
Twenty-ninth street, west side, 12 feet north of north house line of Parrish street.....		4	25
Twenty-ninth street, west side, 12 feet north of north house line of Oxford street.....		4	21
Twenty-ninth street, west side, 8 feet south of south house line of Columbia avenue.....		4	21
Twenty-second street, west side, 12 feet north of north house line of Montgomery avenue.....		4	19
Twenty-second street, west side, 231 feet 7 inches north of north house line of Montgomery avenue.....		4	18
Twenty-second street, east side, 12 feet north of north house line of Dauphin street.....		4	16
Twenty-second street, west side, 147 feet south of south house line of Dauphin street.....		4	21

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Twenty-second street, west side, 12 feet south of south house line of Dauphin street.....		4	23
Twenty-second street, east side, 12 feet south of southeast house line of Glenwood avenue.....		4	16
Twenty-seventh street, east side, 18 feet south of south house line of Jefferson street.....		4	13
Wallace street, north side, 12 feet west of west house line of Broad street.....		4	13
Wallace street, south side, 24 feet west of west house line of Broad street.....		4	15
Wallace street, south side, 12 feet east of east house line of Fifteenth street.....		4	13
Wallace street, north side, 116 feet east of east house line of Fifteenth street.....		4	14
Wellington street, east side, 12 feet north of north house line of Master street.....		4	15
Wellington street, east side, 80 feet 6 inches south of south house line of Jefferson street.....		4	15
Wellington street, east side, 12 feet north of north house line of Jefferson street.....		4	16
Wellington street, east side, 12 feet south of south house line of Oxford street.....		4	14
Wellington street, east side, 170 feet north of north house line of Oxford street.....		4	16
Wellington street, east side, 134 feet 6 inches south of south house line of Columbia avenue.....		4	15
York street, north side, 12 feet west of west house line of Twenty-first street.....		4	14
York street, north side, 12 feet east of southeast house line of Glenwood avenue.....		4	14
York street, north side, 12 feet west of west house line of Twenty-second street.....		4	14
York street, north side, 12 feet east of southeast house line of Sedgley avenue.....		4	15
York street, north side, 164 feet west of west house line of Twenty-fourth street.....		4	14
York street, north side, 12 feet east of east house line of Twenty-fifth street.....		4	14
York street, north side, 217 feet west of west house line of Twenty-fifth street.....		4	14
York street, north side, 12 feet east of east house line of Twenty-sixth street.....		4	14
York street, north side, 12 feet west of west house line of Twenty-ninth street.....		4	14
York street, north side, 12 feet east of east house line of Thirtieth street.....		4	14
York street, north side, 12 feet west of west house line of Thirty-first street.....		4	14
York street, north side, 12 feet east of east house line of Thirty-second street.....		4	14
Total.....			2,273

Street.	Location.	Size in inches.	Distance in feet.
Fire hydrant connections.....		6	3,583
<i>Supply Connections (private).</i>			
Allegheny avenue, south side, 304 feet east of east house line of Nineteenth street.....		6	8
Allegheny avenue, south side, 304 feet 10 inches east of east house line of Nineteenth street. For Warden Mfg. Co.....		4	9
Carlisle street, east side, 197 feet 6 inches north of north house line of Master street. For Mercantile Club.....		4	13
Dauphin street, south side, 89 feet east of east house line of Ninth street. For Emergency House.....		3	11
Hutchinson street, east side, 196 feet south of south house line of Oxford street For Electric Traction Co.....		4	9
Ridge avenue, northeast side, 8 feet southeast of east house line of Thirty-second street. For Philadelphia Traction Co.....		6	27
Spring Garden Pumping Station, from southeast corner of store house northeast across P. & R. R. to connect with 36-inch supplementary main.....		6	201
Spring Garden Pumping Station, from 6-inch supply connection from 36-inch supplementary main at a point 15 feet 6 inches north of north house line of store house west to meter house. For Bureau of Water..		6	156
Thirty-third street, east side, 41 feet north of north house line of Thompson street. For Bergner & Engel Brewing Co.....		3	7
Thompson street, south side, west curb line of Park avenue. For Ontario Park.....		4	6
<b>Total.....</b>			<b>447</b>
<i>Meter Inspection Connections.</i>			
Twenty-first street, east side, 6 feet south of south house line of Master street.....		4	12
<i>Drains.</i>			
Cumberland street, 100 feet west of west house line of Thirty-first street, from 48-inch main.....		6	14
Fairmount avenue, northeast curb line of Pennsylvania avenue, from 10-inch main.....		4	14
Nineteenth street 2 feet 2 inches north of north house line of Vine street, from 10-inch main.....		6	6
Sartain street, 20 feet south of north house line of Cumberland street, from 6-inch main.....		6	8

Street.	Location.	Size in inches.	Distance in feet.
<i>Drains—Continued.</i>			
Thirty-third street, west side, 41 feet north of north house line of Master street, from 36-inch main.....		6	11
Thirty-third street, 162 feet south of south house line of Oxford street and 150 feet west of east house line of Thirty-third street, from 48-inch main.....		6	6
Thirty-third street, 162 feet south of south house line of Oxford street and 156 feet west of east house line of Thirty-third street, from 36-inch main.....		6	15
Thirty-third street, 163 feet south of south house line of Oxford street, and 166 feet west of east house line of Thirty-third street, from 48-inch main.....		6	22
Thirty-third street, from 149 feet north of north house line of Susquehanna avenue, from inlet.....		12	18
Thirty-third street, 69 feet 5 inches north of northeast house line of Ridge avenue, south to sewer in Ridge avenue, from 48-inch main.....		6	87
Twenty-first street, 48 feet north of north house line of Spring Garden street, from 6-inch main.....		4	8
Twenty-ninth street, 9 feet 3 inches north of south house line of Lehigh avenue, from 48-inch main.....		6	18
Twenty-ninth street, from 11 feet north of south house line of Lehigh avenue, from 48-inch main.....		6	19
Thirty-third street, 14 feet 6 inches north of south house line of Lehigh avenue from 48-inch main.....		6	15
Twenty-second street, 79 feet 4 inches north of north house line of Spring Garden street, from 6-inch main.....		4	5
Total .....			266
<i>Pipe Relaid.</i>			
Alder street, from 1 foot south of south house line of Master street, north .....		6	22
Alder street, from Columbia avenue, north.....		6	33
Amboy street, from centre of Jefferson street, north.....		6	29
Amboy street, from 7 feet 3 inches south of south line of Columbia avenue, north.....		6	38
Bankson street, from 9 feet south of south house line of Wallace street to 25 feet north of south house line of Melon street.....		6	372
Becket street, from 2 feet 6 inches east of east house line of Seventeenth street, west.....		6	28
Brandywine street, from west house line of Thirteenth street to 4 feet east of east house line of Broad street		6	526
Brandywine street, from 37 feet east of east house line of Seventeenth street, west.....		6	54
Brandywine street, 7 feet 7 inches east of east house line of Eighteenth street, west .....		6	64

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Brandywine street, from 1 foot east of east house line of Nineteenth street, west.....		6	47
Brandywine street, from 3 feet east of east house line of Twentieth street, west.....		6	23
Brandywine street, from 22 feet 6 inches east of west house line of Twentieth street, west.....		6	24
Brandywine street, from east house line of Twenty-first street, west.....		6	51
Brandywine street, from east house line of Twenty-second street, west.....		6	62
Brandywine street, from 1 foot 5 inches east of east house line of Twenty-third street, west.....		6	26
Brandywine street, from 13 feet east of west house line of Twenty-fourth street, west.....		6	14
Broad street, east side, from 157 feet north of north house line of Cumberland street to 331 feet north of south house line of Huntingdon street.....		6	697
Broad street, east side, from 58 feet south of south house line of Lehigh avenue, northwest. Connection between 6-inch main on east side and 6-inch main on west side.....		6	140
Broad street, 58 feet south of south house line of Lehigh avenue, north.....		6	138
Broad street, east side, from north house line of Lehigh avenue, north 214 feet, thence west 28 feet 6 inches...		6	242
Broad street, west side, from 33 feet 6 inches north of north house line of Cumberland street to 464 feet north of south house line of Huntingdon street.....		6	954
Broad street, east side, 231 feet 6 inches north of north house line of Huntingdon street, northwest connection between 6-inch main on east side and 6-inch main on west side.....		6	165
Broad street, west side, from north house line of Lehigh avenue, north 212 feet 5 inches, thence east 27 feet...		6	240
Broad street, west side, from 27 feet south of north house line of Lehigh avenue, north.....		6	27
Brown street, from 5 feet west of northeast house line of Francis street, west.....		6	27
Bucknell street, from centre of Hare street, north.....		6	29
Bucknell street, from 1 foot 6 inches south of south house line of Brown street, north.....		6	27
Buttonwood street, from Nineteenth street, west.....		6	30
Buttonwood street, from 4 feet east of east house line of Twentieth street, west.....		6	29
Cabot street, from 2 feet east of east house line of Seventeenth street, west.....		6	31
Cabot street, from centre of Eighteenth street, west.....		6	27
Cabot street, from 3 feet 6 inches east of east house line of Nineteenth street, west.....		6	92

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Carlton street, from 1 foot east of east house line of Seventeenth street, west.....		6	27
Carlton street, from Eighteenth street, west.....		6	27
Carlton street, from 1 foot 6 inches east of east house line of Nineteenth street, west.....		6	56
Carlton street, from east house line of Twentieth street, to 54 feet west of east house line of Twenty-first street.....		6	597
Camac street, from south house line of Jefferson street, north.....		6	15
Camac street, from 24 feet south of south house line of Columbia avenue, north.....		6	62
Cambridge street, from 1 foot 6 inches east of east house line of Seventeenth street, west.....		6	48
Cambridge street, from centre of Nineteenth street, west ..		6	30
Cambridge street, from 7 feet 9 inches east of east house line of Twentieth street, west.....		6	58
Cameron street, from Francis street, northwest.....		6	24
Clayton street, from 5 feet east of east house line of Twenty-third street, west.....		6	30
Cuyler street, from Nineteenth street, west.....		6	32
Cuyler street, from 3 feet east of east house line of Twentieth street west.....		6	28
Darien street, from Jefferson street, north.....		6	28
Fawn street, from Jefferson street, north.....		6	28
Fawn street, from 3 feet 7 inches south of south house line of Columbia avenue, north .....		6	64
Francis street, from southwest house line of Barnhurst place to 15 feet northeast of northeast house line of Perkiomen street.....		6	519
Geary street, from Francis street, northwest.....		6	31
Geary street from centre of Poplar street, north.....		6	34
Girard avenue, south side, from Thirty-first street west across bridge over Pennsylvania avenue.....		10	231
Grayson street, from Seventeenth street, west.....		6	27
Grayson street, from 1 foot east of east house line of Eighteenth street, west.....		6	26
Grove street, from centre of Perkiomen street, northeast..		6	27
Harland street, from centre of Nineteenth street, west.....		6	25
Harland street, from 3 feet 6 inches east of east house line of Twentieth street, west.....		6	28
Huntingdon street, from 7 feet 6 inches east of west house line of Broad street to Carlisle street.....		6	306
Hutchinson street, from centre of Poplar street, north.....		6	31
Hutchinson street, from 3 feet south of south house line of Master street, north .....		6	28
Hutchinson street, from centre of Jefferson street, north...		6	28
Judson street, from centre of Hare street, north.....		6	28
Judson street, from 1 foot 6 inches south of south house line of Brown street, north.....		6	25



Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Kessler street, from south house line of Green street to north house line of Spring Garden street.....		6	258
Kurtz street, from centre of Poplar street, north ...		6	27
Larch street, from 4 feet north of north house line of Wallace street to Melon street.....		6	239
Lehigh avenue, south side, from 161 feet east of east house line of Broad street, west.....		6	195
Lehigh avenue, north side, from 161 feet 8 inches east of east house line of Broad street, west.....		6	184
Lemon street, from west house line of Tenth street to east house line of Eleventh street.....		6	396
Linden street, from 1 foot 5 inches south of south house line of Green street, north.....		6	22
Lorain street, from north house line of Buttonwood street to south house line of Spring Garden street. ....		6	245
Lorain street, from 3 feet 6 inches south of south house line of Green street, north.....		6	29
Master street, from 76 feet east of east house line of Twenty-seventh street, west.....		36	89
Matlack street, from 3 feet 6 inches south of south house line of Poplar street, north.....		6	30
Meredith street, from centre of Twenty-third street, west..		6	28
Minerva street, from centre of Seventh street, west.....		6	29
Minerva street, from 4 feet 8 inches east of east house line of Franklin street, west.....		6	30
Ninth street, west side, from Callowhill street to Buttonwood street.....		8	798
Ninth street, from 1 foot 3 inches south of south house line of Green street, north.....		6	27
Noble street, from 15 feet west of east house line of Ninth street, west.....		6	16
North street, from 1 foot 6 inches east of east house line of Seventeenth street, west.....		6	45
North street, from 1 foot east of east house line of Eighteenth street, west .....		6	45
North street, from 2 feet east of east house line of Nineteenth street, west.....		6	53
North street, from 4 feet 10 inches east of east house line of Twentieth street, west.....		6	30
Olive street, from 3 feet 6 inches east of east house line of Seventeenth street, west.....		6	55
Olive street, from 3 feet east of east house line of Eighteenth street, west.....		6	28
Ontario street, from 10 feet south of south house line of Master street, north.....		6	66
Ontario street, from 1 foot south of south house line of Jefferson street, north.....		6	15
Park avenue, from 1 foot 9 inches south of south house line of Master street, north.....		6	55

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Park avenue, from south house line of Jefferson street, north.....		6	18
Pearl street, from 2 feet east of center of Seventeenth street, west.....		6	28
Pearl street, from 1 foot east of east house line of Eighteenth street, west.....		6	52
Pearl street, from 2 feet 6 inches east of east house line of Nineteenth street, west.....		6	54
Pearl street, from east house line of Twentieth street, west.....		6	25
Pearl street, from Twenty-third street, west.....		6	26
Pennsylvania avenue, from 4 feet 3 inches east of east house line of Nineteenth street, west.....		6	25
Perth street, from 3 feet south of south house line of Master street, north.....		6	55
Perth street, from 1 foot 6 inches south of south house line of Jefferson street, north.....		6	27
Potts street, from 6 feet west of west house line of Twelfth street, to 5 feet 7 inches east of east house line of Thirteenth street.....		6	389
Rhodes street, from east house line of Eighteenth street, west.....		6	27
Rhodes street, from 1 foot east of east house line of Nineteenth street, west.....		6	22
Rugan street, from Callowhill street, north.....		6	30
Sartain street, from centre of Poplar street, north.....		6	29
Scott street, from center of Nineteenth street, west.....		6	30
Scott street, from 8 feet 10 inches east of east house line of Twentieth street, west.....		6	59
Seventeenth street, from Pearl street to Wood street.....		6	115
Seventeenth street, from 112 feet south of south house line of Poplar street, north.....		6	137
Seybert street, from 2 feet 6 inches east of east house line of Seventeenth street, west.....		6	31
Seybert street, from center of Eighteenth street, west.....		6	30
Seybert street, from 7 feet east of east house line of Nineteenth street, west.....		6	61
Springett street, from east house line of Twentieth street, west.....		6	23
Springett street, from east house line of Twenty-first street, west.....		6	25
Tatlow street, from east house line of Eighteenth street, west.....		6	30
Tatlow street, from 1 foot east of east house line of Nineteenth street, west.....		6	22
Torr street, from centre of Ninth street, west.....		6	23
Twenty-seventh street, from 9 feet south of north house line of Hare street, north.....		6	9
Wallace street, from Twenty-second street to Twenty-third street.....		6	452

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Warnock street, from center of Poplar street, north.....		6	30
Warnock street, from 3 feet 6 inches south of south house line of Master street, north.....		6	22
Warnock street, from 4 feet 6 inches south of south house line of Jefferson street, north.....		6	43
Warnock street, from 20 feet 10 inches north of south house line of Columbia avenue, north.....		6	45
Walters street, from 1 foot east of east house line of Seventeenth street, west.....		6	53
Walters street, from east house line of Eighteenth street west .....		6	25
Wood street, from east house line of Ninth street, west....		6	51
Wood street, from 6 feet 6 inches east of east house line of Twentieth street, west.....		6	60
Wood street, from center of Twenty-first street, west.....		6	52
Wood street, from 4 feet 6 inches east of east house line of Twenty-third street, west.....		6	27
Total .....			12,087
Fire hydrant connections relaid.....		6	723
Repairs, general.....		4	14
Repairs, general.....		6	2,969
Repairs, general.....		8	115
Repairs, general.....		10	374
Repairs, general.....		12	116
Repairs, general.....		16	20
Repairs, general.....		20	3
Repairs, general.....		48	56
Total.....			3,667
<i>Pipe Taken Up.</i>			
Alder street, from 1 foot south of south house line of Master street, north.....		4	22
Alder street, from Columbia avenue, north .....		4	33
Amboy street, from center of Jefferson street, north.....		4	29
Amboy street, from 7 feet 3 inches south of south house line of Columbia avenue, north .....		4	38
Bankson street, from 9 feet south of south house line of Wallace street to 25 feet north of south house line of Melon street.....		4	372
Becket street, from 2 feet 6 inches east of east house line of Seventeenth street, west.....		4	28

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up—Continued.</i>			
Brandywine street, from west house line of Thirteenth street to 4 feet east of east house line of Broad street.		4	526
Brandywine street, from 37 feet east of east house line of Seventeenth street, west.....		4	54
Brandywine street, from 7 feet 7 inches east of east house line of Eighteenth street, west.....		4	64
Brandywine street, from 1 foot east of east house line of Nineteenth street, west.....		4	47
Brandywine street, from 3 feet east of east house line of Twentieth street, west.....		4	23
Brandywine street, from 22 feet 6 inches east of west house line of Twentieth street, west.....		4	24
Brandywine street, from east house line of Twenty-first street, west.....		4	51
Brandywine street, from east house line of Twenty-second street, west.....		4	62
Brandywine street, from 1 foot 5 inches east of east house line of Twenty-third street, west.....		4	26
Brandywine street, from 13 feet east of west house line of Twenty-fourth street, west.....		4	14
Bucknell street, from center of Hare street, north.....		4	28
Bucknell street, from 1 foot 6 inches south of south house line of Brown street, north.....		4	27
Buttonwood street, from Nineteenth street, west.....		4	30
Buttonwood street, from 4 feet east of east house line of Twentieth street, west.....		4	29
Cabot street, from 2 feet east of east house line of Seventeenth street, west.....		4	31
Cabot street, from center of Eighteenth street, west.....		4	27
Cabot street, from 3 feet 6 inches east of east house line of Nineteenth street, west.....		4	29
Carlton street, from 1 foot east of east house line of Seventeenth street, west.....		4	27
Carlton street, from Eighteenth street, west.....		4	27
Carlton street, from 1 foot 6 inches east of east house line of Nineteenth street, west.....		4	56
Carlton street, from east house line of Twentieth street to 54 feet west of east house line of Twenty-first street...		4	596
Camac street, from south house line of Jefferson street, north.....		4	15
Camac street, from 24 feet south of south house line of Columbia avenue, north.....		4	62
Cambridge street, from 1 foot 6 inches east of east house line of Seventeenth street, west.....		4	48
Cambridge street, from centre of Nineteenth street, west...		4	29
Cambridge street, from 7 feet 9 inches east of east house line of Twentieth street, west.....		4	58
Cameron street from Francis street, northwest.....		4	24
Clayton street, from 5 feet east of east house line of Twenty-third street west.....		4	30

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up—Continued.</i>			
Cuyler street, from Nineteenth street, west.....		4	31
Cuyler street, from 3 feet east of east house line of Twentieth street, west.....		4	28
Darien street, from Jefferson street, north.....		4	27
Fawn street, from Jefferson street, north.....		4	28
Fawn street, from 3 feet 7 inches south of south house line of Columbia avenue, north.....		4	64
Geary street, from Francis street, northwest.....		4	26
Geary street from centre of Poplar street, north.....		4	33
Girard avenue, from Thirty-first street west across bridge over Penna. R. R.....		6	212
Grayson street, from Seventeenth street, west.....		4	27
Grayson street, from 1 foot east of east house line of Eighteenth street, west.....		4	26
Grove street, from centre of Perkiomen street, northeast.....		4	27
Harland street, from centre of Nineteenth street, west.....		4	25
Harland street, from 3 feet 6 inches east of east house line of Twentieth street, west.....		4	28
Hutchinson street, from centre of Poplar street, north.....		4	31
Hutchinson street, from 3 feet south of south house line of Master street, north.....		4	28
Hutchinson street, from centre of Jefferson street, north.....		4	28
Judson street, from centre of Hare street, north.....		4	27
Judson street, from 1 foot 6 inches south of south house line of Brown street, north.....		4	25
Kessler street, from south house line of Green street to north house line of Spring Garden street.....		3	258
Kurtz street, from centre of Poplar street, north.....		4	27
Larch street, from Wallace to Melon street.....		4	250
Lemon street, from west house line of Tenth street to east house line of Eleventh street.....		4	393
Linden street, from 1 foot 5 inches south of south house line of Green street, north.....		4	21
Lorain street, from north house line of Buttonwood street to south house line of Spring Garden street.....		4	245
Lorain street, from 3 feet 6 inches south of south house line of Green street, north.....		4	29
Master street, from southeast corner of Twenty-seventh street, southeast.....		36	121
Master street, from southeast corner of Twenty-seventh street, southeast.....		16	51
Master street, from 76 feet east of east house line of Twenty-seventh street, (stand pipe).....		30	30
Matlack street, from 3 feet 6 inches south of south house line of Poplar street, north.....		2	30
Meredith street, from Twenty-third street, west.....		4	27
Minerva street, from centre of Seventh street, west.....		4	28
Minerva street, from 4 feet 8 inches east of east house line of Franklin street, west.....		4	30

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up—Continued.</i>			
Ninth street, west side, from 161 feet north of north house line of Callowhill to Buttonwood street.....		4	612
Ninth street, from 1 foot 3 inches south of south house line of Green street, north.....		4	27
Noble street, from 15 feet west of east house line of Ninth street, west.....		4	16
North street, from 1 foot 5 inches east of east house line of Seventeenth st. eet. west.....		4	45
North street, from 1 foot east of east house line of Eighteenth street, west.....		4	45
North street, from 2 feet east of east house line of Nineteenth street, west.....		4	53
North street, from 4 feet 10 inches east of east house line of Twentieth street, west.....		4	30
Olive street, from 3 feet 6 inches east of east house line of Seventeenth street, west.....		4	55
Olive street, from 3 feet east of east house line of Eighteenth street, west.....		4	28
Ontario street, from 10 feet south of south house line of Master street, north.....		6	66
Ontario street, from 1 foot south of south house line of Jefferson street, north.....		4	15
Park avenue, from 1 foot 9 inches south of south house line of Master street, north.....		4	55
Park avenue, from south house line of Jefferson street, north.....		4	18
Pearl street, from 2 feet east of center of Seventeenth street, west.....		4	28
Pearl street, from 1 foot east of east house line of Eighteenth street, west.....		4	52
Pearl street, from 2 feet 6 inches east of east house line of Nineteenth street, west.....		4	53
Pearl street, from east house line of Twentieth street, west.....		4	25
Pearl street, from Twenty-third street, west.....		4	26
Pennsylvania avenue, from 4 feet 3 inches east of east house line of Nineteenth street, west.....		4	25
Perth street, from 3 feet south of south house line of Master street, north.....		4	54
Perth street, from 1 foot 6 inches south of south house line of Jefferson street, north.....		4	26
Potts street, from 6 feet west of west house line of Twelfth street, to 5 feet 7 inches east of east house line of Thirteenth street.....		4	389
Rhodes street, from east house line of Eighteenth street, west.....		4	26
Rhodes street, from 1 foot 6 inches east of east house line of Nineteenth street, west.....		4	21
Rugan street, from Callowhill street, north.....		4	30
Sartain street, from intersection of Poplar street, north.....		4	28
Scott street, from centre of Nineteenth street, west.....		4	30

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up—Continued.</i>			
Scott street, from 8 feet 10 inches east of east house line of Twentieth street, west.....		4	58
Seybert street, from 2 feet 6 inches east of east house line of Seventeenth street, west.....		4	31
Seybert street, from Eighteenth street, west.....		4	29
Springett street, from Twentieth street, west.....		4	22
Springett street, from east house line of Twenty-first street, west.....		4	25
Tatlow street, from east house line of Eighteenth street, west.....		4	28
Tatlow street, from 1 foot east of east house line of Nineteenth street, west.....		4	21
Torr street, from Ninth street, west.....		4	28
Twenty-seventh street, from 9 feet south of south house line of Hare street, north.....		6	9
Twentieth street, intersection of Poplar street (supply main connection).....		6	52
Wallace street, from Twenty-second street, west.....		4	51
Warnock street, from intersection of Poplar street, north.....		4	30
Warnock street, from 3 feet 6 inches south of south house line of Master street, north.....		4	28
Warnock street, from 4 feet south of south house line of Jefferson street, north.....		4	42
Warnock street, from 20 feet 10 inches north of south house line of Columbia avenue, north.....		4	45
Walters street, from 1 foot east of east house line of Seventeenth street, west.....		4	52
Walters street, from east house line of Eighteenth street, west.....		4	25
Wood street, from east house line of Ninth street, west....		4	56
Wood street, from 6 feet 6 inches east of east house line of Twentieth street, west.....		4	59
Wood street, from center of Twenty-first street, west.....		4	52
Wood street, from 4 feet 6 inches east of east house line of Twenty-third street, west.....		4	27
Total.....			7,451
Fire hydrant connections taken up.....		4	542
<i>Pipe Lowered.</i>			
Twenty-eighth street, from 3 feet north of north house line of Poplar street, north.....		6	174
Total.....			174

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Cut Off and Abandoned.</i>			
Broad street, east side, from 342 feet south of south house line of Huntingdon to 29 feet north of south house line of Lehigh avenue.....		6	941
Broad street, east side, from 20 feet south of north house line of Lehigh avenue, north.....		12	233
Broad street, west side, from 22 feet north of south house line of Jefferson street, north.....		6	8
Broad street, west side, from 366 feet south of south house line of Huntingdon street to 211 feet north of north house line of Lehigh avenue.....		6	1,227
Brown street, from 5 feet northwest of southeast house line of Francis street, northwest.....		6	20
Francis street, from southwest house line of Barnhurst place to 14 feet northeast of northeast house line of Perkiomen street.....		4	515
Girard avenue, from 24 feet west of east house line of Thirty-first street, west.....		6	18
Huntingdon street, from 7 feet 6 inches east of west house line of Broad street to 18 feet west of east house line of Carlisle street.....		6	204
Lehigh avenue, south side, from 160 feet east of east house line of Broad street, west.....		6	195
Lehigh avenue, north side, from 160 feet east of east house line of Broad street, west.....		6	195
Master street, from southeast corner of Twenty-seventh street, northwest.....		16	36
Ninth street, from Callowhill street, north.....		4	186
Seventeenth street, from Pearl street to Wood street.....		4	113
Seventeenth street, from 112 feet south of south house line of Poplar street, north.....		4	135
Seybert street, from 7 feet east of east house line of Nineteenth street, west.....		4	61
Thirty-first street, from 13 feet north of south house line of Girard avenue, north.....		6	31
Wallace street, from 26 feet west of west house line of Twenty-third street, west.....		4	400
Total.....			4,518
Fire hydrants cut off and abandoned.....		4	664
Fire hydrants cut off and abandoned.....		6	526



### Recapitulation Fourth District.

16

	Purposes for which used.	SIZE IN INCHES.											Total feet and pounds.		
		2	3	4	6	8	10	12	16	20	30	36		48	
New pipe or feet added.	Service mains.....			1,078	22,560	4,332	2,083	1,100							31,108
	Supply mains.....													16,640	16,640
	Pumping mains.....													625	625
	Service main connections.....				43		40	321							404
	Supply main connections.....					21	10								227
	Pumping main connections.....											24			496
	Meter inspection connections.....														391
	Fire hydrant connections.....		27	2,235	11										12
	Supply connections (private).....		18	37	3,583										2,273
	Drains.....			27	392										3,583
					221				18						447
														266	
	Total... { Feet.....		45	3,389	26,810	4,353	2,083	1,439					24	17,852	55,995
	{ Pounds.....		67	64,391	884,730	182,826	114,565	103,608					10,128	10,443,420	11,804,343
Pipe used, but adding nothing to feet in ground.	Pipe relaid.....				11,669	798	248		6				89		12,110
	Repairs general.....			14	2,969	115	374	116	20	3				56	3,667
	Pipe taken up.....	30	258	7,230	273				51		30	121			7,993
	Pipe lowered.....				174										174
	Total... { Feet.....	30	258	7,244	15,085	913	622	116	77	3	30	210		56	24,644
{ Pounds.....	300	3,870	137,636	497,805	38,346	34,210	8,352	8,470	477	9,960	88,620		32,760	860,806	
Total handled... { Feet.....	30	303	10,633	41,895	5,266	2,705	1,555	77	3	30	234		17,908	80,639	
{ Pounds.....	300	4,545	202,027	1,382,535	221,172	148,775	111,960	8,470	477	9,960	98,748		10,476,180	12,665,149	
Pipe cut off and abandoned.....			2,074	3,365				233	36					5,703	

229

## FIFTH DISTRICT.

Comprising the Twenty-first and part of the Twenty-eighth Ward.

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains.</i>			
Adams street, from Ridge avenue, west.....		6	33
Crawford street, from centre of Ridge avenue, northeast...		6	30
Domino lane, from southwest house line of Ridge avenue, northeast .....		6	26
Fisk street, from northeast house line of Cresson street to Thirty-sixth street.....		6	425
Fountain terrace, from centre of Ridge avenue, northeast..		4	30
Gates street, from Wood street to Manayunk avenue.....		6	500
Hermit street, from centre of Manayunk avenue, northeast.....		6	25
Jefferson street, from Wood street to dead end, 55 feet northeast of northeast house line line of Mitchell street.....		6	1,867
Kingsley street, from Manayunk avenue, northeast.....		6	19
Leverington avenue, from Hamilton street to dead end, northeast curb line of Pechin street.....		6	2,027
Linden street, from northwest houseline of Bolton avenue to Jefferson street.....		6	270
Lock street, from southwest house line of Main street, northeast.....		6	20
Manayunk avenue, from centre of Osborne street to dead end, southeast house line of Ridge avenue.....	{ 6	{ 43	
	{ 10	{ 435	
Manayunk avenue, from dead end, southwest house line of Ridge avenue to Adams street.....	{ 6	{ 28	
	{ 10	{ 449	
Manayunk avenue, from northwest house line of Hermit street to 50 feet northwest of northwest house line of Kingsley street.....	10	1,003	
Magnet street, from centre of Lyceum avenue to dead end northwest curb line of Gay street.....	6	122	
Markle street, from dead end, 5 feet southwest of southwest house line of Manayunk avenue, northeast to connect.....	6	36	
Mitchell street, from 12 feet southwest of southwest curb line of Ridge avenue, northeast.....	6	31	
Nice avenue, from 850 feet southwest of southwest house line of Wissahickon avenue, northeast.....	6	861	
Osborne street, from dead end, northeast house line of Ridge avenue to Manayunk avenue.....	6	437	
Pechin street, from southeast house line of Leverington avenue, northwest.....	6	50	
Ridge avenue, from 15 feet southeast of northwest house line of Domino lane, northwest.....	6	108	

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Scott's lane, from Ridge avenue, northeast.....		6	26
Spencer street, from dead end 22 feet southwest of centre of Thirty-sixth street, northeast.....		6	22
Thirty-sixth street, from Spencer to Fisk streets.....		6	202
Venango street, from southeast curb line of Nicetown lane, northeast to 12-inch main on Wissahickon avenue .....		6	190
Webster street, from southeast house line of Leverington avenue, northwest .....		6	50
Wood street, from southeast house line of Leverington avenue, northwest.....		6	62
<b>Total</b> .....			<b>9,427</b>
<i>Supply Mains.</i>			
<i>48-Inch supply main from Queen Lane reservoir to Twenty-ninth street and Allegheny avenue.</i>			
Twenty-ninth street, from north house line of Allegheny avenue to Nicetown lane			
Nicotown lane, from Twenty-ninth street to Thirty-second street			
Thirty-second street, from Nicetown lane to northwest house line of Abbotsford avenue, thence along southerly side of Queen lane reservoir to west side of Thirty-first street, a distance of 777 feet, thence from west side of Thirty-first street and southeast corner of Queen lane reservoir to dead end laid in 1893 at south stop house .....		48	5,024
<i>48-Inch supply main (second line) from Queen Lane reservoir to Twenty-ninth street and Allegheny avenue.</i>			
Twenty-ninth street, from north house line of Allegheny avenue to Nicetown lane			
Nicotown lane, from Twenty-ninth street to Thirty-second street			
Thirty-second street, from Nicetown lane to 36 feet south of northwest house line of Abbotsford avenue, thence along southerly side of Queen lane reservoir to Thirty-first street, thence north to dead end laid in 1893 at south stop house, Queen lane reservoir.....		48	5,064

Street.	Location.	Size in inches.	Distance in feet.
<i>48-Inch supply (third line).</i>			
Thirty-second street, from 154 feet southeast of centre of Juniata street, northwest across roadbed of Richmond branch of Philadelphia and Reading Railroad.....		48	154
Total.....			10,242
<i>Pumping Mains.</i>			
<i>Forty-eight (48) inch pumping main (first line) from Queen lane pumping station to Queen lane reservoir.</i>			
East Park, from 54 feet southeast of pumping station and intercepting sewer to Ridge avenue, thence southeast on Ridge avenue.....		48	1,023
Ridge avenue, from 658 feet northwest of northwest curb line of Midvale avenue to dead end, laid in 1893, on Midvale avenue, northeast house line of Ridge avenue .....		48	718
Midvale avenue, from dead end, laid in 1893, 300 feet northeast of northeast house line of Ridge avenue to Thirty-third street.....		48	3,148
Thirty-third street, from Midvale avenue to 403 feet southeast of southeast house line of Fairview avenue .....		48	1,501
<i>Second line.</i>			
Midvale avenue, from dead end, laid in 1893, 300 feet northeast of northeast house line of Ridge avenue, northeast .....		48	875
Total.....			7,270
<i>Supply main connections.</i>			
Ann street, 294 feet southeast of southeast house line of Port Royal avenue, between 30 and 48-inch mains...		30	40
Ann street, from 30-inch main northwest house line of Shawmont avenue, southeast.....		30	93
Ann street, from 93 feet southeast of northwest house line of Shawmont avenue, southeast 225 feet, thence east 115 feet, connecting with 20-inch pumping main on Bean street at a point 68 feet southeast of southeast house line of new pumping station.....		{ 30 20	{ 366 36
Roxborough reservoir (upper), southwest side, 336 feet southeast of southeast house line of Port Royal avenue, between 36-inch outlet from reservoir and 48-inch main on Ann street.....		36	231

Street.	Location.	Size in inches.	Distance in feet.
<i>Supply Main Connections—Continued.</i>			
Shawmont avenue, from 30-inch main 53 feet northeast of northeast house line of Ann street, southeast, for new pumping station.....		30	65
Total.....			831
<i>Pumping Main Connections.</i>			
New Roxborough Pumping Station, southeast side, between engine house and 30-inch pumping main connection (suction).....		30	87
New Roxborough Pumping Station, from 38 feet northwest of southeast front of engine house southwest to Ann street; thence northwest to stand pipe connection 10 feet southeast of southeast house line of Shawmont avenue.....		30	284
Shawmont Pumping Station, 151 feet northeast of northeast front of No. 1 engine house, north.....		30	21
Total.....			392
<i>By-pass Connections.</i>			
James street and Ridge avenue, northeast side, between 6-inch main on James street and 12-inch main on Ridge avenue.....		6	23
<i>Service Supply Connections.</i>			
Ridge avenue, northeast side, 88 feet northwest of northwest house line of Spencer street.....		4	19
Ridge avenue, northeast side, 730 feet northwest of northwest house line of Spencer street.....		4	25
Ridge avenue, southwest side, opposite centre of northwest entrance to Riverside Mansion.....		4	20
Ridge avenue, west side, from Adams street, north.....		4	48
Ridge avenue, west side, from Adams street, south.....		4	19
Total.....			131
Fire hydrant connections.....		6	210
<i>Fire Connections (Private).</i>			
Main street, northeast side, 600 feet southeast of southeast house line of Fountain, for William Spink.....		4	12

Street.	Location.	Size in inches.	Distance in feet.
<i>Supply Connections (Private).</i>			
Queen Lane Pumping Station, from 12-inch main on Ridge avenue to 23 feet northeast of southwest house line of boiler house, for Bureau of Water.....		6	241
<i>Drains.</i>			
Ann street, northeast side, from 30-inch supply main connection (number 4), from Upper Roxborough Reservoir 192 feet southeast of southeast house line of Port Royal avenue, northwest.....		12	250
Port Royal avenue, southeast side, from Stop House, west curb line of Upper Roxborough Reservoir, southwest of Queen Lane Pumping Station, from 54 feet northwest of southeast line of boiler house, southeast 104 feet; thence southwest 148 feet to connect with 18-inch drain.....		12	234
Queen Lane Reservoir, from a point 213 feet northeast of northeast house line of Thirty-second street and 156 feet northwest of northwest house line of Abbotsford avenue southeast, to drain spring.....		6	252
Roxborough Reservoir, new engine house, northwest side through basement southwest side to a point 98 feet southwest of southwest house line.....		6	109
Summit avenue, northwest side, from Stop House south corner of Upper Roxborough Reservoir south 173 feet; thence southwest 152 feet.....		6	163
Summit avenue, from 12-inch drain (from Stop House) northeast house line of Ann street, southwest.....		12	325
		6	50
Total .....			1,383
<i>Pipe Relaid.</i>			
Ridge avenue, southwest side, from 25 feet northwest of southeast house line of Midvale avenue to 234 feet northwest of northwest house line of Rodman street. (Gas main).....		8	1,969
Fire hydrant connections relaid.....		6	25
Repairs, general.....		6	98
“ “ .....		10	4
“ “ .....		12	13
“ “ .....		20	58
“ “ .....		30	82
“ “ .....		36	96
Total .....			351

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up.</i>			
Ridge avenue, southwest side, from 25 feet northwest of southeast house line of Midvale avenue to 234 feet northwest of northwest house line of Rodman street (Gas Main).....		8	1,969
Fire hydrant connections taken up.....		4	23
Fire hydrant connections taken up.....		6	22
Total.....			45
<i>Pipe Lowered.</i>			
Magnet street, from southeast house line of Flint street, northwest.....		6	112
Ridge avenue, from northwest house line of Adams street, northwest.....		6	326
Total.....			438
<i>Pipe cut off and Abandoned.</i>			
Rodman street, southwest side, intersection of Ridge avenue.....		{ 4 6	15 6
Total.....			21

Recapitulation Fifth District, 1894.

Purposes for which used.	SIZE IN INCHES.									Totals feet and pounds.	
	4	6	8	10	12	20	30	36	48		
New pipe or feet added	Service mains.....	30	7,510		1,887					10,242	9,427
	Pumping mains.....									7,270	10,242
	Supply mains.....										7,270
	Supply main connections.....						36	564	231		831
	Pumping main connections.....							392			392
	By-pass connections.....		23								23
	Service supply connections.....	131									131
	Firehydrant connections.....		210								210
	Fire connections, (private).....	12									12
	Supply connections, (private).....		241								241
Drains.....		574			809						1,383
Total..... { Feet.....	173	8,558		1,887	809	36	956	231	17,512	30,162	
{ Pounds.....	3,287	282,414		103,785	58,248	5,724	317,392	97,482	10,244,520	11,112,852	
Pipe used but adding nothing to feet in the ground.	Pipe relaid.....		25	1,969		13	58	82	96		1,994
	Repairs general.....		98		4						351
	Pipe taken up.....	23	22	1,969							2,014
	Pipe lowered.....		438								438
	Total..... { Feet.....	23	583	3,938	4	13	58	82	96		4,797
{ Pounds.....	437	19,239	165,396	220	936	9,222	27,224	40,512		263,186	
Total handled..... { Feet.....	196	9,141	3,988	1,891	822	94	1,038	327	17,512	34,959	
{ Pounds.....	3,724	301,653	165,396	104,005	59,184	14,946	344,616	137,994	10,244,520	11,376,088	
Pipe cut off and abandoned.....	15	6									21



## SIXTH DISTRICT.

Comprising the Twenty-second and part of the Twenty-ninth and Thirty-third Wards.

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains.</i>			
Abington street, from 3 feet southwest of southwest house line of Germantown avenue, northeast.....		6	41
Anderson street, from southeast house line of Mount Airy avenue, northwest.....		6	54
Belview street, from Twentieth to Twenty-first streets.....		6	531
Berkley street, from dead end northeast house line of Wayne to Green street.....		6	593
Bockius street, from southeast house line of Locust avenue to dead end southeast house line of Woodbine avenue		6	377
Broad street, east side, from north house line of Franklin street to Cayuga street.....		6	2,084
Broad street, west side, from 143 feet south of south house line of Roxborough street to south house line of Juniata street.....		12	722
Broad street, west side, from Cayuga street, north.....		6	43
Butler street, from southwest house line of Germantown avenue to dead end east house line of Fifteenth street		6	257
Butler street, from dead end west house line of Fifteenth street to west house line of Sixteenth street.....		6	448
Butler street, from northeast house line of Pulaski avenue, west.....		6	63
Carlisle street, from 516 feet south of south house line of Westmoreland street, north.....		6	541
Cayuga street, from 4 feet west of east house line of Broad street, west.....		6	26
Chelton avenue, from Pulaski avenue to dead end 5 feet 6 inches southwest of southwest house line of Green street.....		10	1,692
Chelton avenue, from dead end 3 feet 6 inches northeast of northeast house line of Green street to southwest house line of Germantown avenue.....		10	756
Chew street, from Washington to Northwest Upsal street..		12	1,739
Clara street, from southeast house line of Wingohocking street, northwest.....		6	50
Clarissa street, from Hunting Park avenue, northwest.....		6	16
Clivedon street, from southwest house line of Chew street, northeast.....		6	40
Creshheim road (southeast), from 8 feet northeast of southwest house line of Germantown avenue, northeast....		6	25
Creshheim road (northwest) from 26 feet southwest of northeast house line of Germantown avenue, northeast.....		6	26
Crittenden street, from southeast house line of Mount Airy avenue, northwest.....		6	54

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Devon street, from Locust avenue, northwest.....		6	25
Donat street, from Lehman to Rittenhouse street.....		6	318
Duval street, from southwest house line of Chew street, northeast.....		6	60
Earlham street, from 18 feet southwest of centre of Morris street, northeast.....		6	43
Eberle street, from 112 feet southeast of southeast house line of Godfrey street, northwest.....		6	192
Eighteenth street, from southwest house line of Pulaski avenue, north.....		12	17
Eighteenth street, from 17 feet north of southwest house line of Pulaski avenue, north.....		6	51
Eighteenth street, from 14 feet south of southeast curb line of Hunting Park avenue, north.....		6	35
Eighteenth street, from south house line of Wingohocking street, north.....		6	50
Germantown avenue, southwest side, from dead end 78 feet southeast of southeast house line of Allen's lane, northwest.....		10	85
Germantown avenue, southwest side, from 45 feet southeast of northwest house line of Allen's lane, northwest.....		12	55
Germantown avenue, northeast side, from 5 feet southeast of southeast house line of Allen's lane, northwest.....		12	53
Godfrey street, from southwest house line of Otto street to northeast house line of Eberle street.....		6	480
Gowen avenue, from 2 feet northeast of southwest house line of Germantown avenue, northeast.....		6	31
Green street, from southeast house line of Berkley street, northwest.....		6	29
Hansberry street, from 39 feet southwest of northeast house line of Wayne, northeast.....		6	31
Horter street, from 16 feet southwest of northeast house line of Germantown avenue, northeast.....		6	6
Hunting Park avenue, from Pulaski to southwest house line of Germantown avenue.....		12	1,312
Jefferson street, from northwest house line of Duval to Johnson.....		6	339
Johnson street, from 2 feet northeast of southwest house line of Chew street, northeast.....		12	76
Juniata street, from 135 feet southwest of southwest house line of Wayne, northeast.....		6	135
Kinnear street, from Chelton avenue, northwest.....		6	42
Lehman street, from 3 feet southwest of southwest house line of Donat street, northeast.....		6	50
Lenox avenue, from Broad street to Fifteenth street.....		6	469
Locust street, from Bockius, northeast.....		6	25
Louden street, from southwest house line of Stenton avenue, northeast.....		6	50
Luzerne street, from 14 feet southeast of southeast curb line of Hunting Park avenue, northwest.....		6	35

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Lydia street, from southwest house line of Twenty-fifth st., northeast .....		6	50
McPherson street, from 26 feet southwest of northeast house line of Germantown avenue, northeast.....		6	26
Mount Airy avenue, from 9 feet northeast of southwest house line of Germantown avenue, northeast .....		6	13
Mount Airy avenue, from Anderson to northeast house line of Stenton avenue.....		6	1,195
Mather street, from southeast house line of Butler street, northwest.....		6	50
Mermaid avenue, from southwest house line of Germantown avenue, northeast.....		6	45
Moreland street (southwest), from southwest house line of Germantown avenue, northeast.....		6	37
Moreland street, (northeast) from 20 feet southwest of northeast house line of Germantown avenue, northeast.....		6	14
Moreland street, from southwest house line of Twenty-fifth street, northeast.....		6	50
Morris street, from southeast house line of Earlham street, northwest.....		6	50
Nineteenth street, from southeast house line of Cayuga street, northwest.....		6	50
Otto street, from dead end 100 feet southeast of southeast house line of Godfrey street, northwest.....		6	140
Park avenue, from 12 feet south of north house line of Allegheny avenue to Rising Sun lane.....		6	692
Pelham road, from 10 feet northeast of southwest house line of Germantown avenue, northeast (since abandoned .....		6	7
Pelham road, from northeast house line of Cresheim road to Germantown avenue.....		6	516
Phil-Ellena street, from Pelham road to Germantown avenue.....		6	1,215
Pike street, from southwest house line of Pulaski avenue, northeast .....		6	71
Pleasant street, from 18 feet southwest of northeast house line of Germantown avenue, northeast.....		6	18
Pulaski avenue, from Seventeenth street, northwest.....		6	28
Pulaski avenue, from Seventeenth street to Hunting Park avenue .....	12		1,211
Quincy street, from southeast house line of Phil-Ellena street to Westview street.....		6	352
Rising Sun lane, from east house line of Thirteenth street west .....		6	54
Rockland street, from southwest house line of Stenton avenue, northeast.....		6	50
Roumford street, from 26 feet southwest of northeast house line of Germantown avenue, northeast.....		6	26
Roxborough street from 8 feet east of east house line of Broad street, west. ....		6	124

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Sedgewick street, from 9 feet northeast of southwest house line of Germantown avenue, northeast.....		6	8
Sixteenth street, from southeast house line of Butler street, northwest.....		6	50
Sixteenth street, from southeast house line of Straub street, northwest.....		6	40
Sprague street, from 18 feet southeast of northwest house line of Mount Airy avenue, northwest.....		6	18
Springfield avenue, from 21 feet southwest of northeast house line of Germantown avenue, northeast.....		6	21
Springfield avenue, from 2 feet northeast of southwest house line of Twenty-fifth street, northeast.....		6	36
Springer street, from 16 feet southwest of northeast house line of Germantown avenue, northeast.....		6	16
Stafford street, from Wissahickon avenue, northeast to connect.....		6	335
Stenton avenue, from southeast house line of Mount Airy avenue, northwest.....		6	54
Straub street, from dead end northeast house line of Germantown avenue to Sixteenth street.....		6	658
Sullivan street, from southeast house line of Mount Airy avenue, northwest.....		6	54
Thirteenth street, dead end north house line of Allegheny avenue to north house line of Rising Sun lane.....		6	339
Tulpehocken street, northwest side, from Germantown avenue, northeast.....		10	35
Twentieth street, from southeast house line of Wingo-hocking street, northwest.....		6	50
Twenty-first street, from northwest house line of Spencer street to Godfrey street.....		6	580
Twenty-fifth street, from Mermaid avenue to dead end southeast house line of Willow Grove.....		8	1,715
Upsal street, from 40 feet southwest of northeast house line of Chew street, northeast.....		6	40
Wayne street, from 3 feet northwest of southeast house line of Hunting Park avenue, northwest.....		6	44
Westmoreland street, from east house line of Thirteenth street, west.....		6	50
Westmoreland street, from east house line of Park avenue, west.....		6	60
Wingohocking street, from 50 feet northeast of northeast house line of Twentieth street to dead end northeast house line of Germantown avenue.....		6	314
Wingohocking street, from northeast house line of Clara street to southwest house line of Eighteenth street.....		6	346
Wyalusing avenue, from southwest house line of Stenton avenue, northeast.....		6	14
Wyoming street, from 35 feet southwest of northeast house line of Stenton avenue, northeast.....		6	35
Total.....			25,768

Street.	Location.	Size in inches.	Distance in feet.
<i>Supply Mains.</i>			
Germantown avenue, from 8 feet southeast of southeast house line of Abington street to dead end southeast house line of Hartwell avenue.....		20	535
Germantown avenue, from northeast of Mount Airy avenue to 324 feet northwest of northwest house line of Allen's lane.....		20	798
Germantown avenue, from Mount Airy avenue southwest to dead end 39 feet northwest of southeast house line of Mount Airy avenue, northeast.....		12	26
Mount Airy avenue (northeast) from Germantown avenue, northeast.....		20	38
Mount Airy avenue (southwest) from 4 feet southwest of southwest house line of Germantown avenue northeast.....		12	26
Twenty-fifth street, from 182 feet southeast of southeast house line of Union avenue, northwest.....		12	207
Total.....			1,712
<i>Service Main Connections.</i>			
Coulter and Wayne streets, between 6-inch main on Coulter street and 8-inch main on Wayne street.....		6	15
Germantown avenue, from 5 feet southeast of northwest house line of Allen's lane, between 12-inch main on northeast side and 12-inch main on southwest side of Germantown avenue.....		12	28
Germantown avenue, 14 feet northwest of southeast house line of Allen's lane, between 12-inch main on northeast side and 12-inch main on southwest side of Germantown avenue.....		10	28
Penn and Wayne streets, between 6-inch main on Penn street and 8-inch main on Wayne street.....		6	15
Queen and Wayne streets, between 6-inch main on Queen street and 8-inch main on Wayne street.....		6	9
School and Wayne streets, between 6-inch main on School street and 8-inch main on Wayne street.....		6	14
Wayne street, 2 feet southeast of southeast house line of School street, southwest 9 feet; thence northwest 9 feet between 6-inch and 8-inch mains on Wayne st..		6	16
Total.....			125
<i>Supply Main Connections.</i>			
Abington avenue and Germantown avenue, northeast side, between 10-inch main on Abington avenue and 20-inch main on Germantown avenue.....		10	66

Street.	Location.	Size in inches.	Distance in feet.
<i>Supply Main Connections—Continued.</i>			
Germantown avenue, from 5 feet southeast of northwest house line of Allen's lane, between 16-inch supply main connections and 12-inch service main connections .....		16	26
Germantown avenue, intersection of Allen's lane, between 20-inch main on Germantown avenue and 16-inch main on Allen's lane.....		16	27
Germantown avenue, 21 feet northwest of northwest house line of Allen's lane, between 20-inch main on southwest side and 16-inch main on northeast side of Germantown avenue.....		16	19
Total.....			138
<i>Bye-Pass Connections.</i>			
Carpenter street and Germantown avenue, between 6-inch main on Carpenter street and 10-inch main on southwest side of Germantown avenue.....		6	27
Miller street and Germantown avenue, between 6-inch main on Miller street and 10-inch main on southwest side of Germantown avenue.....		6	28
Mount Pleasant avenue and Germantown avenue, between 6-inch main on Mount Pleasant avenue and 10-inch main on southwest side of Germantown avenue.....		6	30
Total.....			85
<i>Service Supply Connections.</i>			
Bellefield avenue, southwest side, 13 feet northwest of northwest house line of Penn street.....		4	26
Bellefield street, southwest side, 485 feet northwest of northwest house line of Penn street.....		4	22
Bellefield street, southwest side, 11 feet southeast of southeast house line of Mill street.....		4	56
Berkley street, northwest side, 15 feet northeast of northeast house line of Wayne street.....		4	16
Berkley street, southeast side, 12 feet northeast of northeast house line of Green street. ....		4	19
Berkley street, southeast side, 12 feet southwest of southwest house line of Green street.....		4	16
Berkley street, southeast side, 139 feet southwest of southwest line of Green street.....		4	16
Berkley street, northwest side, 253 feet southwest of southwest house line of Green street.....		4	16
Berkley street, southeast side, 85 feet southwest of southwest house line of Germantown avenue.....		4	19

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Butler street, northwest side, 12 feet southwest of southwest house line of Fifteenth street.....		4	14
Butler street, southeast side, 12 feet southwest of southwest house line of Fifteenth street.....		4	14
Butler street, northwest side, 12 feet northeast of northeast house line of Mather street.....		4	14
Butler street, southeast side, 12 feet northeast of northeast house line of Mather street.....		4	14
Butler street, northwest side, 12 feet southwest of southwest house line of Mather street.....		4	14
Butler street, southeast side, 12 feet southwest of southwest house line of Mather street.....		4	14
Butler street, northwest side, 12 feet northeast of northeast house line of Sixteenth street.....		4	14
Butler street, southeast side, 12 feet northeast of northeast house line of Sixteenth street.....		4	14
Cayuga street, northwest side, 12 feet southwest of southwest house line of Eighteenth street.....		4	13
Cayuga street, northwest side, 12 feet northeast of northeast house line of Nineteenth street.....		4	13
Cayuga street, northwest side, 12 feet southwest of southwest house line of Nineteenth street.....		4	13
Cayuga street, northwest side, 28 feet northeast of northeast house line of Germantown avenue.....		4	17
Chelton avenue, northwest side, 327 feet northeast of northeast house line of Germantown avenue.....		4	21
Chelton avenue, southeast side, 327 feet northeast of northeast house line of Germantown avenue.....		4	30
Chelton avenue, northwest side, 488 feet northeast of northeast house line of Germantown avenue.....		4	21
Chelton avenue, southeast side, 534 feet northeast of northeast house line of Germantown avenue.....		4	30
Donat street, southwest side, 11 feet northwest of northwest house line of Lehman street.....		4	13
Donat street, northeast side, 11 feet northwest of northwest house line of Lehman street.....		4	13
Donat street, northeast side, 55 feet southeast of southeast house line of Rittenhouse street.....		4	13
Donat street, southwest side, 14 feet southeast of southeast house line of Rittenhouse street.....		4	13
Germantown avenue, southwest side, 12 feet northwest of northwest house line of Pike street.....		4	13
Germantown avenue, southwest side, 42 feet 6 inches southeast of southeast house line of Barr street.....		4	13
Germantown avenue, southwest side, 15 feet northwest of northwest house line of Apsley street.....		4	13
Germantown avenue, southwest side, 15 feet southeast of southeast house line of Wyoming street.....		4	13
Germantown avenue, southwest side, 12 feet northwest of northwest house of Westview avenue.....		4	8

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Germantown avenue, southwest side, 12 feet southeast of southeast house line of Carpenter.....		4	6
Hunting Park avenue, southeast side, 55 feet southwest of southwest house line of Germantown avenue.....		4	24
Hunting Park avenue, southeast side, 14 feet northeast of northeast house line of Wayne street.....		4	24
Hunting Park avenue, southeast side, 15 feet southwest of southwest house line of Wayne street.....		4	24
Hunting Park avenue, southeast side, 12 feet northeast of northeast house line of Luzerne street.....		4	24
Hunting Park avenue, southeast side, 16 feet southwest of southwest house line of Clarissa street.....		4	24
Hunting Park avenue, southeast side, 10 feet northeast of northeast house line of Pulaski avenue .....		4	24
Locust avenue, northwest side, 8 feet northeast of northeast house line of Chew street.....		4	17
Locust avenue, northwest side, 96 feet southwest of southwest house line of Boyd street .....		4	17
Locust avenue, northwest side, 12 feet northeast of northeast house line of Boyd street.....		4	17
Locust avenue, southeast side, 12 feet northeast of northeast house line of Boyd street.....		4	17
Locust avenue, southeast side, 97 feet southwest of southwest house line of Boyer street .....		4	17
Locust avenue, northwest side, 13 feet southwest of southwest house line of Boyer street.....		4	17
Locust avenue, northwest side, 12 feet northeast of northeast house line of Boyer street.....		4	34
Locust avenue, northwest side, 12 feet southwest of southwest house line of Devon street.....		4	17
Locust avenue, southeast side, 92 feet southwest of southwest house line of Bockius street.....		4	17
Mount Pleasant avenue, southeast side, 107 feet northeast of northeast house line of Germantown avenue.....		4	15
Mount Pleasant avenue, southeast side, 12 feet southwest of southwest house line of Chew street.....		4	15
Mount Pleasant avenue, southeast side, 12 feet northeast of northeast house line of Chew street.....		4	15
Mount Pleasant avenue, southeast side, 12 feet southwest of southwest house line of Boyer street.....		4	15
Mount Pleasant avenue, southeast side, 12 feet northeast of northeast house line of Boyer street.....		4	15
Mount Pleasant avenue, southeast side, 112 feet southwest of southwest house line of Sprague street.....		4	15
Mount Pleasant avenue, northwest side, 200 feet northeast of northeast house line of Boyer street.....		4	15
Mount Pleasant avenue, northwest side, 12 feet southwest of southwest house line of Devon street.....		4	15
Mount Airy avenue, southeast side, 126 feet northeast of northeast house line of Sullivan street.....		4	26



Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Mount Airy avenue, southeast side, 12 feet northeast of northeast house line of Anderson street.....		4	17
Mount Airy avenue, northwest side, 12 feet northeast of northeast house line of Anderson street.....		4	17
Mount Airy avenue, northwest side, 12 feet southwest of southwest house line of Anderson street.....		4	26
Mount Airy avenue, southeast side, 16 feet southwest of southwest house line of Crittenden street.....		4	17
Mount Airy avenue, northwest side, 16 feet southwest of southwest house line of Crittenden street.....		4	17
Mount Airy avenue, southeast side, 12 feet northeast of northeast house line of Crittenden street.....		4	17
Mount Airy avenue, northwest side, 12 feet northeast of northeast house line of Crittenden street.....		4	17
Mount Airy avenue, southeast side, 17 feet southwest of southwest house line of Stenton avenue.....		4	17
Mount Airy avenue, northwest side, 17 feet southwest of southwest house line of Stenton avenue.....		4	17
Park avenue, west side, 12 feet north of north house line of Allegheny avenue.....		4	18
Park avenue, east side, 12 feet north of north house line of Allegheny avenue.....		4	18
Park avenue, west side, 12 feet south of south house line of Westmoreland street.....		4	18
Park avenue, east side, 12 feet south of south house line of Westmoreland street.....		4	18
Park avenue, east side, 12 feet north of north house line of Westmoreland street.....		4	18
Park avenue, west side, 12 feet north of north house line of Westmoreland street.....		4	18
Park avenue, east side, 12 feet south of south house line of Rising Sun lane.....		4	18
Park avenue, west side, 12 feet south of south house line of Rising Sun lane.....		4	18
Pulaski avenue, southwest side, 28 feet southeast of southeast house line of Butler street.....		4	6
Pulaski avenue, northeast side, 12 feet northwest of northwest house line of Butler street.....		4	31
Pulaski avenue, southwest side, 15 feet northwest of northwest house line of Butler street.....		4	6
Pulaski avenue, southwest side, 11 feet northwest of northwest house line of Seventeenth street.....		4	6
Pulaski avenue, southwest side, 12 feet southeast of east house line of Eighteenth street.....		4	6
Pulaski avenue, northeast side, 39 feet northwest of east house line of Eighteenth street.....		4	31
Pulaski avenue, northeast side, 12 feet northwest of northwest house line of Pike street.....		4	31
Pulaski avenue, southwest side, 49 feet northwest of northwest house line of Pike street.....		4	31

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Pulaski avenue, northeast side, 40 feet southeast of southeast house line of Hunting Park avenue.....		4	31
Pulaski avenue, southwest side, 36 feet southeast of southeast house line of Hunting Park avenue.....		4	6
Stafford street, northwest side, 24 feet northeast of northeast house line of Wissahickon avenue.....		4	15
Stafford street, northwest side, 197 feet northeast of northeast house line of Wissahickon avenue.....		4	15
Stanton avenue, northeast side, 34 feet north of northeast house line of Germantown avenue.....		4	18
Stenton avenue, northeast side, 6 feet southeast of southeast house line of Courtland street.....		4	18
Stenton avenue, northeast side, 114 feet northwest of northwest house line of Courtland street.....		4	25
Stenton avenue, northeast side, 50 feet northwest of northwest house line of Wyalusing avenue.....		4	25
Stenton avenue, southwest side, 12 feet northwest of northwest house line of Wyoming street.....		4	7
Stenton avenue, northeast side, 12 feet northwest of northwest house line of Wyoming street.....		4	25
Stenton avenue, southwest side, 12 feet southeast of southeast house line of Loudon street.....		4	16
Stenton avenue, northeast side, 12 feet southeast of southeast house line of Loudon street.....		4	16
Stenton avenue, southwest side, 12 feet northwest of northwest house line of Loudon street.....		4	16
Stenton avenue, northeast side, 12 feet southeast of southeast house line of Rockland street.....		4	16
Stenton avenue, southwest side, 53 feet southeast of southeast house line of Rockland street.....		4	16
Thirteenth street, east side, 12 feet north of north house line of Allegheny avenue.....		4	15
Thirteenth street, west side, 12 feet north of north house line of Allegheny avenue.....		4	15
Thirteenth street, east side, 12 feet south of south house line of Westmoreland street.....		4	15
Thirteenth street, west side, 12 feet south of south house line of Westmoreland street.....		4	15
Thirteenth street, east side, 12 feet north of north house line of Westmoreland street.....		4	15
Thirteenth street, west side, 12 feet north of north house line of Westmoreland street.....		4	15
Thirteenth street, east side, 7 feet south of south house line of Rising Sun lane.....		4	15
Thirteenth street, west side, 19 feet south of south house line of Rising Sun lane.....		4	15
Wayne street, southwest side, 15 feet northwest of northwest house line of Queen lane.....		4	13

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Wayne street, northeast side, 15 feet northwest of north-west house line of Queen lane.....		4	31
Wayne street, northeast side, 91 feet northwest of north-west house line of Manheim street.....		4	31
Wayne street, northeast side, 362 feet northwest of north-west house line of Manheim street.....		4	31
Wayne street, northeast side, 113 feet southeast of south-east house line of Penn street.....		4	31
Wayne street, southwest side, 12 feet southeast of south-east house line of Penn street.....		4	13
Wayne street, northeast side, 13 feet northwest of north-west house line of Penn street.....		4	31
Wayne street, southwest side, 14 feet southeast of south-east house line of Coulter street.....		4	13
Wayne street, northeast side, 14 feet southeast of south-east house line of Coulter street.....		4	31
Washington lane, northwest side, 260 feet northeast of northeast house line of Green street.....		4	16
Washington lane, northwest side, 12 feet southwest of southwest house line of Adams street.....		4	16
Westmoreland street, south side, 104 feet west of west house line of Sixteenth street.....		4	15
<b>Total</b> .....			<b>2,169</b>
Fire hydrant connections.....		6	1,349
<i>Supply Connections (Private).</i>			
Heiskell street, southeast side, 30 feet 6 inches northwest of southeast house line of Walnut lane, for Germantown Ice Co.....		3	3
<i>Pipe Relaid.</i>			
Cheltenham avenue, from 21 feet northeast of southwest house line of Pulaski avenue, to Germantown avenue.....		6	2,485
Germantown avenue, from Westview to Levering.....		10	3,545
Thorp's lane, from 834 feet west of west house line of Old York road, west.....		6	2,245
Twenty-fifth street, from Southampton avenue, northwest.		12	216
Wayne street, from Manheim street to 57 feet northwest of southeast house line of Cheltenham avenue.....		8	3,385
<b>Total</b> .....			<b>11,876</b>

Street.	Location.	Size in Inches.	Distance in feet.
Fire hydrant connections relaid.....		6	95
Repairs, general.....		4	86
Repairs, general.....		6	519
Repairs, general.....		8	18
Repairs, general.....		10	65
Repairs, general.....		12	48
Repairs, general.....		16	37
Repairs, general.....		20	12
Repairs, general.....		30	20
Total.....			805
<i>Pipe Taken Up.</i>			
Cheltenham avenue, from 21 feet northeast of southwest house line of Pulaski avenue, northeast.....		4	7
Germantown avenue, from 20 feet southeast of northwest house of Allen's lane (southeast) supply connection be- tween 16-inch and 10-inch mains on Allen's lane.....		16	19
Twenty-fifth street, from Southampton avenue, northwest		6	216
Total.....			242
Fire hydrant connections taken up.....		4	92
<i>Pipe Lowered.</i>			
Southampton avenue, from southwest house line of Twenty- fifth street, northeast.....		12	50
Stenton avenue, from 270 feet southeast of southeast house line of Rockland street, to southeast house line of Logan street.....		6	720
Twenty-fifth street, from 28 feet southeast of southeast house line of Southampton avenue, northwest.....		12	103
Wayne street, 127 feet southeast of southeast house line of Berkley street (fire connection).....		4	75
Total.....			948

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Raised.</i>			
Green street, from 116 feet southeast of southeast house line of Lincoln drive, northwest.....		16	316
Lincoln drive, from 29 feet southwest of northeast house line of Green street.....		10	11
Total.....			327
<i>Pipe Cut off and Abandoned.</i>			
Cheltenham avenue, from Pulaski avenue to Green street.....		4	1,727
Cheltenham avenue, from 481 feet northeast of northeast house line of Green street to Germantown avenue.....		3	270
Cheltenham avenue, from northeast house line of Germantown avenue, northeast.....		4	481
Germantown avenue, from 47 feet northwest of northwest house line of Westview to 222 feet northwest of northwest house line of Levering street .....		4	3,545
Thorp's lane, from 384 feet west of west house line of York road, west.....		3	2,245
Wayne street, from northwest house line of Manheim street to northwest house line of School lane.....		4	2,616
Wayne street, from northwest house line of School lane to 57 feet northwest of southeast house line of Cheltenham avenue.....		3	769
Total.....			11,653
Fire hydrant connections cut off and abandoned.....		3	16
		4	324
		6	77

Recapitulation—Sixth District.

Purposes for which used.	SIZE IN INCHES.									Totals in feet and pounds.	
	3	4	6	8	10	12	16	20	30		
New pipe or feet added.	Service mains.....			16,300	1,715	2,568	5,185				25,768
	Supply mains.....						341		1,371		1,712
	Service main connections.....			69		28	28				125
	Supply main connections.....					66		72			138
	Bye-pass connections.....			85							85
	Service supply connections.....		2,169								2,169
	Fire hydrant connections (private).....			1,349							1,349
Supply connections (private)c.....	4									4	
Totals... { Feet .....	4	2,169	17,803	1,715	2,662	5,554	72	1,371		31,350	
{ Pounds.....	60	41,211	587,499	72,030	146,410	399,888	7,920	217,989		1,473,007	
Pipe used but adding nothing to feet in ground.	Pipe relaid.....			4,730	3,385	3,545	216				11,876
	Repairs general.....		86	519	18	65	48	37	12	20	805
	Pipe taken up.....		99	216				19			334
	Pipe lowered.....		75	720			153				948
	Pipe raised.....					11		316			327
	Totals... { Feet.....		260	6,185	3,403	3,621	417	372	12	20	14,290
	{ Pounds.....		4,940	204,105	142,926	199,155	30,024	40,920	1,908	6,640	630,618
Totals handled.. { Feet.....	4	2,429	23,988	5,118	6,283	5,971	444	1,383	20	45,640	
{ Pounds.....	60	46,151	791,604	214,956	345,565	429,912	48,810	219,897	6,640	2,103,625	
Pipe cut off and abandoned.....	3,300	8,693	77							12,070	

## Recapitulation of Work on the Water Pipes.

Purposes for which used.	SIZE IN INCHES.													Totals in feet and pounds.	
	2	3	4	6	8	10	12	16	18	20	30	36	48		
New pipe or feet added.	Service mains.....			3,978	146,088	17,125	9,740	21,232	5,014					203,127	
	Supply mains.....							3,160			2,258	252		28,882	
	Pumping mains.....										727			14,419	
	Service main connections.....				302	12	161	319						1,405	
	Supply main connections.....				17	21	87	111	72		36	634	231	1,209	
	Pumping main connections.....											794	24	1,209	
	Bye pass connections.....				156										156
	Meter inspection connections.....			12											12
	Service supply connections.....		27	9,208	26										9,261
	Fire hydrant connections.....				17,214										17,214
	Fire connections (private).....			20	4										24
	Supply connections (private).....		53	167	674										894
	New check valves.....													57	57
	Drains.....			58	1,218	132		827		180					2,415
Total...	{ Feet.....		80	13,443	165,649	17,290	9,988	25,679	5,086	180	3,021	1,680	255	41,218	283,569
	{ Pounds.....		1,200	255,417	5,466,417	726,180	543,340	1,848,888	559,460	25,200	480,309	557,760	107,610	24,112,530	34,690,341
Pipe used, but adding nothing to feet in the ground.	Pipe relaid.....			1,941	64,738	10,560	3,793	7,656	781				89	89,558	
	Repairs general.....		20	165	1,939	463	982	934	72			84	146	96	56
	Pipe taken up.....	30	9,752	47,493	2,819	2,056	70					30	121		62,371
	Pipe lowered.....			75	1,882			153				138			2,248
	Pipe raised.....				395		11		316						722
	Pipe shifted.....				396										520
											124				
Total...	{ Feet.....	30	9,772	49,674	81,169	13,079	4,786	8,743	1,239		208	314	306	56	173,376
	{ Pounds.....	300	146,580	943,806	2,810,577	549,318	263,230	629,496	136,290		33,072	104,248	129,132	32,760	5,778,809
Total handled...	{ Feet.....	30	9,852	63,117	250,818	30,369	14,774	34,422	6,325	180	3,229	1,994	561	41,274	456,945
	{ Pounds.....	300	147,780	1,199,223	8,276,994	1,275,498	812,570	2,478,381	695,750	25,200	513,411	662,908	236,742	24,145,200	40,469,150
Pipe cut off and abandoned.....		5,541	22,861	4,761				233	36					33,432	

### Recapitulation by Districts.

DISTRICTS.		Size in Inches.												Total.			
		2	3	4	6	8	10	12	16	18	20	30	36	48	Feet.	Pounds.	
New Pipe or Feet added.	First.....			1,653	37,061	3,932	66	500	3,125		887				47,224	1,943,977	
	Second.....		12	1,115	41,418	2,447	3,103	12,118	105		727	52			61,297	2,744,901	
	Third.....		19	4,944	33,999	4,843	187	5,259	1,784	180		472		5,854	57,541	5,611,261	
	Fourth.....		45	3,389	26,810	4,353	2,083	1,439					24	17,852	55,995	11,804,343	
	Fifth.....			173	8,558		1,887	809				36	956	231	17,512	30,162	11,112,852
	Sixth.....		4	2,169	17,803	1,715	2,662	5,554	72			1,371			31,350	1,473,007	
	Total.....	{ Feet ..... Pounds .....		80 1,200	13,443 255,417	165,649 5,466,417	17,290 726,180	9,988 549,340	25,679 1,848,888	5,086 559,460	180 25,200	3,021 480,339	1,680 557,760	255 107,610	41,218 24,112,530	283,569	34,690,341
Pipe used but adding nothing in ground.	First.....		447	10,549	14,997	17	37	57	15						26,119	710,540	
	Second.....		9,486	9,194	20,984	809	204	1,937	47		135	10			41,806	1,209,063	
	Third.....		581	22,404	27,335	3,999	298	6,203	728			172			61,720	2,104,594	
	Fourth.....	30	288	7,244	15,085	913	622	116	77			3	30	210	56	24,644	860,806
	Fifth.....			23	583	3,938	4	13				58	82	96		4,797	263,186
	Sixth.....			260	6,185	3,403	3,621	417	372			12	20			14,290	630,618
	Total.....	{ Feet ..... Pounds .....	30 300	9,772 146,580	49,674 943,806	85,169 2,810,577	13,079 549,318	4,786 263,230	8,743 629,496	1,239 136,290		208 3,307	314 104,248	306 129,132	56 32,760	173,376	5,778,809
Total Handled... { Feet ..... Pounds .....		30 300	9,852 147,780	63,117 1,199,223	250,818 8,276,994	30,369 1,275,498	14,774 812,570	34,422 2,478,384	6,325 695,750	180 25,200	3,229 513,411	1,994 662,008	561 236,742	41,274 24,145,290	456,945	40,469,150	
Pipe cut off and abandoned.....			5,541	22,861	4,761			233	36							33,432	



## NEW FIRE HYDRANTS. FIRST DISTRICT.

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Anthony street, southwest side, 117 feet north of north house line of Tasker.....		1	6	9	6	.....	1		
Birch street, west side, south house line of Fitzwater.....		30	6	7	.....	.....	1		
Carlisle street, east side, 93 feet north of north house line of Jackson.....		26	6	8	.....	.....	1		
Carpenter street, north side, 2 feet east of east house line of Fifth.....		2	6	14	.....	.....	1		
Carpenter street, north side, west house line of Tenth.....		2	6	15	.....	.....	1		
Christian street, south side, west house line of Fifth.....		2	6	16	.....	.....	1		
Christian street, north side, east house line of Seventh.....		3	6	7	6	.....	1		
Christian street, north side, 55 feet east of east house line of Eighth.....		3	6	11	6	.....	1		
Christian street, north side, west house line of Tenth .....		3	6	19	.....	.....	1		
Christian street, north side, 2 feet east of east house line of Tenth.....		3	10	19	.....	.....	1		
Christian street, north side, 2 feet east of east house line of Twelfth.....		3	6	9	6	.....	1		
Cross street, south side, 97 feet east of east house line of Seventh.....		1	6	6	6	.....	1		
Dean street, east side, 115 feet south of south house line of Snyder avenue.....		1	6	9	.....	.....	1		
Dickinson street, north side, west house line of Ninth.....		1	6	6	.....	.....	1		

*New Fire Hydrants—First District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Dickinson street, north side, 6 feet east of east house line of Juniper.....		26	6	14	6	.....	1		
Dickinson street, north side, east house line of Point Breeze avenue.....		36	6	18	6	.....	1		
Dudley street, north side, 50 feet east of east house line of Nineteenth.....		36	6	9		.....	1		
Dudley street, north side, 187 feet east of east house line of Twentieth.....		36	6	9		.....	1		
Eighth street, east side, north house line of Cantrell .....		1	6	15		.....	1		
Eighteenth street, east side, north house line of Wolf .....		36	6	14	6	.....	1		
Eighteenth street, east side, south house line of Dickinson.....		26	6	14	6	.....	1		
Eighteenth street, west side, 2 feet south of south house line of Reed.....		36	6	14	6	.....	1		
Eighteenth street, west side, south house line of Catharine.....		30	6	14	6	.....	1		
Eighteenth street, east side, north house line of Fitzwater.....		30	6	14	6	.....	1		
Eighteenth street, east side, south house line of Fitzwater.....		30	6	13		.....	1		
Eleventh street, east side, 4 feet south of south house line of Ritner.....		1	6	14	6	.....	1		
Eleventh street, east side, 2 feet south of south house line of Wolf.....		1	6	14	6	.....	1		
Ellsworth street, north side, east house line of Ninth.....		2	6	19		.....	1		
Ellsworth street, north side, 2 feet east of east house line of Tenth.....		2	6	15		.....	1		
Ellsworth street, north side, west house line of Peters.....		26	6	15		.....	1		

*New Fire Hydrants—First District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Ellsworth street, south side, 2 feet west of west house line of Seventeenth.....		26	6	15	.....		1		
Emily street, north side, 138 feet west of west house line of Fifteenth.....		26	6	8	.....		1		
Eneu street, north side, west house line of Eighth.....		2	6	8	.....		1		
Federal street, north side, 5 feet east of east house line of Moyamensing avenue.....		2	6	14	6	.....		1	
Fitzgerald street, north side, 116 feet east of east house line of Twelfth.....		1	6	10	.....		1		
Fitzwater street, south side, 2 feet east of east house line of Ninth.....		3	6	8	.....		1		
Fitzwater street, north side, east house line of Twentieth.....		30	6	13	.....		1		
Fifth street, west side, south house line of Emily.....		1	6	5	.....		1		
Fifth street, west side, 2 feet south of south house line of McKean.....		1	6	14	6	.....	1		
Fifth street, west side, 2 feet south of south house line of Watkins .....		1	6	15	.....		1		
Fifth street, east side, north house line of Dickinson.....		1	16	15	6	.....	1		
Fifth street, west side, 2 feet south of south house line of Wharton.....		1	6	15	.....		1		
Fifth street, west side, 2 feet south of south house line of Washington avenue.....		1	6	12	.....		1		
Fifth street, west side, 2 feet north of north house line of German.....		4	10	15	.....			1	
Fifth street, west side, 2 feet south of south house line of South.....		4	6	15	.....		1		
Fifteenth street, west side, 2 feet south of south house line of Ritner.....		26	6	14	6	.....			1

*New Fire Hydrants—First District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH. CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Fifteenth street, west side, 2 feet south of south house line of Wolf.....		26	6	14	6			1	
Fifteenth street, east side, 2 feet south of south house line of Jackson.....		26	6	14			1		
Fifteenth street, east side, 3 feet north of north house line of Jackson.....		26	6	8	6		1		
Garrett street, south side, 154 feet west of west house line of Twenty-third.....		36	6	6			1		
Hicks street, east side, 2 feet north of north house line of Jackson.....		26	6	11			1		
Hoffman street, north side, 200 feet west of west house line of Nineteenth.....		36	6	9	6		1		
Holly street, east side, 50 feet south of south house line of Fitzwater.....		30	6	8			1		
Jackson street, north side, west house line of Ninth.....		1	6	12	6				1
Latona street, north side, 206 feet east of east house line of Twenty-seventh.....		36	6	9			1		
Lawrence street, north side, east house line of Nineteenth.....		36	6	8			1		
Letitia street, west side, 160 feet south of south house line of Snyder avenue.....		1	6	8	6		1		
Lindsay street, west side, 42 feet south of south house line of Bainbridge.....		30	6	7			1		
McClellan street, south side, 56 feet east of east house line of Moyamensing avenue.....		1	6	9			1		
McClellan street, north side, 186 feet west of west house line of Eleventh.....		1	6	8	6		1		
McClellan street, north side, 198 feet west of west house line of Eleventh.....		1	6	8	6		1		
McIlwain street, north side, west house line of Fifth.....		2	6	8			1		

*New Fire Hydrants—First District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
McKean street, north side, west house line of Ninth.....		1	6	14	6	.....	1		
McKean street, north side, 176 feet east of east house line of Twentieth.....		36	6	14	6	.....	1		
Margaretta street, west side, south house line of Mary.....		2	6	3	6	.....	1		
Mifflin street, south side, west house line of Ninth.....		1	6	14	6	.....	1		
Morris street, south side, west house line of Twenty-second.....		36	6	8	6	.....	1		
Morris street, south side, 2 feet east of east house line of Twenty-second.....		36	6	8	6	.....	1		
Moore street, north side, 3 feet east of east house line of Ninth.....		1	6	9	.....	.....	1		
Moyamensing avenue, southeast side, 2 feet southwest of south house line of Watkins.....		1	6	6	.....	.....	1		
Moyamensing avenue, northwest side, 3 feet northeast of north house line of Tasker.....		1	6	3	.....	.....	1		
Ninth street, east side, north house line of Passyunk avenue.....		1	6	8	.....	.....	1		
Ninth street, east side, 6 feet south of south house line of Jackson.....		1	6	14	6	.....		1	
Ninth street, east side, 15 feet south of south house line of Snyder avenue.....		1	6	14	6	.....	1		
Ninth street, east side, south house line of McKean.....		1	6	14	6	.....	1		
Ninth street, east side, north house line of Mifflin.....		1	6	5	.....	.....		1	
Ninth street, west side, south house line of Morris.....		1	6	7	6	.....	1		
Ninth street, east side, 2 feet south of south house line of Dickinson.....		1	6	9	6	.....	1		

*New Fire Hydrants—First District—Continued.*

Street	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Nineteenth street, west side, 4 feet south of south house line of Morris.....		36	6	15			1		
Nineteenth street, west side, south house line of Wharton.....		36	12	14	6		1		
Nineteenth street, east side, north house line of Washington avenue.....		30	6	14	6			1	
Oakford street, north side, east house line of Twenty-first.....		36	6	14	6		1		
Oakford street, north side, 186 feet east of east house line of Twenty-seventh.....		36	6	15			1		
Otsego street, west side, 2 feet south of south house line of Morris.....		1	6	15			1		
Passyunk avenue, east side, 9 feet south of south house line of Moore.....		1	6	15			1		
Pemberton street, north side, 44 feet east of east house line of Nineteenth.....		30	6	8	6		1		
Pemberton street, north side, west house line of Twenty-second.....		30	6	5				1	
Pemberton street, north side, 2 feet east of east house line of Gray's Ferry road.....		30	6	15			1		
Porter street, north side, 54 feet east of east house line of Thirteenth.....		1	6	16			1		
Porter street, north side, east house line of Broad.....		1	6	15			1		
Porter street, north side, west house line of Fifteenth.....		26	6	18			1		
Porter street, north side, west house line of Sixteenth.....		26	6	18			1		
Queen street, north side, 5 feet east of east house line of Bard.....		3	6	14	6		1		
Queen street, north side, 1 foot east of east house line of Fifth.....		3	6	9	6		1		

*New Fire Hydrants—First District—Continued.*

Street.	Location	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Reed street, north side, 3 feet east of east house line of Second .....		1	6	5	6	.....	1		
Reed street, south side, 163 feet west of west house line of Third.....		1	6	19	.....	.....	1		
Reed street, north side, 17 feet east of east house line of Eighteenth.....		26	6	14	6	.....	1		
Reed street, north side, 4 feet east of east house line of Nineteenth.....		36	6	14	6	.....	1		
Reed street, north side, 2 feet east of east house line of Twentieth.....		36	6	14	6	.....	1		
Ritner street, north side, west house line of Twelfth.....		1	6	15	6	.....	1		
Ritner street, south side, 2 feet east of east house line of Twelfth.....		1	6	17	6	.....	1		
Ritner street, south side, 2 feet west of west house line of Twelfth.....		1	6	17	6	.....	1		
Ritner street, north side, 110 feet east of east house line of Thirteenth. ....		1	6	17	.....	.....	1		
Ritner street, north side, east house line of Fifteenth.....		26	6	14	6	.....			1
Ritner street, north side, west house line of Sixteenth.....		36	6	15	.....	.....			1
Ritner street, north side, west house line of Seventeenth.....		26	6	18	.....	.....	1		
Ritner street, north side, 2 feet east of east house line of Nineteenth.....		36	6	18	.....	.....	1		
Rosewood street, east side, 165 feet south of south house line of Jackson.....		26	6	8	.....	.....	1		
Rosewood street, east side, 145 feet north of north house line of Jackson.....		26	6	8	.....	.....	1		
Second street, east side, south house line of Jackson.....		1	6	14	6	.....	1		

*New Fire Hydrants—First District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.				
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.	
Second street, east side, 2 feet south of south house line of Morris.....		1	6	13				1		
Second street, east side, 5 feet north of north house line of Mead.....		3	6	14	6			1		
Second street, west side, 2 feet south of south house line of Federal.....		2	6	15				1		
Second street, west side, 2 feet south of south house line of Washington avenue.....		2	6	15				1		
Second street, west side, south house line of Carpenter.....		2	6	15				1		
Seventh street, east side, north house line of Cantrell.....		1	6	14	6			1		
Seventh street, east side, south house line of McKean.....		1	6	14	6			1		
Seventeenth street, west side, 9 feet north of north house line of Tasker.....		26	6	13				1		
Seventeenth street, west side, south house line of Wharton.....		26	6	14	6			1		
Seventeenth street, east side, south house line of Washington avenue.....		26	6	13	6			1		
Seventeenth street, east side, south house line of Bainbridge.....		30	6	14	6			1		
Shunk street, north side, west house line of Watts.....		1	6	16				1		
Sixth street, west side, 3 feet south of south house line of Cantrell.....		1	6	12				1		
Sixth street, west side, 2 feet south of south house line of Dudley.....		1	6	15				1		
Sixth street, west side, 2 feet south of south house line of Mfillin.....		1	6	15				1		
Sixth street, east side, 2 feet south of south house line of Moore.....		1	6	15				1		



*New Fire Hydrants—First District—Continued.*

18

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Sixth street, east side, south house line of Morris.....		1	6	15	.....	.....	1		
Sixth street, east side, 2 feet north of north house line of Tasker.....		1	6	14	6	.....	1		
Sixth street, west side, north house line of Dickinson.....		1	16	15	.....	.....	1		
Sixth street, west side, north house line of Reed.....		1	6	14	6	.....	1		
Sixth street, east side, 2 feet south of south house line of Wharton.....		1	6	15	.....	.....	1		
Sixth street, east side, 2 feet south of south house line of Washington avenue.....		2	6	9	6	.....	1		
Sixth street, east side, 2 feet south of south house line of Bainbridge.....		4	6	15	.....	.....	1		
Sixteenth street, east side, south house line of Ritner.....		26	6	14	6	.....	1		
Sixteenth street, west side, 5 feet south of south house line of Wolf.....		26	6	14	6	.....	1		
Sixteenth street, east side, 5 feet south of south house line of Jackson.....		26	6	14	6	.....	1		
Sixteenth street, east side, 5 feet north of house line of Jackson.....		26	6	8	6	.....	1		
Siegel street, south side, 3 feet east of east house line of Moyamensing avenue.....		1	6	9	.....	.....	1		
Snyder avenue, south side, 2 feet west of west house line of Broad.....		26	6	10	6	.....	1		
Snyder avenue, south side, 2 feet west of west house line of Fifteenth.....		26	6	7	6	.....	1		
Snyder avenue, north side, west house line of Fifteenth.....		26	6	9	.....	.....	1		
South street, north side, 144 feet east of east house line of Second.....		5	8	7	6	.....	1		

*New Fire Hydrants—First District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
South street, north side, east house line of Seventh .....		7	12	16			1		
South street, north side, 2 feet east of east house line of Eighth.....		7	12	15			1		
South street, north side, 2 feet east of east house line of Ninth.....		7	16	15			1		
South street, north side, 3 feet west of west house line of Eleventh.....		7	16	16			1		
South street, north side, 2 feet west of west house line of Twelfth.....		7	16	15			1		
South street, south side, west house line of Seventeenth .....		30	6	5					1
South street, south side, 4 feet east of east house line of Eighteenth.....		30	12	15			1		
South street, north side, 3 feet west of west house line of Nineteenth.....		30	12	15	6		1		
South street, south side, 3 feet west of west house line of Twentieth .....		30	12	15			1		
South street, north side, 2 feet west of west house line of Twenty-first .....		30	12	15			1		
Tasker street, north side, west house line of Thirty-third.....		36	8	14			1		
Tasker street, north side, 2 feet west of west house line of Thirty-fourth .....		36	6	13					
Tenth street, west side, 3 feet south of south house line of Wolf.....		1	6	14	6		1		
Third street, west side, south house line of Redwood.....		2	6	15			1		
Third street, west side, 5 feet south of south house line of Carpenter.....		2	6	15			1		
Third street, east side, south house line of German.....		3	6	14	6				1

*New Fire Hydrants—First District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Third street, east side, north house line of Bainbridge.....		4	6	14	6	.....	1		
Twelfth street, west side, 315 feet south of south curb line of Ritner.....		1	6	15		.....	1		
Thirteenth street, west side, south house line of Porter.....		1	6	14	6	.....	1		
Thirteenth street, east side, south house line of Ritner.....		1	6	14	6	.....	1		
Thirteenth street, west side, 2 feet south of south house line of Wolf.....		1	6	14	6	.....	1		
Thirty-first street, east side, 2 feet north of north house line of Reed.....		36	6	15		.....	1		
Thirty-fifth street, west side, 2 feet south of south house line of Morris.....		36	8	13					
Thirty-fifth street, west side, 2 feet south of south house line of Tasker.....		36	8	13					
Twentieth street, east side, south house line of Reed.....		1	6	14	6	.....			1
Twentieth street, east side, 6 feet south of south house line of Ellsworth.....		36	6	14	6	.....			1
Twentieth street, west side, south house line of Washington avenue.....		36	6	14	6	.....			1
Twenty-first street, east side, 2 feet south of south house line of Dickinson.....		36	6	14	6	.....	1		
Twenty-first street, east side, south house line of Washington avenue.....		36	6	14	6	.....	1		
Twenty-first street, west side, south house line of Fitzwater.....		30	6	6		.....			1
Twenty-second street, east side, south house line of Tasker.....		36	12	15	6	.....	1		
Twenty-second street, east side, 5 feet south of south house line of Ellsworth.....		36	6	16	6	.....	1		

*New Fire Hydrants—First District—Continued.*

Street,	Location.	Ward.	Size of Main.	6-INCH CONNECTION.			STYLE.		
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Twenty-second street, west side, 2 feet north of north house line of Washington avenue.....		30	6	16			1		
Twenty-second street, west side, 3 feet south of south house line of Washington avenue.....		36	6	13	6		1		
Twenty-second street, west side, 4 feet south of south house line of Carpenter.....		30	6	16			1		
Twenty-second street, west side, 2 feet south of south house line of Christian.....		30	6	16			1		
Twenty-second street, west side, south house line of Fitzwater.....		30	6	13			1		
Twenty-second street, east side, south house line of South.....		30	6	16			1		
Twenty-third street, east side, 3 feet south of south house line of Ellsworth.....		36	6	15			1		
Twenty-third street, east side, 2 feet north of north house line of Washington avenue.....		30	6	15			1		
Twenty-third street, west side, 5 feet north of north house line of Carpenter.....		30	6	15			1		
Twenty-third street, east side, north house line of Pemberton.....		30	6	3				1	
Twenty-fourth street, east side, south house line of Federal.....		36	6	10	6		1		
Twenty-fourth street, west side, south house line of South.....		30	6	7			1		
Twenty-sixth street, east side, south house line of Wharton.....		36	6	15			1		
Twenty-eighth street, west side, north house line of Jackson.....		36	6	15					
Twenty-eighth street, east side, 9 feet north of north house line of Snyder avenue.....		36	6	14	6				
Twenty-eighth street, east side, 10 feet north of north house line of McKean.....		36	6	14	6				

*New Fire Hydrants—First District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Twenty-eighth street, east side, 4 feet north of north house line of Mifflin.....		36	6	14	6				
Twenty-eighth street, east side, 2 feet north of north house line of Moore.....		36	6	14	6				
Twenty-eighth street, east side, 2 feet north of north house line of Morris.....		35	6	14	6				
Twenty-eighth street, east side, 2 feet north of north house line of Tasker.....		36	6	14	6				
Twenty-eighth street, east side, 2 feet north of north house line of Dickin on.....		36	6	14	6				
Washington avenue, north side, 2 feet east of east house line of Fifth.....		2	6	14				1	
Webster street, north side, 3 feet west of west house line of Twentieth.....		30	6	10				1	
Wharton street, north side, east house line of Second.....		1	6	20				1	
Wharton street, north side, northwest house line of Moyamensing avenue.....		2	6	15				1	
Wharton street, north side, southeast house line of Passyunk avenue.....		2	6	14	6			1	
Wharton street, north side, east house line of Broad.....		26	6	14	6			1	
Wharton street, south side, 14 feet west of west house line of Twentieth.....		36	6	14	6			1	
Wharton street, south side, west house line of Thirty-first.....		36	6	15				1	
Wharton street, south side, 2 feet east of east house line of Thirty-third.....		36	6	15				1	
Wharton street, north side, 4 feet west of west house line of Thirty-third.....		33	6	15				1	
Wilder street, south side, 59 feet west of west house line of Twenty-third.....		36	6	8	6			1	

*New Fire Hydrants—First District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Wolf street, north side, west house line of Ninth.....		1	6	13	6	.....	1		
Wolf street, north side, 71 feet east of east house line of Twelfth.....		1	6	16	.....	.....	1		
Wolf street, south side, 245 feet west of west house line of Twelfth.....		1	16	9	6	.....	1		
Wolf street, south side, 6 feet east of east house line of Broad.....		1	6	9	6	.....	.....	1	
Wolf street, south side, 2 feet west of west house line of Rosewood.....		26	6	18	.....	.....	1		
Wolf street, north side, west house line of Sixteenth.....		26	6	18	.....	.....	1		
Wolf street, north side, west house line of Seventeenth.....		26	6	18	.....	.....	1		
Totals.....				2,786	6	.....	154	13	6

# NEW FIRE HYDRANTS.

## SECOND DISTRICT.

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STBLE.				
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.	
Ann street, north side, 74 feet 4 inches east of east house line of Eighteenth.....		8	6	5			1			
Arch street, north side, west house line of Twenty-second.....		10	12	14				1		
Aspen street, south side, 3 feet east of east house line of Forty-eighth.....		24	8	18			1			
Baltimore avenue, north side, 1 foot west of west house line of Forty-first.....		27	8	23						1
Baltimore avenue, north side, west house line of Forty-second.....		27	6	23			1			
Baltimore avenue, south side, 1 foot east of east house line of Forty-fourth.....		27	6	23						1
Baltimore avenue, north side, 2 feet east of east house line of Forty-fifth.....		27	6	23						1
Baltimore avenue, south side, 12 feet east of east house line of Forty-sixth.....		27	6	23						1
Baltimore avenue, north side, 16 feet east of east house line of Forty-seventh.....		27	6	23						1
Baltimore avenue, north side, 2 feet west of west house line of Forty-eighth.....		27	6	23						1
Baltimore avenue, north side, 46 feet east of east house line of Forty-ninth.....		27	6	23						1
Baltimore avenue, north side, 1 foot west of west house line of Fifty-first.....		27	6	23						1
Baltimore avenue, south side, 2 feet west of west house line of Fifty-ninth.....		27	12	13				1		
Baltimore avenue, south side, 2 feet west of west house line of Sixtieth.....		27	12	13						1

*New Fire Hydrants—Second District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Baltimore avenue, south side, 119 feet west of west house line of Sixtieth.....		27	12	13	.....	.....	.....	.....	1
Baltimore avenue, south side, 74 feet west of west house line of Sixty-first.....		27	12	13	.....	.....	.....	.....	1
Baring street, north side, west house line of Thirty-third.....		24	6	19	.....	.....	1	.....	.....
Baring street, north side, west house line of Fortieth.....		24	12	.....	.....	.....	.....	.....	1
Barker street, south side, 118 feet west of west house line of Twenty-first.....		9	6	7	.....	.....	1	.....	.....
Barker street, south side, 2 feet east of east house line of Twenty-third.....		9	6	7	.....	.....	1	.....	.....
Barnwell street, east side, north house line of Lombard.....		7	6	14	5	.....	.....	.....	1
Belmont avenue, east side, 64 feet north of north house line of Wyalusing avenue.....		24	20	12	.....	.....	1	.....	.....
Belmont avenue, east side, 10 feet south of south house line of Columbia avenue.....		24	12	20	.....	.....	.....	1	.....
Belmont avenue, west side, north house line of Crestline avenue.....		34	12	14	.....	.....	1	.....	.....
Belmont avenue, west side, 556 feet north of north house line of Crestline avenue.....		34	12	14	.....	.....	1	.....	.....
Belmont avenue, west side, 200 feet south of south house line of Conshohocken avenue.....		34	12	14	.....	.....	1	.....	.....
Belmont avenue, west side, 203 feet north of north house line of Conshohocken avenue.....		34	12	14	.....	.....	1	.....	.....
Belmont avenue, west side, 870 feet north of north house line of Conshohocken avenue.....		34	12	14	.....	.....	1	.....	.....
Chestnut street, north side, 33 feet east of east house line of Forty-second.....		27	6	23	.....	.....	1	.....	.....
Chippewa (or Twenty-seventh) street, east side, north house line of South.....		7	6	13	.....	.....	.....	.....	1



*New Fire Hydrants—Second District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Cherry street, north side, west house line of Jacoby.....		10	6	8				1	
Chester avenue, north side, east house line of Forty-sixth.....		27	6	12			1		
City avenue, south side, 6 feet east of east house line of Bryn Mawr avenue.....		34	12	8	6		1		
City avenue, south side, 15 feet west of west house line of Fifteenth.....		34	12	7	6		1		
City avenue, south side, 6 feet west of west house line of Bala avenue.....		34	12	7			1		
City avenue, south side, 5 feet 6 inches east of east house line of Conshohocken avenue.....		34	12	7			1		
City avenue, south side, 400 feet west of west house line of D'Invilliers avenue.....		34	12	7			1		
City avenue, south side, 3 feet west of west house line of D'Invilliers avenue.....		34	12	7			1		
City avenue, south side, 676 feet west of west house line of Belmont avenue.....		34	12	7			1		
City avenue, south side, 6 feet west of west house line of Belmont avenue.....		34	12	7			1		
Cuthbert or Benezet street, north side, 171 feet east of east house line of Eleventh.....		9	6	7			1		
Cuthbert street, south side, 67 feet west of west house line of Thirteenth.....		9	6	6			1		
Cuthbert street, north side, 186 feet west of west house line of Sixteenth.....		9	6	8			1		
Drury street, north side, 105 feet east of east house line of Juniper.....		8	6	8			1		
Eighth street, east side, north house line of Pine.....		7	6	14			1		
Eighth street, west side, north house line of Spruce.....		8	10	12				1	

*Fire Hydrants—Second District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Eighteenth street, east side, opposite centre of Naudain.....		7	12	8	.....	.....	1		
Eighteenth street, east side, north house line of Waverly.....		7	12	9	.....	.....	1		
Eighteenth street, west side, 121 feet north of north house line of Walnut.....		8	12	14	.....	.....	1		
Elm avenue, south side, 116 feet east of east house line of Forty-fourth.....		24	10	15	.....	.....	1		
Elfreth street, north side, 2 feet east of east house line of Second.....		6	6	4	.....	.....	1		
"F" street, north side, 4 feet west of west house line of Twenty-second.....		8	6	10	.....	.....	1		
Fairmount avenue, south side, 2 feet west of west house line of Forty-sixth.....		34	8	18	.....	.....	1		
Filbert stree , south side, 2 feet west of west house line of Ninth.....		9	6	14	.....	.....	1		
Filbert street, south side, east house line of Ninth.....		9	6	13	.....	.....	1		
Filbert street, north side, 162 feet east of east house line of Twelfth.....		9	6	17	.....	.....	1		
Filbert street, north side, 163 feet west of west house line of Eighteenth.....		9	6	14	.....	.....	1		
Fifth street, west side, south house line of Pine.....		5	6	12	.....	.....	1		
Fifth street, west side, south house line of Race.....		6	10	14	8	.....	.....		1
Fifteenth street, east side, north house line of Arch.....		10	30	14	.....	.....	1		
Fiftieth street, west side, south house line of Saybrook.....		27	6	21	6	.....	1		
Fifty-second street, west side, 5 feet south of south house line of Thompson.....		34	6	36	10	.....	1		

*New Fire Hydrants—Second District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Fifty-second street, west side, opposite centre of Kershaw avenue.....		34	6	35	.....	.....	1		
Fifty-second street, west side, south house line of Warren.....		34	6	41	.....	.....	1		
Fifty-third street, west side, 3 feet north of north house line of Supplee.....		34	6	18	.....	.....	1		
Fifty-four-and-one-half street, east side, 2 feet north of north house line of Pennsgrove.....		34	6	8	.....	.....	1		
Fifty-fifth street, west side, north house line of Haverford.....		34	6	18	.....	.....	1		
Florence avenue, north side, 2 feet east of east house line of Forty-ninth.....		27	6	23	.....	.....	1		
Fortieth street, east side, south house line of Irving.....		27	10	18	.....	.....	1		
Fortieth, street, east side, 16 feet north of north house line of Locust.....		27	10	18	.....	.....	1		
Fortieth street, east side, south house line of Woodland avenue.....		27	10	18	.....	.....	1		
Fortieth street, east side, north house line of Wallace.....		24	6	12	.....	.....			1
Forty-first street, east side, 4 feet north of north house line of Locust.....		27	6	18	.....	.....	1		
Forty-first street, west side, south house line of Walnut.....		27	8	16	.....	.....			1
Forty-first street, east side, 2 feet north of north house line of Ludlow.....		27	6	7	.....	.....	1		
Forty-first street, west side, 1 foot north of north house line of Aspen.....		24	6	17	.....	.....	1		
Forty-first street, west side, 1 foot south of south house line of Westminster avenue.....		24	6	18	.....	.....	1		
Forty-first street, east side, south house line of Brown.....		24	6	19	.....	.....	1		

*New Fire Hydrants—Second District—Continued.*

Street.	Location.	Ward.	Size of Main.		6-INCH CONNECTION.		STYLE.		
			Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.	
Forty-first street, west side, 2 feet south of south house line of Parrish.....		24	6	17	.....	1			
Forty-first street, west side, 5 feet south of south house line of Poplar.....		24	6	18	.....	1			
Forty-second street, west side, 8 feet north of north house line of Spruce.....		27	6	22	.....	1			
Forty-second street, west side, 4 feet north of north house line of Locust.....		27	6	23	.....	1			
Forty-second street, east side, 5 feet north of north house line of Walnut.....		27	6	23	.....	1			
Forty-second street, west side, north house line of Chester avenue.....		27	6	23	.....	1			
Forty-third street, west side, south house line of Aspen.....		24	6	14	.....	1			
Forty-three-and-one-half street, west side, 5 feet south of south house line of Brown.....		24	6	9	6	1			
Forty-fourth street, west side, 2 feet north of north house line of Brown.....		34	6	18	.....	1			
Forty-fifth street, west side, south house line of Lombard.....		27	6	18	.....	1			
Forty-fifth street, east side, 3 feet south of south house line of Osage avenue.....		27	6	18	.....	1			
Forty-fifth street, west side, 2 feet south of south house line of Pine.....		27	6	19	.....	1			
Forty-fifth street, west side, south house line of Locust.....		27	6	18	.....	1			
Forty-sixth street, west side, 2 feet north of north house line of Springfield avenue.....		27	8	21	.....	1			
Forty-sixth-and-one-half or June street, east side, 2 feet south of south house line of Westminster ave...		34	6	9	8	1			
Forty-sixth-and-three-quarters street, east side, 8 feet north of north house line of Lindmore.....		27	6	7	8	1			

*New Fire Hydrants—Second District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Forty-ninth street, west side, south house line of Hoopes.....		34	6	18			1		
Forty-ninth street, west side, north house line of Dohan.....		34	6	11				1	
Greenway avenue, north side, 184 feet west of west house line of Fiftieth.....		27	6	23	6		1		
Hazel avenue, north side, east house line of Sixty-second.....		27	6	14			1		
Haverford avenue, south side, 13 feet west of west house line of Thirty-third.....		24	6	13				1	
Haverford avenue, south side, 13 feet east of east house line of Thirty-fourth.....		24	6	13					1
Haverford avenue, north side, west house line of Thirty-ninth.....		24	6	18			1		
Haverford avenue, south side, 2 feet east of east house line of Forty-second.....		24	6	26			1		
Haverford avenue, south side, 2 feet west of west house line of Forty-third.....		24	6	10			1		
Haverford avenue, north side, 2 feet west of west house line of Forty-fourth.....		34	6	23			1		
Haverford avenue, south side, 3 feet west of west house line of Forty-fifth.....		34	6	25			1		
Haverford avenue, south side, west house line of Forty-sixth.....		34	6	26			1		
Haverford avenue, north side, 2 feet east of east house line of Forty-seventh.....		34	6	23			1		
Haverford avenue, south side, east house line of Forty-eighth.....		34	6	23			1		
Haverford avenue, north side, 1 foot west of west house line of Forty-ninth.....		34	6	23			1		
Haverford avenue, south side, 2 feet east of east house line of Fairmount avenue.....		34	6	23			1		

*New Fire Hydrants—Second District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Haverford avenue, north side, west house line of Fiftieth.....		34	6	23			1		
Haverford avenue, south side, east house line of Fifty-first.....		34	6	23			1		
Haverford avenue, south side, west house line of Vine.....		34	12	21			1		
Haverford avenue, north side, 200 feet west of west house line of Fifty-third.....		34	6	23			1		
Haverford avenue, north side, opposite centre of Fifty-sixth.....		34	12	23	8		1		
Haverford avenue, south side, 15 feet east of east house line of Fifty-eighth.....		34	12	22			1		
Haverford avenue, north side, 8 feet east of east house line of Fifty-ninth.....		34	12	23			1		
Haverford avenue, south side, east house line of Sixtieth.....		34	12	23			1		
Haverford avenue, north side, 8 feet east of east house line of Sixty-third.....		34	12	23			1		
Haverford avenue, south side, east house line of Sixty-three-and-one-half.....		34	12	23			1		
Haverford avenue, south side, 47 feet east of east curb line of Sixty-sixth.....		34	6	23					
Hunter street, south side, 260 feet east of east house line of Tenth.....		9	6	8			1		
Jacoby street, west side, south house line of Race.....		10	6	12					1
Lancaster avenue, northeast side, north house line of Aspen.....		21	6	25					1
Lancaster avenue, southwest side, 57 feet north west of west house line of Forty-first.....		24	6	25			1		
Lancaster avenue, northeast side, 148 feet north west of west house line of Markoe.....		34	6	25					1

*New Fire Hydrants—Second District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.		
				Feet.	In.	O. S.	No. 1.	No. 2.
Lancaster avenue, northeast side, 48 feet southeast of east house line of Forty-seventh.....		34	6	25	.....	.....	.....	1
Lancaster avenue, southwest side, south house line of Girard avenue.....		34	6	25	.....	.....	.....	1
Lancaster avenue, southwest side, 17 feet northwest of north house line of Master .....		34	6	25	.....	.....	.....	1
Lancaster avenue, southwest side, 2 feet northwest of west house line of Old York road .....		34	6	25	.....	.....	.....	1
Lancaster avenue, southwest side, 7 feet southeast of south house line of Powelton avenue.....		24	6	20	6	.....	.....	1
Lee street, on dead end of 6-inch pipe, 326 feet west of west house line of Eighteenth.....		9	6	.....	.....	.....	1	
Levant street, west side, 8 feet south of south house line of Evelina.....		5	6	11	.....	.....	1	
Linton street, north side, 245 feet west of west house line of Twentieth.....		9	6	3	.....	.....	1	
Lombard street, south side, 108 feet west of west house line of Front.....		5	6	11	.....	.....	1	
Lombard street, north side, 5 feet east of east house line of Radcliff.....		5	6	5	.....	.....	.....	1
Lombard street, north side, east house line of Thirteenth.....		7	6	12	.....	.....	.....	1
Lombard street, south side, 195 feet west of west house line of Seventeenth.....		7	6	14	.....	.....	1	
Lombard street, north side, 126 feet west of west house line of Barnwell.....		7	6	9	.....	.....	.....	1
Locust street, south side, west house line of Twenty-second.....		8	12	14	.....	.....	1	
Locust street, north side, 38 feet west of west house line of Woodland avenue.....		27	8	18	.....	.....	1	
Market street, south side, 55 feet west of west house line of Twenty-first.....		9	6	9	.....	.....	1	

*New Fire Hydrants—Second District—Continued.*

Street.	Location.	Ward,	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Market street, north side, east house line of Twenty-third.....		9	6	8	.....		1		
Market street, north side, east, house line of Sixty-first.....		34	10	5	.....		1		
Market street, north side 2 feet east of east house line of Sixty-second.....		34	10	6	.....		1		
Market street, south side, 250 feet east of east house line of Sixty-second.....		27	6	6	.....		1		
Market street, south side, 240 feet west of west house line of Sixty-second.....		27	6	6	.....		1		
Market street, north side, 2 feet east of east house line of Sixty-third.....		34	10	6	.....		1		
Markoe street, west side, 2 feet south of south house line of Aspen.....		34	6	14	.....		1		
Madison street, west side, 123 feet north of north house line of Sheaff.....		10	6	7	.....		1		
Master street, south side, 2 feet west of west house line of Sixtieth.....		34	6	18	.....		1		
Mantua avenue, west side, 11 feet east of west curb line of Thirty-sixth.....		24	6	18	.....		1		
Mantua avenue, north side, 18 feet east of centre of Thirty-seventh.....		24	6	28	.....			1	
Mantua avenue, north side, 18 feet east of east house line of Thirty-eighth.....		24	6	28	.....		1		
Merion street, north side, 256 feet west of west house line of Fiftieth.....		34	6	14	.....		1		
Ninth street, west side, south house line of Lombard.....		7	6	12	.....				1
Ninth street, east side, 2 feet south of south house line of Pine.....		7	6	14	.....		1		
Ninth street, west side, north house line of Pine.....		7	6	11	.....		1		



*New Fire Hydrants—Second District—Continued.*

19	Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
					Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
	Ninth street, east side, north house line of Spruce.....		8	12	12				1	
	Nineteenth street, east side, north house line of Market.....		9	6	14			1		
	Nineteenth street, east side, 5 feet north of north house line of Filbert.....		9	6	16			1		
	Oxford or Heston street, north side, 140 feet 9 inches north of north house line of Fifty-one-and-one-half.		34	6	4	8		1		
	Parrish street, north side, 18 feet west of west house line of Lancaster avenue.....		24	6	16	6		1		
	Perry street, east side, 2 feet north of north house line of Lambert.....		10	6	8			1		
	Peach street, east side, 2 feet south of south house line of Media.....		34	6	14			1		
	Peach street, west side, 2 feet south of south house line of Lansdowne avenue.....		34	6	14			1		
	Pear street, south side, 2 feet east of east house line of Third.....		5	6	8			1		
	Pine street, north side, east house line of Seventh.....		5	6	12			1		
	Powell street, north side, 177 feet east of east house line of Sixth.....		5	6	11			1		
	Powelton avenue, south side, west house line of Thirty-fifth.....		24	6	30			1		
	Powelton avenue, north side, east house line of Saunders avenue.....		24	6	26			1		
	Powelton avenue, south side, 1 foot west of west house line of Thirty-ninth.....		24	6	23			1		
	Powelton avenue, south side, east house line of Fortieth.....		24	6	23			1		
	Powelton avenue, south side, 1 foot west of west house line of Preston.....		24	6	18			1		

*New Fire Hydrants—Second District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Powelton avenue, north side, 1 foot west of west house line of Bell.....		24	6	27	.....	.....	1		
Race street, south side, 5 feet west of west house line of Goodwill court.....		10	8	12	.....	.....		1	
Race street, south side, 2 feet west of west house line of Sixteenth.....		10	6	14	.....	.....	1		
Race street, north side, 18 feet west of west house line of Eighteenth.....		10	6	14	.....	.....	1		
Race street, south side, opposite centre of Madison.....		10	6	14	.....	.....	1		
Race street, north side, 2 feet east of east house line of Thirty-third.....		24	6	20	.....	.....	1		
Race street, south side, west house line of Thirty-fourth.....		24	6	18	.....	.....	1		
Race street, north side, 3 feet west of west house line of Thirty-fifth.....		24	6	18	.....	.....	1		
Rittenhouse street, south side, east house line of Twenty-first .....		8	48	12	.....	.....	1		
Sansom street, north side, 119 feet east of east house line of Fifteenth.....		8	6	11	.....	.....	1		
Sansom street, north side, 156 feet west of west house line of Sixteenth.....		8	6	11	.....	.....	1		
Sansom street, north side, 178 feet west of west house line of Seventeenth.....		8	6	11	.....	.....	1		
Sansom street, north side, 209 feet west of west house line of Eighteenth.....		8	6	11	.....	.....	1		
Sansom street, north side, east house line of Thirty-sixth.....		27	6	12	.....	.....	1		
Sergeant street, north side, east house line of Tenth.....		10	6	12	.....	.....		1	
Second street, east side, north house line of Spruce.....		5	10	12	.....	.....	1		

*New Fire Hydrants—Second District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Seventh street, west side, south house line of Barclay.....		7	6	9				1	
Seventh street, east side, 2 feet south of north house line of Spruce.....		5	10	10			1		
Seventeenth street, west side, south house line of Pine.....		7	6	7			1		
Seventeenth street, west side, 4 feet north of north house line of Spring.....		10	6	8				1	
Seventeenth street, east side, north house line of Summer.....		10	6	14			1		
Seventy-second street, east side, 2 feet north of north house line of Elmwood avenue.....		27	10	21			1		
Sixth street, east side, south house line of Lombard.....		5	6	14				1	
Sixth street, west side, north house line of Pine.....		5	6	12			1		
Sixth street, west side, north house line of Spruce.....		5	10	12			1		
Sixtieth street, west side, 2 feet north of north house line of Market.....		34	10	18			1		
Sixtieth street, west side, 2 feet south of south house line of Arch.....		34	10	18			1		
Sixty-two-and-one-half street, west side, 2 feet north of north house line of Arch.....		34	6	14			1		
Sixty-two-and-one-half street, west side, 2 feet north of north house line of Race.....		34	6	14			1		
Sixty-third street, east side, 2 feet south of south house line of Paschall ave.....		27	10	21			1		
Sixty-third street, west side, 2 feet north of north house line of Callowhill.....		34	8	31			1		
Sixty-third street, east side, 305 feet south of south house line of Lansdown ave.....		34	6	8					1

*New Fire Hydrants—Second District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH. CONNECTION.		STYLE.		
				Feet.	In.	O. S.	No. 1.	No. 2.
Sixty-third street, west side, 668 feet south of south house line of Lansdowne ave.....		34	6	7	.....	.....	.....	1
Sixty-third street, west side, south house line of Lansdowne ave.....		34	6	7	.....	.....	.....	1
Sixty-third street, east side, 3 feet north of north house line of Master.....		34	6	8	.....	.....	.....	1
Sixty-third street, west side, 408 feet north of north house line of Columbia avenue.....		34	6	7	6	.....	.....	1
Sixty-third street, east side, south house line of Lancaster avenue.....		34	6	8	6	.....	.....	1
Sixty-third street, east side, south house line of Malvern avenue.....		34	6	8	6	.....	.....	1
Sixty-third street, west side, 314 feet north of north house line of Malvern avenue.....		34	6	7	6	.....	.....	1
Sixty-three-and-one-half street, east side, 2 feet south of south house line of Hamilton.....		34	6	14	.....	.....	1	
Sixty-fifth street, west side, 2 feet south of south house line of Callowhill.....		34	6	18	.....	.....	1	
Sixty-fifth street, east side, 2 feet south of south house line of Girard avenue.....		34	6	18	.....	.....	1	
Spruce street, north side, east house line of Fourth.....		5	10	12	.....	.....	.....	1
Spruce street, north side, west house line of Fifth.....		5	10	12	.....	.....	1	
Spruce street, south side, west house line of Thirteenth.....		7	12	12	.....	.....	1	
Spruce street, north side, opposite centre of Twenty-sixth.....		8	6	14	.....	.....	1	
Spruce street, south side, east house line of Thirty-third.....		27	6	23	.....	.....	1	
Spruce street, south side, east house line of Woodland avenue.....		27	8	23	.....	.....	1	

*New Fire Hydrants—Second District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Spruce street, north side, east house line of Thirty-eighth.....		27	6	13				1	
Spruce street, north side, west house line of Fortieth.....		27	8	22			1		
Spruce street, south side, 1 foot 6 inches east of west house line of Fortieth.....		27	10	11					1
Spruce street, south side, west house line of Forty-first.....		27	8	22				1	
Spring Garden street, north side, 6 feet west of west house line of Thirty-second.....		24	12	16				1	
Spring Garden street, north side, east house line of Thirty-sixth.....		24	12	18				1	
Spring Garden street, south side, east house line of Thirty-seventh.....		24	12	18					1
Stiles street, north side, east house line of Forty-second.....		24	6	4	8		1		
Summer street, north side, 157 feet west of west house line of Fifteenth.....		10	6	8			1		
Sycamore street, west side, north house line of Spruce.....		8	12	12				1	
Third street, east side, 2 feet north of north house line of Lombard.....		5	6	14					1
Third street, east side, north house line of Pine.....		5	6	12				1	
Third street, east side, south house line of Walnut.....		5	12	13	6		1		
Thirteenth street, east side, 98 feet south of south house line of Chestnut.....		8	6	14				1	
Thirtieth street, west side, 148 feet south of south house line of Walnut.....		27	6	11			1		
Thirtieth street, west side, 5 feet north of north house line of Marston.....		27	6	11			1		

*New Fire Hydrants—Second District—Continued.*

Street.	Location.	Ward.	Size of Main.	8-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Thirty-third street, east side, south house line of Foster.....		24	6	3	6		1		
Thirty-third street, east side, west house line of Arch.....		24	6	21			1		
Thirty-sixth street, west side, south house line of Ludlow.....		27	6	13			1		
Thirty-sixth street, east side, south house line of Filbert.....		24	6	16			1		
Thirty-sixth street, west side, south house line of Powelton avenue.....		24	6	18			1		
Thirty-eighth street, west side, west house line of Irving.....		27	6	18			1		
Thirty-eighth street, east side, south house line of Locust.....		27	6	12			1		
Thirty-eighth street, east side, south house line of Proctor Square.....		27	12	18			1		
Thirty-eighth street, west side, north house line of Sansom.....		27	12	20			1		
Thirty-eighth street, west side, 2 feet north of north house line of Ludlow.....		27	12	18			1		
Thirty-eighth street, east side, 1 foot south of south house line of Filbert.....		24	6	18			1		
Thirty-eighth street, east side, south house line of Centre.....		24	6	18			1		
Thirty-eighth street, west side, south house line of Powelton avenue.....		24	6	20			1		
Thirty-ninth street, east side, north house line of Filbert.....		24	6	17			1		
Thirty-nine-and-one-quarter street, east side. 126 feet south of south house line of Warren.....		24	6	3	9		1		
Twentieth street, west side, north house line of Market.....		9	6	14			1		

*New Fire Hydrants—Second District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Twentieth street, west side, north house line of Summer.....		10	6	14	.....	.....	1		
Twentieth street, east side, south house line of Cherry.....		10	6	12	.....	.....	1		
Twenty-first street, east side, south house line of Lombard.....		7	6	12	.....	.....			1
Twenty-first street, west side, south house line of Spruce.....		7	20	14	.....	.....	1		
Twenty-first street, west side, south house line of Arch.....		9	20	16	.....	.....	1		
Twenty-first street, east side, south house line of Cherry.....		10	6	12	.....	.....	1		
Twenty-second street, east side, south house line of Summer.....		10	6	18	.....	.....	1		
Twenty-third street, west side, south house line of Naudain.....		7	6	14	.....	.....	1		
Twenty-third street, east side, north house line of Trinity plac.....		7	6	12	.....	.....		1	
Twenty-third street, west side, south house line of Sansom.....		10	12	8	.....	.....	1		
Twenty-third street, west side, 2 feet north of north house line of Cherry.....		8	6	12	.....	.....	1		
Twenty-third street, west side, 1 foot north of north house line of Race.....		10	12	8	.....	.....	1		
Twenty-fifth street, east side, south house line of Ashburton.....		7	6	14	.....	.....	1		
Twenty-fifth street, east side, 175 feet north of north house line of Spruce.....		8	6	14	.....	.....	1		
Vine street, south side, east house line of Third.....		6	10	8	.....	.....	1		
Vine street, north side, 17 feet east of east house line of Eleventh.....		14	12	14	.....	.....	1		

*New Fire Hydrants—Second District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Vine street, north side, west house line of Fifteenth.....		15	12	9			1		
Vine street, south side, west house line of Seventeenth.....		10	12	8			1		
Vine street, north side, 19 feet east of east house line of Eighteenth.....		15	12	20			1		
Vine street, north side, west house line of Twenty-first.....		15	20	12					1
Vine street, south side, west house line of Twenty-second.....		10	6	8			1		
Vine street, north side, west house line of Fifty-third.....		34	6	32			1		
Vine street, south side, 6 feet east of east house line of Fifty-fourth.....		34	6	23			1		
Vine street, north side, 1 foot east of east house line of Fifty-eighth.....		34	6	26			1		
Vine street, south side, east house line of Fifty-ninth.....		34	6	23			1		
Vine street, south side, west house line of Sixty-first.....		34	6	23			1		
Vine street, north side, 2 feet east of east house line of Sixty-second.....		34	6	23			1		
Vine street, north side, 6 feet east of east house line of Sixty-fourth.....		34	6	23			1		
Vine street, south side, 10 feet east of east house line of Sixty-fifth.....		34	6	23			1		
Walnut street, west side, west house line of Fifth.....		5	12	13	6				1
Walden street, north side, 176 feet west of west house line of Twenty-first.....		9	6	7			1		
Warren street, south side, west house line of Thirty-sixth.....		24	6	14			1		



*New Fire Hydrants—Second District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Warren street, north side, 126 feet west of west house line of Thirty-ninth.....		24	6	14	.....	.....	1		
Warren street, north side, east house line of Fortieth.....		24	6	17	.....	.....	1		
Warren street, south side, 1 foot north of north house line of Master.....		34	6	11	.....	.....	1		
Westminster avenue, north side, opposite centre of Forty-ninth.....		34	12	16	.....	.....		1	
Windsor street, north side, west house line of Forty-eighth.....		27	6	14	.....	.....	1		
Wyalusing avenue, south side, east house line of Forty-fifth.....		34	6	18	.....	.....	1		
Wyalusing avenue, west side, 2 feet south of south house line of Merion.....		34	6	18	.....	.....			1
Total.....				4,488	.....	.....	223	33	36

NEW FIRE HYDRANTS.  
THIRD DISTRICT.

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.				
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.	
Adams street, north side, 59 feet east of east house line of Holman.....		31	6	16					1	
Adams road, northeast side, 2 feet northwest of northwest house line of Lindley.....		35	8	7	6			1		
Adams road, northeast side, 441 feet northwest of northwest house line of Lindley.....		35	8	7	3			1		
Adams road, northeast side, northwest house line of Duncannon.....		35	8	8	6			1		
Adams road, southwest side, northwest house line of "L".....		35	8	23				1		
Agate street, northwest side, northeast house line of Somerset.....		25	6	8	2			1		
Agate street, northwest side, southwest house line of Auburn.....		25	6	8	2			1		
Allen street, north side, east house line of Frankford avenue.....		18	6	11	3			1		
Allegheny avenue, southwest side, northwest house line of Cooper.....		25	6	4				1		
Amber street, southeast side, 71 feet 4 inches southwest of southwest house line of Auburn.....		25	6	15				1		
Amber street, east side, 1 foot north of north house line of Cumberland.....		31	10	20				1		
Amber street, southeast side, 1 foot southwest of southwest house line of Adam.....		31	C	13				1		
Arrott street, northeast side, 14 feet southeast of Asylum pike.....		23	6	14	6			1		
Auburn street, southwest side, northwest house line of Amber.....		25	8	15				1		

*New Fire Hydrants—Third District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Berks street, south side, east house line of Second.....		19	6	10	6	.....	1		
Berks street, north side, 14 feet east of east house line of Third.....		19	6	9	10	.....	1		
Berks street, south side, east house line of North Penn R. R.....		19	6	10	6	.....	1		
Berks street, south side, east house line of Fourth.....		19	6	10	8	.....	1		
Berks street, north side, 1 foot west of west house line of Germantown avenue.....		19	6	7	6	.....	1		
Boudinot street, east side, 83 feet south of south house line of Somerset.....		33	6	16	.....	.....	1		
Boudinot street, east side, south house line of Denver.....		33	6	14	6	.....	1		
Brown street, north side, 6 feet east of east house line of Front.....		12	6	15	6	.....	1		
Brown street, north side, 13 feet east of east house line of St. John.....		11	6	14	6	.....	1		
Ruckius street, northeast side, southeast house line of Kensington avenue.....		25	6	11	6	.....	1		
Butler street, southwest side, 1 foot 6 inches southeast of southeast house line of Frankford avenue.....		25	6	14	2	.....	1		
Butler street, south side, east house line of Fifth.....		33	30	18	6	.....	1		
"C" street, west side, 225 feet north of north house line of Somerset.....		33	6	15	3	.....	1		
"C" street, west side, 245 feet north of north house line of Cambria.....		33	6	14	.....	.....	1		
"C" street, east side, south house line of Indiana avenue.....		33	6	14	6	.....	1		
Camilla street, east side, north house line of Palmer.....		18	6	8	.....	.....	1		

*New Fire Hydrants—Third District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Cherry street, southeast side, 106 feet southwest of southwest house line of Wakeling.....		23	6	17	.....	.....	1		
Cherry street, northwest side, southwest house line of Harrison.....		23	6	14	5	.....	1		
Cherry street, southeast side, southwest house line of Ann.....		23	6	15	.....	.....	1		
Cherry street, southeast side, northeast house line of Foulkrod.....		23	6	15	.....	.....	1		
Chatham street, east side, 81 feet north of north house line of Buttonwood.....		12	6	14	6	.....	.....	1	
Charlotta street, west side, 125 feet south of south house line of Thompson .....		17	6	17	.....	.....	1		
Clementine street, north side, west house line of " F ".....		33	6	8	6	.....	1		
Clementine street, south side, east house line of " E ".....		33	6	8	6	.....	1		
Coral street, west side, south house line of Adams.....		31	6	15	.....	.....	1		
Coville street, south side, south house line of Front.....		19	6	8	.....	.....	1		
Cornwall street, northeast side, southeast house line of Kensington avenue.....		25	6	11	.....	.....	1		
Cottage street, southeast side, north house line of Howell.....		35	12	14	6	.....	1		
Cottage street, northwest side, northeast house line of Vankirk.....		35	12	14	6	.....	1		
Columbia avenue, south side, opposite centre of Waterloo.....		19	6	14	1	.....	1		
Columbia avenue, north side, east house line of Second.....		19	6	14	.....	.....	.....	1	
Columbia avenue, north side, 76 feet east of east house line of Germantown avenue.....		19	6	14	.....	.....	1		

*New Fire Hydrants—Third District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Columbia avenue, north side, east house line of Fourth.....		19	6	16	.....	.....	1		
Crown street, west side, south house line of Callowhill.....		12	6	14	6	.....	1		
Curran place, south side, 104 feet east of east house line of Fourth.....		12	6	4	.....	.....	1		
Cumberland street, southeast side, 4 feet west of west house line of Commerce.....		31	6	18	8	.....	1		
Cumberland street, north side, 16 feet east of east house line of Germantown avenue.....		19	6	15	.....	.....	1		
Darien street, east side, north house line of Indiana avenue.....		33	6	8	6	.....	1		
Darien street, west side, south house line of Clearfield .....		33	6	8	6	.....	1		
Dauphin street, south west side, 2 feet northwest of northwest house line of Memphis street.....		31	6	14	5	.....	1		
Dauphin steet, south side, 8 feet 6 inches east of east house line of Tulp.....		31	6	14	6	.....	1		
Dauphin street south side, east house line of Howard.....		19	6	14	3	.....	1		
Dauphin street, south side, east house line of American.....		19	6	14	6	.....	1		
Deal street, north side, opposite Camilla.....		18	6	14	6	.....	1		
Devereaux street, northeast side, 245 feet northwest of northwest house line of "Y".....		35	48	19	6	.....	1		
Dittman street, southeast side, northeast house line of Howell.....		35	6	14	6	.....	1		
Dittman street, northwest side, northeast house line of Vankirk.....		35	6	14	6	.....	1		
Dyre street, northeast side, northwest house line of Willow.....		23	6	14	6	.....	1		

*New Fire Hydrants—Third District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Dyre street, southwest side, southeast house line of Cedar .....		23	6	14	6	.....	1		
Dyre street, north side, east house line of Frankford avenue.....		23	6	14	6	.....	1		
Edgemont street, northwest side, northeast house line of Huntingdon.....		13	4	14	.....		1		
Eighth street, east side, south house line of Clearfield .....		33	6	14	6	.....	1		
Ella street, south side, east house line of Amber.....		31	6	9	.....		1		
Emerald street, southeast side, northeast house line of Stella.....		25	6	14	6	.....	1		
"F" street, west side, 29 feet north of north house line of Indiana avenue.....		33	6	14	7	.....	1		
"F" street, southeast side, southwest house line of Allegheny avenue.....		33	6	14	6	.....	1		
Fairmount avenue, north side, west house line of Front.....		11	6	11	.....		1		
Fairmount avenue, south side, 9 feet 6 inches east of east house line of New Market.....		11	6	17	.....		1		
Fairmount avenue, south side, 15 feet east of east house line of Second.....		11	6	16	6	.....	1		
Fairhill street, east side, south house line of Huntingdon.....		33	6	25	.....				1
Fairhill street, east side, 3 feet 6 inches south of south house line of Lehigh avenue.....		19	6	14	6	.....	1		
Fairhill street, east side, 6 feet south of south house line of Indiana avenue.....		33	4	13	8	.....	1		
Fisher street, east side, south house line of Westmoreland.....		25	6	9	9	.....	1		
Fillmore street, west side, south house line of Somerset.....		33	.....	12	10	.....			1

*New Fire Hydrants—Third District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Fifth street, east side, north house line of Brown.....		12	6	19	.....		1		
Fifth street, east side, north house line of Airdrie.....		33	30	16	6	.....		1	
Fifth street, east side, 222 feet south of south house line of Thompson.....		17	6	18	6	.....	1		
Fifth street, east side, southwest corner of Germantown avenue.....		19	6	18	7	.....	1		
Fifth street, east side, south house line of Dauphin.....		19	6	17	4	.....	1		
Fifth street, west side, south house line of Huntingdon.....		19	6	14	6	.....	1		
Fifth street, east side, north house line of Indiana avenue.....		33	6	18	.....		1		
Fifth street, west side, 2 feet south of south house line of Allegheny avenue.....		33	6	19	9	.....	1		
Fifth street, east side, 15 feet 5 inches north of north house line of Glenwood avenue.....		33	6	19	.....		1		
Fifth street, west side, 2 feet south of south house line of Erie avenue.....		33	6	18	.....		1		
Fifth street, west side, 256 feet 6 inches north of north house line of Butler.....		33	6	18	6	.....	1		
Fourth street, east side, south house line of Dauphin.....		19	6	15	.....		1		
Fourth street, east side, north house line of York.....		19	6	15	.....		1		
Fourth street, east side, south house line of Indiana avenue.....		33	6	15	.....		1		
Franklin street, southwest side, northwest house line of Richmond.....		25	6	13	.....		1		
Front street, east side, south house line of Columbia avenue.....		20	6	24	7	.....	1		

*New Fire Hydrants—Third District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Front street, west side, south house line of Diamond.....		19	6	18	10	.....	1		
Front street, west side, 4 feet north of south house line of Dauphin.....		19	6	19		.....	1		
Front street, west side, north house line of Cumberland.....		19	6	19		.....	1		
Front street, east side, north house line of Huntingdon.....		19	6	19		.....	1		
Front street, east side, south house line of Lehigh avenue.....		19	6	19		.....	1		
Front street, west side, 3 feet south of south house line of Somerset.....		33	6	17		.....	1		
Frankford avenue, east side, 200 feet north of north house line of Richmond.....		18	10	18		.....	1		
Frankford avenue, west side, 221 feet south of south house line of Girard avenue.....		16	10	20	6	.....	1		
Frankford avenue, east side, south house line of Sargeant.....		31	10	18	4	.....	1		
Frankford avenue, west side, 23 feet north of north house line of Huntingdon.....		31	10	19		.....	1		
Frankford avenue, southeast side, southwest house line of Clearfield.....		25	6	16	2	.....	1		
Frankford avenue, southeast side, 13 ft. 10 in. southwest of northeast house line of Allegheny avenue.....		25	10	19	2	.....	1		
Frankford avenue, southeast side, 360 feet northeast of northeast house line of Westmoreland.....		25	10	18	11	.....	1		
Frankford avenue, southeast side, opposite centre of Kettlewell.....		25	12	18	4	.....	1		
Frankford avenue, southeast side, opposite centre of Harrowgate lane.....		33	12	19		.....	1		
Frankford avenue, southeast side, 418 feet northeast of northeast house line of Vonango.....		25	12	19	2	.....	1		



*New Fire Hydrants—Third District—Continued.*

20	Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.			STYLE.		
					Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
	Frankford avenue, west side, 219 feet north of north house line of Harrison.....		23	12	25			1		
	Frankford avenue, west side, 135 feet north of north house line of Wakeling.....		23	12	24			1		
	Frankford avenue, southeast side, opposite centre of Pike.....		25	12	22		6	1		
	Frankford avenue, southwest side, northwest house line of Tacony.....		23	12	14			1		
	Frankford avenue, west side, north house line of James.....		23	6	14		6	1		
	Frankford avenue, east side, south house line of Worth.....		23	6	14		6	1		
	Frankford avenue, east side, south house line of Edmund.....		23	6	14		6	1		
	Frankford avenue, west side, north house line of Orleans.....		25	6	19		6	1		
	Frankford avenue, southeast side, opposite southwest house line of Wishart.....		25	10	19			1		
	George street, south side, west house line of Third.....		16	6	11			1		
	Germantown avenue, southwest side, southeast house line of Thompson.....		17	6	19			1		
	Germantown avenue, northeast side, south house line of Jefferson.....		17	10	18		4	1		
	Girard avenue, southeast side, southwest house line of Vienna.....		18	6	10				1	
	Girard avenue, north side, 1 foot east of east house line of Front.....		17	8	15		6		1	
	Glenwood avenue, southeast side, west house line of Fifth.....		33	6	4				1	
	Gray street, south side, east house line of Gray.....		16	4	8			1,		

*New Fire Hydrants—Third District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Green street, south side, west house line of Front.....		11	6	21			1		
Green street, north side, 11 feet east of east house line of New Market.....		11	6	16	6		1		
Green street, north side, 157 feet east of east house line of Fourth.....		12	6	16			1		
Green street, north side, 19 feet east of east house line of Fifth.....		12	6	11	6		1		
Green street, north side south house line of Weaver.....		12	6	16			1		
Gurney street, northeast side, east house line of Front.....		33	6	14	6		1		
Hancock street, west side, 154 feet south of south house line of Dauphin.....		19	6	14	2		1		
Hancock street, east side, 245 feet north of north house line of Dauphin.....		19	6	14			1		
Hancock street, east side, 238 feet north of north house line of York.....		19	6	14			1		
Hancock street, east side, 232 feet north of north house line of Cumberland.....		19	6	14	4		1		
Hancock street, west side, 3 feet south of south house line of Somerset.....		33	6	21				1	
Hancock street, west side, 120 feet south of south house line of Ontario.....		33	6	14	6		1		
Harrison street, north side, east house line of Hancock.....		19	6	8	6		1		
Howard street, west side, north house line of Master.....		19	6	14	6		1		
Howard street, west side, 43 feet north of north house line of Diamond.....		19	6	15			1		
Howard street, west side, 237 feet 6 inches north of north house line of Dauphin.....		19	6	14			1		

*Fire Hydrants—Third District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Howard street, east side, 235 feet north of north house line of York.....		19	6	13	6	.....	1		
Howard street, west side, 27 feet north of north house line of Cumberland.....		19	6	14	2	.....	1		
Howard street, east side, south house line of Somerset.....		33	6	15		.....	1		
Hope street, west side, south house line of Susquehanna avenue.....		19	6	8		.....	1		
Hull street, southwest side, 2 feet southeast of southeast house line of Frankford avenue.....		25	6	14	6	.....	1		
Huntingdon street, northeast side, northwest house line of Richmond.....		18	6	22	8	.....	1		
Huntingdon street, northeast side, 136 feet southeast of southeast house line of Almendo.....		18	6	17	10	.....		1	
Huntingdon street, southwest side, west house line of Aramingo.....		31	8	10	6	.....	1		
Huntingdon street, south side, east house line of Waterloo.....		19	6	9		.....	1		
Huntingdon street, north side, west house line of Hancock.....		19	6	14		.....	1		
Huntingdon street, north side, west house line of American.....		19	6	14	6	.....	1		
Huntingdon street, south side, 3 feet east of east house line of Sixth.....		19	6	10	4	.....	1		
Huntingdon street, south side, west house line of Hutchinson.....		19	6	15		.....	1		
Indiana avenue, south side, east house line of "D".....		33	6	16		.....	1		
Indiana avenue, north side, west house line of Hartville.....		33	6	13	6	.....	1		
Indiana avenue, north side, west house line of Hart lane.....		33	6	14	6	.....	1		

*New Fire Hydrants—Third District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Jasper street, southeast side, northeast house line of Allegheny avenue.....		25	6	14	6	.....	1		
Jackson street, southeast side, northeast house line of Howell.....		35	6	14	6	.....	1		
Jackson street, northwest side, northeast house line of Vankirk.....		35	6	14	6	.....	1		
Jackson street, southeast side, 186 feet southwest of southwest house line of Vankirk.....		35	6	5	6	.....	1		
James street, southeast side, 227 feet northeast of northeast house line of Orthodox.....		23	6	17	6	.....	1		
Jefferson street, north side, east house line of Front.....		17	6	10	3	.....	1		
Jefferson street, north side, east house line of Howard.....		17	6	18	6	.....		1	
Kensington avenue, northeast side, opposite centre of Airdrie.....		33	6	11	5	.....	1		
Kensington avenue, west side, 182 feet north of north house line of Leamy.....		38	6	9	6	.....	1		
Kensington avenue, northwest side, northeast house line of Old Front.....		25	6	10	.....	.....	1		
Kensington avenue, southeast side, 9 feet 6 inches southwest of southwest house line of Clementine.....		25	6	11	.....	.....	1		
Kensington avenue, northwest side, opposite northeast house line of Wellington.....		33	6	11	3	.....	1		
Kensington avenue, northwest side, opposite centre of Thayer.....		33	6	11	9	.....	1		
Kensington avenue, northwest side, opposite northeast house line of Russell.....		33	6	11	5	.....	1		
Kensington avenue, northwest side, opposite southwest house line of Tioga.....		33	6	11	8	.....	1		
Kensington avenue, southeast side, southwest house line of Pacific.....		33	6	11	.....	.....	1		

*New Fire Hydrants—Third District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Kensington avenue, northwest side, northeast house line of "M".....		33	6	11	5	.....	1		
Kensington avenue, southeast side, 75 feet northeast of northeast house line of Butler.....		25	6	11	10	.....	1		
Kensington avenue, southeast side, southwest house line of Sedgley avenue.....		25	6	7	2	.....	1		
Kensington avenue, southeast side, northeast house line of Pike.....		33	6	10	6	.....	1		
Kensington avenue, southeast side, opposite north house line of Luzerne.....		33	6	11	4	.....	1		
Lawrence street, east side, 184 feet south of south house line of York.....		19	6	14	6	.....	1		
Lawrence street, west side, south house line of Cumberland.....		19	6	15	.....	.....	1		
Lawrence street, west side, south house line of Huntingdon.....		19	6	15	.....	.....	1		
Lawrence street, west side, 98 feet south of south house line of Indiana avenue.....		33	6	15	.....	.....	1		
Lee street, east side, 340 feet north of north house line of Tioga.....		33	6	12	6	.....	1		
Leithgow street, east side, north house line of Berks.....		19	6	8	.....	.....	1		
Leiper street, northwest side, 206 feet northeast of northeast house line of Orthodox.....		23	6	15	.....	.....	1		
Leiper street, northwest side, 174 feet northeast of northeast house line of Allen.....		23	6	14	.....	.....	1		
Lehigh avenue, north side, west house line of Front.....		33	6	11	.....	.....	1		
Lehigh avenue, north side, west house line of Hope.....		33	6	10	.....	.....	1		
Lehigh avenue, south side, west house line of Hope.....		19	6	20	.....	.....	1		

*New Fire Hydrants—Third District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Lehigh avenue, north side, west house line of Howard.....		33	6	12			1		
Lehigh avenue, north side, west house line of Mascher.....		33	6	11			1		
Lehigh avenue, south side, west house line of Mascher.....		19	6	8	7		1		
Lehigh avenue, south side, east house line of Hancock.....		19	6	13			1		
Lehigh avenue, south side, west house line of Second.....		19	6	9			1		
Lehigh avenue, south side, west house line of American.....		19	6	17			1		
Lehigh avenue, south side, east house line of Third.....		19	6	10			1		
Lehigh avenue, north side, east house line of Third.....		33	6	14			1		
Lehigh avenue, north side, south house line of Orianna.....		33	6	8	6		1		
Lehigh avenue, south side, east house line of Orkney.....		19	6	7	6			1	
Lehigh avenue, north side, west house line of Reese.....		33	6	11			1		
Lehigh avenue, north side, east house line of Fairhill.....		33	6	10			1		
Lehigh avenue, south side, 1 foot west of west house line of Seventh.....		19	6	10			1		
Linda street, south side, west house line of Hancock.....		33	6	8	6		1		
Lippincott street, south side, east house line of "E".....		33	6	8	6		1		
Maria street, south side, east house line of Fifth.....		12	6	9	6		1		

*New Fire Hydrants—Third District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.				
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.	
Master street, south side, opposite centre of Philip.....		17	10	15	.....	.....	1			
Master street, south side, 3 feet east of east house line of Germantown avenue.....		17	10	14	6	.....	1			
Master street, north side, 3 feet east of east house line of Fifth.....		17	6	14	.....	.....	1			
Marshall street, east side, south house line of Clearfield.....		33	6	14	6	.....	.....	1		
Marshall street, east side, 228 feet south of south house line of Clearfield.....		33	6	14	1	.....	1			
Mascher street, west side, 179 feet 8 inches south of south house line of Huntingdon.....		19	6	15	.....	.....	1			
Mascher street, east side, north house line of Lehigh avenue.....		33	6	19	.....	.....	1			
Marlborough street, south side, 184 feet 8 inches southeast of southeast house line of Belgrade.....		18	6	14	6	.....	1			
Melvale street, southeast side, southwest house line of Neff.....		25	6	15	.....	.....	1			
Melrose street, southeast side, 70 feet southwest of southwest house line of Orthodox.....		23	6	14	6	.....	1			
Melrose street, northwest side, southwest house line of Margaret.....		23	6	14	6	.....	1			
Melrose street, northwest side, 203 feet 6 inches northeast of northeast house line of Tucker.....		23	6	14	6	.....	1			
Melrose street, southeast side, 363 feet southwest of southwest house line of Tucker.....		23	6	14	6	.....	1			
Melrose street, northwest side, southwest house line of Bridge.....		23	6	14	6	.....	1			
Mill street, northeast side, 105 feet northwest of northwest house line of Ball.....		23	6	9	8	.....	1			
Montgomery avenue, northwest side, southwest house line of Manor.....		19	6	6	6	.....	1			

*New Fire Hydrants—Third District—Continued.*

Street.	Location.	Ward,	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Montgomery avenue, south side, 46 feet west of west house line of Fifth.....		19	6	15			1		
Monmouth street, south side, west house line of Trenton avenue.....		25	6	8	6		1		
Mutter street, west side, south house line of Somerset.....		33	6	7	10		1		
Neff street, northeast side, southeast house line of Richmond.....		25	6	14			1		
Neff street, northeast side, southeast house line of Salmon.....		25	6	14	6		1		
Norris street, northeast side, northwest house line of Belgrade.....		31	6	14	2		1		
Ontario street, north side, west house line of Howard.....		33	16	10	6		1		
Ontario street, north side, west house line of Mascher.....		33	6	14	6		1		
Ontario street, south side, east house line of Hancock.....		33	6	14	6		1		
Ormes street, east side, south house line of Clearfield.....		33	6	15			1		
Orleans street, southwest side, northwest house line of Emerald.....		25	6	16			1		
Orleans street, south side, 2 feet west of west house line of Helen.....		33	6	15			1		
Orthodox street, northeast side, northeast house line of Asylum pike.....		23	6	14	6		1		
Orthodox street, southwest side, southeast house line of Horrocks.....		23	6	14	6		1		
Orthodox street, northeast side, southeast house line of Large.....		28	6	14	6		1		
Oxford street, southwest side, northwest house line of Tackawanna.....		23	6	14	6		1		



*New Fire Hydrants—Third District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STTLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Oxford street, north side, northwest house line of Cadwallader.....		19	6	14	7	.....	1		
Oxford street, north side, east house line of Fifth.....		19	6	14	6	.....		1	
Oxford pike, northwest side, northeast fence line of Vankirk.....		35	20	10	.....	.....			1
Paul street, west side, south house line of Green.....		23	6	9	10	.....	1		
Paul street, northwest side, southwest house line of Church.....		23	6	14	4	.....	1		
Paul street, west side, 5 feet south of south house line of Frankford avenue.....		23	6	9	.....	.....		1	
Peel street, east side, 9 feet south of south house line of Lydia.....		16	6	14	9	.....	1		
Philip street, east side, 58 feet south of south house line of Jefferson..		17	6	8	6	.....	1		
Pink street, west side, 98 feet south of south house line of Jefferson.....		17	4	8	.....	.....	1		
Randolph street, east side, north house line of Brown.....		12	6	10	.....	.....	1		
Reese street, west side, south house line of Lehigh avenue.....		33	6	21	.....	.....		1	
Ridge street, northeast side, southeast house line of Oakland.....		25	6	12	.....	.....	1		
Richmond street, north side, east house line of Leopard.....		16	6	9	6	.....	1		
Richmond street, north side, 306 feet east of east house line of Leopard.....		16	6	9	6	.....	1		
Richmond street, northwest side, 65 feet northeast of northeast house line of Marlborough .....		18	10	14	6	.....		1	
Richmond street, southeast side, 272 feet northeast of northeast house line of Cumberland street. ....		18	28	8	.....	.....	1		

*New Fire Hydrants—Third District—Continued.*

Street.	Location	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Richmond street, northwest side, 263 feet 4 inches southwest of southwest house line of Lehigh avenue...		25	.....	18	6	.....	1		
Richmond street, southeast side, 6 feet northeast of northeast house line of Somerset.....		25	6	18	6	.....	1		
Richmond street, southeast side, southwest house line of William.....		25	6	18	6	.....	1		
Richmond street, southeast side, southwest house line of Allegheny avenue.....		25	6	19	6	.....	1		
Rosehill street, west side, 238 feet north of north house line of Somerset.....		33	6	15	.....	.....	1		
Rohrer street, west side, 242 feet 9 inches north of north house line of Indiana avenue.....		25	6	14	8	.....	1		
Romain street, northwest side, southwest house line of Ruan.....		23	6	11	2	.....	1		
Romain street, northwest side, northeast house line of Adams.....		23	6	12	.....	.....	1		
Ruan street, northeast side, northwest house line of Paul.....		23	6	13	3	.....		1	
Salmon street, northwest side, northeast house line of Wellington.....		25	6	11	.....	.....	1		
Salmon street, northwest side, southeast house line of Orthodox.....		25	6	11	6	.....	1		
Salmon street, southeast side, 466 feet southwest of southwest house line of Lefevre.....		25	6	11	6	.....	1		
Salmon street, northwest side, 146 feet northeast of northeast house line of Ash.....		25	6	11	6	.....	1		
Second street, west side, 139 feet 6 inches north of north house line of Brown.....		11	6	9	.....	.....	1		
Second street, east side, 12 feet north of north house line of Poplar.....		16	6	18	.....	.....	1		
Second street, east side, 107 feet north of north house line of Canal.....		16	6	16	3	.....	1		

*New Fire Hydrants—Third District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH. CONNECTION.		STYLE.				
				Feet.	In.	V. S.	No. 1.	No. 2.	No. 3.	
Second street, east side, north house line of Norris.....		19	10	18	.....	.....	1			
Seventh street, east side, 222 feet 6 inches south of south house line of York.....		19	6	10	4	.....	1			
Seventh street, west side, north house line of Cumberland.....		19	6	16	6	.....	.....	1		
Seventh street, east side, 197 feet north of north house line of Huntingdon.....		19	6	14	5	.....	1			
Sixth street, west side, south house line of Master.....		20	6	7	6	.....	1			
Sixth street, east side, north house line of Montgomery avenue.....		19	12	7	6	.....	1			
Sixth street, south corner of Germantown avenue.....		19	4	7	9	.....	1			
Sixth street, east side, north house line of York.....		19	6	15	8	.....	.....	1		
Sixth street, west side, 272 feet north of north house line of Glenwood avenue.....		33	10	8	.....	.....	1			
Sixth street, west side, south house line of Erie avenue.....		33	10	16	.....	.....	1			
Sixth street, west side, 23 feet south of south house line of Rising Sun lane.....		33	10	15	.....	.....	1			
Sophia street, west side, east house line of Edward.....		16	6	10	.....	.....	.....	.....	1	
Somerset street, south side, east house line of Gaul.....		25	6	18	8	.....	1			
Somerset street, southwest side, northwest house line of Cedar.....		25	6	18	4	.....	1			
Somerset street, north side, east house line of Rosehill.....		33	6	11	.....	.....	1			
Somerset street, south side, 150 feet east of east house line of Front.....		33	6	14	4	.....	1			

*New Fire Hydrants—Third District—Continued.*

Street	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Somerset street, south side, east house line of Mascher.....		33	6	18	6	.....	1		
Somerset street, north side, east house line of Fairhill.....		33	6	20	2	.....	1		
St. John street, east side, south house line of Green.....		11	6	12		.....	1		
St. John street, west side, 56 feet north of north house line of Green.....		11	6	15		.....	1		
St. John street, west side, 164 feet north of north house line of Fairmount avenue.....		11	6	10		.....	1		
St. John street, east side, north house line of George.....		16	6	12		.....	1		
Sterner street, northeast side, northwest house line of Frankford avenue.....		25	6	8		.....	1		
Sterner street, south side, 172 feet east of east house line of Leamy.....		33	6	7	10	.....	1		
Stiles street, northwest side, 260 feet southwest of southwest house line of Tucker.....		23	6	15		.....	1		
Susquehanna avenue, north side, east house line of Second.....		19	6	19		.....	1		
Susquehanna avenue, south side, east house line of American.....		19	6	17		.....	1		
Susquehanna avenue, south side, west house line of Thouron street.....		19	6	16	7	.....	1		
Tacony street, southwest side, 16 feet southeast of southeast house line of Paul.....		23	6	15		.....		1	
Tacony street, northeast side, 5 feet southeast of southeast house line of Frankford avenue.....		23	6	16	6	.....	1		
Tamarind street, west side, 123 feet south of south house line of Fairmount avenue.....		12	4	4		.....	1		
Third street, east side, north house line of Fairmount avenue.....		11	10	16		.....	1		

*New Fire Hydrants—Third District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Third street, east side, 227 feet 6 inches north of north house line of Oxford.....		19	6	14	6	.....	1		
Third street, east side, 144 feet 6 inches south of south house line of Montgomery avenue.....		19	6	14	2	.....	1		
Third street, east side, 200 feet north of north house line of Montgomery avenue.....		19	6	8	.....	.....	1		
Third street, west side, south house line of Dauphin.....		19	6	14	4	.....	1		
Third street, east side, 132 feet north of north house line of York.....		19	6	14	6	.....	1		
Third street, west side, 249 feet 6 inches north of north house line of Cumberland.....		19	6	14	6	.....	1		
Third street, east side, 1 foot south of south house line of Huntingdon.....		19	6	14	6	.....	1		
Third street, west side, 245 feet 6 inches south of south house line of Somerset.....		25	6	14	6	.....	1		
Third street, west side, 225 feet 6 inches south of south house line of Cambria.....		33	6	14	6	.....	1		
Thompson street, northwest side, northeast house line of Palmer.....		18	6	14	6	.....	1		
Thompson street, south side, west house line of Second.....		17	6	16	.....	.....	1		
Thompson street, south side, west house line of Cadwalader.....		17	8	8	4	.....	1		
Thompson street, north side, east house line of Fifth.....		17	6	16	.....	.....	1		
Thompson street, south side, east house line of Sixth.....		17	6	8	.....	.....	1		
Tioga street, northeast side, southeast house line of Clarion.....		25	6	18	.....	.....	1		
Tioga street, north side, west house line of Sixth.....		33	6	14	6	.....	1		

*New Fire Hydrants—Third District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Torresdale avenue, north west side, northeast house line of Howell.....		35	12	26	.....	.....	1		
Torresdale avenue, northwest side, northeast house line of Vankirk.....		35	12	25	6	.....	1		
Tulip street, northwest side, northeast house line of Cumberland.....		31	6	12	8	.....	1		
Tucker street, southwest side, southeast house line of Melrose.....		23	6	14	6	.....	1		
Venango street, southwest side, northwest house line of Emerald.....		25	6	19	.....	.....	1		
Venango street, south side, west house line of Fifth.....		33	6	14	6	.....	1		
Venango street, south side, west house line of Sixth.....		33	6	14	.....	.....	1		
Vici street, north side, 4 feet east of east house line of Frankford avenue.....		25	6	9	.....	.....		1	
Vienna street, south side, 207 feet west of west house line of Richmond.....		18	6	14	6	.....	1		
Vienna street, northeast side, 90 feet 6 inches southeast of southeast house line of Girard avenue.....		18	6	15	.....	.....	1		
Wager street, north side, west house line of Fifth.....		12	6	6	.....	.....	1		
Walker street, northwest side, northeast house line of Howell.....		35	6	14	6	.....	1		
Walker street, southeast side, northeast house line of Vankirk.....		35	6	13	6	.....	1		
Westmoreland street, south side, southeast house line of Jasper.....		25	8	18	.....	.....	1		
Westmoreland street, south side, 270 feet southeast of southeast house line of Kensington avenue.....		25	8	18	6	.....	1		
William street, south side, west house line of Trenton avenue.....		25	6	11	2	.....	1		

*New Fire Hydrants—Third District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Wreken street, southwest side, northwest house line of Commerce.....		31	6	9	.....	.....	1		
York street, south side, 9 feet 6 inches west of west house line of Beach.....		18	6	21	6	1			
York street, northeast side, north house line of Richmond.....		18	6	15	.....	.....	1		
York street, southwest side, 27 feet southeast of southeast house line of Moyer.....		31	6	5	8	.....	1		
York street, southwest side, southeast house line of Almond.....		31	6	10	6	.....	.....	1	
York street, southwest side, northwest house line of Gaul.....		31	6	10	.....	.....	1		
York street, northeast side, northwest house line of Cedar.....		31	6	9	2	.....	1		
York street, south side, west house line of Tulip.....		31	12	9	6	.....	1		
York street, south side, west house line of Tulip.....		31	12	8	.....	.....	1		
York street, northeast side, northwest house line of Sepviva.....		31	6	9	.....	.....	.....	1	
York street, south side, east house line of Trenton avenue.....		31	12	9	.....	.....	1		
York street, southwest side, opposite centre of Holman.....		31	6	14	3	.....	1		
York street, north side, east house line of American.....		19	6	14	2	.....	1		
<b>Totals.....</b>				<b>4,814</b>	<b>9</b>	<b>1</b>	<b>319</b>	<b>25</b>	<b>2</b>

NEW FIRE HYDRANTS.  
FOURTH DISTRICT.

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Alder street, west side, south house line of Master.....		20	6	5			1		
Alroy street, north side, east house line of Pemberton.....		14	6	27	5		1		
Bailey street, west side, north house line of Jefferson.....		29	6	18	6		1		
Becket street, north side, east house line of Seventeenth.....		15	6	8	4		1		
Berks street, north side, 3 feet east of east house line of Twelfth.....		32	8	13	11		1		
Berks street, north side, east house line of Twenty-first.....		32	6	13	8		1		
Bouvier street, east side, 3 feet north of north house line of Huntingdon.....		28	6	8	6		1		
Brandywine street, south side, 4 feet east of east house line of Broad.....		14	6	10	6		1		
Brandywine street, north side, east house line of Seventeenth.....		15	6	8	7		1		
Brandywine street, north side, east house line of Eighteenth.....		15	6	10	10		1		
Brandywine street, south side, east house line of Nineteenth.....		15	6	10	2		1		
Broad street, west side, south house line of Huntingdon.....		28	6	10	7		1		
Broad street, west side, 276 feet north of north house line of Huntingdon.....		28	6	10	3		1		
Broad street, east side, 40 feet south of south house line of Huntingdon.....		37	6	9			1		



*New Fire Hydrants—Fourth District—Continued.*

21

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Broad street, east side, 274 feet 6 inches north of north house line of Huntingdon.....		37	6	9	5	.....	1		
Broad street, west side, 5 feet north of north house line of Lehigh avenue.....		28	6	6	.....	.....	1		
Broad street, east side, 5 feet 5 inches north of north house line of Lehigh avenue.....		37	6	12	10	.....	1		
Brown street, south side, east house line of Twenty-third.....		15	6	14	6	.....	.....	1	
Brown street, north side, 2 feet west of west house line of Twenty-sixth.....		15	6	15	.....	.....	1		
Bucknell street, east side, south house line of Brown.....		15	6	9	.....	.....	1		
Button wood street, north side, east house line of Seventeenth.....		15	6	17	.....	.....	1		
Cabot street, north side, 16 feet east of east house of Nineteenth.....		29	6	8	.....	.....	1		
Callowhill street, north side, 3 feet east of east house line of Thirteenth.....		14	10	15	9	.....	1		
Callowhill street, north side, 174 feet west of west house line of Eighteenth.....		15	10	.....	.....	.....	1		
Camac street, east side, 10 feet south of south house line of Norris.....		32	6	12	3	.....	1		
Cambridge street, north side, east house line of Twentieth.....		29	6	8	6	.....	1		
Carlton street, north side, west house line of Twentieth.....		15	6	4	4	.....	1		
Carlton street, south side, 1 foot 6 inches west of west house line of Twenty-first.....		15	6	5	.....	.....	1		
Clearfield street, north side, east house line of Twenty-first.....		28	8	13	8	.....	1		
Columbia avenue, north side, 44 feet east of east house line of Seventh.....		20	6	20	3	.....	1		

309

*New Fire Hydrants—Fourth District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Columbia avenue, south side, east house line of Eighteenth.....		29	6	18	7	.....	1		
Columbia avenue, north side, 7 feet 8 inches east of east house line of Nineteenth.....		29	6	16	5	.....	1		
Columbia avenue, south side, 15 feet east of east house line of Twentieth.....		29	6	19	2	.....	1		
Columbia avenue, south side, 22 feet 6 inches east of east house line of Lambert.....		29	6	18	9	.....	1		
Columbia avenue, north side, 8 feet 8 inches west of west house line of Twenty-fourth.....		29	6	18	8	.....	1		
Columbia avenue, north side, 1 foot west of west house line of Twenty-fifth.....		29	6	17	10	.....	1		
Columbia avenue, north side, 117 feet 6 inches east of east house line of Thirty-first.....		29	6	18		.....	1		
Colorado street, east side, 2 feet north of north house line of Huntingdon.....		28	6	9		.....	1		
Croskey street, east side, north house line of Columbia avenue.....		29	6	11	11	.....	1		
Cumberland street, north side, 20 feet east of east house line of Marston.....		28	8	15		.....	1		
Cumberland street, north side, west house line of Twenty-eighth.....		28	8	15		.....	1		
Darien street, west side, 6 feet 6 inches south of south house line of Norris.....		20	6	8	10	.....	1		
Dauphin street, south side, 8 feet east of east house line of Eighth.....		37	6	14	4	.....	1		
Dauphin street, south side, west house line of Ninth.....		37	30	16	4	.....	1		
Dauphin street, north side, 120 feet 6 inches west of west house line of Eleventh.....		37	6	13	6	.....	1		
Dauphin street, south side, 4 feet 6 inches west of west house line of Fifteenth.....		28	6	17	5	.....	1		

*New Fire Hydrants—Fourth District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Dauphin street, south side, east house line of Seventeenth.....		28	6	9	11	.....	1		
Dauphin street, north side, east house line of Eighteenth.....		28	6	14	.....	1			
Dauphin street, south side, west house line of Twenty-second.....		28	8	14	7	.....	1		
Dauphin street, north side, east house line of Twenty-sixth.....		28	6	15	9	.....			1
Dauphin street, north side, 150 feet east of east house line of Twenty-seventh.....		28	6	14	5	.....	1		
Dauphin street, south side, west house line of Twenty-ninth.....		28	6	16	8	.....	1		
Dauphin street, south side, east house line of Thirty-first.....		28	6	16	10	.....		1	
Dauphin street, south side, east house line of Thirty-second.....		28	6	14	9	.....	1		
Delhi street, west side, south house line of Dauphin.....		37	6	12	9	.....	1		
Drum street, west side, 100 feet south of south house line of Buttonwood.....		13	4	6	.....	1			
Eighteenth street, west side, south house line of Callowhill.....		15	6	14	5	.....	1		
Eighteenth street, west side, 4 feet south of south house line of Hamilton.....		15	6	22	3	.....		1	
Eighteenth street, west side, 5 feet north of south house line of Spring Garden.....		15	6	14	8	.....	1		
Eighteenth street, west side, south house line of Green.....		15	6	14	10	.....	1		
Eighteenth street, west side, 1 foot south of south house line of Mt. Vernon.....		15	6	15	.....	1			
Eighteenth street, west side, south house line of Wallace.....		15	6	14	3	.....	1		

*New Fire Hydrants—Fourth District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH. CONNECTION.		STYLR.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Eighteenth street, west side, south house line of Grayson.....		15	6	14			1		
Eighteenth street, west side, 14 feet north of north house line of Ridge avenue.....		29	6	14	5		1		
Eighteenth street, west side, south house line of Stiles.....		29	6	14			1		
Eighteenth street, east side, 8 feet south of south house line of Jefferson.....		29	6	17			1		
Eighteenth street, east side, 2 feet 6 inches south of south house line of Oxford.....		29	6	13	10		1		
Eighteenth street, west side, 3 feet north of north house line of Oxford.....		29	6	15			1		
Euclid avenue, south side, east house line of Thirty-first.....		32	6	10	5		1		
Fairmount avenue, south side, 145 feet east of east house line of Eleventh.....		14	10	14			1		
Fairmount avenue, north side, east house line of Twelfth.....		14	10	13			1		
Fairmount avenue, south side, 12 feet east of east house line of Thirteenth.....		14	10	14	8		1		
Fairmount avenue, north side, west house line of West.....		15	6	12	2		1		
Fawn street, west side, south house line of Jefferson.....		20	6	14			1		
Fifteenth street, west side, 2 feet south of south house line of Huntingdon.....		28	6	6	6		1		
Fifteenth street, east side, 4 feet south of south house line of Lehigh avenue.....		28	6	14			1		
Fountain street, north side, west house line of Sixteenth.....		32	6	11					
Francis street, west side, 11 feet north of north house line of Perklomen.....		15	6	14	6		1		

*New Fire Hydrants—Fourth District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Franklin street, west side, 9 feet north of north house line of Wood.....		13	6	3	3	.....	1		
Franklin street, west side, 7 feet north of north house line of Callowhill.....		13	6	14	10	.....	1		
Franklin street, west side, 150 feet south of south house line of Brown.....		13	6			.....	1		
Franklin street, east side, 3 feet south of south house line of Susquehanna avenue.....		20	6	14	5	.....	1		
Franklin street, east side, south house line of Norris.....		20	6	13	11	.....	1		
Garden street, east side, south house line of Noble.....		13	6	11	6	.....			1
Garnet street, east side, south house line of Cumberland.....		28	6	9	6	.....	1		
Girard avenue, south side, 9 feet east of east house line of Ninth.....		20	6	9		.....	1		
Graham street, north side, 6 feet 6 inches east of east house line of Nineteenth.....		29	6	8		.....	1		
Gratz street, west side, south house line of Huntingdon.....		29	6	7		.....	1		
Green street, south side, 35 feet west of west house line of Marshall.....		13	6	14		.....	1		
Green street, south side 55 feet 6 inches west of west house line of Franklin.....		13	6	14	2	.....	1		
Green street, south side, east house line of Eleventh.....		14	6	14	10	.....	1		
Green street, north side, 180 feet west of west house line of Eleventh.....		13	6	14	2	.....	1		
Green street, south side, 58 feet 3 inches east of northeast house line of Ridge avenue.....		14	6	14	2	.....	1		
Green street, north side, 38 feet 6 inches east of east house line of Broad.....		14	6	13	1	.....	1		

*New Fire Hydrants—Fourth District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Green street, north side, east house line of Fifteenth.....		15	6	14	11	.....	1		
Green street, north side, east house line of Eighteenth.....		15	6	15	1	.....	1		
Hamilton street, north side, east house line of Seventeenth.....		15	6	19	.....	.....	1		
Hamilton street, south side, west house line of Twenty-third.....		15	6	12	.....	.....	1		
Hare street, south side, 14 feet west of west house line of Ringgold.....		15	6	13	8	.....	1		
Huntington street, north side, 10 feet east of east house line of Fifteenth.....		28	6	13	10	.....	1		
Jefferson street, south side, 3 feet east of east house line of Nineteenth.....		29	6	14	.....	.....	1		
Jefferson street, south side, 7 feet 8 inches east of east house line of Twentieth.....		29	6	11	11	.....	1		
Jefferson street, north side, west house line of Twenty-second.....		29	15	.....	.....	.....	1		
Jefferson street, north side, 11 feet west of west house line of Twenty-third.....		29	6	15	.....	.....	1		
Judson street, east side, south house line of Brown.....		15	6	9	.....	.....			
Kessler street, west side, south house line of Green.....		13	6	8	.....	.....	1	1	
Larch street, east side, 36 feet 6 inches north of north house line of Wallace.....		14	6	8	.....	.....	1		
Lambert street, east side, south house line of Susquehanna avenue.....		32	6	11	6	.....	1		
Lehigh avenue, south side, west house line of Thirteenth.....		37	6	16	4	.....	1		
Lehigh avenue, north side, east house line of Twenty-eighth.....		28	6	3	.....	.....	1		

FIG

*New Fire Hydrants—Fourth District—Continued.*

Street.	Location.	Ward.	Size of Main.	8-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Lemon street, north side, 2 feet west of west house line of Tenth.....		14	6	4			1		
Linn street, south side, 2 feet west of west house line of Twenty-second.....		15	6	20	3		1		
Linn street, north side, west house line of Twenty-third.....		15	6	14			1		
Lorain street, east side, 2 feet north of north house line of Wallace.....		13	6	5			1		
McNally street, east side, opposite center of Owen.....		15	6	3	11		1		
Master street, south side, east house line of Seventh.....		20	6	12				1	
Master street, north side, 43 feet 6 inches west of west house line of Bouvier.....		29	6	15			1		
Master street, north side west house line of Twenty-third.....		29	6	15			1		
Master street, north side, west house line of Twenty-sixth.....		29	6	5	6		1		
Master street, north side, 1 foot east of west house line of Twenty-eighth.....		29	6	13	7		1		
Master street, south side, west house line of Twenty-ninth.....		29	6	6			1		
Melon street, south side, 7 feet east of southeast house line of Ridge avenue.....		14	6	14	6		1		
Mervine street, west side, south house line of Master.....		20	6	16			1		
Mervine street, east side, 146 feet north of north house line of Berks.....		32	6				1		
Mervine street, east side, 246 feet north of north house line of Berks.....		32	6	14	9				
Montgomery avenue, north side, 25 feet 6 inches east of east house line of Seventh.....		20	6	15			1		

*New Fire Hydrants—Fourth District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Montgomery avenue, north side, 3 feet 6 inches east of east house line of Warnock.....		20	6	14	6	.....	1		
Montgomery avenue, north side, 10 feet east of east house line of Eleventh.....		20	6	14	6	.....	1		
Montgomery avenue, north side, west house line of Van Pelt.....		32	6	13	5	.....	1		
Montgomery avenue, south side, west house line of Twenty-second.....		29	6	12	2	.....	1		
Montgomery avenue, south side, east house line of Twenty-ninth.....		29	6	14	6	.....	1		
Morse street, south side, east house line of Thirty-second.....		32	6	8	2	.....	1		
Myrtlewood street, east side, 6 feet south of south house line of Jefferson.....		29	6	7	6	.....	1		
Natrona street, west side, 91 feet north of north house line of Engleside avenue.....		29	6	5		.....	1		
Nicholas street, north side, west house line of Twentieth.....		29	6	14	2	.....	1		
Ninth street, west side, 13 feet north of north house line of Callowhill.....		13	8	7		.....	1		
Ninth street, west side, 1 foot south of south house line of Noble.....		13	8	7		.....	1		
Ninth street, west side, south house line of Spring Garden.....		13	8	9		.....	1		
Ninth street, east side, north house line of Susquehanna avenue.....		20	6	13	1	.....	1		
Ninth street, west side, south house line of York.....		37	6	12	6	.....	1		
Nineteenth street, west side, south house line of Callowhill.....		15	6	14	3	.....	1		
Nineteenth street, east side, 4 feet south of south house line of Pennsylvania avenue.....		15	10	8	6	.....	1		



*New Fire Hydrants—Fourth District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH. CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Nineteenth street, west side, 60 feet 3 inches south of south house line of Brown.....		15	10	14	.....	.....	1		
Nineteenth street, west side, south house line of Parrish.....		15	6	12	.....	.....		1	
Nineteenth street, west side, 38 feet north of north house line of Poplar.....		29	10	14	6	.....	1		
Nineteenth street, west side, 10 feet 6 inches north of north house line of Thompson .....		29	6	19	6	.....	1		
Nineteenth street, west side, south house line of Oxford.....		29	6	15	6	.....	1		
Nineteenth street, west side, 8 feet 6 inches north of north house line of Oxford.....		29	6	14	6	.....	1		
Nineteenth street, east side, south house line of Montgomery avenue.....		29	6	12	6	.....	1		
Nineteenth street, west side, 20 feet 10 inches north of north house line of Monument avenue.....		32	6	14	6	.....	1		
Nineteenth street, east side, south house line of Huntingdon .....		28	6	14	6	.....	1		
Noble street, north side, 51 feet west of west house line of Marshall.....		13	6	11	3	.....	1		
North street, south side, east house line of Eighteenth.....		15	6	18	6	.....	1		
Norris street, north side, 7 feet west of west house line of Eighth.....		20	6	14	6	.....	1		
Norris street, south side, east house line of Park avenue.....		32	12	15	6	.....	1		
Norris street, south side, 2 feet east of east house line of Fifteenth.....		32	6	16	10	.....	1		
Norris street, 11 feet west of west house line of Seventeenth.....		32	6	12	4	.....	1		
Norris street, north side, west house line of Cleveland avenue.....		32	6	12	.....	.....	1		

*New Fire Hydrants—Fourth District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Norris street, south side, 8 feet east of east house line of Twentieth.....		32	6	14	11	.....	1		
Norris street, south side, 3 feet east of east house line of Thirty-second.....		32	6	13	.....		1		
Olive street, north side, east house line of Seventeenth.....		15	6	5	3	.....	1		
Olive street, north side, east house line of Eighteenth.....		15	6	5	.....		1		
Ontario street, west side, 10 feet south of south house line of Master.....		20	6	14	6	.....	1		
Opal street, west side, south house line of Cumberland.....		23	6	9	6	.....	1		
Oxford street, north side, east house line of Seventeenth.....		29	6	14	5	.....	1		
Oxford street, south side, east house line of Nineteenth.....		29	6	13	5	.....	1		
Page street, south side, east house line of Thirty-second.....		32	6	10	.....		1		
Parrish street, south side, east house line of Twenty-eighth.....		15	6	14	6	.....	1		
Park avenue, east side, 2 feet south of south house line of Jefferson.....		20	6	11	3	.....	1		
Park avenue, west side, north house line of Sedgley avenue.....		37	6	8	3	.....	1		
Pennock street, west side, south house line of Poplar.....		15	6	11	6	.....		1	
Perklomen street, southwest side, south house line of Wylie.....		15	10	14	.....		1		
Perklomen street, northeast side, east house line of Vineyard.....		15	10	14	5	.....	1		
Perth street, east side, 78 feet north of north house line of Jefferson.....		20	6	8	.....		1		

*New Fire Hydrants—Fourth District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.				
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.	
Perth street, west side, south house line of Jefferson.....		20	6	6	.....	.....	1			
Perth street, east side, south house line of Columbia avenue.....		20	6	7	9	.....	.....	1		
Poplar street, north side, 6 feet east of east house line of Eighth.....		13	6	13	10	.....	.....	1		
Poplar street, north side, east house line of Eleventh.....		20	6	14	9	.....	.....	1		
Poplar street, north side, east house line of Twelfth.....		20	10	13	6	.....	.....	1		
Poplar street, south side, east house line of Vineyard.....		15	6	8	9	.....	.....	1		
Poplar street, north side, 60 feet west of west house line of Geary.....		29	6	13	9	.....	.....	1		
Poplar street, north side, 3 feet west of west house line of Twentieth.....		29	6	8	8	.....	.....	1		
Poplar street, north side, east house line of Twentieth.....		15	6	18	5	.....	.....	1		
Poplar street, north side, east house line of Twenty-second.....		29	6	14	2	.....	.....	1		
Poplar street, north side, 6 feet west of west house line of Twenty-eighth.....		29	6	18	.....	.....	.....	1		
Portland street, north side, 42 feet east of east house line of Eleventh.....		14	4	5	1	.....	.....	1		
Potts street, on dead end of 6-inch pipe, 60 feet 9 inches east of east house line of Twelfth.....		14	4	.....	.....	.....	.....	1		
Prospect street, west side, south house line of Master.....		20	6	4	.....	.....	.....	1		
Ringold street, east side, north house line of Brown.....		15	6	17	3	.....	.....	1		
Ridge avenue, east side, 2 feet south of south house line of Jefferson.....		29	6	3	6	.....	.....	1		

*New Fire Hydrants—Fourth District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Rush street, south side, east house line of Brown.....		37	6	9			1		
Scott street, south side, east house line of Twentieth.....		29	6	6			1		
Sedgley avenue, north side, 3 feet east of east house line of Broad.....		37	6	10	6		1		
Sedgley avenue, north side, 3 feet east of east house line of Twenty-sixth.....		28	6	15	4		1		
Sedgley avenue, south side, 6 feet east of east house line of Twenty-seventh.....		28	8	20	3		1		
Sedgley avenue, southeast side, southwest house line of Ridge avenue.....		32	8	19					1
Seventh street, east side, north house line of Brown.....		13	6	11	4				1
Seventh street, east side, south house line of Berks.....		20	6	15	6		1		
Seventh street, east side, 2 feet 6 inches south of south house line of Norris.....		20	6	16	6		1		
Seventeenth street, east side, north house line of Green.....		15	6	14			1		
Seventeenth street, west side, south house line of Green.....		15	6	14	10		1		
Seventeenth street, west side, south house line of Mt. Vernon.....		15	6	13	7		1		
Seventeenth street, east side, south house line of North.....		15	6	15	8		1		
Seventeenth street, west side, south house line of Master.....		29	6	11	6		1		
Seventeenth street, west side, south house line of Jefferson.....		29	6	16	6		1		
Seventeenth street, east side, south line of Berks.....		32	6	14	5		1		

*New Fire Hydrants—Fourth District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Seventeenth street, east side, north house line of Berks.....		32	6	14			1		
Seventeenth street, west side, north house line of Diamond.....		32	6	14	8		1		
Seybert street, south side, east house line of Seventeenth.....		29	6	10			1		
Seybert street, north side, east house line of Nineteenth.....		29	6	12	6		1		
Showaker street, south side, 4 feet 9 inches east of east house line of Twenty-fifth.....		28	6	11	4		1		
South College avenue, south side, east house line of Twentieth.....		29	6	9	3		1		
South College avenue, south side, 22 feet 8 inches east of west house line of Twentieth.....		29	6	23			1		
Fpringett street, south side, west house line of Twentieth.....		15	6	6			1		
Stiles street, south side, 2 feet west of west house line of Thirtieth.....		29	6	15	6		1		
Susquehanna avenue, south side, 1 foot east of east house line of Seventh.....		20	6	14	6		1		
Susquehanna avenue, north side, 9 feet east of east house line of Broad.....		37	6	18	9		1		
Susquehanna avenue, north side, 2 feet west of west house line of Broad.....		28	6	8	2		1		
Susquehanna avenue, south side, 5 feet east of east house line of Seventeenth.....		32	6	13			1		
Susquehanna avenue, south side, 8 feet east of east house line of Eighteenth.....		32	6	15			1		
Susquehanna avenue, south side, 4 feet 3 inches east of east house line of Nineteenth.....		32	6	8	8		1		
Thirtieth street, east side, west house line of Stiles.....		29	10	14			1		

*New Fire Hydrants—Fourth District—Continued.*

Street.	Location.	Ward.	Size of Main.		6-INCH CONNECTION.		STYLE.		
			Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.	
Thirtieth street, west side, 5 feet 3 inches south of south house line of Jefferson.....		29	10	15	4		1		
Thirtieth street, west side, 3 feet south of south house line of Oxford.....		29	10	14			1		
Thirtieth street, east side, 159 feet 6 inches south of south house line of Columbia avenue.....		29	10	14			1		
Thirtieth street, east side, north house line of Arlington.....		32	6	13	6		1		
Thirtieth street, east side, 4 feet 6 inches south of south house line of Norris.....		32	12	17	9		1		
Thirtieth street, east side, south house line of Dauphin.....		28	12	14	10		1		
Thirty-and-one-half street, west side, south house line of Arlington.....		32	6	7			1		
Thirty-one-and-three-quarter street, west side, 58 feet 6 inches south of south house line of Norris.....		32	6	10			1		
Thirty-second street, west side, 2 feet south of south house line of Arlington.....		32	6	31			1		
Thirty-second street, west side, south house line of Diamond.....		32	6	12	6		1		
Thirty-second street, east side, 2 feet south of southwest house line of Ridge avenue.....		28	12	18	7			1	
Thirty-third street, east side, south house line of Cumberland.....		28	48	51					
Thompson street, south side, west house line of Thirtieth.....		29	10	14	5		1		
Twelfth street, east side, south house line of Somerset.....		37	6	14			1		
Twentieth street, west side, south house line of Callowhill.....		15	6	11	9				1
Twentieth street, east side, south house line of Brandywine street.....		15	6	15			1		

*New Fire Hydrants—Fourth District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Twentieth street, west side, south house line of Green.....		15	10	18	5	.....	1		
Twentieth street, west side, south house line of Brown.....		15	6	19	.....	.....	1		
Twentieth street, west side, south house line of Parrish.....		15	6	17	6	.....	1		
Twentieth street, west side, south house line of Poplar.....		15	6	15	7	.....	1		
Twentieth street, west side, south house line of Jefferson.....		29	6	10	1	.....	1		
Twentieth street, west side, north house line of Montgomery avenue.....		32	6	18	9	.....	1		
Twentieth street, east side, 1 foot south of south house line of Diamond.....		32	6	18	8	.....	1		
Twentieth street, west side, south house line of Susquehanna avenue.....		32	6	14	.....	.....	1		
Twentieth street, east side, north house line of Susquehanna avenue.....		28	6	14	2	.....	1		
Twenty-eighth street, west side, south house line of Dauphin.....		28	6	14	8	.....	1		
Twenty-first street, east side, south house line of Brandywine.....		15	6	15	.....	.....	1		
Twenty-first street, west side, south house line of Green.....		15	6	14	4	.....	1		
Twenty-first street, east side, south house line of Fairmount avenue.....		15	6	15	.....	.....	1		
Twenty-first street, east side, 3 feet south of south house line of Jefferson.....		29	10	14	8	.....	1		
Twenty-first street, west side, 168 feet north of north house line of Montgomery avenue.....		32	6	14	2	.....	1		
Twenty-first street, west side, south house line of Norris.....		32	6	13	5	.....	1		

*New Fire Hydrants—Fourth District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Twenty-first street, west side, 197 feet 10 inches north of north house line of Norris.....		32	6	14	7	.....	1		
Twenty-first street, east side, south house line of Susquehanna avenue.....		32	6	10		.....	1		
Twenty-fifth street, west side, 126 feet south of south house line of Fairmount avenue.....		15	6	15		.....	1		
Twenty-fifth street, west side, 6 feet north of north house line of Perot.....		15	6	15	7	.....	1		
Twenty-fifth street, west side, north house line of Hare.....		15	6	15	6	.....			1
Twenty-fifth street, east side, 6 feet south of south house line of Brown.....		15	6	24	6	.....	1		
Twenty-five and three-quarters street, east side, north house line of Page.....		32	6	8	6	.....	1		
Twenty-fourth street, west side, south house line of Biddle.....		15	6	10		.....			1
Twenty-fourth street, east side, 4 feet south of south house line of Spring Garden.....		15	6	14	6	.....			1
Twenty-fourth street, west side, 2 feet north of north house line of Spring Garden.....		15	6	16		.....			1
Twenty-fourth street, west side, south house line of Hare.....		15	6	20	5	.....			1
Twenty-ninth street, west side, 9 feet south of south house line of Parrish.....		29	6	26		.....			
Twenty-ninth street, west side, 166 feet north of north house line of Oxford.....		29	8	22	5	.....			1
Twenty-second street, east side, south house line of Carlton.....		15	6	11	9	.....	1		
Twenty-second street, west side, 1 foot north of south house line of Shamokin.....		15	6	9	8	.....	1		
Twenty-second street, east side, north house line of Spring Garden.....		15	10	9	8	.....	1		



*New Fire Hydrants—Fourth District—Continued.*

22

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Twenty-second street, east side, south house line of Green.....		15	10	8	7	.....	1		
Twenty-second street, east side, south house line of Mt. Vernon.....		15	6	12	5	.....	1		
Twenty-second street, east side, 22 feet 6 inches south of south house line of Jefferson.....		29	6	18	10	.....	1		
Twenty-second street, east side, south house line of Norris.....		29	6	18	.....	.....	1		
Twenty-second street, west side, north house line of Norris.....		32	6	18	10	.....	1		
Twenty-second street, east side, south house line of Somerset.....		28	6	6	10	.....	1		
Twenty-second street, west side, south house line of Cambria.....		28	6	11	4	.....	1		
Twenty-second street, east side, south house line of Indiana avenue.....		28	6	16	7	.....	1		
Twenty-second street, west side, south house line of Clearfield.....		28	6	18	.....	.....	1		
Twenty-seventh street, east side, south house line of Brown.....		15	6	14	6	.....	1		
Twenty-seventh street, east side, 3 feet south of south house line of Girard avenue.....		29	6	14	10	.....	1		
Twenty-seventh street, west side, south house line of Columbia avenue.....		29	6	14	6	.....	1		
Twenty-seventh street, east side, south house line of Dauphin.....		28	6	14	6	.....	.....	.....	1
Twenty-seventh street, east side, 4 feet south of south house line of York.....		28	6	14	3	.....	1		
Twenty-seventh street, east side, south house line of Herman.....		28	6	14	3	.....	.....	.....	1
Twenty-sixth street, west side, 9 feet 3 inches north of north house line of Jefferson.....		29	6	16	6	.....	1		

325

*New Fire Hydrants—Fourth District—Continued.*

Street.	Location.	Ward.	6-INCH CONNECTION.		STYLE.			
			Size of Main. Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Twenty-third street, east side, south house line of Wood.....		15	6	14		1		
Twenty-third street, west side, 3 feet north of north house line of Biddle.....		15	6	14		1		
Twenty-third street, west side, north house line of Gold.....		15	6	14	8	1		
Twenty-third street, west side, north house line of Hare.....		15	6	15		1		
Van Pelt street, west side, south house line of Norris.....		32	6	14	4	1		
Vineyard street, west side, 8 feet north of north house line of Perkiomen.....		15	6	15	10	1		
Wilmington street, east side, 3 feet 10 inches north of north house line of Oxford.....		29	6	15	6			1
Wilmington street, west side, 172 feet south of south house line of Columbia avenue.....		29	6	8	9			
Wilmington street, west side, 172 feet north of north house line of Montgomery avenue.....		32	6	3	2	1		
Woodstock street, east side, 141 feet south of south house line of Norris.....		32	6	16		1		
Wood street, north side, west house line of Twentieth.....		15	6	9	4	1		
York street, south side, east house line of Fifteenth.....		28	6	12	4		1	
York street, north side, 3 feet east of east house line of Eighteenth.....		28	6	12	7	1		
York street, north side, east house line of Twenty-fifth.....		28	6	16	4			1
York street, north side, 4 feet east of east house line of Twenty-sixth.....		28	6	14				1
<b>Totals.....</b>				<b>3,932</b>	<b>5</b>	<b>271</b>	<b>18</b>	<b>7</b>

# NEW FIRE HYDRANTS.

## FIFTH DISTRICT.

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Fisk street, northwest side, 31 feet northeast of northeast house line of Cresson.....		28	6	14	6	.....	1		
Gates street, northwest side, southwest house line of Manayunk avenue.....		21	6	14	6	.....	1		
Gates street, southeast side, 214 feet northeast of northeast house line of Wood.....		21	6	14	6	.....	1		
Jefferson street, northwest side, 305 feet northeast of northeast house line of Wood.....		21	6	14	6	.....		1	
Jefferson street, southeast side, 600 feet northeast of northeast house line of Wood.....		21	6	14	6	.....		1	
Jefferson street, southeast side, northeast house line of Pechin.....		21	6	14	6	.....		1	
Leverington avenue, southeast side, 8 feet southwest of southwest house line of Wood .....		21	6	8	.....		1		
Leverington avenue, southeast side, 6 feet southwest of southwest house line of Webster.....		21	6	8	.....		1		
Magnet street, northeast side, northwest house line of Flint.....		21	6	11	6	.....	1		
Main street, southwest side, 55 feet southeast of southeast house line of Shur's lane.....		21	10	6	6	.....	1		
Manayunk avenue, northeast side, 3 feet northwest of southwest house line of Ridge avenue.....		21	6	10	6	.....	1		
Manayunk avenue, northeast side, 14 feet northwest of northwest house line of Markle.....		21	10	9	.....		1		
Manayunk avenue, northeast side, 16 feet southeast of southeast house line of Kingsley.....		21	10	9	.....		1		
Nice avenue, southeast side, 11 feet southwest of southwest house line of Wissahickon avenue.....		21	6	8	6	.....	1		

*New Fire Hydrants—Fifth District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Nice avenue, southeast side, 479 feet southwest of southwest house line of Wissahickon avenue.....		21	6	8	6	.....	1		
Nice avenue, northwest side, 850 feet southwest of southwest house line of Wissahickon avenue.....		21	6	8	6	.....	1		
Osborne street, southeast side, 118 feet northeast of northeast house line of Ridge avenue.....		21	6	14	6	.....	1		
Ridge avenue, southwest side, 455 feet southeast of southeast house line of Wissahickon drive.....		21	6	20	.....	.....	1		
<b>Totals.....</b>				<b>209</b>	<b>6</b>	.....	<b>15</b>	<b>3</b>	

## NEW FIRE HYDRANTS. SIXTH DISTRICT.

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Berkley street, southeast side, southwest house line of Germantown avenue.....		22	6	17	.....	.....	1		
Berkley street, northwest side, southwest house line of Green.....		22	6	16	.....	.....	1		
Berkley street, northwest side, 5 feet northeast of northeast house line of Wayne.....		22	6	16	.....	.....	1		
Bellview street, south side, east house line of Twenty-first.....		28	6	14	.....	.....	1		
Bellfield avenue, southwest side, 484 feet southeast of southeast house line of Mill.....		22	6	20	.....	.....	1		
Bockius street, southwest side, southeast house line of Woodbine.....		22	6	13	.....	.....	1		
Broad street, west side, north house line of Roxborough.....		33	12	4	.....	.....	1		
Broad street, east side, 2 feet south of south house line of Cayuga.....		33	6	4	.....	.....	1		
Broad street, east side, north house line of Bristol.....		33	6	4	.....	.....	1		
Broad street, east side, north house line of Juniata.....		33	6	4	.....	.....	1		
Broad street, east side, north house line of Roxborough.....		33	6	4	.....	.....	1		
Butler street, northwest side, southwest house line of Fifteenth.....		28	6	14	.....	.....	1		
Butler street, southeast side, northeast house line of Sixteenth.....		28	6	14	.....	.....	1		
Cayuga street, northwest side, northeast house line of Germantown avenue.....		22	6	28	.....	.....	1		

*New Fire Hydrants—Sixth District—Continued.*

Street.	Location	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.		
				Feet.	In.	O. S.	No. 1.	No. 2.
Cheltenham avenue, southeast side, southwest house line of Germantown avenue.....		22	6	14				1
Cheltenham avenue, southeast side, 126 feet northeast of northeast house line of Green.....		22	6	13				1
Cheltenham avenue, southeast side, 474 feet northeast of northeast house line of Wayne.....		22	6	10			1	
Cheltenham avenue, northwest side, northeast house line of Green.....		22	10	14			1	
Cheltenham avenue, northwest side, 26 feet northeast of northeast house line of Pulaski avenue.....		22	10	13			1	
Cheltenham avenue, northwest side, southwest house line of Wayne avenue.....		22	10	13			1	
Cheltenham avenue, northwest side, 87 feet southwest of southwest house line of Knox.....		22	10	13			1	
Cheltenham avenue, northwest side, southwest house line of Germantown avenue.....		22	10	13			1	
Chew street, southwest side, northwest house line of Washington lane.....		22	12	21			1	
Chew street, northeast side, northwest house line of Johnson.....		22	12	21			1	
Chew street, southwest side, 5 feet southeast of northwest house line of Cliveden.....		22	12	21			1	
Chew street, northeast side, southeast house line of Upsal.....		22	12	21			1	
Eberle street, southwest side, southeast house line of Godfrey.....		22	6	13			1	
Germantown avenue, southwest side, 253 feet northwest of northwest house line of Coulter.....		22	10	11			1	
Germantown avenue, southwest side, northwest house line of Carpenter.....		22	10	8			1	
Germantown avenue, southwest side, northwest house line of Sedgwick.....		22	10	9			1	

*New Fire Hydrants—Sixth District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH. CONNECTION.			STYLE.		
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Germantown avenue, southwest side, northwest house line of Mt. Pleasant avenue.....		22	10	9	.....	.....	1		
Germantown avenue, southwest side, northwest house line of Mt. Airy avenue.....		22	10	9	.....	.....	1		
Germantown avenue, northeast side, southeast house line of Union avenue.....		22	6	9	.....	.....	1		
Germantown avenue, northeast side, northwest house line of Highland avenue.....		22	6	9	.....	.....	1		
Germantown avenue, southwest side, northwest house line of Allens lane.....		22	12	4	.....	.....	1		
Germantown avenue, northeast side, southeast house line of Evergreen.....		22	6	8	.....	.....	1		
Germantown avenue, northeast side, northwest house line of Spring House pike.....		22	6	6	.....	.....	1		
Haines street, southeast side, northeast house line of Uuderhill .....		22	6	12	.....	.....	1		
Hunting Park avenue, northwest side, southwest house line of Germantown avenue.....		28	12	6	.....	.....	1		
Hunting Park avenue, southeast side, southwest house line of Wayne.....		28	12	22	.....	.....	1		
Hunting Park avenue, northwest side, southwest house line of Clarissa. ....		28	12	6	.....	.....	1		
Hunting Park avenue, southeast side, northeast house line of Puleski avenue.....		28	12	22	.....	.....	1		
Jefferson street, northeast side, southeast house line of Johnson.....		22	6	16	.....	.....	1		
Lehman street, southeast side, 111 feet southwest of southwest house line of Wayne.....		22	6	10	.....	.....	1		
Lenox street, north side, east house line of Fifteenth.....		28	6	7	.....	.....	1		
Maplewood street, southeast side, northeast house line of Wayne.....		22	6	15	.....	.....		1	

*Fire Hydrants—Sixth District—Continued.*

Street.	Location,	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.		
				Feet.	In.	O. S.	No. 1.	No. 2.
Maplewood street, southeast side, southwest house line of Green.....		22	6	12				1
Mt. Airy avenue, southeast side, 262 feet southwest of southwest house line of Crittenden.....		22	6	16			1	
Mt. Airy avenue, northwest side, southwest house line of Crittenden.....		22	6	16				1
Mt. Airy avenue, southeast side, southwest house line of Stenton avenue.....		22	6	16				1
Mt. Airy avenue, northwest side, southwest house line of Anderson.....		22	6	9				1
Mt. Airy avenue, northwest side, southwest house line of Sprague.....		22	6	8				1
Mt. Airy avenue, southeast side, southwest house line of Sullivan.....		22	6	25			1	
Park avenue, west side, south house line of Westmoreland.....		28	6	18			1	
Park avenue, east side, south house line of Rising Sun lane.....		28	6	18			1	
Pelham road, northwest side, 151 feet southwest of southwest house line of Germantown avenue.....		22	6	17			1	
Phil-Ellena street, northwest side, southwest house line of Germantown avenue.....		22	6	18	6		1	
Phil-Ellena street, northwest side, 303 feet northeast of northeast house line of Quincy.....		22	6	12			1	
Phil-Ellena street, northwest side, southwest house line of Quincy.....		22	6	12			1	
Phil-Ellena street, northwest side, northeast house line of Pelham road.....		22	6	12			1	
Pulaski avenue, southwest side, west house line of Seventeenth.....		28	12	6			1	
Pulaski avenue, southwest side, east house line of Eighteenth.....		28	12	6			1	



*New Fire Hydrants—Sixth District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.			STYLE.		
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Pulaski avenue, southwest side, 25 feet southeast of southeast house line of	Hunting Park avenue.....	28	12	6	.....	.....	1	.....	.....
Quincy street, southwest side, southeast house line of	Westview.....	22	6	14	.....	.....	1	.....	.....
Quincy street, northeast side, southeast house line of	Pelham road.....	22	6	24	.....	.....	1	.....	.....
Rittenhouse street, southeast side, northeast house line of	Adams.....	22	6	13	.....	.....	.....	1	.....
Seymour street, northwest side, southwest house line of	Germantown avenue.....	22	6	16	.....	.....	1	.....	.....
Sixteenth street, east side, south house line of	Erie avenue.....	28	6	14	.....	.....	.....	1	.....
Sixteenth street, west side, north house line of	Venango.....	28	6	14	.....	.....	1	.....	.....
Sixteenth street, east side, south house line of	Venango.....	28	6	14	.....	.....	1	.....	.....
Sixteenth street, east side, north house line of	Tioga.....	28	6	14	.....	.....	1	.....	.....
Smedley street, east side, north house line of	Ontario.....	28	6	17	.....	.....	1	.....	.....
Smedley street, east side, 5 feet south of south house line of	Tioga.....	28	6	3	.....	.....	1	.....	.....
Straub street, northwest side, 300 feet northeast of northeast house line of	Germantown avenue.....	33	6	11	.....	.....	1	.....	.....
Straub street, southeast side, southwest house line of	Sixteenth.....	33	6	11	.....	.....	1	.....	.....
Stenton avenue, northeast side, northwest house line of	Wyoming.....	22	6	24	.....	.....	1	.....	.....
Stenton avenue, northeast side, 130 feet southeast of southeast house line of	Wyoming.....	22	6	24	.....	.....	.....	1	.....
Stenton avenue, northeast side, 63 feet north of northeast house line of	Germantown avenue.....	22	6	18	.....	.....	1	.....	.....

*New Fire Hydrants—Sixth District—Continued.*

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Thorp's lane, north side, 890 feet west of west house line of York road.....		22	6	8			1		
Thorp's lane, north side, 1,929 feet west of west house line of York road.....		22	6	8			1		
Thirteenth street, west side, south house line of Westmoreland.....		22	6	14			1		
Thirteenth street, east side, south house line of Rising Sun lane.....		37	6	14			1		
Twenty-first street, east side, west house line of Spencer.....		22	6	18			1		
Twenty-fifth street, south west side, southeast house line of Union avenue.....		22	6	15			1		
<i>Twenty-fifth street, southwest side, northwest house line of Lydia.....</i>		22	8	15			1		
<i>Twenty-fifth street, northeast side, 189 feet northwest of northwest house line of Mermaid.....</i>		22	8	15			1		
<i>Twenty-fifth street, southwest side, northwest house line of Moreland avenue.....</i>		22	8	15			1		
Twenty-fifth street, southwest side, northwest house line of Moreland avenue.....		22	8	12			1		
Wayne street, southwest side, northwest house line of Hansberry.....		22	8	12			1		
Wayne street, southwest side, southeast house line of Queen.....		22	8	12			1		
Wayne street, southwest side, southeast house line of Penn.....		22	8	12			1		
Wayne street, southwest side, northwest house line of Manheim.....		22	6	8			1		
Wayne street, southwest side, southeast house line of Coulter.....		22	8	12			1		
Wayne street, northeast side, southeast house line of Winona.....		22	8	31			1		
Wayne street, southwest side, 2 feet southeast of southeast house line of School lane.....		22	8	12			1		

*New Fire Hydrants—Sixth District—Continued.*

Street.	Location.	Ward,	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Wayne street, northeast side, 143 feet northwest of northwest house line of School lane.....		22	8	19	.....	1			
Wayne street, southwest side, southeast house line of Cheltenham avenue.....		22	8	12	.....	1			
Wingohocking street, southeast side, southwest house line of Clara.....		22	6	14	.....	1			
Wissahickon avenue, northeast side, 258 feet southeast of southeast house line of Queen lane .....		22	12	10	.....	1			
<b>Totals.....</b>				1,052		87	11		

## FIRE HYDRANTS RENEWED. FIRST DISTRICT.

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION.	STYLE.													
			Old.	New.		Feet.	Inches.	TAKEN OUT.					PUT IN.						
								O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.	
Christian street, south side, east house line of Second.....		2	10		15			1							1				
Christian street, north side, southeast house line of Passyunk.....		3	6		17			1								1			
Christian street, north side, east house line of Fallon.....		3	10		9	6		1								1			
Denmark street, north side, east house line of Second.....		1	6		12			1								1			
Earp street, north side, east house line of Ninth.....		1	6		11			1								1			
Eighteenth street, west side, 12 feet south of south house line of Wharton.....		36	6		14	6		1								1			
Eighteenth street, east side, 15 feet south of south house line of Titan.....		26	6		14	6		1								1			
Ellsworth street, south side, 125 feet east of east house line of Eleventh.....		26	6		15			1								1			
Federal street, north side, 94 feet east of east house line of Fourth.....		2	6		15			1								1			
Fitzwater street, south side, 2 feet west of west house line of Tenth.....		3	6		15			1								1			
Fitzwater street, north side, 200 east feet east of house line of Tenth.....		4	6		15			1								1			
Fifth street, west side, 6 feet north of north house line of Siegel.....		1	6		14	6		1								1			
Fifth street, west side, 47 feet north of north house line of Tasker.....		1	6		15			1								1			

*Fire Hydrants Renewed—First District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CON- NECTION.		STYLE.																
			Old.	New.	Feet.	In.	TAKEN OUT.					PUT IN.											
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.						
Fifth street, east side, 5 feet north of north house line of Wilder.....		1	6		15		1																
Fifth street, west side, 81 feet south of south house line of Paxton.....		2	6		15		1																
Fifth street, west side, south house line of Carpenter.....		2	6		15		1																
Fifth street, east side, 79 feet south of south house line of Marriott.....		2	6		15		1																
Greenwich street, north side, 2 feet east of east house line of Moyamensing avenue.....		1	6		16		1																
Hoffman street, south side, 4 feet east of east house line of Sixth.....		1	6		8		1																
Jackson street, north side, 7 feet east of east house line of Sixth.....		1	6		16	6	1																1
Jarvis street, north side, 2 feet east of east house line of Moyamensing av.		1	6		8	6	1																
Jamison street, north side, 183 feet west of west house line of Seventh....		2	6		8		1																
Linnard street, north side, 2 feet east of east house line of Ninth.....		1	6		11		1																
McIlvain street, south side, 58 feet east of east house line of Fifth.....		2	6		8		1																
Mary street, north side, 208 feet east of east house line of Seventh.....		2	6		8		1																
Mifflin street, north side, 2 feet east of southeast house line of Moyamensing avenue.....		1	6		14	6	1																

*Fire Hydrants Renewed—First District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION		STYLE.																			
			Old	New.	Feet.	Inches.	TAKEN OUT.					PUT IN														
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.									
Moyamensing ave., north side, 104 feet east of east house line of Seventh		1	6		16		1																			
Moyamensing avenue, south side, 8 feet south of southeast house line of Marker		1	6		3		1																			
Moyamensing avenue, southeast side, 83 feet southwest of south house line of Dickinson		1	16		19	6	1																			
Moore street, south side, east house line of Swanson		1	6		3	6	1																			
Ninth street, west side, 9 feet south of south house line of Tasker		1	6		11	6	1																			
Ninth street, east side, 16 feet south of south house line of Scott		1	6		10		1																			
Passyunk avenue, southeast side, 277 feet south of south house line of Mifflin		1	6		15		1																			
Passyunk avenue, northwest side, 239 feet south of south house line of Moore		26	6		15		1																			
Passyunk avenue, northwest side, 23 feet north of north house line of Pierce		26	6		15		1																			
Passyunk avenue, northwest side, 39 feet northeast of north house line of Morris		26	6		15		1																			
Passyunk avenue, northwest side, 23 feet southwest of south house line of Tasker		26	6		15		1																			

*Fire Hydrants Renewed—First District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN		6-INCH CONNECTION.		STYLE.																			
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.														
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.									
Passyunk avenue, southeast side, 200 feet northeast of north house line of Reed.....		1	6		16			1																		
Passyunk avenue, northwest side, 142 feet southwest of south house line of Fitzwater.....		4	6		15			1																		
Passyunk avenue, southeast side, 81 feet southwest of south house line of South.....		4	6		15			1																		
Point Breeze avenue, west side, 200 feet southwest of south house line of Reed.....		36	6		18	6		1																		
Second street, east side, north house line of Greenwich.....		1	6		18			1																		
Second street, west side, 81 feet north of north house line of Carpenter....		2	6		15			1																		
Second street, west side, 21 feet south of south house line of Queen.....		2	10		14	6		1																		
Second street, east side, 19 feet south of south house line of Catharine....		2	10		14	6		1																		
Second street, east side, south house line of Almond.....		3	6		14	6		1																		
Second street, west side, 50 feet south of south house line of Bainbridge..		4	6		14	6		1																		
Second street, west side, 153 feet north of north house line of Bainbridge		4	6		14	6		1																		
Seventeenth street, west side, 35 feet south of south house line of Federal		26	6		14	6		1																		

*Fire Hydrants Renewed—First District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION.		STYLE.														
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.									
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.				
Seventeenth street, west side, 9 feet north of north house line of Ellsworth.		26	6	.....	14	6	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Sixth street, west side, 2 feet north of north house line of Morris.....		1	6	.....	15	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Sixth street, east side, 85 feet north of north house line of Marriott.....		2	6	.....	15	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Sixth street, west side, 8 feet north of north house line of Alaska.....		4	6	.....	15	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
South street, north side, 72 feet east of east house line of Twenty-sixth....		7	6	.....	15	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Third street, east side, 10 feet south of south house line of Marriott.....		2	6	.....	15	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Twenty-second street, east side, 9 feet north of north house line of Catharine.....		30	6	.....	16	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Twenty-third street, east side, 4 feet north of north house line of League.		30	6	.....	15	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Watkins street, north side, east house line of Second.....		1	6	.....	8	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Watkins street, north side, 2 feet east of east house line of Sixth.....		1	6	.....	7	6	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Washington avenue, north side, west house line of Twenty-first.....		30	6	.....	9	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Webster street, south side, 282 feet west of west house line of Eighteenth		30	6	.....	9	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Webster street, north side, 110 feet west of west house line of Twenty-first.....		30	6	.....	3	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....



*Fire Hydrants Renewed—First District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION.		STYLE.																
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.											
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.						
Wharton street, north side, 41 feet east of east house line of Fourth.....		2	6	.....	15	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wharton street, north side, 2 feet east of west house line of Eighth.....		2	6	.....	14	6	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wharton street, north side, 13 feet east of east house line of Nineteenth..		36	6	.....	14	6	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<b>Total.....</b>					865	6	65	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

23

## FIRE HYDRANTS RENEWED. SECOND DISTRICT.

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION.		STYLE.													
			Old.	New.	Feet.	Inches.	O. S.	TAKEN OUT.					PUT IN.							
								No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.			
Albion street, west side, 88 feet south of south house line of Race.....		10	6					1												
Ann street, south side, 141 feet east of east house line of Twentieth.....		8	6		8		1													
Ann street, south side, 141 feet east of east house line of Twentieth.....		8	6					1												
Arch street, south side, 130 feet west of west house line of Eighteenth.....		9	12		11		1													
Arch street, south side, 232 feet east of east house line of Twenty-first.....		9	6		11		1													
Aspen street, north side, 125 feet west of west house line of Thirty-eighth.....		24	6		14		1													
Baltimore avenue, north side, 265 feet east of east house line of Forty-first.....		27	8		23		1													1
Baltimore avenue, north side, west house line of Forty-second.....		27	6					1												
Baltimore avenue, north side, 70 feet east of east house line of Forty-third.....		27	6						1											1
Baring street, south side, 96 feet east of east house line of Thirty-sixth.....		24	4		14															
Baring street, north side, 118 feet west of west house line of Thirty-sixth.....		24	6		18		1													1
Belmont avenue, west side, 12 feet north of north house line of Wyalusing.....		34	12		33		1													1
Belmont avenue, west side, 42 feet north of north house line of Girard ave.....		34	12		32		1													1

*Fire Hydrants Renewed—Second District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION.		STYLE.													
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.								
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.			
Belmont avenue, east side, 13 feet south of south house line of Jefferson...		24	12	.....	29	..	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Belmont avenue, east side, 106 feet north of north house line of Jefferson.		24	12	.....	29	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Broad street, east side, south house line of Rodman.....		7	6	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Branch street, north side, 75 feet east of east house line of Fourth.....		6	6	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Chestnut street, south side, 180 feet east of east house line of Fifth.....		5	10	.....	3	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Chestnut street, north side, 177 feet west of west house line of Sixth .....		6	10	.....	3	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Chestnut street, north side, 170 feet west of west house line of Ninth.....		9	10	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Chestnut street, north side, 135 feet west of west house line of Thirteenth		9	10	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Chestnut street, north side, 12 feet west of west house line of Thirty-third		27	8	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Cherry street, south side, 112 feet west of west house line of Ninth.....		10	6	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Crown street, west side, 272 feet north of north house line of Race.....		6	6	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Crown street, east side, 98 feet south of south house line of Vine.....		6	6	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Delaware avenue, east side, 87 feet south of south house line of Lombard...		5	6	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Dinker street, north side, 172 feet east of east house line of Second.....		6	6	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Eighteenth street, west side, south house line of Rodney.....		7	12	.....	14	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....

*Fire Hydrants Renewed—Second District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION.		STYLE.															
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.										
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.					
Eighteenth street, east side, 33 feet north of north house line of Exeter....		8	12	.....	14	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Elm avenue, south side, 36 feet west of west house line of Forty-first.....		24	10	.....	4	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Elm avenue, south side, 27 feet west of west house line of Forty-second....		24	10	.....	4	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Elmwood avenue, north side, east house line of Sixty-first.....		27	6	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Elmwood avenue, north side, east house line of Sixty-third.....		27	6	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Elmwood avenue, north side, east house line of Sixty-seventh.....		27	6	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Evelina street, north side, 11 feet west of west house line of Levant.....		5	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fairmount avenue, north side, west house line of Markoe.....		34	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lancaster ave., north side, 48 feet east of east house line of Forty-seventh.		34	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lancaster ave., north side, 26 feet east of east house line of Forty-eighth..		34	6	.....	25	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lancaster ave., north side, 86 feet east of east house line of Forty-eighth..		34	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lancaster ave., s. w. side, 102 feet n. w. of north house line of Girard ave..		34	6	.....	7	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lancaster ave., n. e. side, 103 feet s. e. of south house line of Girard ave....		24	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lancaster ave., north side, 136 feet west of west house line of Fiftieth.....		34	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lombard street, north side, 257 feet west of west house line of Second.....		5	6	.....	14	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

*Fire Hydrants Renewed—Second District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN,		6-INCH CONNECTION.		STYLE.																	
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.												
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.							
Lombard street, north side, 195 feet west of west house line of Third.....		5	6		14		1																	
Lombard street, north side, 195 feet east of east house line of Fifth.....		5	6		14		1																	
Lombard street, north side, 120 feet east of east house line of Seventh.....		5	6		14		1																	
Lombard street, north side, east house line of Radcliff.....		7	6		14		1																	
Lombard street, north side, 20 feet east of east house line of Fothergill...		7	6		14		1																	
Lombard street, north side, east house line of Thirteenth.....		7	6										1											
Lombard street, north side, west house line of Twenty-sixth.....		7	6																					
Locust street, south side, 216 feet w. of west house line of Thirty-seventh..		27	8		18		1																	
Locust street, south side, 14 feet east of east house line of Thirty-ninth....		27	8		18		1																	
Ludlow street, south side, 62 feet east of east house line of Thirty-first.....		27	6																					
Ludlow street, north side, 110 feet w. of west house line of Thirty-ninth.		27	6		11		1																	
Girard avenue, southeast corner of Thirty-seventh.....		24	12																					
Haverford avenue, north side, 246 feet east of east house line of Fifty-second.....		34	6		23		1																	
Haverford avenue, south side, 268 feet east of east house line of Fifty-fourth.....		34	12																					

*Fire Hydrants Renewed—Second District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION		STYLE.													
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.								
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.			
Haverford avenue, south side 186 feet west of west house line of Fifty-fifth.....		34	12	.....	23	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Haverford avenue, south side, west house line of Sixty-one-and-one-half..		34	12	.....	23	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Haverford avenue, south side, 8 feet east of east house line of Sixty-fifth.		34	12	.....	23	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Haverford ave., south side, 2 feet east of east house line of Lansdowne ave.		34	6	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Heston street, north side, 37 feet west of west house line of Fifty-second.		34	6	.....	9	6	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Island road, east side, 2 feet north of north house line of Paschall.....		27	6	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kershaw avenue, north side, 97 feet east of east house line of Fifty-first...		34	6	.....	11	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kershaw avenue, north side, 297 feet east of east house line of Fifty-second		34	6	.....	10	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lancaster avenue, south side, 40 feet west of west house line of Fortieth..		24	6	.....	34	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lancaster avenue, north side, south house line of Haverford avenue.....		24	12	.....	27	8	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lancaster avenue, northeast side, north house line of Brown.....		24	6	.....	25	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lancaster avenue, north side, 49 feet west of west house line of Forty-fifth		34	20	.....	5	6	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lancaster avenue, south side, 15 feet west of west house line of Forty-sixth		34	6	.....	25	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lancaster avenue, south side, 15 feet west of west house line of Forty-sixth		34	6	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

## Fire Hydrants Renewed—Second District—Continued.

Street.	Location.	Ward.	SIZE OF MAIN.		3-INCH CON- NECTION.		STYLE.													
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.								
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.			
Filbert street, south side, 167 feet east of east house line of Ninth.....		9	6	.....	14	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Filbert street, north side, 58 feet east of east house line of Seventeenth....		9	6	.....	14	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fifth street, east side, north house line of Gaskill.....		5	10	.....	14	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fourth street, east side, south house line of Chestnut.....		5	16	.....		.....		.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1
Fortieth street, east side, 9 feet north of north house line of Sansom.....		27	12	.....		.....		.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Fortieth street, west side, 181 feet south of south house line of Powelton avenue.....		24	12	.....	22	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fortieth street, east side, 37 feet south of south house line of Parrish.....		24	6	.....	17	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fortieth street, west side, 137 feet south of south house line of Sylvan.....		24	6	.....	23	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fortieth street, east side, 21 feet north of north house line of Poplar.....		24	6	.....	20	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fortieth street, west side, 16 feet south of south house line of Girard ave..		24	6	.....	26	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Forty-first street, west side, 156 feet north of north house line of Baltimore avenue.....		27	6	.....	17	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Forty-first street, west side, 234 feet south of south house line of Balti- more avenue.....		27	6	.....	17	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Forty-first street, east side, opposite centre of Viola.....		24	6	.....	21	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

*Fire Hydrants Renewed—Second District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION		STYLE.													
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.								
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.			
Forty-second street, west side, 190 feet south of south house line of Pine..		27	6	.....	23	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Forty-second street, west side, 3 feet south of south house line of Ludlow..		27	6	.....	12	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Forty-third street, west side, 30 feet north of north house line of Walnut..		27	6	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Forty-eighth street, east side, south house line of Baltimore avenue.....		27	6	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Girard avenue, southeast corner of Thirty-seventh.....		24	12	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....
Market street, north side, 31 feet east of east house line of Ninth... ..		9	6	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Market street, north side, northeast corner of Eighteenth.....		9	6	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	2
Market street, north side, 164 feet east of east house line of Thirty-second.		24	10	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Market street, north side, 350 feet west of west house line of Thirty-fourth.....		24	10	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Market street, north side, 211 feet west of west house line of Thirty-eighth		24	12	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1
Market street, south side, 7 feet west of west house line of Forty-fourth..		27	10	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1
Market street, south side, 75 feet west of west house line of Forty-ninth...		27	10	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Market street, south side, 296 feet west of west house line of Sixtieth.....		27	6	.....	5	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Mantua avenue, north side, opposite centre of Thirty-seventh .....		24	6	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1



*Fire Hydrants Renewed—Second District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION		STYLE.												
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.							
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.		
Ninth street, east side, 88 feet south of south house line of Sansom.....		8	6						1							1			
Ninth street, west side, south house line of Nassau.....		10	6		12		1									1			
Ninth street, west side, south house line of Morgan.....		10	6		14		1									1			
Nineteenth street, east side, 82 feet south of south house line of Market...		9	6		14		1										1		
North street, south side, west house line of Seventy-second.....		27	6					1									1		
Parrish street, south side,, 6 feet east of east house line of Forty-ninth....		34	6		20		1									1			
Paschall avenue, south side, west house line of Mud lane or Seventy-second.....		27	6		14				1								1		
Price street, north side, 129 feet east of east house line of Eighth.....		7	6		14		1									1			
Price street, north side, 10 feet east of east house line of Ninth.....		7	6		14		1									1			
Pine street, south side, west house line of Fothergill.....		7	6		14		1									1			
Pine street, south side, east house line of Quince.....		7	6		14		1									1			
Pine street north side, 92 feet east of east house line of Broad.....		7	6		14		1									1			
Pine street, south side, 212 feet west of west house line of Fifteenth.....		7	6		7		1									1			
Pine street, south side, 203 feet west of west house line of Seventeenth.....		7	6		7		1									1			

### Fire Hydrants Renewed—Second District—Continued.

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CON- NECTION.		STYLE.													
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.								
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.			
Pine street, south side, 204 feet west of west house line of Eighteenth.....		7	6		7		1									1				
Pier No. 22 South Wharves, 185 feet east of west curb line of Delaware avenue and 115 feet north of north house line of Lombard.....		5	6				1								1					
Race street, north side, 11 feet west of west house line of Front.....		6	6							1										1
Race street, north side, east house line of Second .....		6	6											1						1
Race street, south side, 158 feet east of east house line of Ninth.....		10	6		14		1													1
Race street, south side, 50 feet west of west house line of Eutaw.....		10	6		14		1													1
Race street, north side, 218 feet east of east house line of Tenth.....		10	6		14		1													1
Race street, south side, 229 feet east of east house line of Eighteenth.....		10	6		14		1													1
Race street, north side, 163 feet west of west house line of Twentieth.....		10	6		14		1													1
Rittenhouse street, north side, 62 feet west of west house line of Twentieth		8	6							1										1
Sansom street, north side, 168 feet east of east house line of Sixteenth.....		8	4	6	11		1													1
Second street, east side of market shed, 26 feet north of north house line of South.....		5	10				1									1				
Seventh street, west side, south house line of Bennet.....		8	6		7	6	1													1
Seventh street, west side, opposite center of Jayne.....		9	6		5	6	1													1

*Fire Hydrants Renewed—Second District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION.		STYLE.													
			Old.	New.	Feet.	In.	TAKEN OUT.					PUT IN.								
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.			
Seventeenth street, east side, south house line of Latimer.....		8	6		14		1									1				
Seventeenth street, west side, 57 feet south of south house line of Delancy place.....		7	6		8		1									1				
Seventy-second street, east side, 2 feet north of north house line of Elmwood.....		27	6					1								1				
Sixth street, west side, south house line of Minster.....		5	6		14		1									1				
Sixth street, east side, 161 feet south of south house line of Lombard.....		5	6		14		1									1				
Sixteenth street, east side, 9 feet south of south house line of Grace.....		10								1							1			
Sixtieth street, west side, 224 feet north of north house line of Lombard.....		27	8							1						1				
Sixty-first street, east side, south house line of Master.....		34	6							1						1				
Sixty-third street, west side, 12 feet north of north house line of Market.....		34	8		33		1									1				
Sixty-third street, east side, 60 feet north of north house line of Market.....		34	8		30		1											1		
Spruce street, north side, 2 feet east of east house line of Acorn alley.....		8	6							1							1			
Spring Garden street, north side, 4 feet west of west house line of Thirty-first.....		24	12		14	6	1												1	
Spring Garden street, north side, 137 feet east of east house line of Thirty-first.....		24	12		14	6	1												1	

*Fire Hydrants Renewed—Second District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION.		STYLE.												
			Old.	New.	Feet.	In.	TAKEN OUT.					PUT IN.							
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.		
Spring Garden street, north side, 137 feet east of east house line of Thirty-first .....		24	6						1										1
Spring Garden street, north side, 4 feet west of west house line of Thirty-first .....		24	6						1										1
Spring Garden street, north side, 6 feet west of west house line of Thirty-second.....		24	12						1										1
Spring Garden street, south side, west house line of Thirty-fourth.....		24	6		19		1								1				
Spring Garden street, north side, 110 feet west of west house line of Thirty-eighth.....		24	12		18		1												1
Stiles street, north side, 72 feet west of west house line of Forty-ninth....		34	6				1							1					
Tenor place, south side, 236 feet west of west house line of Fourth.....		5	6					1							1				
Thompson street, south side, 80 feet west of west house line of Forty-ninth.....		34	6						1						1				
Third street, east side, north house line of Gaskill.....		5	6		14		1								1				
Third street, east side, 2 feet north of north house line of Lombard.....		5	6							1									
Third street, east side, north house line of Union.....		5	6		14		1								1				
Third street, east side, south house line of Dock.....		5	6		14		1								1				

*Fire Hydrants Renewed—Second District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH. CONNECTION		STYLE.												
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.							
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.		
Third street, west side, 159 feet south of south house line of Chestnut.....		5	6		15	3	1									1			
Thirty-third street, east side, 8 feet north of north house line of Chancellor place.....		27	6		18		1									1			
Thirty-third street, west side, 3 feet north of north house line of Ludlow		27	6		12														
Thirty-fifth street, west side, 300 feet north of Pennsylvania Railroad.....		24	12				1								1				
Thirty-nine-and-one-half street, east side, 109 feet south of south house line of Warren.....		24	6		4		1									1			
Twentieth street, east side, south house line of Naudain.....		7	6		14		1									1			
Twentieth street, west side, 20 feet north of north house line of Hampton		7	6		14		1									1			
Twentieth street, west side, north house line of Heberton.....		8	6		14		1									1			
Twentieth street, west side, north house line of Linton.....		8	6		14		1									1			
Twentieth street, east side, 21 feet south of south house line of Moravian..		8	6		14		1									1			
Twentieth street, east side, south house line of Cuthbert.....		9	6		14		1									1			
Twentieth street, east side, 8 feet north of north house line of Wilcox.....		7	6		14		1									1			
Twenty-first west side, 105 feet north of north house line of Lombard.....		10	6		14		1									1			
Twenty-first street, west side, south house line of Walnut.....		8	12							1						1			

*Fire Hydrants Renewed—Second District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION.		STYLE.														
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.									
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.				
Twenty-second street, east side, 44 feet north of north house line of South		7	6	.....	12	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Twenty-second street, east side, 92 feet south of south house line of Pine		7	12	.....	13	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Twenty-second street, east side, 120 feet north of north house line of Pine		7	12	.....	17	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Twenty-second street, west side, 32 feet south of south house line of "F"		8	12	.....	18	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Twenty-second st., east side, 158 feet north of north house line of Chestnut		9	12	.....	18	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Twenty-second street, west side, 15 ft. south of south house line of Barker		9	12	.....	18	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Twenty-second street, west side, 137 feet north of north house line of Market.....		9	12	.....	24	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Twenty-second street, east side, 6 feet north of north house line of Cuthbert		9	12	.....	12	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Twenty-third street east side, 92 ft. north of north house line of Lombard		7	6	.....	14	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Twenty-third street, west side, 23 feet north of north house line of Kent		7	6	.....	14	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Twenty-third street, east side, 8 ft. south of south house line of Manning		8	6	.....	14	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Twenty-third street, west side, 121 ft. south of south house line of Locust		8	6	.....	14	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Union street, north side, 189 feet west of west house line of Front.....		5	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Viola street, north side, east house line of Forty-fourth.....		24	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

*Fire Hydrants Renewed—Second District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CON- NECTION.		STYLE.												
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.							
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.		
Vine street, north side, 18 feet west of west house line of Front.....		11	10										1		1				
Vine street, north side, 50 feet east of east house line of Garden.....		13	12		6		1									1			
Vine street, south side, east house line of Madison.....		10	12		14		1									1			
Vine street, north side, 188 feet west of west house line of Twelfth.....		14	12		14		1									1			
Vine street, south side, 233 feet west of west house line of Twentieth.....		10	12		8		1									1			
Vine street, north side, west house line of Twenty-first .....		15	20							1						1			
Warren street, north side, 170 feet east of east house line of Forty-second		24	6		11		1									1			
Wallace street, south side, 4 feet east of east house line of Thirty-fifth.....		24	7		14		1									1			
Walnut street, north side, 6 feet west of west house line of Delaware ave..		5	6							1						1			
Walnut street, north side, 115 feet west of west house line of Swanwick....		15	6		6		1									1			
Walnut street, north side, 41 feet west of west house line of Thirty-second		27	6						1								1		
Westminster avenue, north side, 16 feet west of west house line of Forty- eighth.....		34	12		17		1									1			
Westminster avenue, north side, west house line of Fiftieth.....		34	12						1										1

*Fire Hydrants Renewed—Second District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION		STYLE.												
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.							
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.		
Westminster avenue, north side, 30 feet west of west house line of Fifty-fourth.....		34	12							1							1		
Westminster avenue, north side, 29 feet west of west house line of Fifty-fourth.....		34	12							1							1		
Westminster avenue, south side, 25 feet west of west house line of Fifty-fifth.....		34	12							1								1	
Woodland ave., north side, 322 feet east of east house line of Thirty-fourth.....		27	8		17			1									1		
Woodland ave., n. w. side, 309 feet south of south house line of Walnut.....		27	8		17			1									1		
Woodland ave., north side, 26 feet west of west house line of Thirty-sixth.....		27	8		22			1									1		
Woodland ave., north side, 297 feet east of east house line of Fortieth.....		27	8		26			1									1		
Woodland ave., north side, 12 feet west of west house line of Fifty-eighth.....		27	10							1								1	
Woodland ave., south side, 190 feet east of east house line of Sixty-second.....		27	12							1							1		
<b>Totals.....</b>					1,598			134	15	88	9	1	2	7	147		29	15	1



# FIRE HYDRANTS RENEWED.

## THIRD DISTRICT.

24

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CON- NECTION.		STYLE											
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.						
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.	
Auburn street, north side, west house line of Trenton avenue.....		25	4	8	15	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Beach street, west side, 103 feet north of north house line of Green.....		11	6	.....	16	3	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Beach street, west side, 7 feet south of south house line of Canal.....		16	6	.....	13	10	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brown street, north side, 5 feet east of east house line of New Market.....		11	6	.....	15	6	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brown street, north side, west house line of Third.....		12	6	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Brooks street, west side, 11 feet south of south house line of Green.....		11	6	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brinton street, west side, 100 feet south of south house line of Jefferson...		17	4	.....	8	6	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Columbia avenue, south side, east house line of American.....		19	6	.....	14	6	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Crease street, east side, 218 feet south of south house line of Girard ave....		18	6	.....	8	7	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cumberland street, northeast corner of Tulip.....		31	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cumberland street, south side, east house line of Trenton avenue.....		31	6	.....	9	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cumberland street, north side, 8 feet east of east house line of Lee.....		19	6	6	15	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cumberland street, south side, 8 feet east of east house line of American..		19	6	6	15	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

357

*Fire Hydrants Renewed—Third District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION.		STYLE.											
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.						
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.	
Dauphin street, southwest side, 4 feet northwest of northwest house line of Belgrade.....		31	6						1					1				
Fairhill street, west side, 234 feet 6 inches north of north house line of Lehigh avenue.....		33	6		13	6	1								1			
Fairmount avenue, north side, 57 feet west of west house line of Mintzer		12	6		17	6	1								1			
Fairmount avenue, north side, 18 feet east of east house line of Fifth.....		12	6	6					1							1		
Fifth street, east side, 166 feet 4 inches south of south house line of Oxford		17	6		18		1								1			
Fifth street, west side, 25 feet 3 inches south of south house line of Montgomery avenue.....		19	6		18	6	1								1			
Fifth street, west side, 248 feet 6 inches north of north house line of Norris		19	6		18	4	1								1			
Fifth street, east side, 128 feet north of north house line of Cambria.....		33	6	6	18	6	1								1			
Fifth street, west side, 401 feet 6 inches south of south house line of Venango		33	6	6	18	6	1								1			
Fourth street, east side, 254 feet north of north house line of Montgomery av		19	6	6	15		1								1			
Fourth street, east side, opposite south house line of Hackley.....		19	6	6	15		1								1			
Front street, east side, 144 feet north of north house line of Columbia ave.		19	6		18	8	1								1			

*Fire Hydrants Renewed—Third District—Continued.*

Street;	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION		STYLE.													
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN								
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.			
Front street, west side, 4 feet 6 inches south of south house line of Susquehanna avenue.....		31	6		17	3	1										1			
Frankford avenue, northwest side, 204 feet 6 inches northeast of northeast house line of Tloga.....		25	10		17	6	1													1
Frankford avenue, east side, 165 feet south of south house line of Somerset		25	10		16		1													1
Frankford avenue, southeast side, 335 feet 10 inches northeast of northeast house line of Huntington.....		31	6		5	10		1												1
Frankford avenue, east side, 84 feet north of north house line of Dauphin.		31	10		19			1												1
Frankford avenue, east side, 101 feet south of south house line of Deal....		18	10		18	6	1													1
Frankford avenue, east side, south house line of Marlborough.....		18	10		19	6	1													1
Frankford avenue, east side, 27 feet south of south house line of Belgrade.		18	10		20			1												1
Gaul street, east side, south house line of Aramingo.....		31	6							1										1
Girard avenue, southeast side, southwest house line of Vienna.....		18	6							1										1
Girard ave., south side, 12 feet west of west house line of Frankford ave..		16	6							1										1
Hancock street, east side, south house line of Oxford.....		17	6							1										1

*Fire Hydrants Renewed—Third District—Continued.*

Street.	Location.	SIZE OF 6-INCH CON-		STYLE.															
		MAIN.		NECTION.		TAKEN OUT.					PUT IN.								
		Ward.	Old.	New.	Feet.	Inches.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.		
Hancock street, west side, 350 feet north of north house line of Montgomery avenue.....		19	6	14	6	1												1	
Hancock street, east side, 88 feet south of south house line of Diamond....		19	6	14	9	1													1
Hancock street, east side, 190 feet 7 inches north of north house line of Huntingdon.....		19	6	14	2	1													1
Hart lane, south side, east house line of Cambria.....		33	6						1										1
Huntingdon street, northeast side, 175 feet northwest of northwest house line of Thompson.....		31	6							1									1
Huntingdon street, south side, south house line of Cedar.....		31	6							1									1
Huntingdon street, north side, east house line of Kensington avenue....		31	6	14	6						1								1
Indiana avenue, north side, east house line of "E".....		33	6	6	14	6	1												1
James street, southeast side, southwest house line of Margaret.....		23	6	16		1													1
James street, west side, north house line of Orthodox.....		28	6						1										1
Jefferson street, south side, east house line of American.....		17	6	14	6	1													1
Kensington avenue, southeast side, 8 feet southwest of southwest house line of Sedgely avenue.....		25	6	11		1													1

*Fire Hydrants Renewed—Third District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION.		STYLE.											
			Old.	New.	Feet.	In.	TAKEN OUT.					PUT IN.						
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.	
Kensington avenue, northwest side, 2 feet southwest of southwest house line of Clearfield.....		33	6					1						1				
Kensington avenue, N. W. side, opposite southwest house line of Hilton...		33	6	6						1					1			
Lawrence street, west side, north house line of Poplar.....		16	6								1					1		
Lawrence street, west side, 17 feet north of north house line of Culvert...		16	6		12			1							1			
Lawrence street, west side 175 feet south of south house line of Dauphin		19	6	6	15			1							1			
Leopard street, west side, 255 feet north of north house line of Girard av		17	6					1						1				
Leiper street, N. W. side, 19 feet S. W. of southwest house line of Oxford.		23			15			1							1			
Lehigh avenue, south side, 5 feet east of east house line of Ninth.....		19	6		10	6		1							1			
Lehigh ave., north side, 12 feet east of east house line of Germantown av.		33			6			1							1			
Master street, north side, east house line of Hancock.....		17	6		14						1					1		
Master street, northwest side, 8 feet 6 inches northeast of northeast house line of Cadwalader.....		17	6		18			1							1			
New Market street, east side, 80 feet north of north house line of Poplar.		16	6		15	3		1							1			
New Market street, east side, 16 feet south of south house line of Laurel.		16	6		15	2		1							1			

*Fire Hydrants Renewed—Third District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION.		STYLE.											
			Old.	New.	Feet.	Inches.	TAKEN OUT.				PUT IN.							
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.	
New Market street, west side, 13 feet south of south house line of German-town avenue.....		16	6	.....	6	10	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Norris street, northeast side, 14 feet northwest of northwest house line of Richmond.....		18	6	6	18	6	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Norris street, northeast side, 319 feet northwest of northwest house line of Richmond.....		18	6	6	13	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Norris street, north side, 42 feet east of northeast house line of German-town avenue.....		19	18	.....	5	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Orthodox street, northeast side, southeast house line of Oakland.....		23	6	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Oxford street, north side, 38 feet east of east house line of Lawrence.....		19	6	.....	15	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Palethorp street, west side, 186 feet south of south house line of Dauphin		19	6	.....	8	6	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Paul street, east side, 153 feet north of north house line of Mill.....		23	6	6	19	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Paul street, west side, 273 feet northeast of northeast house line of Unity		23	6	6	8	6	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Paul street, southeast side, southwest house line of Orthodox.....		23	6	6	18	6	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Phillip street, west side, 86 feet north of north house line of Jefferson.....		17	6	.....	8	6	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Randolph street, east side, 85 feet south of south house line of Poplar.....		12	6	.....	9	10	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Randolph street, east side, 390 feet south of south house line of Wager.....		16	6	.....	12	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....

*Fire Hydrants Renewed—Third District—Continued.*

Street.	Location.	SIZE OF MAIN.		6-INCH CONNECTION.		STYLE.															
		Ward.	Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.									
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.				
Randolph street, west side, 109 feet 2 inches south of south house line of Girard avenue.....		16	6		12			1									1				
Richmond street, southeast side, 122 feet northeast of northeast house line of Franklin.....		25	6		12	9		1										1			
Richmond street, northwest side, 809 feet southwest of southwest house line of Wheatshaf Lane.....		25	6		8			1										1			
Richmond street, southeast side, 182 feet northeast of northeast house line of Ann.....		25	6							1										1	
Richmond street, northwest corner of Huntingdon.....		18	6								1										1
Richmond street, northwest side 85 feet 6 inches east of east house line of Montgomery avenue.....		18	6		14	6		1												1	
Richmond street, north west side, 94 feet northeast of northeast house line of Hanover street.....		18	10		14	6		1													1
Richmond street, northwest side, 177 feet southwest of southwest house line of Shackamaxon.....		18	6		12			1													1
Salmon street, west side, 162 feet south of south house line of Fremont....		25	6					1													1
Salmon street, east side, 300 feet south of south house line of Lehigh ave.		18	6		8			1													1
Second street, west side, 108 feet 6 inches south of south house line of George.....		16	6		18	6		1													1





*Fire Hydrants Renewed—Third District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN		6-INCH CONNECTION.		STYLE.													
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.								
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.			
Stella avenue, south side, 222 feet west of west house line of Emerland....		25	6	6	15	6	1										1			
St John street, west side, 51 feet north of north house line of Wood.....		11	6							1										1
St. John street, east side, 5 feet north of north house line of Poplar.....		16	6							1										1
Taylor street, south side, 3 feet west of west house line of Amber.....		31	6		10	10	1													1
Tacony street, west side, 110 feet south of south house line of Longshore..		35	6							1										1
Tackawanna street, southwest side, northeast house line of Gillingham...		23	6							1										1
Third street, west side, south house line of Noble .....		12	6							1										1
Third street, west side, 7 feet south of south house line of Buttonwood....		12	6		15	6	1													1
Third street, west side, 4 feet south of south house line of Green. ....		12	6		15	6	1													1
Third street, east side, 248 feet south of south house line of Green.....		11	6		15	6	1													1
Third street, west side, 85 feet 6 inches north of north house line of Brown		12	6		16	6	1													1
Thompson street, northwest side, northeast house line of Montgomery avenue.....		18	6		15		1													1
Thompson street, north side, 61 feet east of east house line of Adrian.....		17	6		13	6	1													1
Thompson street, north side, opposite centre of Leithgow.....		17	6		9	7	1													1

*Fire Hydrants Renewed—Third District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION.		STYLE.											
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.						
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.	
Unity street, north side, 4 feet west of west house line of Paul.....		23	6	6	12	8	1											
Venango street, south side, east house line of Kensington avenue.....		25			18	6					1							1
Weaver street, west side, 166 feet south of south house line of Fairmount avenue.....		12	4	6	8	6	1											1
York street, northeast side, 4 feet southeast of southeast house line of Gaul.....		31	6		9		1											1
Totals.....					1,222	2	91	3	18	5				1	103	13		

FIRE HYDRANTS RENEWED.  
FOURTH DISTRICT.

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION.		STYLE.															
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.										
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.					
Alder street, west side, south house line of Germantown avenue.....		37	6	.....	8	9	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Callowhill street, north side, 118 feet east of east house line of Eighth.....		15	10	.....	15	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Callowhill street, north side, 74 feet 6 inches west of west house line of Eighteenth.....		15	10	.....	22	3	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Callowhill street, north side, east house line of Newbold.....		15	6	.....	19	4	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Callowhill street, north side, east house line of Twenty-seventh (bridge)...		15	6	.....	26	9	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Camac street, west side, 12 feet 4 inches north of north house line of Norris.....		32	6	.....	14	6	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Columbia avenue, north side, 31 feet west of west house line of Park ave..		20	6	.....	17	11	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Columbia avenue, south side, 203 feet west of west house line of Twenty-third.....		29	6	.....	18	6	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Columbia avenue, north side, 23 feet 4 inches west of west house line of Twenty-sixth.....		29	6	.....	18	7	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cumberland street, north side, west house line of Twenty-sixth.....		28	6	.....	3	11	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Eighteenth street, east side, 15 feet south of south house line of Buttonwood.		15	6	.....	12	6	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

*Fire Hydrants Renewed—Fourth District—Continued.*

Street	Location.	Ward.	SIZE OF		STYLE.										
			6-INCH CON-		TAKEN OUT.				PUT IN.						
			MAIN.	NECTION.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.
Old.	New.	Feet.	Inches.												
Eighteenth street, west side, 5 feet 6 inches south of south house line of Thompson .....		29	6	.....	13	8	1	.....	.....	.....	.....	.....	.....	.....	.....
Franklin street, west side, 9 feet north of north house line of Wood.....		13	6	.....	12	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Franklin street, west side, 150 feet south of south house line of Brown.....		13	6	.....	11	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Franklin street, east side, 3 feet south of south house line of Dauphin.....		37	6	.....	14	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Green street, north side, 8 feet west of west house line of Twenty-second..		15	6	.....	18	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Green street, south side, east house line of Pennsylvania avenue.....		15	6	.....	13	9	1	.....	.....	.....	.....	.....	.....	.....	.....
Hamilton street, south side, 10 feet west of west house line of Twenty-second.....		15	6	.....	19	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Master street, south side, 7 feet east of east house line of Eighth.....		20	6	.....	15	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Master street, north side, 4 feet east of east house line of Ninth.....		20	6	.....	14	6	1	.....	.....	.....	.....	.....	.....	.....	.....
Master street, north side, 10 feet east of east house line of Twentieth.....		29	6	.....	15	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Master street, south side, 136 feet east of east house line of Twenty-fifth...		29	6	.....	13	6	1	.....	.....	.....	.....	.....	.....	.....	.....
Montgomery avenue, north side, 4 feet west of west house line of Uber.....		32	6	.....	14	6	1	.....	.....	.....	.....	.....	.....	.....	.....
Ninth street, west side, 157 feet 9 inches north of north house line of Parrish.....		15	10	.....	15	.....	1	.....	.....	.....	.....	.....	.....	.....	.....

*Fire Hydrants Renewed—Fourth District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION		STYLE.														
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.									
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.				
Ninth street, west side, 175 feet north of north house line of Poplar.....		20	6		8	3	1														
Norris street, north side, 9 feet 6 inches west of west house line of Tenth..		20	6		12		1														
Poplar street, north side, 12 feet east of east house line of Thirteenth.....		20	10		14	5	1														
Poplar street, south side, 38 feet 6 inches east of east house line of Broad..		14	6				1														
Poplar street, north side, 15 feet 6 inches west of west house line of Broad		29	16		9	6	1														
Poplar street, north side, 200 feet west of west house line of Sixteenth.....		29	16		6		1														
Ridge avenue, east side, 337 feet north of north house line of Hunting Park avenue .....		28	6		6	6	1														1
Ridge avenue, west side, 523 feet north of north house line of Hunting Park avenue.....		28	12		3	9	1														1
Seventeenth street, west side, north house line of Wood.....		15	6		14	5	1														
Seventeenth street, east side, north house line of Girard avenue.....		29	6		14		1														
Shirley street, south side, 11 feet east of east house line of Nineteenth....		15	6		16	2	1														1
Susquehanna avenue, south side, 22 feet west of west house line of Twelfth.		32	6		10	6					1										
Susquehanna avenue, south side, 42 feet 6 inches east of east house line of Park avenue.....		32	6		17	6	1														

*Fire Hydrants Renewed—Fourth District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN,		6-INCH CON- NECTION.		STYLE.												
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.							
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.		
Susquehanna avenue, south side, 44 feet east of east house line of Sixteenth.		32	6	.....	15		1	.....								1			
Thirtieth street, east side, 67 feet 7 inches south of south house line of Master.....		29	10	.....	14		1	.....								1			
Twentieth street, east side, 9 feet 8 inches north of north house line of Fairmount avenue.....		15	6	.....	16	6	1	.....								1			
Twentieth street, east side, 144 feet north of north house line of Columbia avenue.....		29	6	.....	14	7	1	.....											1
Twentieth street, east side, 205 feet north of north house line of Berks.....		32	6	.....	14	7	1	.....											1
Twenty-eighth street, north side, 88 feet north of north house line of Brown.....		15	6	.....	14	7	1	.....								1			
Twenty-fourth street, west side, south of south house line of Poplar.....		15	6	.....	14		1	.....											1
Twenty-fourth street, west side, 20 feet north of north house line of Jefferson.....		29	10	.....	12		1	.....											1
Twenty-ninth street, east side, 69 feet 10 inches south of south house line of Parrish.....		15	6	.....	21	5	1	.....											1
Twenty-ninth street, east side, 4 feet south of south house line of Poplar.....		15	6	.....	12	3	1	.....											1
Twenty-second street, west side, 17 feet 6 inches north of north house line of Columbia avenue.....		29	6	.....	18	3	1	.....											1

Fire Hydrants Renewed—Fourth District—Continued.

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH. CONNECTION		STYLE.																
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.											
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.						
Twenty-seventh street, north side, 52 feet north of north house line of Parrish.....		15	6	.....	15	5	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Twenty-third street, west side, north house line of Spring Garden.....		15	6	.....	14	6	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Twenty-third street, west side, 11 feet south of south house line of Hare...		15	6	.....	14	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Woodstock street, west side, 4 feet 6 inches south of south house line of Susquehanna avenue .....		32	6	.....	12	4	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....					723	4	51	.....	1	.....	.....	.....	.....	.....	.....	.....	43	8	1	.....	.....	.....	.....

FIRE HYDRANTS RENEWED.  
FIFTH DISTRICT.

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION.		STYLE.											
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.						
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.	
Davis street, southeast side, 32 feet southwest of southwest house line of Ezekiel.....		21	4	4			1							1				
Grape street, southeast side, 35 feet northeast of northeast house line of Main.....		21	6	6					1							1		
Grape street, northwest side, 26 feet southwest of southwest house line of Wood.....		21	6	6			1									1		
Grape street, northwest side, 19 feet northeast of northeast house line of Cresson.....		21	6					1								1		
Grape street, northwest side, 262 feet northeast of northeast house line of Cresson.....		21	6	6			1									1		
Green lane, southwest side, 242 feet southwest of southwest house line of Mitchell.....		21	6	6			1									1		
Lyceum avenue, southeast side, 12 feet northeast of northeast house line of Tower.....		21	6				1									1		
Main street, northeast side, 220 feet southeast of southeast house line of Shur's lane.....		21	6				1									1		
Main street, northeast side, 532 feet southeast of southeast house line of Shur's lane.....		21	6	6	2		1									1		



*Fire Hydrants Renewed—Fifth District—Continued.*

25	Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION.		STYLE.												
				Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.							
								O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.		
	Main street, northeast side, 28 feet southeast of southeast house line of Centre.....		21	6	6							1					1			
	Main street, northeast side, 123 feet southeast of southeast house line of Penn.....		21	6		13		1									1			
	Main street, northeast side, 44 feet southeast of southeast house line of Jackson.....		21	6	6			1									1			
	Main street, northeast side, 39 feet northwest of northwest house line of Robinson.....		21	6		10		1									1			
	Mechanic street, southeast side, 9 feet northeast of northeast house line of Leibert.....		21	6	6			1									1			
	Rodman street, southeast side, 8 feet southwest of southwest house line of Ridge avenue.....		28	6	6					1							1			
	Spring street, southeast side, 420 feet northeast of northeast house line of Wood.....		21	6							1						1			
	<b>Total.....</b>					25		11	1	3	1					1	15			

**FIRE HYDRANTS RENEWED.**  
**SIXTH DISTRICT.**

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CON- NECTION.		STYLE.												
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.							
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.		
Allens lane, southeast side, northeast house line of Emlen.....		22	10	10					1							1			
Bristol street, northwest side, southwest house line of Germantown ave...		28	12						1							1			
Chelten avenue, northwest side, 3 feet northeast of northeast house line of Wissahickon avenue.....		22	6						1							1			
Chelten avenue, northwest side, 69 feet southwest of southwest house line of Kinnier.....		22	6		26		1									1			
Chelten avenue, southeast side, southwest house line of Germantown ave.		22	6	6					1								1		
Chelten avenue, southeast side, 126 feet northeast of northeast house line of Green.....		22	6	6					1							1			
Chelten avenue, southeast side, 13 feet northeast of northeast house line of Cedar Lane.....		22	6	6						1						1			
Emlen street, northeast side, northwest house line of Franklin.....		22	6	6					1							1			
Germantown avenue, southwest side, 4 feet southeast of southeast house line of Washington.....		22	10		5		1									1			
Germantown avenue, northeast side, 33 feet 6 inches southeast of south- east house line of Upsal street.....		22	10		8		1									1			

*Fire Hydrants Renewed—Fifth District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION.		STYLE.												
			Old.	New.	Feet.	In.	TAKEN OUT.					PUT IN.							
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.		
Germantown avenue, northeast side, 33 feet northwest of northwest house line of Sedgwick.....		22	10					1								1			
Germantown avenue, southwest side, 11 feet 6 inches northwest of southeast house line of Mount Pleasant.....		22	10		6			1								1			
Germantown avenue, southwest side, 240 feet northwest of northwest house line of Allens lane.....		22	16					1								1			
Germantown avenue, northeast side, 189 feet northwest of northwest house line of Gowen avenue.....		22	10					1								1			
Germantown avenue, northeast side, 711 feet 6 inches northwest of northwest house line of McPherson.....		22	10					1								1			
Germantown avenue, northeast side, 104 feet 4 inches southeast of southeast house line of Mt. Airy.....		22	10	10				1								1			
Germantown avenue, northeast side, 503 feet northwest of northwest house line of Gowan avenue.....		22	10	10				1								1			
Germantown avenue, southwest side, 266 feet 6 inches northwest of northwest house line of McPherson.....		22	10	10					1							1			
Germantown avenue, northeast side, northwest house line of Washington.....		22	10	10						1						1			
Germantown avenue, southwest side, northwest house line of Upsal.....		22	10	10						1						1			
Germantown ave., southwest side, northwest house line of Tulpehocken.....		22	12	12						1						1			

*Fire Hydrants Renewed—Fifth District—Continued.*

Street.	Location.	SIZE OF MAIN.		6-INCH CONNECTION.		STYLE.												
		Ward.	Old.	New.	Feet.	In.	TAKEN OUT.					PUT IN.						
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.	
Germantown avenue, northeast side, 380 feet southeast of southeast house line of Mermaid avenue.....		22	10	10	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Germantown avenue, northeast side, northwest house line of Mermaid avenue.....		22	10	10	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Germantown avenue, southwest side, 541 feet 6 inches north west of north-west house line of Mermaid avenue.....		22	10	10	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Germantown avenue, northeast side, 12 feet southeast of southeast house line of Springfield.....		22	10	10	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Germantown avenue, northeast side, 149 feet 7 inches northwest of north-west house line of Willow Grove.....		22	10	10	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Germantown avenue, northeast side, 12 feet southeast of southeast house line of Springfield.....		22	10	10	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Germantown avenue, northeast side, 72 feet southeast of southeast house line of Miller.....		22	10	10	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Germantown avenue, southwest side, 71 feet southeast of southeast house line of Hartwell avenue.....		22	12	12	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Germantown avenue, northeast side, 161 feet 8 inches northwest of north-west house line of Hartwell avenue.....		22	6	6	8	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Germantown avenue, southwest side, 30 feet 6 inches northwest of north-west house line of Southampton.....		22	6	6	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....

*Fire Hydrants Renewed—Fifth District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION.		STYLE.												
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.							
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.		
Germantown avenue, southwest side, 121 feet 9 inches southeast of southeast house line of Highland avenue.....		22	12	12	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Germantown avenue, southwest side, 211 feet 8 inches southeast of southeast house line of Berkley.....		22	10	10	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Germantown avenue, northeast side, 28 feet 4 inches northwest of northwest house line of Evergreen.....		22	12	12	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Germantown avenue, southwest side, southeast house line of Roberts av...		28	10	10	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Germantown avenue, southeast side, northeast house line of Ardleigh.....		22	6	6	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Gorgas street, southeast side, 127 feet northeast of northeast house line of Musgrove.....		22	6	6	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
Maplewood avenue, southeast side, 496 feet southwest of southeast house line of Green.....		22	6	.....	15	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mill street, northwest side, northeast house line of Wakefield.....		22	4	4	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Morris street, northeast side, 35 feet southeast of southeast house line of Penn.....		22	6	6	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Morris street, northeast side, northwest house line of School lane.....		22	6	6	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
Mount Pleasant street, southeast side, southwest house line of Sprague.....		22	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Pelham road, southwest side, northwest house line of Upsal.....		22	6	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

*Fire Hydrants Renewed—Fifth District—Continued.*

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION		STYLE.											
			Old.	New.	Feet.	Inches.	TAKEN OUT.					PUT IN.						
							O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.	
Pelham road, northeast side, southeast house line of Franklin.....		22	6	6				1							1			
Penn street, northwest side, 193 feet 7 inches southwest of southwest house line of Green.....		22	4	4	9		1								1			
Pomona terrace, northwest side, 385 feet 3 inches northeast of northeast house line of Hancock.....		22	6	6				1							1			
Price street, southeast side, 154 feet southwest of southwest house line of Engle.....		22	6	6				1							1			
Pulaski avenue, southwest side, 340 feet southeast of southeast house line of Rittenhouse.....		22	12	12				1							1			
Reading pike, northeast side, southeast house line of Sunset avenue.....		22	6	6					1						1			
Smedley street, east side, 16 feet 6 inches south of south house line of Venango.....		28	6	6				1							1			
Smedley street, west side, 13 feet north of north house line of Tioga.....		28	6	6				1							1			
Stenton avenue, southwest side, 66 feet southeast of southeast house line of Logan.....		22	6	6	12		1									1		
Upsal street, southeast side, northeast house line of Musgrove.....		22	6	6					1						1			
Washington street, northwest side, 320 feet northeast of northeast house line of Green.....		22	6	6				1								1		



*Recapitulation of Fire Hydrants Set, Renewed, and Removed.*

DISTRICTS.		STYLE.					Total.
		O. S.	No. 1.	No. 2.	No. 3.	No. 4.	
Set.	First .....		184	13	5		202
	Second .....		228	83	36		292
	Third .....	1	319	25	2		347
	Fourth .....		271	18	7		296
	Fifth .....		15	3			18
	Sixth .....		83	11			94
	Total .....	1	1,095	108	50		1,249
Renewed.	First .....		63	2			65
	Second .....	7	147	29	15	1	199
	Third .....	1	103	13			117
	Fourth .....		43	8	1		52
	Fifth .....	1	15				16
	Sixth .....		48	9			57
	Total .....	9	419	61	16	1	506
Total new hydrants .....							1,755
Removed.	First .....	64	4	9	38		115
	Second .....	127	6	16	42	2	193
	Third .....	124	2	13	46		185
	Fourth .....	75	4	15	71		165
	Fifth .....	1	1				2
	Sixth .....	25	2	2			29
	Total .....	415	19	56	197		2
Total added during 1894 .....							560



*Fire Hydrants by Purveyors' Districts.*

DISTRICTS.	STYLE.						Total.
	O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	
First.....	228	690	676	112	.....	.....	1,701
Second.....	449	696	763	158	.....	17	2,083
Third.....	558	805	789	121	2	.....	2,275
Fourth.....	214	622	890	88	1	4	1,819
Fifth.....	196	104	109	10	.....	.....	419
Sixth.....	265	424	360	98	.....	.....	1,147
Total.....	1,905	3,341	3,587	587	3	21	9,444

*Fire Hydrants by Wards.*

Wards.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	Total.
First .....	94	184	156	19			453
Second .....	18	91	87	16			212
Third .....	14	59	41	7			121
Fourth .....	8	58	32	14			112
Fifth .....	37	65	57	15		1	175
Sixth .....	20	26	51	29		2	128
Seventh .....	16	78	85	12		1	192
Eighth .....	24	59	106	7		1	197
Ninth .....	16	58	68	14		3	159
Tenth .....	4	61	72	5		6	148
Eleventh .....	23	32	32	2			89
Twelfth .....	14	38	30	8			90
Thirteenth .....	36	37	55	14			142
Fourteenth .....		66	83				149
Fifteenth .....	26	140	172	14	1	2	355
Sixteenth .....	13	40	38	8	1		100
Seventeenth .....	26	54	31	2			113
Eighteenth .....	68	57	67	15			202
Nineteenth .....	88	129	124	20			361
Twentieth .....	51	84	124	2			261
Twenty-first .....	175	76	102	8			361
Twenty-second .....	215	345	251	74			885
Twenty-third .....	107	82	95	14			298
Twenty-fourth .....	137	104	131	22		1	395
Twenty-fifth .....	127	134	142	7			410
Twenty-sixth .....	28	118	120	16			282
Twenty-seventh .....	129	126	141	27		1	424
Twenty-eighth .....	64	142	222	43			471
Twenty-ninth .....	47	121	164	25		1	358
Thirtieth .....	24	81	112	6			223
Thirty-first .....	50	69	72	20			211
Thirty-second .....	28	76	83	12		1	200
Thirty-third .....	61	165	190	30	1		447
Thirty-fourth .....	72	123	81	21		1	298
Thirty-fifth .....		26	8	1			35
Thirty-sixth .....	39	90	97	31			257
Thirty-seventh .....	11	47	65	7			130
Totals .....	1,905	3,341	3,587	587	3	21	9,444

Statement of the number of Fire Hydrants by Districts and Wards during 1894 and total previous thereto.

	FIRST DISTRICT.									SECOND DISTRICT.									THIRD DISTRICT.									FOURTH DISTRICT.									FIFTH DISTRICT.			SIXTH DISTRICT.			Total.											
	Wards.								Total.	Wards.								Total.	Wards.								Total.	Wards.						Total.	Total.																			
	1	2	3	4	5	7	26	30		36	5	6	7	8	9	10	14		15	24	27	34	11	12	16	17		18	19	20	23	25	31			33	35	12	13	14	15	20		28	29	32	37	21	28	22	28	33	37	
Prior to 1894.....	.....	.....	.....	.....	.....	.....	.....	.....	1,585	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,017	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,118	.....	.....	.....	.....	.....	.....	.....	.....	1,684	.....	.....	403	.....	.....	.....	1,082	8,884				
During 1894.....	67	18	10	4	1	5	32	28	37	202	18	3	19	17	19	22	1	3	51	56	83	292	11	12	10	16	16	75	2	37	50	23	78	17	347	1	16	14	77	25	44	65	40	14	296	17	1	18	70	16	7	1	94	1,249
<b>Total</b> .....	.....	.....	.....	.....	.....	.....	.....	.....	1,787	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,309	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,460	.....	.....	.....	.....	.....	.....	.....	.....	1,980	.....	.....	421	.....	.....	.....	1,176	10,138					
Taken out 1894.....	.....	.....	.....	.....	.....	.....	.....	.....	115	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	193	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	185	.....	.....	.....	.....	.....	.....	.....	.....	165	.....	.....	2	.....	.....	.....	29	689					
<b>Total in City</b> ...	.....	.....	.....	.....	.....	.....	.....	.....	1,672	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,216	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,275	.....	.....	.....	.....	.....	.....	.....	.....	1,815	.....	.....	419	.....	.....	.....	1,147	9,444					

Number of attachments for Fire purposes previously reported.....	425
First District.....	1
Second District.....	1
Third District.....	1
Fourth District.....	0
Fifth District.....	1
Sixth District.....	0
<b>Made during 1894.....</b>	<b>429</b>
<b>Total</b> .....	<b>429</b>

*Attachments, etc., made by the Purveyors in accordance with permits issued by the Bureau of Water.  
Arranged by months.*

MONTHS.	NEW ATTACHMENTS.							SHUT-OFFS BY PERMIT.						WORK DONE WITHOUT PERMIT.						
	SIZE.							Repaired for larger attachments.	Re-drive.	Discontinued.	Transfer.	REPAIRS.		Totals.	DRAWN.					Drawn and retdriven.
	½-inch.	⅝-inch.	¾-inch.	1-inch.	1½-inch.	2-inch.	Total.					Not drawn.	Drawn and retdriven.		Discontinued and abandoned.	Duplicate.	Delinquent.	Leak.	Total.	
January .....	166	4	2	2	1	.....	175	2	8	4	.....	10	12	36	3	.....	.....	13	16	.....
February .....	138	1	8	2	2	2	148	1	2	3	.....	1	5	12	1	.....	4	8	13	.....
March .....	1,488	14	12	10	4	4	1,532	14	18	37	2	4	18	88	3	.....	2	38	43	72
April .....	1,693	38	14	16	1	4	1,766	23	57	41	1	6	10	138	17	.....	.....	67	84	174
May .....	1,354	33	31	14	3	6	1,441	24	37	27	1	26	17	132	2	.....	1	52	55	278
June .....	1,029	23	16	6	6	7	1,087	24	54	9	1	.....	19	107	6	.....	.....	44	50	73
July .....	870	35	28	21	5	4	963	7	22	40	18	7	21	115	26	.....	.....	39	65	390
August .....	951	26	18	20	5	6	1,027	17	51	18	4	1	19	105	28	.....	1	47	76	315
September .....	1,086	35	8	7	4	5	1,145	10	53	27	.....	5	12	107	14	.....	1	52	67	188
October .....	994	38	10	9	4	1	1,056	20	26	30	.....	3	8	87	16	.....	.....	31	47	448
November .....	1,29	48	8	18	7	6	916	7	28	32	.....	.....	13	80	5	.....	.....	22	27	.....
December .....	293	12	2	3	.....	3	313	1	21	14	.....	.....	19	55	2	.....	.....	37	39	69
<b>Totals.....</b>	<b>10,891</b>	<b>307</b>	<b>147</b>	<b>134</b>	<b>42</b>	<b>48</b>	<b>11,569</b>	<b>150</b>	<b>377</b>	<b>272</b>	<b>27</b>	<b>68</b>	<b>173</b>	<b>1,062</b>	<b>123</b>	<b>.....</b>	<b>9</b>	<b>450</b>	<b>582</b>	<b>2,007</b>

*Attachments, etc., made by the Purveyors in accordance with permits issued by the Bureau of Water.  
Arranged by districts.*

DISTRICTS.	NEW ATTACHMENTS.						SHUT OFFS BY PERMIT.							WORK DONE WITHOUT PERMIT.						
	SIZE.						Reamed for larger attachments.	Redriven.	Discontinued.	Transfer.	REPAIRS.		Totals.	DRAWN.						
	½-inch.	⅝-inch.	¾-inch.	1-inch.	1½-inch.	2-inch.					Total.	Not drawn.		Drawn and Redriven.	Discontinued and Abandoned.	Duplicate.	Delinquent.	Leak.	Total.	Drawn and Redriven.
First.....	2,285	10	18	19	8	3	2,343	2	74	42	3	.....	39	160	8	.....	5	109	122	.....
Second .....	1,893	122	39	32	15	17	2,118	69	95	114	18	.....	67	363	45	.....	1	110	156	794
Third .....	3,156	43	43	53	6	11	3,812	.....	92	104	1	48	7	252	67	.....	3	145	215	892
Fourth.....	2,684	90	28	19	10	12	2,843	79	82	6	1	9	25	206	3	.....	.....	81	84	190
Fifth .....	205	2	3	5	.....	1	216	.....	8	.....	1	2	15	22	.....	.....	.....	5	5	87
Sixth .....	668	40	16	6	3	4	737	.....	26	6	3	4	20	59	.....	.....	.....	.....	.....	94
Totals.....	10,891	307	147	134	42	48	11,569	150	377	272	27	63	173	1,062	123	.....	9	450	582	2,007

*Service Attachments Laid to the Curb (on Streets to be Paved or Repaved) by the Bureau of Water.*

DISTRICTS.	SIZE.						TOTAL.
	1/2-inch.	5/8-inch.	3/4-inch.	1-inch.	1 1/2-inch.	2-inch.	
First.....	2,265	2	4				2,271
Second.....	1,576	29					1,605
Third.....	2,147		1	2			2,150
Fourth.....	887	19	4	1			911
Fifth.....	175						175
Sixth.....	1,360			1			1,361
Totals.....	8,410	50	9	4			8,473

*Account of New Stops and Check Valves for 1894.*

DISTRICTS.	BUREAU OF WATER.		VINEY				Check Valves.	Total.
	2-Way.	Butterfly.	2-Way.	3-Way.	4-Way.	5-Way.		
First .....	420		5	16				441
Second .....	548			39				587
Third .....	569	6	2	27			5	609
Fourth .....	440	10		49	25		4	528
Fifth .....	41	3		1			1	46
Sixth .....	159							159
Total .....	2,172	19	7	132	25		10	2,368

*Repairs to Mains Stops and Fire Hydrants ; also Stops and Fire Hydrants Removed during 1894.*

DISTRICT.	Repairs to Mains.	STOPS.			FIRE HYDRANTS.		
		Repaired.	Renewed.	Removed.	Repaired.	Renewed.	Removed.
First .....	92	222	255	9	585	65	115
Second .....	102	190	208	28	203	199	193
Third .....	203	539	375	14	300	117	185
Fourth .....	217	341	27	119	1,198	52	165
Fifth .....	10	49	5	1	22	16	2
Sixth .....	85	9	15	1	12	60	29
Total .....	709	1,350	885	173	2,320	509	689

*Location of Check Valves.*

Street.	Location.	Ward.	Size.
Shawmont Pumping Station....	191 feet northeast of northeast wall of No. 1 engine house.....	21	30
Lardners Pt. Pumping Station...	Northwest side 156 ft. 6 ins. northwest of northwest h. l. of engine house.....	23	30
Lardners Pt. Pumping Station..	Robbins avenue, 47 ft. 4 ins., southeast of northwest h. l. of engine house.....	23	48
Spring Garden Pumping Station	River drive, 5 ft. 8 ins. west of west h. l. of new engine house .....	29	48
Spring Garden Pumping Station	River drive, 5 ft. 8 ins. west of west h. l. of new engine house, second main.....	29	48
Mifflin lane (East Park).....	Northwest side of P. & R. R. R.....	29	48
Mifflin lane (East Park).....	Northwest side of P. & R. R. R., second main	29	48
Devereaux street.....	14 ft. 2 ins. northwest of northwest fence line of Second street pike.....	35	48
Devereaux street.....	490 ft. 4 ins. northwest of northwest h. l. of Castor road.....	35	48
Devereaux street.....	74 ft. southeast of southeast fence line of Bristol pike.....	35	48



*Number of Valves raised in the several Districts during the Year 1894;  
also, in each Year since 1873.*

DISTRICT.	5-way Barton.	6-inch Barton.	8-inch Barton.	5-way Viney.	6-inch Viney.	3-inch.	4-inch.	6-inch.	8-inch.	10-inch.	12-inch.	16-inch.	20-inch.	30-inch.	36-inch.	Total.
First.....				1				2				1				4
Second.....	4					2	2	7			1					16
Third.....																
Fourth.....								1					1			2
<b>Total for 1894.....</b>	<b>4</b>			<b>1</b>		<b>2</b>	<b>2</b>	<b>10</b>			<b>1</b>	<b>1</b>	<b>1</b>			<b>22</b>
" 1893.....					1	5	8	17			1	2	1			35
" 1892.....		6			1	3	7	32		3	1	2				55
" 1891.....		2	2		1	6	10	37		3	1		1	2		65
" 1890.....		8	3			8	23	68		7	1	1				114
" 1889.....		15			2	4	23	78		4	1	1		1		124
" 1888.....		6				8	26	74		10	1	2		1		128
" 1887.....		11				11	16	61		10	3	4	2	1	1	120
" 1886.....		12				13	18	57	1	3				1		105
" 1885.....						11	24	97	1	9		2		1		145
" 1884.....						7	13	71	1	4	2	1	3	6	1	109
" 1883.....						4	27	88		8		1		1	1	130
" 1882.....			1			14	25	58	1	5	1			1		106
" 1881.....						15	44	90		5	7					161
" 1880.....						7	23	47		8	1			1		87
" 1879.....						9	16	60	1	3	2			1	1	93
" 1878.....						27	22	100		3	1		1	1		155
" 1877.....						12	6	50		1			1			70
" 1876.....						3	17	49		3			1			73
" 1875.....						17	55	120	4	12	2	4	1	2		217
" 1874.....						13	32	111	6	6	3	3				174
<b>Total for 21 years.....</b>	<b>4</b>	<b>60</b>	<b>6</b>	<b>1</b>	<b>5</b>	<b>194</b>	<b>437</b>	<b>1,370</b>	<b>15</b>	<b>107</b>	<b>29</b>	<b>24</b>	<b>12</b>	<b>20</b>	<b>4</b>	<b>2,288</b>

*Number of Complaints and Examinations during 1893 and 1894.*

MONTHS.	HYDRANTS.		SERVICE PIPES.		WASH PAVES.		SPIGOTS.		WATER-CLOSETS		HORSE TROUGHS		NO. LEAKS.		TOTAL.	
	1893.	1894.	1893.	1894.	1893.	1894.	1893.	1894.	1893.	1894.	1893.	1894.	1893.	1894.	1893.	1894.
January.....	426	106	267	74	53	6	6	5	6	2	3	2	26	10	785	205
February .....	197	48	137	73	22	4	2	2	10	4	2	1	31	8	400	140
March.....	160	71	142	76	9	3	3	3	14	6	1	.....	29	6	351	165
April.....	101	65	83	64	4	4	2	.....	6	1	.....	.....	11	14	206	148
May.....	122	68	89	60	4	.....	.....	2	5	5	1	.....	11	10	208	145
June.....	140	67	110	93	5	3	.....	5	12	10	2	.....	24	24	292	202
July.....	99	99	123	85	2	3	.....	7	7	3	1	1	13	16	245	214
August.....	88	71	78	61	5	2	4	3	7	8	2	2	16	22	197	169
September.....	127	87	86	45	1	1	2	1	3	3	.....	3	22	10	239	150
October .....	222	96	114	83	.....	2	13	3	33	9	1	2	14	14	295	209
November.....	126	74	107	66	1	1	3	2	5	13	.....	8	20	7	249	171
December.....	78	86	62	79	.....	2	6	2	4	17	.....	4	10	20	155	210
Total.....	1,881	938	1,398	859	106	31	41	35	112	81	13	23	234	161	3,622	2,128

# DISTRIBUTION EXPENSES.

*During the year 1894.*

INCLUDING EXPENSES AT MAIN OFFICE, PURVEYORS' DISTRICTS AND METER SHOP.

Material and Labor.	First District.	Second District.	Third District.	Fourth District.	Fifth District.	Sixth District.	Distribu- tion.	Meter Shop.	Main Office.	Totals.
Lead .....	\$6,712 99	\$6,311 57	\$4,085 79	\$20,254 68	\$10,924 61	\$9,482 65				\$57,772 29
Gasket.....	115 93	214 98	111 45	222 18		92 06				756 60
Coke.....	98 55	136 00	255 50	602 21	624 50	114 80				1,831 55
Wood .....	54 00				48 00	46 00				148 00
Pipes.....							\$399,136 34			399,136 34
Breeches pipes and ¼ turns.....							3,132 22			3,132 22
Small specials.....							33,692 92			33,692 92
Large specials.....							21,602 17			21,602 17
Frames and covers.....	1,142 99	1,366 60	1,297 68	1,918 82	235 22	602 50				6,563 72
Viney stops.....	1,080 00	1,140 00	1,365 00	3,612 00						7,197 00
Excavation by contract.....							3,826 88			3,826 88
Hauling, trans. and hotel.....		30 33	809 37	328 00			14,675 53	328 28		15,671 51
Supplies, tools, small stores, etc.....	973 60	2,204 59	2,634 25	4,593 72	3,340 56	2,002 37	2,354 74	412 11	490 55	19,006 49
Plumbing and plumbers, supplies.....	4 10		30 10		42 78	25 65		30,382 19		30,484 82
Meters, etc.....								2,485 50		2,485 50
Repairs to buildings, etc.....		40 00	15 90	38 00		23 00				116 90
Brick, stone, lime and cement.....	97 47	30 68	565 74	4,127 04	2,538 02	137 50		13 70		7,510 15

*Distribution Expenses—Continued.*

Material and Labor.	First District.	Second District.	Third District.	Fourth District.	Fifth District.	Sixth District.	Distribu- tion.	Meter Shop.	Main Office.	Totals.
Lumber.....	454 18	502 99	1,703 72	3,280 52	8,373 17	794 80		391 64		15,501 02
Hay, feed, etc.....	845 17	828 40	1,049 82	982 60	117 01	165 83				3,988 83
Stable supplies.....	151 42	323 24	47 13	293 90	2 20	11 52				829 41
Stable repairs.....	173 00	451 23	479 12	673 10	28 35	5 50				1,810 32
Stable medicine.....	5 20		63 50	97 00						219 70
Stable shoeing.....	124 25	188 00	130 75	135 00	24 01	26 00				578 01
Shop work.....	25,265 57	20,619 09	23,621 61	26,779 57	5,557 24	8,735 84	2,085 63	397 79	6 94	118,089 28
Supplies, stationery.....	444 34	319 39	177 19	314 38	83 67	234 87	3,731 58	363 80	1,172 54	6,841 76
Wages { Per diem.....	38,665 07	52,295 75	107,204 55	129,778 34	72,970 84	70,568 43	10,964 90	11 220 73	2,805 00	496,473 61
Wages { Salary.....	4,734 27	5,999 00	6,764 00	8,011 19	1,739 00	3,962 54				31,210 00
<b>Total cost of labor and material on account of distribution .....</b>	<b>\$81,196 01</b>	<b>\$92,951 86</b>	<b>\$156,912 17</b>	<b>\$206,042 24</b>	<b>\$106,669 18</b>	<b>\$97,031 86</b>	<b>\$495,202 91</b>	<b>\$45,995 74</b>	<b>\$4,475 03</b>	<b>\$1,286,477 00</b>
Buildings and grounds.....				18,003 62	8,216 05					26,219 67
Reading Terminal.....				1,480 25						1,480 25
Bureau of Gas.....					716 75					716 75
<b>Total labor and materials.....</b>	<b>\$81,196 01</b>	<b>\$92,951 86</b>	<b>\$156,912 17</b>	<b>\$225,526 11</b>	<b>\$115,601 98</b>	<b>\$97,031 86</b>	<b>\$495,202 91</b>	<b>\$45,995 74</b>	<b>\$4,475 03</b>	<b>\$1,314,893 67</b>

*Tabular Statement of Work Connected with the Distribution for the years 1880 to 1894, inclusive.*

Years.	PIPE.										Additional stops.	Additional Fire hydrants	Fire hydrants in use.	Meters in use.	SERVICE ATTACHMENTS.							
	Extensions.		Repairs and Relays.		Total pipe hauled.		Total amount in use.		Total amount handled.						½ in.	¾ in.	¾ in.	1 in.	1 ½ in.	2 in.	Total.	
	Feet.	Pounds.	Feet.	Pounds.	Feet.	Pounds.	Feet.	Pounds.	Feet.	Pounds.												
1880...	23,085	894,946	9,557	262,826	32,642	1,107,772	3,927,623	192,816,906	4,164,768	200,136,708	138	70	5,358	34	2,687	118	49	89	.....	.....	2,913	
1881...	56,616	2,832,623	3,832	199,649	60,448	3,032,272	3,981,239	195,649,529	4,225,216	203,168,980	249	144	5,502	42	3,166	137	59	121	.....	.....	3,483	
1882...	56,860	5,396,165	7,740	484,092	64,600	5,880,257	4,081,180	202,202,522	4,289,816	209,019,237	312	120	5,622	45	3,169	110	76	129	.....	.....	3,481	
1883...	63,215	3,048,645	12,605	675,420	75,880	3,724,065	4,144,395	205,251,167	4,365,696	212,773,301	281	130	5,752	63	4,576	97	71	133	.....	.....	4,877	
1884...	81,451	7,155,385	18,079	1,380,271	102,530	8,535,656	4,228,846	212,406,552	4,468,226	221,308,957	324	147	5,887	560	5,529	185	84	140	.....	7	5,945	
1885...	137,967	12,234,074	93,783	3,265,537	231,850	15,499,611	4,366,813	224,640,526	4,700,076	236,808,568	539	307	6,195	305	6,734	254	121	160	.....	16	7,285	
1886...	136,831	18,238,457	121,210	4,883,826	258,011	23,122,283	4,503,644	242,879,083	4,958,117	259,930,851	736	295	6,490	284	7,482	258	104	133	.....	32	8,009	
1887...	122,790	14,780,082	34,098	1,329,083	156,888	16,109,165	4,626,434	257,659,165	5,115,005	276,040,016	546	429	6,715	253	7,892	317	124	143	.....	2	54	8,532
1888...	133,552	6,856,379	45,943	1,483,631	179,495	7,843,010	4,759,986	261,015,544	5,294,500	283,883,026	772	214	6,929	267	8,260	193	139	118	.....	23	55	8,788
1889...	147,171	12,270,311	57,836	2,410,677	205,007	14,680,988	4,907,157	276,285,855	5,499,507	298,514,014	601	247	7,433	304	8,950	263	149	119	.....	17	46	9,544
1890...	159,176	14,164,305	70,546	3,058,294	229,722	17,222,539	5,066,333	290,450,160	5,729,229	315,736,613	810	316	7,749	552	9,248	426	167	164	.....	30	46	10,081
1891...	218,931	21,319,926	64,491	2,051,782	283,422	23,371,708	5,285,264	310,770,086	6,012,651	339,108,321	1,136	356	8,105	697	7,607	243	100	152	.....	13	38	8,178
1892...	158,783	9,713,931	104,996	5,352,355	263,779	15,066,316	5,414,047	320,484,047	6,276,430	354,174,637	1,025	342	8,147	789	8,093	289	198	218	.....	41	61	8,900
1893...	265,911	35,684,877	192,771	6,015,495	458,681	41,730,372	5,719,958	356,168,924	6,735,111	395,905,009	1,834	437	8,884	1,115	11,010	413	181	198	.....	44	46	11,892
1894...	283,569	34,693,341	173,376	5,778,809	456,945	40,469,150	5,993,527	390,859,265	7,192,056	436,374,159	2,362	560	9,444	1,196	10,891	307	147	134	.....	42	48	11,569

*New Meters Set.*

Ward.	Occupant.	Location.	Business.	Date when Set.	Name of Meter.	SIZE.								Gallons Consumed.	Remarks.
						½-inch.	¾-inch.	1-inch.	1½-inch.	2-inch.	3-inch.	4-inch.	6-inch.		
1	Bailey, John T.....	S. E. Otsego and Tasker sts.....	Rope Factory.....	Jan. 20.....	Crown.....		1						1	144,750	Charged by meter.
1	Spreckels, Claus.....	Reed st., 156 ft. E. of Meadow.....	Sugar Refinery.....	Nov. 12.....	Crown.....		1						1	24,000	Charged by meter.
1	Taylor, N. and G.....	{ N. S. Tasker, from Meadow } to Swanson.....	Tin Plate Factory.....	Nov. 28.....	Crown.....				1				1	808,500	Charged by meter.
2	Hey, D.....	1155-57 S. Ninth st.....	Bottling Establishment.....	Dec. 8.....	Crown.....		1						1	750	
2	O'Neill, J. F.....	1114 S. Front street.....	Laundry.....	Dec. 24.....	Crown.....		1						1	2,250	
3	South 11th st. Market Co.	743-69 S. Eleventh st.....	Ice Factory.....	June 29.....	Gem.....						1		1	1,752,000	Charged by meter.
6	Crowell & Class.....	{ 50 and 54 N. Delaware ave., } and 51-55 N. Water st.....	Cold Storage.....	June 14.....	Gem.....				1				1	1,209,000	
6	Fidelity Trust Co.....	325-31 Chestnut st.....	Trust Co.....	May 19.....	Crown.....				1				1	1,185,750	Charged by meter.
8	Girard Life Insurance } and Trust Co.....	N. E. Broad and Chestnut sts.....	Trust Co.....	Aug. 18.....	Gem.....						1		1	5,382,000	
8	Jefferson Med. Coll'ge.....	120-30 S. 10th & 1016-24 Sanson.	College and Hospital ..	Jan. 4.....	Crown.....			1					1	63,000	
8	University Club.....	1816 Walnut st.....	Club House .....	Sept. 12.....	Crown.....			1					1	828,500	
9	Lea, H. C.....	726-28 Market st.....	Clothing House.....	Dec. 14.....	Crown.....					1			1	148,500	
9	Philada. Traction Co.....	1922-32 Market st.....	Power House.....	Dec. 14.....	Crown.....		1		1				2	404,750	
9	Philada. Traction Co.....	1922-32 Market st.....	Power House.....	Dec. 24.....	Gem.....						1		1		
10	Jones J R.....	722-28 Cherry st.....	Miscellaneous.....	May 20.....	Gem.....					1			1	1,074,750	Charged by meter.

New Meters Set—Continued.

Ward.	Occupant.	Location.	Business.	Date when Set.	Name of Meter.	SIZE.								Gallons Consumed.	Remarks.	
						½-inch.	¾-inch.	1-inch.	1½-inch.	2-inch.	3-inch.	4-inch.	6-inch.			Total.
11	Philad'a. Warehousing } and Storage Co..... }	509-13 North Front street.....	Cold Storage.....	Feb. 27.....	Crown.....	1							1	117,750	Charged by meter.	
11	Peoples' Traction Co.....	618 North Delaware avenue.....	Power House.....	Oct. 5.....	Gem.....						1		1	574,500		
12	Pierson, C. W.....	440-42 Dillwyn street.....	Morocco Factory.....	Aug. 27.....	Gem.....					1			1	3,231,375		
12	Stevenson, J.....	439-43 York avenue.....	Morocco Factory.....	Dec. 22.....	Crown.....			1					1	106,500		
12	Ulmer.....	338-40 Brown street.....	Brewery.....	Nov. 7.....	Crown.....	1	2						3	330,750		
13	Pennsylvania Ice Co.....	316-20 North Seventh street.....	Ice Factory.....	Nov. 8.....	Crown.....	2							2	97,250		
13	Pennsylvania Ice Co.....	316-20 North Seventh street.....	Ice Factory.....	Dec. 1.....	Gem.....					1			1			
14	Harmonie Hall.....	525 N. 11th st., N. E. c. Wister..	Music Hall.....	Feb. 3.....	Crown.....				1				1	2,519,250		Charged by meter.
14	Hoopes & Townsend.....	1312-16 and 1330 Buttonwood st.	Bolt Works.....	May 21.....	Gem.....					1			1			
14	Hoopes & Townsend.....	1312-16 and 1330 Buttonwood st.	Bolt Works.....	May 28.....	Crown.....	1	1						2	3,646,250		
14	Lorraine Apart. House..	{ E. S. Broad, from N. E. cor. Potts to Fairmount ave..... }	Apartment House.....	Nov. 20.....	Crown.....						1		1	1,026,000		
14	Lorraine Apart. House..	{ E. S. Broad, from N. E. cor. Potts to Fairmount ave..... }	Apartment House.....	Nov. 21.....	Gem.....						1		1			
15	Arbelo, J.....	1407-09 North street.....	Saw Mill.....	May 16.....	Crown.....		1						1	509,000		Charged by meter.
15	Bergdoll L. Br.'g Co.....	829 N. 29th st., N. E. c. Parrish..	Brewery.....	Nov. 28.....	Crown.....					1			1	324,600		Charged by meter.
15	Cresson, George V.....	S. E. Eighteenth and Hamilton..	Machine Shop.....	Dec. 19.....	Nash.....	1							1	750		

New Meter Set—Continued.

Ward.	Occupant.	Location.	Business.	Date when set.	Name of meter.	SIZE.							Total.	Gallons consumed.	Remarks.
						1/2-inch.	3/4-inch.	1-inch.	1 1/2-inch.	2-inch.	3-inch.	4-inch.			
15	Cresson, George V.....	S.E. cor. 18th and Hamilton sts.	Machinshop.....	Dec. 26.....	Crown.....					1			1		
15	Hestonville Pass. Ry. Co.	2620-32 Callowhill street.....	Power house.....	Nov. 21.....	Gem.....							1	1	2,797,500	Charged by meter.
15	Phila.Chem. Inciner'g Co	2416-23 Callowhill street.....	Incinerating plant.....	July 1.....	Gem.....					1			1	1,531,500	
16	Dubring, E.....	1102 Frkfd av., N.W. cor. Otter..	Machine shop.....	Jan. 4.....	Crown.....		1						1	299,250	Charged by meter.
16	Ehringer, Charles.....	1150 Gtn av., N.W. cor. St. John	Ice factory.....	May 28.....	Crown.....			1	1				2	2,640,000	Charged by meter.
16	Electric Traction Co.....	E. side Beach, 230 ft. N. of Poplar	Power house.....	Aug. 23.....	Gem.....							1	1	3,396,750	Charged by meter.
16	Walton, P. M.....	1023-1029 Germantown avenue	Miscellaneous.....	Jan. 17.....	Crown.....			1					1	578,250	Charged by meter.
17	Delaney & Co.....	1445 Hancock, S. E. c. Jefferson.	Morocco factory.....	June 28.....	Crown.....		1						1	6,000	Charged by meter.
17	McKee, J.....	1512-14 Mascher st. and rear.....	Morocco factory.....	Dec. 20.....	Crown.....					1			1	2,250	
19	Bardsley, W. F.....	1925 Germantown avenue.....	Miscellaneous.....	June 6.....	Crown.....		1						1	45,000	Charged by meter.
19	Cairns, A.....	1700 American, N.W. c. Col. av..	Cord factory.....	May 30.....	Crown.....			1					1	243,750	Charged by meter.
19	Enterprise Mfg Co.....	S. E. c. Third and Dauphin sts..	Machine shop.....	Oct. 23.....	Crown.....				1	1			2	No water used	
19	Millick.....	N.W. c. Cumberl'd & American	Ice factory.....	Aug. 29.....	Crown.....						1		1	162,750	Charged by meter.
19	Moore, John.....	2344-48 Hope street.....	Storage house.....	April 7.....	Crown.....		1						1	72,750	Charged by meter.
20	Disston, Mrs.....	1515 North Broad street.....	Elevator.....	Dec. 4.....	Crown.....							1	1	No water used	



*New Meters Set—Continued.*

Ward.	Occupant.	Location.	Business.	Date when Set.	Name of Meter.	Size.								Total.	Gallons Consumed.	Remarks.
						½-inch.	¾-inch.	1-inch.	1½-inch.	2-inch.	3-inch.	4-inch.	6-inch.			
20	Electric Traction Co.....	E. S. Hutchinson, S. of Oxford..	Power House.....	April 13....	Gem.....						2	2	4,771,750	Charged by meter.		
20	Electric Traction Co.....	E. S. Hutchinson, S. of Oxford..	Power House.....	Sept. 6....	Crown.....		2					2				
20	Synagogue.....	E. S. Broad st., 235 ft N. Col. av.	Church.....	June 6....	Gem.....						1	1	1,842,500	Charged by meter.		
20	Synagogue.....	F. S. Broad st., 235 ft N. Col. av.	Church.....	June 6....	Crown.....			1				1				
21	Spink, W.....	F. S. Main, rear 3d h. N. Wash.	Woolen Mill.....	June 8....	Gem.....						1	1	395,250	{ Charged by meter. 4-inch meter on fire attachment.		
21	Spink, W.....	E. S. Main, rear 3d h. N. Wash.	Woolen Mill.....	June 14....	Crown.....		1					1				
21	Wilde's, Robert, Sons.....	{ Leverington ave., S. S., S. W. } cor. Hamilton st.....	Woolen Mill.....	Mar. 20....	Gem.....						1	1	614,250	{ Charged by meter. 4-inch meter on fire attachment.		
21	Wilde's, Robert, Sons.....	{ Leverington ave., S. S., S. W. } cor. Hamilton st.....	Woolen Mill.....	Mar. 20....	Crown.....			1				1				
21	Wissahickon Elec. Lt.Co.	Cresson, W. S., 1st h. N. Ridge av	Electric Light.....	Jan. 9....	Crown.....				1			1	5,885,500	Charged by meter.		
22	Gtn. Steam Heating Co..	S. W. Pelham rd. and Franklin.	Heating Plant.....	Oct. 3....	Crown.....		1					1	22,500	Charged by meter.		
22	Pearson, G. T.....	36 West Walnut lane.....	Organ Motor.....	Mar. 27....	Crown.....				1			1	585,000	Charged by meter.		
22	Platt, R.....	N. W. Church and Crowson sta.	Mill.....	June 8....	Crown.....				1			1	No water used.	Charged by meter.		
22	Woods, Wilson.....	S. W. S. Cumberland, S. E. Mill.	Woolen Mill.....	April 12....	Crown.....		1					1	69,750	Charged by meter.		
23	Friends' Insane Asylum.	S. W. S. Adams st., S. E. of L....	Insane Asylum.....	Dec. 5....	Gem.....						1	1	558,750			
23	Greenwood & Bault.....	4520 Wqrth, N. W., cor. Oxford.	Woolen Mill.....	Dec. 19....	Crown.....				1			1	No water used.			

*New Meters Set—Continued.*

Ward.	Occupant.	Location.	Business.	Date when Set.	Name of Meter.	Size.							Total.	Gallons Consumed.	Remarks.
						½-inch.	¾-inch.	1-inch.	1½-inch.	2-inch.	3-inch.	4-inch.			
24	Hestonville Pass, Ry. Co.	S. W. c. Lancaster av. & 43d st..	Depot.....	Nov. 2.....	Crown.....				1				1	124,500	Charged by meter.
24	Penna. R. R. Co.....	W. s. 38th st. 650 ft. S. Girard av.	Power house.....	May 19. ....	Crown.....			1					1	321,750	
24	Y. M. C. A.....	N. E. c. 41st st. & Westminster av	Hall.....	Jan. 16.....	Gem.....					1			1	1,608,000	Charged by meter.
25	Adamson Estate.....	E. Clearfield st. c. Trenton av...	Dye house.....	Feb. 14.....	Crown.....		1						1	No water used.	Charged by meter.
25	Barker & Booth.....	S.W. c. Thompson & Division sts	Woolen mill.....	Dec. 27.....	Crown.....				1				1	5,250	
25	Foerderer, R. H.....	N. E. c. Wheatsheaf la. & Coral.	Morocco factory.....	Mar. 14.....	Gem.....						1		1	9,572,250	Charged by meter.
25	Gannon, T.....	S.E.c.Richmond & Allegheny av	Incinerating plant.....	June 22.....	Crown.....				1				1	1,096,500	
25	Jeffords, J. E. & Co.....	{ 2716-38 Salmon st. and rear. } { 2719 Edgemont & 2722 Tilton }	Pottery.....	May 18.....	Crown.....		1	1					2	510,500	Charged by meter.
25	P. & R. R. Co.....	N.s. Lehigh, f. Trenton to Amber	Locomotive.....	Nov. 15.....	Crown.....						1		1	18,000	
26	Consumer's Ice Co.....	S. E. c. 17th st & Washington av.	Ice factory.....	June 19.....	Gem.....					1			1	21,342,750	Charged by meter.
26	Hess, D.....	1504-8 Washington ave.....	Incinerating plant.....	July 1.....	Crown.....			1					1	1,428,000	
27	Buzby, Anna.....	106 S. 36th st.....	Organ motor.....	Feb. 27.....	Crown.....			1					1	148,750	Charged by meter.
27	Castner, S., Jr.....	3729 Chestnut st. N. E. c. 38th st	Organ motor.....	April 25.....	Crown.....			1					1	27,500	Charged by meter.
27	Croft & Allen.....	Market st., S. E. c. 33d to Lanc. av	Candy factory.....	Dec. 11.....	Gem.....					1			1	318,000	Charged by meter.
27	Mann, J.....	W. s. 30th st. N. W. c. Locust st.	Stone mill.....	Jan. 20.....	Crown.....			1					1	1,011,000	Charged by meter.

*New Meters Set—Continued.*

Ward.	Occupant.	Location.	Business.	Date when Set.	Name of Meter.	Size.								Total.	Gallons Consumed.	Remarks.
						½-inch.	¾-inch.	1-inch.	1½-inch.	2-inch.	3-inch.	4-inch.	6-inch.			
27	Schlichter Schum & Co...	Walnut st. N. E. cor. 33d.....	Gas engines.....	May 10.....	Gem.....							1	1	44,250	Charged by meter. 4-in. meter on fire attachment.	
27	Sunlight Oil Co.....	49th st. e. s. N. Gray's Ferry R'd	Oil factory.....	June 14.....	Crown.....				1				1	1,020,000		
28	Amor. Card Clothing Co.	S. E. cor. Wayne and Bristol....	Cloth factory.....	Nov. 5.....	Crown.....			1			1		2	750	3-in. meter on fire attachment. Charged by meter.	
28	Cresswell, D. S.....	Logan st. N. E. cor. Rufiner.....	Iron foundry.....	June 7.....	Crown.....				1				1	735,750		
28	Given, S. J., Supt.....	Dauphin st. S. W. cor. 25th.....	Incinerating plant.....	July 1.....	Crown.....								1	729,750	No water used.	
28	Phila. Traction Co.....	{ Ridge ave. e. s. from N. E. c. } { Susq. av. to S. E. c. 32d st. } { 22d st. e. s. 75 ft. N. of Somers- } { et and rear..... }	Power house.....	Dec. 19.....	Crown.....			2				1	3			
28	Ruffner, D.....	{ Ridge ave. e. s. from N. E. c. } { Susq. av. to S. E. c. 32d st. } { 22d st. e. s. 75 ft. N. of Somers- } { et and rear..... }	Brick yard.....	May 29.....	Crown.....			1					1	94,500	Charged by meter.	
28	Warden, W. G.....	S. E. c. 19th and Allegheny ave.	Miscellaneous.....	Aug. 16.....	Gem.....							1	1	10,286,250	Charged by meter.	
29	Aman, F.....	2912 Thompson st.....	Saloon.....	Jan. 18.....	Crown.....		1						1	423,750	Charged by meter.	
29	Bergner & Engel Br'g Co	Thompson st. N. E. cor. 33d....	Brewery.....	March 21.....	Gem.....							1	1	8,256,000	Charged by meter.	
29	Bureau of Water.....	S. E. cor. 21st and Master sts....		June 1.....	Deacon.....							1	1			
29	Coward F. E. & Co.....	1614 Columbia ave.....	Printing office.....	March 10.....	Crown.....		1						1	39,750	Charged by meter.	
29	Phila. Traction Co.....	2306-42 Columbia ave.....	Power house.....	Dec. 7.....	Crown.....				3				3	1,203,000		
29	Poth F. A. Br'g Co.....	N. W. 31st and Jefferson sts.....	Brewery.....	April 20.....	Crown.....					1			1	1,653,000	Charged by meter.	
30	Gerry.....	Schuykill av. S. W. cor. Peltz...	Box factory.....	May 23.....	Crown.....		1						1	70,500	Charged by meter.	

*New Meters Set—Continued.*

Ward.	Occupant.	Location.	Business.	Date when Set.	Name of Meter.	SIZE.								Total.	Gallons Consumed.	Remarks.
						1/2-inch.	3/4-inch.	1-inch.	1 1/2-inch.	2-inch.	3-inch.	4-inch.	6-inch.			
30	Howell.....	N. W. c. 21st & Washington av.	Paper factory.....	June 9.....	Genu.....							1	1	3,323,750	Charged by meter.	
30	Philada. Traction Co.....	E.s. Sutherland av. S.E.c. Kansas	Power house.....	Sept. 13.....	Gem.....								1	3,159,000	Charged by meter.	
30	Philada. Traction Co.....	E.s. Sutherland av. S.E.c. Kaasas	Power house.....	Dec. 3. ....	Crown.....							1	1			
33	Amrhein, L.....	3036 N. 6th st. and rear.....	Brewery.....	Oct. 22.....	Crown.....	1							1	12,000	Charged by meter.	
33	Devlin, Thomas.....	N.W.c. Lehigh av. & American st	Machine shop.....	June 13.....	Crown.....	1							1	6,000	Charged by meter.	
33	Myers, Robert.....	3939-41 N. Fifth st.....	Hosiery mill.....	Sept 25.....	Crown.....				1				1	890,250	Charged by meter.	
36	Atlantic Refining Co.....	W.s. Passy'k av., N.s.c. River rd.	Oil works.....	April 9.....	Crown.....		4		1				5	7,015,500		
37	Mills, F. B.....	3180 Park avenue.....	Organ motor.....	April 24.....	Nash.....	1							1	10,500	Charged by meter.	
37	People's Pass. R. W. Co..	{ Dauphin st., S. W. c. 8th and { N.W.c. 8th & Susquehanna av.	Depot.....	Nov. 22.....	Crown.....					1			1		Charged by meter.	
37	Roskam, Isaac.....	2140-48 Germantown av. & rear..	Candy factory.....	March 1. ..	Crown.....		1						1	1,282,500	Charged by meter.	
		Total.....					27	26	9	18	15	23	1	119	128,822,375	
		Total not charged by meters.....													27,836,925	
		Total charged by meters.....													100,985,450	

NOTE:—One 1-inch Crown meter removed and discontinued; One 1-inch Crown meter removed temporarily.

General Summary of Meter Operations for the year 1894.

SIZE OF METERS.	IN USE JANUARY 1, 1894.						SET DURING 1894.				RENEWED.				DISCONTINUED.			IN USE DECEMBER 31, 1894.						STOCK ON HAND DECEMBER 31, 1894.													
											TAKEN OUT.		PUT IN.		TAKEN OUT.																						
	Crown.	Gem.	Nash.	Deacon.	Worthington.	Union.	Total.	Crown.	Gem.	Nash.	Deacon.	Total.	Crown.	Gem.	Nash.	Total.	Crown.	Gem.	Nash.	Total.	Crown.	Gem.	Nash.	Deacon.	Worthington.	Union.	Total.	Crown.	Gem.	Nash.	Deacon.	Total.	Totals.				
½-inch.....	28		8			36						4			4	1											26		8			34	12		5	17	51
¾-inch.....	188		29			217	25		2		27	3		5	8	9		1	10	9		1	10			209		2			235	38		8	46	281	
1-inch.....	180		24		1	205	26				26	15		1	16	17			17	6			6	202		23		1		226	71		9	80	306		
1½-inch.....	96		24		2	123	9				9	8		2	10	10			10	5			5	102		22		2	1		127	25		6	31	158	
2-inch.....	122	88				210	15	3			18	10	8		18	8	4		12	6	2		8	129	85					214	39	13		52	266		
3-inch.....	43	72				115	9	6			15	4	6		10	3	8		11	2	1		3	49	79					128	7	8		15	143		
4-inch.....	37	144		1		182	4	18	1		23	1	3		4	1	4		5	1	1		2	40	162		2			204	5	3		8	212		
6-inch.....	4	19		4		27		1			1											1	1	4	19		4			27	1		6	7	34		
Totals.....	698	323	85	5	3	1,115	88	28	2	1	119	45	17	8	70	49	16	1	66	29	5	1	35	761	345	79	6	3	1	1,195	198	24	28	6	256	1,451	

NOTE.—One Crown meter charged on last year's report as ¾-inch should have been ½-inch (in use.)

NOTE.—Fourteen meters have been dismantled and are not included in above table.

Miscellaneous Work.

MONTHS.	EXAMINATIONS.					MISCELLANEOUS.							Statements.	METERS.													
	Attachments.	Short supply.	Leaks.	Meters.	Total.	New Boxes.	Boxes repaired.	New iron covers set.	Fishtraps.	Service pipes repaired.	Total.	STYLE.		REPAIRED.				USED IN SERVICE.		PURCHASED.		TESTED.					
														Crown.	Gem.	Nash.	Total.	Crown.	Total.	Deacon.	Total.	Crown.	Total.				
January.....	61			213	274	6		5	9		20	1,914	1/8-inch.....	5		1	6										
February .....	60			235	295				9	3	12	1,382	3/4-inch.....	23		13	36							9	9		
March.....	157	2	84	243	243	6		5	7	121	139	1,857	1-inch.....	32		8	40	1	1				8	3			
April. ....	359		50	409	409	5		5	10	319	369	1,643	1 1/8-inch.....	20		9	29						21	21			
May.....	496	3	57	556	556	4		4	18	476	502	1,983	2-inch.....	35	35	70						20	20				
June.....	159	2	176	337	337	9		7	19	112	147	2,079	3-inch.....	16	28	44						14	14				
July.....	276	1	92	369	369	7	6	3	8	235	259	2,136	4-inch.....	21	60	81						7	7				
August.....	155		85	240	240	6		4	6	130	146	1,994	6-inch.....	7	4	11			6	6							
September.....	221	4	106	331	331	7	2	3	5	171	183	1,178															
October .....	404	1	77	484	484	5		2	5	313	355	2,237															
November.....	135		135	270	270	15	8	7	19	42	91	1,969															
December .....	139	1	110	250	250	13	8	8	24	26	79	2,066															
Totals.....	2,622	5	11	1,420	4,053	83	24	53	139	2,008	2,307	22,538		159	127	31	317	1	1	6	6	74	74				

*New Attachments made and delivered to Districts from January 1 to December 31, 1894.*

DISTRICTS.	Number of Attachments made and delivered.	Number of feet of Pipe.	$\frac{5}{8}$ -in. Lead Pipe in feet.	$\frac{3}{4}$ -in. Lead Pipe in feet.	1-in. Lead Pipe in feet.	$1\frac{1}{2}$ -inch Lead Pipe in feet.	Total in pounds.
First .....	2,329	39,277	39,002	105	170	.....	98,500
Second .....	1,809	39,661	38,920	741	.....	.....	99,523
Third .....	2,622	42,795	42,231	.....	284	280	108,114
Fourth .....	896	14,161	13,823	228	91	19	35,701
Fifth.....	204	3,604	3,604	.....	.....	.....	9,010
Sixth.....	1,977	33,763	33,724	.....	.....	39	84,505
<b>Total.....</b>	<b>9,927</b>	<b>173,261</b>	<b>171,304</b>	<b>1,074</b>	<b>545</b>	<b>338</b>	<b>435,353</b>

# APPENDIX E.

---

## REPORT

ON THE

**Operations of the Construction and Repair Shop**

**DURING 1894.**

---

TWELFTH AND REED STREETS.

*Philadelphia, December 31, 1894.*

MR. JOHN L. OGDEN,  
*Chief, Bureau of Water.*

SIR:—I herewith submit the Annual Report of the operations of the Construction and Repair Shop at Twelfth and Reed streets, for the year ending December 31, 1894.

Respectfully,

JAMES H. DEAN,  
*Superintendent of Shop.*



	MERCHANDISE.	DR.
To stock per inventory of January 1, 1894.....		\$18,903 04
Machinery .....		1,868 20
Iron castings.....		33,130 25
Brass castings.....		13,960 83
Brass fittings.....		112 50
Steel.....		542 79
Wrought iron.....		2,719 44
Wrought iron pipe.....		19 37
Lead coating.....		946 82
Bolts and nuts.....		3,305 05
Hardware .....		140 96
Lumber.....		5,563 34
Plug valves.....		5,270 50
Gum goods.....		736 08
Chandlery .....		333 98
Miscellaneous.....		210 69
Oils and tallow.....		255 75
Paints, brushes, etc.....		99 55
Coal .....		1,348 45
Coke.....		57 60
Wages.....		40,821 24
		<u>\$130,346 43</u>

	MERCHANDISE.	Cr.
First District.....	\$25,265 57	
Second District.....	20,619 09	
Third District.....	28,621 61	
Fourth District.....	26,779 57	
Fifth District.....	5,577 24	
Sixth District.....	8,735 84	
		<u>\$115,598 92</u>

## FAIRMOUNT PUMPING STATION.

Machinery.....	\$152 92	\$152 92
----------------	----------	----------

## FRANKFORD PUMPING STATION.

Machinery .....	\$401 64	
Boilers .....	13 89	
		<u>\$415 53</u>

## ROXBOROUGH PUMPING STATION.

Machinery .....	\$1,474 80	
Boilers.....	29 30	
		<u>\$1,504 10</u>

## BELMONT PUMPING STATION.

Machinery .....	\$617 18	
Boilers.....	38 20	
		<u>\$655 38</u>

## SPRING GARDEN PUMPING STATION.

Machinery .....	\$3,858 71	
Boilers .....	640 00	
Buildings and grounds.....	826 00	
		<u>\$5,324 71</u>

## MT. AIRY PUMPING STATION.

Machinery .....	\$45 98	\$45 98
-----------------	---------	---------

## QUEEN LANE PUMPING STATION.

Buildings and grounds.....	\$96 05	\$96 05
Distribution.....		1,999 59
Meter department.....		397 79
Main office.....		6 94
Machinery .....		163 65
Fixed patterns.....		268 15
General buildings and grounds.....		660 62
Repair shop.....		375 94
Old metals.....		741 32
Ferrules.....		86 04

Total. Cr.....		\$128,493 63
Inventory January 1, 1895 .....		21,166 64
		<u>\$149,660 27</u>
Total. Dr.....		130,346 43
		<u>\$19,313 84</u>

## INVENTORY, JANUARY 1, 1895.

21 No. 1 fire hydrants, at \$25 00.....	\$525 00	
1 4-inch stop valve, at 13 00.....	\$ 13 00	\$525 00
12 6-inch stop valves, at 15 00.....	180 00	
8 10-inch stop valves, at 31 00.....	248 00	
3 12-inch stop valves, at 37 00.....	111 00	
1 30-inch rotary valve, at 300 00.....	300 00	
1 30-inch check valve, at 150 00.....	150 00	
2 3-inch fish traps, at 4 50.....	9 00	
2 4-inch fish traps, at 6 00.....	12 00	
		<u>\$1,023 00</u>
Finished parts of fire hydrants.....	\$1,368 53	
Finished parts of stop valves.....	1,589 50	
Finished parts of rotary valves .....	845 00	
		<u>\$3,803 03</u>

4	Unfinished 20-inch rotary valves, at \$200 00...	\$800 00	
6	Unfinished 36-inch check valves, at 95 00...	570 00	
1	Unfinished 30-inch check valve, at 75 00...	75 00	
3	Unfinished bell cranks, at 15 00...	45 00	
1	Air pump barrel, at 15 00...	15 00	
14	Air pump rod straps, at 9 00...	126 00	
			<hr/>
			\$1,631 00
5	10-inch old style stop screws, at \$4 50 .....	\$ 22 50	
4	12-inch old style stop screws, at 5 00.....	20 00	
20	16-inch old style stop screws, at 6 50.....	130 00	
3	20-inch old style stop screws, at 8 50.....	25 50	
4	30-inch old style stop screws, at 10 50.....	42 00	
			<hr/>
			\$240 00
			<hr/>
			\$7,222 03
6	Viney stop screws, at \$2 00.....	\$12 00	
10	Barton stop screws, at 4 00.....	40 00	
6	Birkenbine stop screws, at 2 50.....	15 00	
7	Barton stop bonnets, at 8 00.....	56 00	
			<hr/>
			\$123 00
13	4-inch new style stop screws, at \$1 50.....	\$ 19 50	
133	6-inch new style stop screws, at 2 00.....	266 00	
16	8-inch new style stop screws, at 3 25.....	52 00	
20	10-inch new style stop screws, at 5 00.....	100 00	
10	12-inch new style stop screws, at 5 25.....	52 50	
4	16-inch new style stop screws, at 6 50.....	26 00	
9	20-inch new style stop screws, at 8 50.....	36 50	
4	30-inch new style stop screws, at 10 25.....	41 00	
3	36-inch new style stop screws, at 12 00.....	36 00	
1	48-inch new style stop screw, at 15 00.....	15 00	
			<hr/>
			\$644 50
37	4-inch socket screws, at \$1 50.....	\$55 50	
11	6-inch socket screws, at 1 75.....	19 25	
6	8-inch socket screws, at 2 00.....	12 00	
10	10-inch socket screws, at 2 25.....	22 50	
12	12-inch socket screws, at 2 50.....	30 00	
			<hr/>
			\$139 25
14	4-inch spindles, at \$1 50.....	\$ 21 00	
17	6-inch spindles, at 1 75.....	29 75	
14	8-inch spindles, at 2 00.....	28 00	
10	10-inch spindles, at 2 25.....	22 50	
20	12-inch spindles, at 2 50.....	50 00	
94	4-inch iron bands, at 75.....	70 50	
4	6-inch iron bands, at \$1 00.....	4 00	
37	8-inch iron bands, at 4 00.....	148 00	

2 10-inch iron bands, at	5 00.....	\$10 00	
25 12-inch iron bands, at	6 00.....	150 00	
9 30-inch iron bands, at	15 00.....	135 00	
5 36-inch iron bands, at	17 00.....	85 00	
5 48-inch iron bands, at	20 00.....	100 00	
			<hr/>
			\$702 50
90 Fire hoe heads, at.....	\$1 00.....	\$90 00	
4 20-inch furnace rings, at.....	5 60.....	22 40	
4 20-inch furnace grates, at....	4 00.....	16 00	
5 24-inch furnace grates, at.....	5 00.....	25 00	
7 Medium lead pots, at.....	2 50.....	17 50	
19 Small lead pots, at.....	1 35.....	25 65	
			<hr/>
			\$ 196 55
127 Wooden plugs, at	.50.....	\$ 63 50	
50 Cast iron plugs, at	\$1 00.....	50 00	
46 Cast iron plug risers, at	2 00.....	92 00	
1000 Brass plugs, at	.25.....	250 00	
3 Sets brass boxes, at	\$4 50.....	13 50	
10 Frost valves, at	6 20.....	63 00	
			<hr/>
			\$532 00
40 Pair wrought iron monkey legs, at	\$3 50.....	\$140 50	
16 Pair cast iron monkey legs, at	1 50.....	24 00	
238 4-inch fire hydrant valves, at	2 50.....	595 00	
73 6-inch fire hydrant valves, at	4 00.....	292 00	
			<hr/>
			\$1,051 00
			<hr/>
			\$10,762 08
11 Drill sockets at 50 cents.....	\$	5 50	\$10,762 08
58 Drills at 35 cents.....		20 30	
94 Bursting wedges at 25 cents.....		21 50	
17 Taper reamers at \$3.50.....		59 50	
6 Brass pressure caps at \$2.00.....		12 00	
135 Handled gouges at 60 cents.....		81 00	
22 Hand gouges at 40 cents.....		8 80	
64 Pipe cutters at 60 cents.....		38 40	
4 Sets handled caulking tools at \$4.50..		18 00	
34 Sets hand caulking tools at \$2.50.....		85 00	
211 Flat chisels at 35 cents.....		73 85	
74 Cape chisels at 35 cents.....		25 90	
27 Gasket irons at 60 cents.....		16 20	
24 Gate cutters at 40 cents.....		9 60	
			<hr/>
			475 55

460 pounds iron forgings at 10 cents.....	\$46 00	
40,864 pounds wrought iron at 2 cents.....	819 28	
65,800 pounds machinery steel at 3 cents.....	1,974 00	
4,833 pounds cas steel at 8 cents.....	386 64	
650 pounds tool steel at 15 cents.....	97 50	
235 pounds self-hardening steel at 48 cents.....	114 80	
		<hr/> 3,438 22
460 pounds steel castings at 8 cents.....	36 80	
1,650 pounds Ajax metal at 22 cents.....	363 00	
370 pounds expansion metal at 15½ cents.....	57 35	
50 pounds Babbit Metal at 16 cents.....	8 00	
7,920 pounds lead at 4½ cents.....	356 40	
		<hr/> 821 55
425 pounds rolled brass at 16 cents.....	68 00	
64 pounds brass wire at 14 cents.....	8 96	
56 pounds copper wire at 16 cents.....	8 96	
58 pounds sheet brass at 14 cents.....	8 12	
39,759 pounds stop valve castings at 1 $\frac{5}{10}$ cents.....	636 09	
83,300 pounds fire hydrant castings at 1 $\frac{9}{10}$ cents.....	1,582 70	
36,383 pounds machinery and miscellaneous at 1 $\frac{7}{10}$ cents.....	633 06	
8,174 pounds brass castings at 11½ cents.....	940 01	
Hardware.....	160 20	
Bolts and nuts.....	549 48	
Oils and tallow.....	98 76	
Paints, oils, brushes, etc.....	32 00	
Chandlery.....	56 80	
Gum goods.....	443 00	
Lumber.....	443 10	
		<hr/> 5,575 20
		<hr/> <b>\$21,166 64</b>

*Articles Delivered to Purveyors' Districts, etc.*

DISTRICTS.	STOP-COCKS.										STOP-SCREWS.				30-inch Check Valve.	48-inch Check Valve.
	4-inch.	6-inch.	8-inch.	10-inch.	12-inch.	16-inch.	20-inch.	30-inch.	36-inch.	30-inch Rotary.	48-inch Rotary.	4-inch.	6-inch.	8-inch.		
First.....	7	636	25	14	7	4	1						28	37		
Second.....	8	532	57	37	58	1	2	1							1	
Third.....	8	698	25	51	50	9		1		3	5	6	18			4
Fourth.....	10	892	14	32	13	1	2	1	1		12		18		4	8
Fifth.....	1	51		2	1		1	3			5		6			1
Sixth.....		140	1	19	17	4	2						6			
Meter Department.....	2															
Distribution.....															2	
<b>Total.....</b>	<b>86</b>	<b>2444</b>	<b>181</b>	<b>155</b>	<b>146</b>	<b>19</b>	<b>8</b>	<b>6</b>	<b>1</b>	<b>8</b>	<b>22</b>	<b>6</b>	<b>76</b>	<b>87</b>	<b>5</b>	<b>12</b>

Articles Delivered to Purveyors' Districts, 1894.

DISTRICTS.	FIRE HYDRANTS.		KEYS.		CHISELS.						PHIGS.							Gum Joints for Fire Hydrants.	
	No. 1.	No. 2.	Hydrant.	Phig Monkey.	Flat.	Hand Diamond Points.	Handled Diam'd Points.	Pipe Cutters.	Cape.	Hand Gouges.	Handled Gouges.	Wood.	Iron.	Brass.	Reducing Caps.	Pressure Caps.	Lead Pots.		Caulking Irons.
First .....	266	2	12	48	132	36	24	24	24	.....	341	155	240	7	2	.....	10	34	
Second .....	401	2	.....	.....	96	48	.....	12	24	36	630	78	216	3	29	18	12	120	
Third.....	339	2	.....	.....	.....	144	12	.....	12	12	689	180	246	.....	.....	3	15	92	
Fourth.....	290	6	.....	.....	.....	72	72	72	.....	48	425	.....	568	6	.....	24	16	36	
Fifth.....	36	.....	.....	.....	12	36	12	20	.....	24	75	.....	36	9	8	18	11	24	
Sixth.....	149	.....	.....	.....	.....	24	24	.....	.....	.....	336	.....	71	.....	.....	5	8	60	
Works.....	.....	.....	.....	.....	33	.....	.....	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Total.....	1,481	12	12	48	273	132	240	152	123	84	108	2,496	413	1,377	25	39	68	72	366

Articles Delivered to Purveyors' Districts, Etc.

DISTRICTS.	STOP BOXES AND RISERS.			IRON BANDS.								6-inch Socket Screws.	Cast Iron Monkey Legs.	Wrought Iron Monkey Legs.	Spindles.	Brass Long Nuts.	Fire Hoe Heads.	Cross Heads.	Barton Stop Screws.
	Boxes.	Unfinished Boxes.	Risers.	4-inch.	6-inch.	8-inch.	10-inch.	12-inch.	16-inch.	18-inch.									
First .....	398	1,840	487		48		13	20	18	11			24		29				
Second .....	535		478		192			2				48			18		12	12	
Third .....	586		458	6	808		13		13	4	12			6	13				
Fourth .....	618		384	6	253	6	6	3		7	24				9				
Fifth .....	66		153		6						12								
Sixth .....	232		137		80		5								6				
Works .....																90			
<b>Total .....</b>	<b>2,435</b>	<b>1,840</b>	<b>2,097</b>	<b>12</b>	<b>832</b>	<b>6</b>	<b>37</b>	<b>25</b>	<b>36</b>	<b>22</b>	<b>48</b>	<b>48</b>	<b>24</b>	<b>6</b>	<b>75</b>	<b>90</b>	<b>12</b>	<b>12</b>	



Articles Delivered to Purveyors' Districts, etc.

DISTRICTS.	Mandrills.	Eye Bolts.	Tail Clamps.	Reamers.	Wrenches.	Plug Risers.	Wedges.	Gasket Irons.	Sets Caulking Tools.	Glands.	Fire Hydrant Reducers.	Caulking Hammers.	FISH TRAPS.					Drills.	Gate Cutters.
													1½-inch.	2-inch.	3-inch.	4-inch.	6-inch.		
First.....	4			2	6	48	2	4	66		6								24
Second.....	6				12	8	12	29	28	60	3	18							36
Third.....	14	30	3	3			9												
Fourth.....	12				24		18		33										
Fifth.....						11		8	11										
Sixth.....		72	72			18						6							
Meter Department.....													15	4	35	20	6		
<b>Total.....</b>	<b>36</b>	<b>102</b>	<b>75</b>	<b>5</b>	<b>42</b>	<b>82</b>	<b>87</b>	<b>39</b>	<b>76</b>	<b>1-6</b>	<b>3</b>	<b>30</b>						<b>36</b>	<b>24</b>

## ARTICLES MANUFACTURED DURING 1894.

1,502	No. 1 fire hydrants, at \$25.00.....	\$37,550 00
200	No. 1 fire hydrants material furnished, at \$16.00.....	3,200 00
12	No. 2 fire hydrants, at \$35.00.....	420 00
37	4-inch stop valves, at \$13.00.....	481 00
2,456	6-inch stop valves, at \$15.00.....	36,840 00
131	8-inch stop valves, at \$24.00.....	3,144 00
161	10-inch stop valves, at \$31.00.....	4,991 00
149	12-inch stop valves, at \$37.00.....	5,513 00
16	16-inch stop valves, at \$60.00.....	960 00
6	20-inch stop valves, at \$95.00.....	570 00
6	30-inch stop valves, at \$190.00.....	1,140 00
2	48-inch rotary valves, at \$665.00.....	1,330 00
10	48-inch rotary valves, at \$500.00.....	5,000 00
10	48-inch rotary valves, at \$180.00.....	1,800 00
3	30-inch rotary valves, at \$385.00.....	1,155 00
1	30-inch rotary valve, at \$300.00.....	300 00
4	48-inch check valves at \$390.00.....	1,560 00
8	48-inch check valves, materials furnished, at \$240.00.....	1,920 00
2	30-inch check valves, at \$200.00.....	400 00
6	6-inch fish traps, at \$13.50.....	81 00
24	4-inch fish traps, at \$6.00.....	144 00
37	3-inch fish traps, at \$4.50.....	166 50
4	2-inch fish traps, at \$3.50.....	10 00
15	1½-inch fish traps, at \$2.00.....	30 00
16	Barton stop screws, at \$4.00.....	64 00
18	Viney stop screws, at \$2.00.....	36 00
20	New style 6-inch stop screws, at \$1.50.....	30 00
39	New style 8-inch stop screws, at \$3.25.....	126 75
2	New style 30-inch stop screws, at \$10.25.....	20 50
45	6-inch socket screws, at \$1.75.....	78 75
24	6-inch spindles, at \$1.75.....	42 00
106	4-inch iron bands, at 75 cents.....	79 50
830	6-inch iron bands, at \$1.00.....	830 00
31	8-inch iron bands, at \$4.00.....	124 00
32	10-inch iron bands, at \$5.00.....	160 00
38	12-inch iron bands, at \$6.00.....	228 00
28	16-inch iron bands, at \$7.50.....	210 00
22	48-inch iron bands, at \$20.00.....	1,056 00
66	Fire hoe heads, at \$1.00.....	66 00
79	Lead pots, at \$2.50.....	197 50
2,338	Wooden plugs, at 50 cents.....	1,169 00
388	Cast iron plugs, at \$1.00.....	388 00
1,864	Brass plugs, at 25 cents.....	466 00
2,351	Stop boxes, at \$2.50.....	5,877 50

1,840	Unfinished stop boxes, at \$1.75.....	\$3,220 00
2,097	Stop box risers, at 35 cents.....	733 95
28	Cast iron plug risers, at \$2.00.....	56 00
12	Hydrant keys, at \$2.25.....	27 00
48	Plug monkey keys, at 75 cents per dozen.....	3 00
49	Wrought iron monkey legs, at \$3.50.....	171 50
54	Cast iron monkey legs, at \$1.50.....	81 00
75	Brass long nuts, at 75 cents.....	56 25
449	Flat chisels, at 35 cents.....	157 15
132	Hand diamond points, at 35 cents.....	46 20
240	Handled diamond points, at 60 cents.....	144 00
216	Pipe cutters, at 60 cents.....	129 60
183	Cape chisels, at 35 cents.....	9 15
79	Hand gouges, at 40 cents.....	31 60
234	Handled gouges, at 60 cents.....	134 40
25	Reducing caps, at 50 cents.....	12 50
33	Pressure caps, at \$2.00.....	66 00
76	Sets caulking tools, at \$4.50.....	342 00
58	Gasket irons, at 60 cents.....	34 80
66	Drills, at 35 cents.....	23 10
181	Wedges, at 25 cents.....	45 25
12	Mandrills, at 75 cents.....	9 00
102	Eye bolts, at 25 cents.....	25 50
33	Wrenches, at 50 cents.....	16 50
	Total .....	\$125,530 45

## APPENDIX F.

---

# REPORT OF JOHN E. CODMAN

### IN CHARGE OF HYDROGRAPHIC WORK.

---

BUREAU OF WATER.

*Philadelphia, January 25, 1895.*

MR. JOHN L. OGDEN,  
Chief of Bureau.

SIR:—The following report on hydrographic work and data collected during the year 1894 in connection with the investigations of the sources for a future water supply is respectfully submitted :

Rainfall observations at twenty-two stations, three of which are provided with automatic rain gauges, have been continued throughout the year, completing twelve years continuous record of data relating to the precipitation.

Streamflow observations by the automatic stream gauges on the Perkiomen, Neshaminy and Tohickon streams have also been continued, completing eleven years continuous records.

The rainfall over the eastern counties of the State of Pennsylvania for the year beginning October 1, 1893, and ending September 30, 1894, was about three and one-half inches more than the previous year, and one-tenth of an inch more than the preceding eleven years average. The least monthly rainfall occurred in Jan-

uary, 1894, when only one and three-quarter inches fell during the month, being, by the United States Weather Bureau observations, one and six-tenths inches less than the mean monthly fall for the past twenty-three years. The following month of February the rain fall was nearly four and one-quarter inches, or about one-half inch above the mean for the past twenty-three years. There being very little frost in the ground and no very heavy or long continued storms, the most of this precipitation was taken up by or remained on the ground in the form of snow.

In March the precipitation was about one and one-half inches, being about one and three-quarter inches less than the mean for the month. The snow that fell in February, melting and flowing into the stream, together with the small amount of precipitation during this month, made the percentage of rainfall flowing in the streams for March very large, although the actual streamflow was considerably below the average.

The rainfall of May amounted to about thirteen inches, or nine and one-half inches above the average. The most of the rain fell between the 18th and 28th, during a cyclonic disturbance, which passed over the Middle and New England States, causing very high water and freshets in the rivers.

During the month of September, 1894, there were several heavy local thunder storms, the amount of rain falling being about two inches above the average.

The remaining months of the year gave about an average precipitation.

The minimum flow of the streams for the year 1894 was reached about August 27th, and continued until September 8th. The flow of the Perkiomen for fifteen days was thirty-six cubic feet per second. The flow of the Neshaminy for eleven days was seven cubic feet per second, and of the Tohickon for twelve days was four cubic feet per second.

The total precipitation registered by the automatic rain gauge at Thirty-second and Spruce streets for the year ending December 31, 1894, was 42.23 inches. The total amount registered by the ground gauge was 47.33 inches.

Observations begun in 1891 with five gauges at different elevations have been continued. The results are similar to those previously obtained. Tabulated results are given in Table V. These are incomplete for the months in which snow fell.

The automatic gauge recorded twenty storms in which the rate exceeded one-quarter of an inch per hour, and one hundred and thirty-six days on which one hundredth of an inch or more of rain fell.

The greatest amount of rain recorded in a single storm was on May 20th to May 24th, when 6.38 inches fell in 51 hours and 15 minutes, of which 3.25 fell on the 21st. At no time during the storm did the rate exceed 0.75 per hour.

The greatest amount for a short period of time was during a thunder storm on August 3d, when .75 of an inch fell in twenty minutes, or at the rate of 2.25 inches per hour.

The amount of rain recorded at stations outside the City varied from five to forty per cent. more than was recorded by either the Water or U. S. Weather Bureaus. The greatest amount recorded at any station outside the City was 57.43 inches, at the Forks of the Neshaminy.

The automatic gauge at Spring Mount (or Frederick) recorded sixteen storms, in which the rate exceeded one-quarter of an inch per hour. The greatest amount recorded in a single storm was on May 20th to May 22d, when 6.29 inches fell in 49 hours and 20 minutes. At no time did the rate exceed .80 inches per hour.

The greatest amount for a short period of time was on September 8th, when 1.70 inches fell in forty minutes, or at the rate of 2.55 inches per hour.

The automatic gauge at the Forks of the Neshaminy recorded seventeen storms, in which the rate exceeded one-quarter of an inch per hour. The greatest amount recorded in a single storm was on May 20th to May 22d, when 9.68 inches fell in 54 hours and ten minutes. At no time during this storm did the rate exceed .40 of an inch per hour.

The greatest amount for a short period of time was during a storm on July 31st, when .95 inches fell in twenty minutes, or at the rate of 2.85 inches per hour.

From May 19th to the 28th, strong southeasterly winds and heavy rains extending over a large portion of the Middle States caused heavy freshets in all the rivers and water courses. This disturbance was remarkable more for the quantity of rain that fell than for the rapidity with which it fell. None of the observers record more than eight-tenths of an inch per hour. The amount recorded at Seisholtzville was 11.10 inches; at Frederick 9.28 inches; at Quakertown, 13.60 inches, of which 5.14 inches fell in 24 hours; at Ottsville, 11.55 inches, of which 5.48 inches fell in 24 hours; at Smith's Corner, 12.15 inches, of which 5.64 inches fell in 24 hours; at Point Pleasant, 11.91 inches, of which 4.85 inches fell in 24 hours; at Forks of Neshaminy, 13.94 inches, of which 5.40 inches fell in 24 hours.

Tables I, II, III, IV and V are compiled as in previous years, from the rainfall data collected during the year, and the records of the automatic gauges.

The average daily flow of the Perkiomen for the past eleven years was 180,591,290 gallons, the year ending September 30th. The daily flow for 1894 was 160,120,489 gallons, being 1,009,842 gallons more than the flow for 1893. The rainfall on the water shed was 2.10 inches less than the past eleven years average, and 1.93 more than that for 1893. The average per cent. of rainfall flowing in

the stream for the past eleven years was 51.2, equivalent to 24.9 inches of the rainfall. The number of inches flowing in the stream during 1894 was 22.12. The storm of May 20th and 21st caused a rise in the stream at this station of 14 feet in 23 hours, the water reaching the highest mark ever made, not excepting that of 1869. The automatic stream gauge was overflowed and washed away, but being in a strong wooden box was secured by the observer at considerable risk further down the stream, sustaining but little injury, and the loss of a few parts which were afterwards replaced. The wooden frame work on which the gauge stood had been previously securely fastened to the trees by wire rope. None of this was lost. All of the parts were collected, and as soon as the water was low enough to work the gauge was again put in operation. This took about two weeks, during which time observations were made from an established bench mark, and afterwards plotted upon the paper rolls.

The average flow of the Neshaminy for the past eleven years was 158,772,864 gallons. The daily flow for 1894 was 169,137,704 gallons, being over 17,374,324 gallons more than the flow of 1893. The rainfall on the watershed was 2.46 inches more than the past eleven years average, and 6.26 inches more than that of 1893.

The average per cent. of rainfall flowing in the stream for the past eleven years was 48.8, equivalent to an annual flow of 23.94 inches. The number of inches flowing during 1894 was 25.5 inches. Rain began falling in the storm of May 20th and 21st at 2.20 A. M. of the 20th and continued until 8.10 A. M. of the 22d. The stream began to rise at 2.20 P. M. of the 20th and continued to rise rapidly until it reached the highest point, about 7 A. M. of the 21st, a rise at this station of 14.52 feet in 16 hours and 40 minutes. The stream at this time was flowing for about two hours 13,600 cubic feet per second,



about 91 cubic feet per second for each square mile of watershed.

The water at its highest point entered the automatic gauge box, filled the clock and works with mud. This was the only damage done at this station.

The average daily flow of the Tohickon for the past eleven years was 147,500,958 gallons. The daily flow for 1894 was 141,670,000 gallons, being 4,030,000 gallons more than the flow during 1893; the rainfall on the watershed .33 more than the past eleven years average and nearly 3 inches more than that of 1893. The average percentage of rainfall flowing in the stream for the past eleven years was 59.3, equivalent to an annual flow of 30.4 inches of the rainfall. The number of inches flowing during 1894 was 29.1.

During the storm of May 20th and 21st the stream began to rise at 6 P. M. of the 20th, and rose 2 feet in five minutes and continued to rise until about 9 A. M. of the 21st, when it reached the highest point, being a rise of 12.30 feet in fifteen hours. The volume of flow at this time was, for about one hour, 11,500 cubic feet per second, about 110 cubic feet per second for each square mile of watershed.

The high water carried away the bridge connecting the gauge with the shore, filled the box partly with mud, and broke the float bands. No further damage was done at this station.

The records kept at Fairmount of the amount of water flowing over the flash boards of Fairmount dam during the year 1894 showed a total of 86 feet 7 inches, being 33 feet 7 inches more than the record for 1893. The rainfall on the Schuylkill valley for the year ending December 31st, 1894, was 51.76 inches, being 6.86 inches more than that of 1893. The computed flow from these records gives 638,858,680,237 gallons as the total flow for the year end-

ing December 31st, 1894, being about 37 per cent., or 19.2 inches of the rainfall. The average daily flow of the Schuylkill for 1893 by this computation would be 1,750,284,055.

During the storm of May 20th and 21st the Schuylkill began to rise on the dam at Fairmount about 6 A. M. of the 20th, and continued to rise until about 6 A. M. of the 22d, when it reached the highest point, the gauge showing 108 inches, being a rise of nearly 9 feet in 24 hours. The water gradually fell until the end of the month before the stream resumed the normal flow. Nearly one-fourth the total flow of the river for the year passed down and over the dam during this time. No water passed over the flash boards during the month of August. There was one day in July, four days in June and five days in September that the water flowed over the flash boards. Total number of days that water passed over the flash boards during the year; 124.

The greatest monthly flow occurred in May; the least in August; the greatest daily flow of the year on May 22d.

The following-named persons have been engaged as observers and rodmen during the entire year :

John G. Hilsman, rodman and gauge observer, Rush Valley P. O.

George W. Wood, rodman and gauge observer, Spring Mount, Pa.

R. G. Stover, gauge observer, Point Pleasant, Pa.

Dr. George M. Grim, gauge observer, Ottsville.

George Lowder, gauge observer, Smith's Corner.

Dr. J. A. Roth, gauge observer, Seisholtzville.

A. W. Walton, gauge observer, Doylestown.

H. L. Shull, gauge observer, Lansdale.

The Bureau is indebted to the following-named persons who have kindly furnished rainfall records :

Mr. Thomas MacKellar, Germantown, Philadelphia.

Mr. J. L. Heacock, Quakertown, Pa.

L. M. Dey, U. S. Weather Bureau.

T. F. Townsend, U. S. Weather Bureau.

Mr. Benjamin Shoemaker, Pennsylvania Hospital, Philadelphia.

Mr. E. F. Smith, Chief Engineer of Canals, Reading, Pa.

Mr. Thomas J. Beans, Moorestown, N. J.

Dr. Charles Moore, Pottstown, Pa.

George W. Hays, Civil Engineer, Lebanon, Pa.

Professor J. W. Moore, Lafayette College, Easton, Pa.

Professor Seldon, Lafayette College, Easton, Pa.

During 1894 all observations on rainfall were taken uniformly in accordance with the instructions given at the beginning of the year.

Respectfully,

JOHN E. CODMAN,  
*In Charge of Hydrographic Work.*

TABLE II.

*Rain Storms exceeding in rate 0.25 inches per hour as recorded by the Automatic Rain Gauge at Philadelphia for the year 1893.*

Date of Observation, 1894.	AUTOMATIC RAIN GAUGE.				
	TOTAL FALL.		MAXIMUM FALL.		
	Amount in Inches.	Duration in Hr. Min.	Amount in Inches.	Duration in Minutes.	Rate per Hour during Maximum Fall.
April 22d, rain storm.....	.36	7-10	.25	10	1.50
May 18th, S. E. rain storm.....	.60	4-30	.55	20	1.65
May 20th, S. E. rain storm.....	1.60	} 51-15 }	.15	12	.75
May 21st, S. E. rain storm.....	3.25		.25	20	.75
May 24th, S. E. rain storm.....	1.53		.22	15	.88
May 28th, S. E. rain storm.....	1.01	6-50	.85	25	2.04
June 24th, shower.....	.21	2-30	.15	15	.60
July 17th, shower.....	.91	1-10	.85	45	1.13
July 21st, shower.....	.63	1-10	.55	30	1.10
August 3d, shower.....	.81	0-35	.75	20	2.25
August 18th, shower.....	.26	2-10	.25	10	1.50
September 9th, rain storm.....	1.55	9-00	.75	35	1.30
September 10th, rain storm.....	.98	0-50	.44	28	.94
September 19th, rain storm.....	1.10	.....	.56	16	2.10
September 20th, rain storm.....	1.65	23-50	.42	20	1.26
October 4th, rain storm.....	.41	13-55	.20	12	1.00
October 10th, rain storm.....	.41	7-25	.10	10	.60
October 31st, rain storm.....	1.22	15-40	.40	12	2.00
November 3d, rain storm.....	.95	4-15	.30	15	1.20
December 12th, rain storm.....	1.04	13-25	.13	8	.97

TABLE III.

*Rain Storms exceeding in rate 0.25 inches per hour, as recorded by the Automatic Rain Gauge at Forks of Neshaminy for the year 1894.*

Date of Observation, 1894.	AUTOMATIC RAIN GAUGE.					
	TOTAL FALL.		MAXIMUM FALL.			
	Amount in Inches.	Duration in Hr. Min.	Amount in Inches.	Duration in Minutes.	Rate per hour during Maximum Fall.	
April 21st, rain storm.....	0.44	10—55	.25	25	.60	Thunder shower.
April 22d, rain storm.....	0.57	11—10	.15	25	.36	
May 20th to 22d, rain storm.....			.20	60	.20	
May 20th to 22d, rain storm.....	9.68	54—10	.40	60	.40	
May 28th, rain storm.....	2.32	6—30	1.92	112	1.08	
June 24th, shower.....	0.38	3—30	.20	20	.60	
June 26th, shower.....	1.16	3—40	.95	40	1.43	
June 30th, shower.....	.99	3—15	.75	28	1.60	
July 6th.....	1.27	7—50	.75	35	1.80	Hall, high wind, thunder.
July 16th, shower.....	2.10	1—05	2.10	48	2.62	
July 31st, shower.....	.99	2—20	.95	20	2.85	
August 3d, shower.....	.55	35	.52	15	2.08	
September 8th, rain storm.....	3.24	19—50	1.88	50	2.25	
September 10th, rain storm.....	.35	1—55	.30	15	1.20	
October 10th, rain storm.....	1.77	12—40	.35	40	.52	
October 13th, rain storm.....	.40	6—30	.15	20	.45	
November 3d, rain storm.....	.84	7—00	.35	60	.35	

TABLE IV.

*Rain Storms exceeding in rate 0.25 inches per hour, as recorded by the Automatic Rain Gauge at Frederick for the year 1894.*

Date of Observation, 1894.	AUTOMATIC RAIN GAUGE.				
	TOTAL FALL.		MAXIMUM FALL.		
	Amount in Inches.	Duration. Hr. Min.	Amount in Inches.	Duration in Minutes.	Rate per hour during Maximum Fall
May 20th to 22d, rain storm.....	6.29	49—20	.20	15	0.80
May 24th, rain storm.....	1.60	31—21	.40	30	0.80
May 28, rain storm.....	1.88	7—10	.58	12	2.90
June 24th, shower.....	.92	4—00	.40	25	.96
June 30th, shower.....	.95	1—35	.76	20	2.28
July 6th, rain storm.....	1.85	11—45	1.68	60	1.68
July 16th, shower.....	1.50	1—20	1.47	35	2.52
July 21st, shower.....	.26	1—50	.24	45	0.32
August 3d, shower.....	1.16	1—00	.80	20	2.40
August 19, shower.....	.92	1—15	.90	25	2.16
September 8th, rain storm.....	2.60	20—55	1.70	40	2.55
September 10th, rain storm.....	.46	0—15	.45	15	1.80
September 18th to 19th, rain storm	3.74	35—20	.80	25	1.92
October 10th, rain storm.....	2.67	12—10	1.37	60	1.37
October 24th, rain storm.....	1.15	27—10	.20	12	1.00
November 3d, rain storm.....	.77	4—45	.20	10	1.20

TABLE V.  
Table Showing Observations on Rainfall at Different Elevations above the surface of the Ground.

MONTH.	ELEVATIONS ABOVE THE GROUND IN FEET.						Number of Observations.	DIRECTION OF WIND.				Automatic Gauge.	Remarks.
	0	5	10	15	25	50		N. E.	S. E.	S. W.	N. W.		
January.....	1.79						9	2	4	2	1	1.49	Including snow.
February.....	3.96						13	7	2	2	2	3.74	Including snow.
March.....	1.68	1.47	1.36	1.62	1.42	1.48	12	7	2	1	2	1.47	
April.....	3.05	2.90	3.31	3.58	2.46	2.26	10	4	5	1	0	2.01	
May.....	11.40	11.97	11.35	12.11	11.97	11.32	15	5	4	6	0	10.27	
June.....	1.93	1.76	1.75	1.65	1.79	1.76	9	6	1	0	2	1.78	
July.....	2.28	2.14	2.27	2.20	1.95	2.15	9	4	3	0	2	2.10	
August.....	2.11	2.00	2.14	1.82	2.07	2.03	10	3	3	2	2	1.94	
September.....	5.81	5.64	5.81	5.30	?	5.93	7	2	1	4	0	5.67	
October.....	5.29	4.71	5.03	5.07	5.21	4.93	9	2	4	2	1	4.36	
November.....	3.35	3.35	3.48	3.04	3.33	3.38	9	2	2	3	2	2.98	
December.....	4.68	3.81	3.29	4.16	3.82	2.86	8	7	1	0	0	4.42	Including snow.
Totals.....	47.33											42.23	

Gauge at five feet on south side of mast. Gauge at fifteen feet on north side of mast.  
 Gauge at ten feet on west side of mast. Gauge at twenty-five feet east side of mast.  
 Gauge at fifty feet on southeast side of mast.

TABLE VI.  
Comparative Statistics of Watersheds.

WATERSHEDS.	Area in square miles.	STATISTICS OF WATER SHEDS IN PERCENTAGE OF TOTAL AREA.				AVERAGE PERCENTAGE OF RAINFALL REACHING THE STREAMS.												
		Woodland.	Cultivated.	Flats.	Roads.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual.
Perkiomen creek, at Frederick, 11 years...	152.	25	71	2	2	76	83	113	80	42	25	18	31	28	25	49	61	51.2
Neshaminy, below Forks, 11 years.....	139.3	6	92	$\frac{1}{4}$	2	86	93	112	72	33	17	13	19	19	20	44	74	48.8
Tohickon, 11 years.....	102.2	24	72	2	2	93	112	130	82	37	21	17	24	30	26	57	72	59.3
Perkiomen, at Frederick.....	{ Maximum in 11 years.....					38	111	191	114	57	39	40	62	50	49	78	75	
	{ Minimum in 11 years.....					40	49	65	41	29	13	8	15	15	9	25	32	
Neshaminy, below Forks.....	{ Maximum in 11 years.....					103	138	177	122	55	41	44	71	41	50	74	100	
	{ Minimum in 11 years.....					46	66	62	43	18	5	2	6	3	2	14	47	
Tohickon.....	{ Maximum in 11 years.....					138	191	190	148	65	53	52	81	66	51	90	97	
	{ Minimum in 11 years.....					44	64	90	42	17	9	2	6	2	2	18	49	



TABLE VII—Average Annual Yield of Sundry Streams October 1, 1893, to October 1, 1894.

Watersheds.	Area in miles.	Average rainfall in inches.	Average rainfall collected in inches.	Per cent. collected.	Average annual yield in gallons.	Average daily yield in gallons.	Average yield in cubic feet per second per square mile of drainage area.	Average yield in cubic feet per second per square mile of drainage area for each inch of rainfall.
Perkiomen at Frederick, eleven years.....	152.0	48.636	24.922	51.200	65,928,259,617	180,591,290	1.838	0.0380
Neshaminy, below Forks, eleven years.....	139.3	49.068	23.944	48.800	57,958,558,996	158,772,364	1.763	0.0359
Tohickon, eleven years.....	102.2	51.207	30.366	59.300	53,919,271,272	147,500,958	2.233	0.0435
Sudbury, Mass., eighteen years.....	75.2	45.915	22.554	49.12	30,151,704,000	80,689,000	1.611	0.03508
Croton, New York, seventeen years.....	338.0	45.970	22.760	49.50	135,400,000,000	371,600,000	1.680	0.0365

TABLE VIII—Observed Minimum Stream and Minimum Flow October 1, 1893, to October 1, 1894.

Stream.	PREVIOUSLY OBSERVED MINIMUM FLOW.	Date.	MINIMUM FLOW, 1894.	Date.
	Cubic feet per 24 hours.		Cubic feet per 24 hours.	
Perkiomen at Frederick.....	653,184	September 5, 1885.....	1,200,960	August 31, 1894.
Neshaminy, below Forks.....	108,864	September 23, 1885. ...	457,920	September 7, 1894.
Tohickon.....	17,280	July 23, 1885.....	207,370	September 6, 1894.

TABLE IX—Observed Maximum Stream Flow and Maximum Flow October 1, 1893, to October 1, 1894.

Stream.	PREVIOUSLY OBSERVED MAXIMUM FLOW.	Date.	MAXIMUM FLOW, 1894.	Date.
	Cubic feet per 24 hours.		Cubic feet per 24 hours.	
Perkiomen at Frederick.....	458,352,000	September 18, 1888.....	757,641,600	May 21, 1894.
Neshaminy, below Forks.....	498,278,300	February 11, 1886.....	778,619,520	May 21, 1894.
Tohickon.....	479,174,400	September 13, 1886.....	747,351,360	May 21, 1894.

TABLE X.

*Yield on Sundry Streams for the year 1894.*

1894.	PERKIOMEN AT FREDERICK.			NESHAMINY BELOW FORKS.			TOHICKON.		
	MONTHLY YIELD.	AVERAGE DAILY YIELD.		MONTHLY YIELD.	AVERAGE DAILY YIELD.		MONTHLY YIELD.	AVERAGE DAILY YIELD.	
	Cubic Feet.	Cubic Feet.	Gallons.	Cubic Feet.	Cubic Feet.	Gallons.	Cubic Feet.	Cubic Feet.	Gallons.
January.....	248,019,840	8,000,640	59,848,943	255,398,400	8,238,660	61,629,455	190,650,240	6,150,000	46,005,194
February.....	858,936,960	30,676,320	229,474,757	866,505,600	30,946,600	231,496,641	902,378,880	32,227,810	241,080,745
March.....	841,700,160	27,151,618	203,108,194	864,786,240	27,900,000	208,706,481	735,220,800	23,717,000	177,415,470
April.....	604,843,200	20,161,440	150,818,043	647,308,800	21,576,960	161,406,867	541,788,480	18,059,616	135,095,301
May.....	2,353,207,680	75,909,925	567,845,665	2,397,798,720	77,348,350	578,605,833	2,036,733,120	65,711,300	491,554,658
June.....	398,442,240	13,281,408	99,351,825	369,576,000	12,319,200	92,154,014	127,638,720	4,254,624	31,826,796
July.....	206,556,480	6,668,112	49,842,538	187,980,800	4,450,993	33,295,738	44,763,840	1,441,000	10,801,871
August.....	120,147,840	3,875,737	28,949,609	109,209,600	3,522,900	26,353,120	27,276,480	879,900	6,582,109
September.....	611,150,400	20,371,680	152,890,747	735,384,960	24,512,832	183,338,714	792,270,720	26,409,024	197,553,206
October.....	585,869,760	18,900,000	141,381,990	481,541,760	15,533,610	116,199,390	498,899,520	16,093,533	120,387,950
November.....	654,168,960	21,805,632	163,117,453	717,854,080	25,595,136	191,464,901	634,512,960	21,150,432	158,216,217
December.....	1,000,900,800	32,287,128	241,524,437	747,826,560	24,123,430	180,455,784	847,488,960	27,338,353	204,505,069
Total.....	8,483,944,320	23,243,683	173,874,813	8,381,171,520	22,962,113	171,769,531	7,379,622,720	20,218,144	151,242,218

WATERSHEDS.

TOHICKON.

AREA OF WATERSHED, 102.2 SQUARE MILES.

DATE, 1893.	Rainfall in inches.	Inches collectible.	Monthly yield	Average daily	Average yield in cubic feet per second per square mile of drainage area.
	off.		of stream.	yield of stream.	
			Cubic feet.	Cubic feet.	
October .....	2.820 6	0.596	145,687,680	4,699,000	0.532
November .....	4.215 0	2.629	623,111,040	21,070,368	2.386
December .....	2.750 6	3.106	736,240,320	23,749,690	2.709
1894.					
January .....	1.775 4	0.803	190,650,240	6,150,000	0.696
February .....	4.215 6	3.801	902,378,880	32,727,810	3.650
March .....	1.445 7	3.094	735,220,800	23,717,000	2.686
April .....	2.545 8	2.281	541,788,480	18,059,616	2.143
May .....	11.635 5	8.578	2,036,733,120	65,711,300	7.538
June .....	3.615 0	0.533	127,638,720	4,254,624	0.481
July .....	2.930 8	0.190	44,763,840	1,444,000	0.163
August .....	2.235 6	0.115	27,276,480	879,900	0.039
September .....	6.360 5	3.337	792,270,720	26,409,024	2.990
Totals .....	46.540 6	29.077	6,903,760,320	18,914,410	2.120

LIBRARY  
OF THE  
UNIVERSITY OF ILLINOIS

AM

1894

EEK

OF THE  
UNIVERSITY OF ILLINOIS

AM FI

894

EEK E

LIBRARY  
OF THE  
UNIVERSITY OF ILLINOIS



M F

394

DN C

I,

re  
y

l-  
s  
s

e  
d  
s  
s  
l-  
s,  
y  
t  
t

UNIVERSITY OF ILLINOIS

## APPENDIX G.

---

# REPORT OF JOHN E. CODMAN, CHIEF DRAUGHTSMAN.

---

BUREAU OF WATER.

*Philadelphia, January , 1895.*

MR. JOHN L. OGDEN,  
Chief of Bureau.

SIR:—The following report of work under my charge in the draughting room for the year 1894 is respectfully submitted:

Two hundred and twelve drawings relating to buildings, reservoirs, boilers, engines and plans of properties have been made and recorded. These comprise as follows:

One hundred and fifty-one drawings of the Queen Lane Engine House and Pumping Station, Roxborough and Belmont Auxiliary Engine Houses and property plans. Thirty drawings of Machinery, Engines, Boilers, etc. Fifteen drawings of Reservoirs, three drawings of Stand-pipes and Special Castings. Specifications for buildings, engines and boilers were also prepared to accompany these drawings. One draughtsman was employed almost continuously on drawings showing water pipe on street plans.

About two thousand one hundred blue prints were prepared and printed. From the data furnished by the Inspectors, calculations of the horse power of two hundred and sixty-four engines and boilers were made.

By your direction the Chief Draughtsman supervised the construction of six marine boilers built by the Southwark Foundry and Machine Company. The twenty-four furnace flue tubular boilers now under contract and process of construction at Pittsburgh, Penna., by Messrs. Riter & Conley, and the two steel stand-pipes under contract with the Warden Manufacturing Company.

The steel plates for the six marine boilers were rolled by the Carnegie Steel Company at the Homestead Works, Pittsburgh, Penna. The steel plates were made by the open hearth process, inspected by the Chief Draughtsman and tested at Homestead in January, 1894. One coupon was taken from each plate entering into the construction of the boilers and subjected to a physical test for elongation, reduction of area, and ultimate tensile strength. One hundred and two coupons were tested for these boilers.

The steel plates for the twenty-four boilers contracted for by Messrs. Riter & Conley, Pittsburgh, were made by the open hearth process by the Carnegie Steel Company, Homestead, and were inspected and tested by the Chief Draughtsman at Homestead in May, 1894. One coupon was taken from each plate entering into the construction of the boilers, and tested for ultimate tensile strength, elongation and reduction of area, also a bending test cold and one after being heated and quenched in water. Three hundred coupons were tested for these boilers.

Work on the boilers was begun about June 1st. An inspection of the work completed was made in Pittsburgh on June 21st, and a report of progress made. A second inspection at Pittsburgh was made July 21st, and a report

of progress made. A third inspection at Pittsburgh was made August 29th, and the progress of the work reported. A fourth visit was made to Pittsburgh on October 31st. At this time seven boilers were tested with hot water to a pressure of 215 pounds per square inch, and found satisfactory. A fifth visit to Pittsburgh was made on December 4th, and five more boilers were tested with hot water to a pressure of 215 pounds per square inch, and found satisfactory. The twelve boilers were shipped to Philadelphia soon after passing the test as required by the specifications.

The steel plates for the two standpipes contracted for by the Warden Manufacturing Company, Philadelphia, were made by the open hearth process by the Lukens Iron and Steel Company, Coatesville, Penna., and were inspected and tested by the Chief Draughtsman at Coatesville in September, 1894. The plates are stamped "Shell," and were subject to the same physical tests as were required for the boiler plate. One coupon was taken from each sheet entering into the construction. One hundred and fourteen coupons were tested for this work. All of the above named steel plates, some five hundred and twenty, were stamped with the number of the steel ingot from which it was rolled, the number of the plate, and, so far as possible, the position of the plate in the finished work.

In testing for the mechanical efficiency four observations of the applied force and elongation were made on each coupon, one at the elastic limit as read from the scale beam of the testing machine, one at one-half inch, one at one inch and one at one and one-half inches elongation. This would generally be the ultimate limit of the tensile strength. The results of the tests are given in the accompanying tables. The column marked relative resilience is computed from the per cent. of elonga-

UNIVERSITY OF ILLINOIS.

AM

894

CEK

tion and the ultimate tensile strength, showing a relative value of the material.

The daily pumpage chart for the report of the Chief of the Bureau and the daily streamflow charts for the Hydrographic Work have been prepared as in former years.

Respectfully,

JOHN E. CODMAN,

*Chief Draughtsman.*



## TESTS OF STEEL PLATE

*Made by John E. Codman, Chief Draughtsman, Bureau of Water, Department of Public Works, at Lukens Iron and Steel Co., Coatesville, Pennsylvania, October, 1894.*

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.	
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.			
1 1017	1.035	.375	.388	14600 19600 22000 22400	37600 56150 56700 57730	Elastic Limit. .50 1.00 1.50 2.20								
2 2905	1.470	.435	.639	20800 29700 34300 35100	32550 46480 53680 54980	Elastic Limit .50 1.00 1.50 2.52	27.5	.720	.190	.137	65.0	15900		
3 2905	1.035	.445	.461	16500 24000 26000 26400	35790 52060 56400 57260	Elastic Limit. .50 1.00 1.50 2.24								
4 1017	1.035	.380	.5931	14700 20800 22900 23200	37400 52920 52260 59030	Elastic Limit. .50 1.00 1.50 2.08	28.0	.735	.275	.202	56.0	16100		
							26.0	.730	.180	.181	66.0	15400		

Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
5 2905	1.035	.485	.450	14500	32220	Elastic Limit.	28.5	.700	.230	.161	64.0	15900	
				21900	48670	.50							
				24800	53170	1.00							
				25100	55780	1.50							
						2.28							
6 1017	1.035	.380	.393	15900	40400	Elastic Limit.	25.0	.775	.215	.167	57.0	14200	
				20600	50890	.50							
				21900	55720	1.00							
				22300	56740	1.50							
						2.00							
7 2905	1.035	.445	.461	15900	34480	Elastic Limit.	26.0	.700	.235	.165	64.0	15200	
				23600	51190	.50							
				25900	56180	1.00							
				26200	56830	1.50							
						2.08							
8 1015	1.035	.375	.388	14010	36800	Elastic Limit.	28.5	.715	.200	.143	63.0	16000	
				19800	51080	.50							
				21300	54890	1.00							
				21700	55920	1.50							
						2.28							
9 1954	1.035	.375	.388	14700	37880	Elastic Limit.	26.0	.725	.190	.138	64.0	15000	
				19700	50770	.50							
				21900	56440	1.00							
				22300	57470	1.50							
						2.08							

Tests of Steel Plate—Continued.

29 Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
10 2819	1.030	.445	.458	16000 24800 27000 27800	34930 54150 58950 59600	Elastic Limit. .50 1.00 1.50 2.12	26.5	.705	.235	.166	63.0	15800	
11 2819	1.030	.455	.469	15700 23900 27200 27700	38470 50960 58000 59060	Elastic Limit. .50 1.00 1.50 2.16	29.0	.715	.260	.186	60.0	17200	
12 2819	1.025	.460	.472	15900 24300 27400 27800	33680 51480 58050 58900	Elastic Limit. .50 1.00 1.50 2.20	27.5	.695	.245	.170	64.0	16200	
13 1863	1.030	.570	.587	19200 31000 33500 33800	32700 52810 57070 57580	Elastic Limit. .50 1.00 1.50 2.28	28.5	.700	.310	.217	63.0	16400	
14 1802	.710	.445	.316	10700 18800	33860 59500	Elastic Limit. .50 1.00 1.50 2.00	25.0	.465	.235	.109	65.0	14800	

Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
15 1888	1.030	.585	.603	19700 29600 33000 33500	32060 49680 54700 55550	Elastic Limit. .50 1.00 1.50 2.04	25.5	.706	.340	.238	60.0	14200	
16 1096	1.470	.380	.559	19300 27400 30100 30900	34520 49000 53840 55270	Elastic Limit. .50 1.00 1.50 2.16	27.0	1.085	.175	.190	66.0	14900	
17 1096	1.470	.380	.559	19000 27300 30600 31100	34000 48300 54740 55630	Elastic Limit. .50 1.00 1.50 2.38	28.5	1.050	.105	.205	63.0	16200	
18 1888	1.030	.575	.592	20000 29000 32900 33400	33780 48980 55580 56420	Elastic Limit. .50 1.00 1.50 2.16	27.0	.695	.335	.233	61.0	15300	
19 2069	1.025	.445	.4561	16900 23600 26200 26600	37060 51750 57450 58330	Elastic Limit. .50 1.00 1.50 2.24	28.0	.695	.240	.167	63.0	16300	

Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
20 2039	1.025	.440	.4511	16100 24000 26200 26600	35700 53210 58090 59000	Elastic Limit. .50 1.00 1.50 2.24	28.0	.725	.240	.174	61.0	16500	
21 1-62	.950	.505	.485	15400 27900	31750 57520	Elastic Limit. .50 1.00 1.50 2.16	27.0	.650	.285	.185	61.0	15500	
22 1968	.730	.385	.281	9200 15800	32740 56220	Elastic Limit. .50 1.00 1.50 2.08	26.0	.475	.200	.095	66.0	14600	
23 1884	.970	.500	.485	14800 27300	30520 53290	Elastic Limit. .50 1.00 1.50 2.00	25.0	.675	.295	.199	59.0	14000	
24 1844	1.025	.505	.518	18100 26800 29000 29700	34940 51730 56370 57330	Elastic Limit. .50 1.00 1.50 2.32	29.0	.705	.285	.201	61.0	16600	

*Tests of Steel Plate—Continued.*

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
25 1884	1.035	.520	.538	19200 26600 29800 30000	35690 49440 55390 55760	Elastic Limit. .50 1.00 1.50 2.16	27.0	.690	.285	.197	63.0	15500	
26 1884	1.035	.515	.533	19400 30000 30400	36400 56290 57030	Elastic Limit. .50 1.00 1.50 2.08	26.0	.750	.325	.244	54.0	14800	
27 1884	.965	.515	.497	16300 28800	32800 57940	Elastic Limit. .50 1.00 1.50 2.12	26.5	.665	.295	.195	60.0	15400	
28 2054	1.035	.565	.585	21600 31500 35100 35300	36900 53840 60000 60300	Elastic Limit. .50 1.00 1.50 2.00	25.0	.700	.320	.224	61.0	15000	
29 2039	.705	.440	.310	11500 18300	37100 59030	Elastic Limit. .50 1.00 1.50 2.12	26.5	.450	.215	.097	68.0	15600	

Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds Per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
30 1927	1.025	.435	.446	16200 24000 25600 26100	36320 53810 57420 58520	Elastic Limit. .50 1.00 1.50 2.20	27.5	.685	.225	.154	65.0	16200	
31 2905	1.035	.435	.450	14600 22000 24300 24600	32440 48800 54000 54660	Elastic Limit. .50 1.00 1.50 2.00	25.0	.715	.225	.161	64.0	13700	
32 1888	1.035	.580	.600	22000 32400 35000 35400	36660 54000 58330 59000	Elastic Limit. .50 1.00 1.50 2.00	25.0	.710	.310	.241	60.0	14700	
33 1801	.705	.435	.307	9900 17500	32230 57000	Elastic Limit. .50 1.00 1.50 2.24	28.0	.460	.235	.108	64.0	16000	
34 1979	1.035	.580	.600	21300 31600 33800 34100	35500 52660 56330 56830	Elastic Limit. .50 1.00 1.50 2.00	25.0	.700	.335	.235	60.0	14200	

Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
35 1927	1.035	.440	.455	14500 23300 25700 26200	31860 52300 56490 57580	Elastic Limit. .50 1.00 1.50 2.00	25.0	.715	.235	.168	63.0	14400	
36 1937	1.025	.445	.456	14600 23300 25500 25900	32010 51090 55920 56800	Elastic Limit. .50 1.00 1.50 2.24	28.0	.700	.240	.168	63.0	16000	
37 2809	1.000	.500	.500	16800 25400 27500 27900	33600 50800 55000 55800	Elastic Limit. .50 1.00 1.50 2.00	25.0	.675	.260	.176	64.0	13900	
38 1056	1.010	.380	.384	14400 20000 21600 22000	37500 52080 56250 57800	Elastic Limit. .50 1.00 1.50 2.36	29.5	.700	.175	.125	68.0	16900	
39 1758	1.010	.505	.510	19000 26100 28500 28900	37250 51170 55900 56600	Elastic Limit. .50 1.00 1.50 2.16	27.0	.670	.265	.178	64.0	15300	



Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds Per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage	Breadth.	Width.	Area.	Percentage.		
40 2076	1.465	.390	.571	21100 28800 31600 32100	36950 54080 55250 56210	Elastic Limit. .50 1.00 1.50 2.24	28.0	1.020	.190	.194	66.0	15800	
41 1758	1.010	.500	.505	18000 27200 29000 29400	35640 53680 57420 58210	Elastic Limit. .50 1.00 1.50 2.00	25.0	.685	.260	.178	64.0	14500	
42 1758	1.005	.500	.503	17700 25300 27500 27900	35180 50300 54670 55460	Elastic Limit. .50 1.00 1.50 2.16	27.0	.660	.245	.162	67.0	15000	
43 1 90	1.010	.375	.379	14600 21300 22500 22700	38520 56200 59370 60000	Elastic Limit. .50 1.00 1.50 2.00	25.0	.725	.200	.145	61.0	15000	
44 2063	1.005	.640	.643	21200 33700 36500 36800	33000 52410 56760 57230	Elastic Limit. .50 1.00 1.50 2.08	26.0	.660	.365	.241	62.0	14900	

Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		ELONGATION OF AREA.				Relative Resilience.	Remarks.						
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area	Percentage.								
45 2063	.700	.645	.452	14600	32300	Elastic Limit.													
				25800	57800	.50 1.00 1.50 .252								29.0	.460	.375	.172	62.0	16800
46 2063	1.005	.640	.643	19700	30600	Elastic Limit.													
				34400	53500	.50								83.5	.655	.355	.233	68.0	19300
				36800	57230	1.00													
				37000	57540	1.50 2.68													
20000	31000	Elastic Limit.																	
34200	53020	.50								25.0	.655	.355	.233	64.0	14200				
36400	56430	1.00																	
36700	56900	1.50 2.00																	
20700	31790	Elastic Limit.																	
34000	52200	.50								25.0	.640	.350	.224	65.0	14200				
36900	56680	1.00																	
37200	56830	1.50 2.00																	
20500	31730	Elastic Limit.																	
33600	52010	.50								27.5	.675	.350	.236	63.0	15700				
36600	56650	1.00																	
36900	57120	1.50 2.20																	

Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breath.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
50 1123	1.010	.635	.641	19800 32800 35600 35900	36890 51170 55530 56000	Elastic Limit. .50 1.00 1.50 2.16	27.0	.650	.350	.228	64.0	15100	
51 1123	1.015	.640	.650	19900 32900 35500 36000	30610 50610 54610 55380	Elastic Limit. .50 1.00 1.50 2.20	27.5	.675	.350	.236	63.0	15200	
52 1123	1.030	.640	.659	22200 34600 37300 37500	33680 52500 56540 56930	Elastic Limit. .50 1.00 1.50 2.12	26.5	.695	.365	.254	61.0	15100	
53 1123	1.015	.635	.645	20000 335 0 35300 35500	31780 50390 54570 55040	Elastic Limit. .50 1.00 1.50 2.18	28.5	.690	.360	.248	61.0	15700	
54 1123	1.010	.645	.651	21800 35700 36000 36300	33480 51770 55300 55760	Elastic Limit. .50 1.00 1.50 2.00	25.0	.665	.365	.243	63.0	13900	

Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
55 2058	1.010	.640	.646	21500	33280	Elastic Limit.	25.0	.665	.360	.239	63.0	14200	
				34300	53090	.50							
				36500	56500	1.00							
				36800	56960	1.50							
						2.00							
53 2058	1.015	.645	.655	21800	33280	Elastic Limit.	26.0	.700	.385	.270	58.0	15200	
				35200	53740	.50							
				38000	58010	1.00							
				38100	58470	1.50							
						2.08							
57 1124	1.030	.625	.637	21100	33120	Elastic Limit.	25.0	.645	.335	.216	66.0	13600	
				32100	50400	.50							
				34300	53840	1.00							
				34700	54470	1.50							
						2.00							
58 1091	1.035	.390	.404	14500	35970	Elastic Limit.	26.0	.755	.215	.162	60.0	15400	
				21800	54000	.50							
				23500	58160	1.00							
				23900	59150	1.50							
						2.08							
59 1091	1.025	.380	.390	13100	33580	Elastic Limit.	26.0	.735	.185	.136	65.0	15000	
				20300	52050	.50							
						1.00							
				22500	57700	1.50							
						2.08							

Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area	Percentage.		
60 1097	.985	.375	.369	13300 19500 21100 21300	36040 52840 57180 57720	Elastic Limit. .50 1.00 1.50 1.84	23.0	.695	.185	.129	65.0	15600	Mill Test: 2.16-27%
61 1097	1.020	.375	.382	14600 20500 22200 22300	38220 53660 58110 58370	Elastic Limit. .50 1.00 1.50 2.00	25.0	.780	.185	.135	64.0	14600	
62 1097	1.020	.385	.393	13200 20100 22100 22300	33580 51140 56230 56740	Elastic Limit. .50 1.00 1.50 2.00	25.0	.725	.200	.145	63.0	14200	
63 1123	1.025	.565	.579	19400 30400 32500 32800	33500 52500 56130 56640	Elastic Limit. .50 1.00 1.50 2.00	25.0	.700	.315	.221	61.0	14100	
64 1123	1.015	.575	.584	19400 30600 32700 32900	33220 52400 56000 56330	Elastic Limit. .50 1.00 1.50 2.00	25.0	.690	.320	.221	62.0	14000	

*Tests of Steel Plate—Continued.*

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
65 1128	1.020	.575	.586	19100 38000 32400 32800	32600 51190 55290 56000	Elastic Limit. .50 1.00 1.50 2.16	27.0	.680	.325	.221	62.0	15200	
66 1128	1.020	.580	.592	19700 31000 33000 33200	33280 52360 55740 56080	Elastic Limit. .50 1.00 1.50 2.20	27.5	.680	.320	.218	63.0	15400	
67 1128	1.015	.575	.584	19000 30000 32900 33100	32530 52400 56330 56670	Elastic Limit. .50 1.00 1.50 2.20	27.5	.675	.325	.223	62.0	15600	
68 1128	1.025	.575	.589	19900 31500 32600 32900	33780 53480 55340 55850	Elastic Limit. .50 1.00 1.50 2.12	26.5	.680	.325	.221	62.0	14800	
69 1128	1.015	.575	.584	19200 31200 33000 33300	32870 53400 56500 57020	Elastic Limit. .50 1.00 1.50 2.12	26.5	.675	.320	.216	63.0	15100	

Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds Per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage	Breadth.	Width.	Area.	Percentage.		
70 2058	1.015	.640	.650	22000 24000 26300 28600	33840 52300 55840 56300	Elastic Limit. .50 1.00 1.50 2.12	26.5	.660	.360	.238	63.0	14900	
71 2058	1.015	.650	.660	21600 24500 26300 28600	32730 52270 55000 56450	Elastic Limit. .50 1.00 1.50 2.20	27.5	.660	.360	.238	64.0	15300	
72 1100	1.035	.510	.528	18200 29000 30300 30500	34460 54920 57380 57760	Elastic Limit. .50 1.00 1.50 2.16	27.0	.700	.275	.193	63.0	15600	
73 2054	1.035	.570	.590	20300 32200 34700 35000	34400 54570 58810 59320	Elastic Limit. .50 1.00 1.50 2.08	26.0	.710	.330	.234	60.0	15400	
74 1761	.985	.500	.493	16400 26000 26400 26700	33200 52730 53550 54150	Elastic Limit. .50 1.00 1.50 2.00	25.0	.640	.250	.160	67.0	13500	

Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
75 1111	1.030	.500	.515	17800 26500 28800 29200	34560 52720 53550 54150	Elastic Limit. .50 1.00 1.50 2.04	25.5	.700	.275	.193	62.0	18800	
76 1106	1.030	.575	.592	19700 31800 34200 34500	33270 53710 57770 58270	Elastic Limit. .50 1.00 1.50 2.24	28.0	.690	.310	.214	64.0	16300	
77 1771	1.030	.505	.520	17500 26400 28800 29100	33650 50770 55380 56000	Elastic Limit. .50 1.00 1.50 2.24	28.0	.675	.260	.176	66.0	15700	
78 1799	1.030	.320	.330	11400 18000 19300 19560	34540 54540 58480 59090	Elastic Limit. .50 1.00 1.50 2.00	25.0	.760	.150	.114	65.0	14800	
79 1799	1.030	.325	.335	12600 18600 19300 20000	37610 55520 57100 60000	Elastic Limit. .50 1.00 1.50 2.00	25.0	.765	.155	.119	64.0	16000	



Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
80 1761	1.015	.510	.518	18400 26100 28700 29100	35520 50380 55400 56170	Elastic Limit. .50 1.00 1.50 2.16	27.0	.660	.260	.172	66.0	15200	
81 1130	.985	.500	.493	16500 24500 26700 27100	33460 49690 54150 54970	Elastic Limit. .50 1.00 1.50 2.12	26.5	.645	.260	.168	65.0	14600	
82 1047	1.035	.325	.336	12800 19400 20500 20600	28090 57730 61010 61300	Elastic Limit. .50 1.00 1.50 1.76	22.0	.750	.150	.113	66.0	16000	Mill Test: 2.08—26 per cent.
83 1047	1.030	.330	.340	14000 19400 20800 21100	41170 57060 61170 62060	Elastic Limit. .50 1.00 1.50 2.00	25.0	.755	.175	.132	61.0	15500	
84 1131	.985	.575	.566	19000 27700 30000 30300	33560 48940 53000 53530	Elastic Limit. .50 1.00 1.50 2.28	28.5	.625	.305	.191	66.0	15300	

Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
85-104 2178	1.025	.770	.789	24400 38400 41500 42100	30920 48650 52600 53360	Elastic Limit. .50 1.00 1.50 2.24	28.0	.650	.425	.276	65.0	15000	
105-108 1021	1.025	.760	.779	24300 35700 38700 39300	31180 45820 49670 50450	Elastic Limit. .50 1.00 1.50 2.56	32.0	.620	.390	.242	69.0	16200	
20 1850	1.010	.500	.5050	17200 24700 27000 27600	34100 48900 58500 54700	Elastic Limit. .50 1.00 1.50 2.24	28.0	.650	.275	.179	65.0	15800	
19 1858	1.005	.505	.5080	16600 24400 27300 27800	32700 48000 53700 54700	Elastic Limit. .50 1.00 1.50 2.16	27.0	.655	.275	.180	65.0	14800	
17-18 2117	1.040	.525	.546	20000 30500 32300 32600	36600 55900 59200 59700	Elastic Limit. .50 1.00 1.50 2.00	25.0	.725	.300	.218	60.0	14900	

Tests of Steel Plate—Continued.

30 Marks.	MEASUREMENTS.			Applied Load.	Strain In Pounds Per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
16 1091	1.035	.765	.792	25500 41800 44600 45400	32200 52800 56300 57300	Elastic Limit. .50 1.00 1.50 2.12	26.5	.670	.435	.291	63.0	15200	
15 1096	1.035	.76	.792	25400 40200 43300 43600	32100 50800 54700 55100	Elastic Limit. .50 1.00 1.50 2.00	25.0	.645	.425	.274	65.0	13800	
14 1091	1.035	.755	.781	24700 44400 44700	31600 56800 57200	Elastic Limit. .50 1.00 1.50 2.20	27.5	.675	.440	.297	62.0	15800	
13 1096	1.035	.765	.792	25800 40000 41800 42200	32600 50500 52800 53300	Elastic Limit. .50 1.00 1.50 2.08	26.0	.640	.410	.262	67.0	13800	
12 2117	1.040	.500	.520	19700 26000 28600 28800	37900 50000 55000 55400	Elastic Limit. .50 1.00 1.50 1.68	21.0	.705	.285	.251	62.0	14700	Mill test : 2.12=26.5 per cent.

453

Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
11 2117	1.040	.500	.520	20100	38700	Elastic Limit.	25.0	.710	.280	.199	62.0	14400	
				27200	52300	.50							
				29600	56900	1.00							
				29900	57500	1.50							
						2.00							
9-10 2117	1.040	.500	.520	19500	37500	Elastic Limit.	29.0	.695	.255	.177	66.0	16400	
				26100	50200	.50							
				28800	55400	1.00							
				29400	56500	1.50							
						2.32							
7-8 2108	1.040	.500	.520	1920	36900	Elastic Limit.	25.0	.725	.280	.203	61.0	14700	
				28000	50000	.50							
				30100	57900	1.00							
				30500	58700	1.50							
						2.00							
5-6 2117	1.040	.500	.520	18400	35400	Elastic Limit.	25.0	.720	.275	.198	62.0	18300	
				24700	47500	.50							
				27100	52100	1.00							
				27600	53100	1.50							
						2.00							
1-2-3-4 2117	1.045	.510	.533	20000	37520	Elastic Limit.	25.0	.730	.290	.212	60.0	14900	
				28600	53700	.50							
				31500	59100	1.00							
				31800	59700	1.50							
						2.00							

Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.			
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.					
1 2624	.715	.750	.536	17600	32800	Elastic Limit.	22.0	.480	.410	.197	63.0	17200	Mill Test: 248—31 per cent.			
				29700	55400	.50 1.00 1.50 1.80										
2 2060	.715	.750	.536	17200	32100	Elastic Limit.	27.0	.460	.400	.184	66.0	15100		Mill Test: 220—27.5 per cent.		
				29800	55600	.50 1.00 1.50 2.16										
3 2052	1.025	.765	.784	24400	31100	Elastic Limit.	27.5	.620	.415	.257	67.0	15000			Mill Test: 220—27.5 per cent.	
				39000	49700	.50										
				42300	54000	1.00										
				42900	54700	1.50 2.20										
4 2062	1.010	.765	.796	24800	31200	Elastic Limit.	24.0	.660	.440	.290	64.0	15800				Mill Test: 220—27.5 per cent.
				40400	50800	.50										
				43900	55200	1.00										
				44200	55500	1.50 1.96										
5 2052	1.025	.775	.794	25300	31800	Elastic Limit.	27.5	.625	.435	.272	66.0	14900	Mill Test: 220—27.5 per cent.			
				39300	49500	.50										
				42600	53700	1.00										
				43100	54300	1.50 2.20										

Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION in Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
6 2624	1.030	.760	.783	24100 38800 42200 42700	30800 49600 53900 54500	Elastic Limit. .50 1.00 1.50 2.58	31.5	.640	.420	.269	66.0	17200	
7 2066	1.030	.760	.783	24600 40000 43200 43800	31400 51100 55200 55900	Elastic Limit. .50 1.00 1.50 2.12	26.5	.650	4.35	.283	64.0	14800	
8 2060	1.030	.755	.778	24500 38500 41900 42500	31500 49500 53900 54600	Elastic Limit. .50 1.00 1.50 2.52	31.5	.635	.420	.267	66.0	17200	
9 2066	1.025	.760	.779	24000 39600 42700 43200	30800 50800 54800 55400	Elastic Limit. .50 1.00 1.50 2.24	28.0	.640	.435	.278	64.0	15500	
10 2660	.925	.760	.703	21900  38500	31100  54900	Elastic Limit. .50 1.00 1.50 2.24	28.0	.610	.415	.253	64.0	15400	

Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth	Width.	Area.	Percentage.		
11 2060	1.035	.765	.792	25000 40200 43000 43400	31600 50800 54300 54800	Elastic Limit. .50 1.00 1.50 2.16	27.0	.635	.410	.260	67.0	14800	
12 2052	1.035	.750	.776	24400 39800 42200 42800	31400 50600 54400 55200	Elastic Limit. .50 1.00 1.50 2.24	28.0	.620	.400	.248	68.0	15500	
13 2052	1.030	.765	.788	24500 39000 42000 42600	31100 49500 53300 54100	Elastic Limit. .50 1.00 1.50 2.44	30.5	.625	.400	.250	68.0	16500	
14 2066	1.030	.765	.788	24800 40200 43300 43800	31500 51000 54900 55600	Elastic Limit. .50 1.00 1.50 2.20	27.5	.645	.415	.268	66.0	15300	
15 2066	1.025	.755	.774	24200 38900 42400 43300	31300 50300 54800 55900	Elastic Limit. .50 1.00 1.50 2.24	28.0	.670	.450	.302	61.0	15700	

*Tests of Steel Plate—Continued.*

Marks.	MEASUREMENTS.			Applied Load	Strain in Pounds per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
16 2052	1.025	.755	.774	24500 38000 41900 42500	31700 49100 54100 54900	Elastic Limit. .50 1.00 1.50 2.24	28.0	.610	.400	.244	68.0	15400	



## TESTS OF STEEL BOILER PLATES,

*Made by John E. Codman, Chief Draughtsman Bureau of Water, Department of Public Works, at Carnegie Steel Company, Limited, Pittsburg, Pennsylvania.*

Marks.	Location in Boiler.	Area.	ELONGATION.						Area of Reduced Section.	Percentage of Reduction of Area.	Relative Resilience.	Remarks.
			Elastic Limit.	.50-inch Strain in lbs. per sq. inch.	1.00-inch Strain in lbs. per sq. inch.	1.50-inch Strain in lbs. per sq. inch.	Total Elongation.	Per cent. of Elongation in 8 inches.				
400 A	Front End Shell.	.9409	30500	36770	44400	56440	2.08	26.00	.3654	61.1	14780	NOTE.—Boilers 11 ft. 9 in. diameter, $\frac{3}{8}$ in. shell. Built by Southwark Machine Company, Philadelphia, 1884.
400 B	“ “ “	.1068	29960	35670	41570	54770	2.16	27.00	.3536	66.8	14800	
400 C	“ “ “	.8730	30470	37460	44440	58760	2.16	27.00	.3520	59.6	16200	
400 D	“ “ “	.9024	30580	36570	43440	56720	2.00	25.00	.3477	61.4	14200	
400 E	“ “ “	.8415	30540	38030	45160	58940	2.32	29.00	.3192	62.0	17000	
400 F	“ “ “	.8890	30260	37120	44090	55340	2.20	27.5	.3127	64.8	15200	
400 G	“ “ “	.8834	30560	37350	44370	57500	2.30	28.75	.3245	63.2	16500	
400 H	“ “ “	.9240	30410	37010	43830	59080	2.16	27.00	.3886	57.9	16000	
400 I	“ “ “	.9579	30380	37160	43430	59080	2.36	29.5	.3944	58.8	17480	
400 J	“ “ “	.8882	30280	39290	43900	56740	2.20	27.5	.3360	62.1	15600	
400 K	“ “ “	.9266	36430	36910	44020	57740	2.08	26.00	.3534	61.8	15300	
400 L	“ “ “	.9486	30360	36900	43330	56820	2.16	27.00	.3286	65.3	16300	
401 A	Back “ “	.9350	30380	36790	43530	52620	2.32	29.00	.3300	64.7	15300	

Tests of Steel Boiler Plate—Continued.

Marks.	Location in Boiler.	Area.	ELONGATION.						Area of Reduced Section.	Percentage of Reduction of Area.	Relative Resilience.	Remarks.
			Elastic Limit.	.50-inch Strain in lbs. per sq. inch.	1.00-inch Strain in lbs. per sq. inch.	1.50-inch Strain in lbs. per sq. inch.	Total Elongation.	Per cent. of Elongation in 8 inches.				
401 B.	Back End Shell.	.9579	30380	37170	43010	56890	2.36	29.5	.3640	62.0	16800	
401 C	" " "	.9194	30230	36760	43190	55300	2.30	28.75	.3591	62.1	15900	
401 D	" " "	.9806	30390	36720	42940	51500	2.32	29.00	.3294	66.4	14900	
401 E	" " "	.9545	30490	37090	43690	58240	2.32	29.0	.3420	64.1	16900	
401 F	" " "	.9120	30480	37170	43850	56570	2.24	28.	.3306	63.7	15900	
401 G	" " "	.9868	30400	37090	43280	53870	2.08	26.	.3705	62.4	15300	
401 H	" " "	.9891	30430	37410	43380	56820	2.30	28.75	.3402	65.6	16400	
401 I	" " "	.8788	30270	37210	44150	59400	2.36	29.5	.3732	56.9	17500	
401 J	" " "	.9069	30430	37050	43550	59210	2.12	26.5	.3375	63.0	15760	
401 K	" " "	.9975	30370	36890	42810	57850	2.20	27.5	.3640	63.5	15900	
401 L	" " "	.8645	30430	32430	44880	59660	2.08	26.0	.3364	61.0	15500	
402 A.	Middle Shell Ring.	.9306	30500	37180	43950	59310	2.12	26.5	.3780	59.3	13700	
402 B	" " "	.8930	30570	37520	44560	55090	2.50	31.25	.3300	63.0	17200	
402 C	" " "	.9306	30630	37180	43520	59310	2.24	28.00	.3534	62.0	16600	
402 D	" " "	.8930	30460	37290	42170	59580	2.32	29.0	.3480	61.0	17300	

Tests of Steel Boiler Plate—Continued.

Marks.	Location in Boiler.	Area,	ELONGATION.						Area of Reduced Section.	Percentage of Reduction of Area.	Relative Resilience.	Remarks.
			Elastic Limit.	.50-inch Strain in lbs. per Sq. Inch.	1.00-inch Strain in lbs. per Sq. Inch.	1.50-inch Strain in lbs. per Sq. Inch.	Total Elongation.	Per Cent. of Elongation in 8 Inches.				
402 E	Middle Shell Ring.	.9327	30650	37260	43670	53740	2.20	27.5	.3402	64.2	15400	.
402 F	" " "	.9108	30530	37330	43800	56760	2.50	31.25	.3294	63.8	17800	
402 G	" " "	.9838	30400	36790	43530	52620	2.32	29.0	.3300	64.7	15300	
402 H	" " "	.8956	30360	37180	44210	53480	2.00	25.0	.3078	65.6	13400	
402 I	" " "	.9306	30630	37610	44170	55870	2.36	29.5	.3422	63.2	16500	
402 J	" " "	.9400	30640	37130	43730	57560	2.20	27.5	.3712	60.5	15800	
402 K	Middle Shell Ring.	.9568	30520	37210	43900	55500	2.40	30.0	.3339	65.1	17000	
402 L	" " "	.9120	30480	37280	43960	55260	2.12	26.5	.3192	65.0	14600	
403 A & L	Manhole Reinforce.	.9860	31130	37520	43500	59010	2.40	30.0	.3875	60.7	17700	
404 A	Top Piece, Front Head.	1.0270	30670	36600	42840	58620	2.20	27.5	.4130	59.7	16100	
404 B	" " " "	1.0800	30410	36040	42510	55910	2.16	27.0	.4182	61.3	15000	
404 C	" " " "	.7968	30880	38280	46180	54840	2.46	33.25	.2958	62.8	18200	
404 D	" " " "	.9102	30430	37140	43830	56260	2.60	32.5	.3366	63.0	18300	
404 E	" " " "	.9672	30610	36400	43430	55420	2.60	32.5	.3424	64.5	18000	
404 F	" " " "	.9240	30410	47620	57360	58020	2.40	30.0	.3745	59.4	17400	

Tests of Steel Boiler Plate—Continued.

Marks.	Location in Boiler.	Area.	ELONGATION						Area of Reduced Section.	Percent- age of Reduction of Area.	Relative Resilience.	Remarks.
			Elastic Limit.	.50-inch Strain in lbs. per sq. inch.	1.00-inch Strain in lbs. per sq. inch.	1.50-inch Strain in lbs. per sq. inch.	Total Elonga- tion.	Per Cent. of Elonga- tion in 8 inches.				
405 A	Bottom Piece Front Head.	.9124	30560	37670	44350	56560	2.08	26.0	.3399	63.9	14700	
405 B	" " " "	.9378	30390	37000	43610	54280	2.60	32.5	.3232	65.5	17600	
405 C	" " " "	.9060	30180	37420	44140	54740	2.64	23.0	.3200	64.6	18100	
405 D	" " " "	.9764	30320	36870	47110	55510	2.50	32.5	.3675	62.3	18100	
405 E	" " " "	.9040	30530	37280	44240	54420	2.32	29.0	.3201	64.5	15800	
405 F	" " " "	.7441	30500	38710	46910	55110	2.32	29.0	.2560	65.5	16000	
406 A	Top Piece, Back Head.	1.0740	31280	37990	43660	58370	2.64	33.0	.4080	62.0	19300	
406 B	" " " "	1.0670	30270	36080	42270	56790	2.56	32.0	.4235	60.3	18100	
406 C	" " " "	1.0580	30530	36390	42340	56900	2.36	29.50	.4080	61.4	16800	
406 D	" " " "	.9375	30610	37330	44370	57180	2.48	31.0	.3296	64.8	17700	
406 E	" " " "	.9534	30940	37340	43840	57680	2.32	29.0	.4368	54.1	16700	
406 F	" " " "	.8937	30550	37370	44300	53710	2.50	31.25	.2912	67.4	16800	
407 A	Bottom " " "	.9472	30300	36530	42330	55530	2.64	33.0	.3030	68.0	18300	
407 B	" " " "	.9164	30560	37100	43860	56960	2.50	31.25	.3536	61.4	17900	
407 C	" " " "	.9410	30500	36980	43570	54300	2.64	33.0	.3866	64.2	17900	

Test of Steel Boiler Plate—Continued.

Marks.	Location in Boiler.	Area.	ELONGATION.					Area of Reduced Section.	Per cent age of Reduction of Area.	Relative Resilience.	Remarks.
			Elastic Limit.	.50-inch Strain in lbs. per sq. inch.	1.00-inch Strain in lbs. per sq. inch.	1.50-inch Strain in lbs. per sq. inch.	Total Elongation.				
407 D	Bottom Flange Back Head.	.9626	30440	43630	51940	57650	2.40	30.0	.3536	63.02	17300
407 E	" " " "	1.0820	28370	34190	40660	53980	2.70	33.75	.3776	65.1	18200
407 F	" " " "	1.0700	31020	36820	42520	55220	2.40	30.0	.3813	64.3	16500
408	Butt Strap.	.9513	30480	33640	44150	58850	2.36	29.5	.4173	56.1	17300
409	" "	1.0010	30870	36960	41600	59940	2.16	27.0	.3672	63.3	16200
410	" "	1.0310	30260	36270	42190	51800	2.50	31.25	.3776	63.3	17200
411	" "	1.0080	30760	36310	42660	59620	2.40	30.0	.4290	57.4	17900
413	Gusset Plate for Com Cham.	.8342	30450	37830	44590	56940	2.30	28.75	.3388	59.3	16400
415 A	Head for drum.	.8859	30180	37250	45260	57910	2.40	30.0	.3360	62.0	17400
415 B	" " "	.9108	30410	37300	44240	57510	2.15	27.25	.3915	57.5	15700
415 C	" " "	.8967	30330	37250	44600	57200	2.50	31.25	.3406	62.0	17900
416 A-B-C	" " "	.9218	30480	37940	44480	57820	2.32	29.0	.3596	60.9	16800
417 A-B	Shell-rings for Drum.	.8149	30430	37800	45400	59270	2.30	28.75	.3509	56.9	17100
417 C-D	" " "	.8564	31060	33100	45300	59670	2.64	33.0	.3528	58.8	19700
417 E-F	" " "	.8317	30540	37880	44850	59160	2.32	29.0	.3416	58.9	17200

Tests of Steel Boiler Plate—Continued.

Marks.	Location in Boiler.	Area.	ELONGATION.						Area of Reduced Section.	Percentage of Reduction of Area.	Relative Resilience.	Remarks.
			Elastic Limit.	.50-inch Strain in lbs. per sq. inch.	1.00-inch Strain in lbs. per sq. inch.	1.50-inch Strain in lbs. per sq. inch.	Total Elongation.	Per cent. of Elongation in 8 inches.				
418 A	Shell-rings for Drum.	.9078	30510	36570	43070	52980	2.70	33.75	.3025	66.6	17900	
418 B	" " "	.8912	30630	37480	44320	58020	2.56	32.0	.3375	62.1	18500	
418 C	" " "	.8515	30770	38170	45570	60180	2.40	30.0	.3810	52.2	18100	
419 A-B-C	{ Reinforce Plate for Man-hole in Drum Shell. }	.9744	30380	36140	43000	56760	2.50	31.25	.3720	61.8	17700	
420 A	{ Combustion Chamber, Back Shell. }	1.0960	30290	35940	41510	54920	2.60	32.50	.3776	65.5	17900	
420 B	" " "	1.0940	30160	35640	41810	54840	2.32	29.0	.3808	65.2	15900	
420 C	" " "	1.0840	30350	36710	42250	55160	2.50	31.25	.3894	64.0	17300	
420 D	" " "	1.0540	30460	36260	42120	58910	2.36	29.5	.4320	59.0	17800	
420 E-F	" " "	1.0470	30550	37060	42890	54340	2.70	33.75	.3627	65.3	18400	
421 A-D	{ Combustion Chamber, Side Shell. }	.9821	30860	37370	43690	52340	2.64	33.0	.3210	67.3	17300	
421 F-I	" " "	1.0750	29720	31530	41770	52840	2.64	33.0	.3689	65.6	17400	
421 E-J-K-L	" " "	.8874	30430	37190	44460	55100	2.32	29.0	.3038	65.7	16000	
422 A	{ Bottom piece of back head com. chamber. }	1.049	30700	36510	42040	59270	2.24	28.0	.5412	48.4	16600	

Tests of Steel Boiler Plate—Continued.

Marks.	Location in Boiler.	Area.	ELONGATION.						Area of Reduced Section.	Percentage of Reduction of Area.	Relative Resilience.	Remarks.
			Elastic Limit.	.50-inch Strain in lbs. per sq. inch.	1.00-inch Strain in lbs. per sq. inch.	1.50-inch Strain in lbs. per sq. inch.	Total Elongation.	Per cent. of Elongation in 8 inches.				
422 B	{ Bottom piece of back head com. chamber. }	1.0980	30330	35970	42800	56450	2.40	30.0	.4191	61.8	16900	
422 C		1.0980	30330	35970	42800	56450	2.40	30.0	.4191	61.8	16900	
422 D		1.0110	30860	37580	44520	53900	2.64	33.0	.3564	64.7	17800	
422 E	" " "	.9486	30360	36580	43010	60090	2.00	25.0	.5031	46.9	15000	
422 F	" " "	1.0490	30700	35510	42040	59270	2.24	28.0	.5412	48.4	16660	
423 A	Tube sheet.	.9058	30800	37540	44260	53320	2.50	31.25	.3264	63.9	16700	
423 B	" "	1.0080	30760	37700	44650	53970	2.70	33.75	.3675	63.5	18300	
423 C	" "	1.0590	30780	34990	45330	52400	2.50	31.25	.3456	67.3	16400	
423 D	" "	1.0040	30680	35960	43830	53990	2.60	32.50	.3348	66.5	17500	
423 E	" "	.9566	30940	37420	43900	51660	2.70	33.75	.3333	65.1	18500	
423 F	" "	.9612	30590	35300	43080	52220	2.40	30.0	.3468	63.9	15600	
426	Reinforce plate for manhole.	.9744	30380	36440	43000	56760	2.50	31.25	.3720	61.8	17700	
427	" " " "	.9744	30380	36440	43000	56760	2.50	31.25	.3720	61.8	17700	
428	" " " "	.9744	30380	36440	43000	56760	2.50	31.25	.3720	61.8	17700	
429	" " " "	1.0080	30760	36310	42660	59620	2.40	30.0	.4290	57.4	17800	
430	" " " "	.9860	31130	37520	43500	59010	2.40	30.0	.3875	60.7	17700	

## TESTS OF STEEL BOILER PLATES

*Made by John E. Codman, Chief Draughtsman, Bureau of Water, Department of Public Works, at Carnegie Steel Co., Limited, Pittsburgh, Pennsylvania, May, 1894.*

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
12105 26190	1.010	.860	8.686	33500 49000 52500 52600	38570 56410 60450 60560	Elastic Limit. .50 1.00 1.50 2.00	25.00	.645	.525	.3386	61.0	15100	Shell.
7143 28354	.985	.860	8.470	30900 44500 48700 49300	36480 52540 57500 58200	Elastic Limit. .50 1.00 1.50 2.16	27.00	.630	.520	.3276	61.3	15700	Shell.
6111 27707	.960	.860	8.254	29200 42800 46900 47400	35380 51850 56820 57130	Elastic Limit. .50 1.00 1.50 2.12	26.50	.610	.520	.3202	61.2	15200	Shell.
9111 26143	1.045	.815	8.516	31200 38000 48000 48700	36640 44620 56350 57180	Elastic Limit. .50 1.00 1.50 2.00	25.00	.640	.480	.3072	63.9	14300	Shell.

NOTE.—Boilers 8 feet 6 inch diameter  $\frac{3}{8}$  inch shell. Built by Riter & Conly, Pittsburgh, 1894.



Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
7142 28290	.950	.870	8.482	32600 44000 47900 48400	38430 51870 56470 57050	Elastic Limit. .50 1.00 1.50 2.34	29.25	.610	.520	.3172	62.6	16700	Shell.
7143 28361	.985	.865	8.520	31400 43200 49100 49500	36860 50700 57630 58100	Elastic Limit. .50 1.00 1.50 2.16	27.00	.600	.510	.3060	64.1	15700	Shell.
6111 27713	1.010	.875	.8836	35600 47500 51100 51600	40290 53760 57830 58400	Elastic Limit. .50 1.00 1.50 2.10	26.25	.650	.515	.3287	62.8	15400	Shell.
7142 28290	1.015	.860	.8728	32000 44100 48800 49200	36670 50530 55900 56370	Elastic Limit. .50 1.00 1.50 2.40	30.00	.625	.495	.3094	64.6	16900	Shell.
9110 26055	.990	.870	.8612	32200 47600 50400 50800	37400 52270 58520 58990	Elastic Limit. .50 1.00 1.50 2.12	26.50	.640	.520	.3328	61.4	15600	Shell.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
2154 28291	1.000	.870	.8700	33400 47200 51000 51200	38400 54260 58620 58860	Elastic Limit. .50 1.00 1.50 2.20	27.50	.640	.530	.3392	61.0	16200	Shell.
7139 21816	.960	.860	.8255	30100 44100 46300 46800	36460 53420 56080 56690	Elastic Limit. .50 1.00 1.50 2.30	28.75	.590	.500	.2950	64.3	16300	Shell.
2154 28298	1.000	.865	.8650	29600 45900 50400 50400	34220 53060 58260 58260	Elastic Limit. .50 1.00 1.50 2.14	26.75	.630	.520	.3276	62.1	15600	Shell.
12104 26026	.985	.875	.8618	33600 46700 51100 51500	38990 54200 59300 59760	Elastic Limit. .50 1.00 1.50 2.32	29.00	.635	.520	.3302	61.7	17300	Shell.
9110 26038	.960	.860	.8254	30700 44100 49000 49600	37200 53430 59360 60100	Elastic Limit. .50 1.00 1.50 2.00	25.00	.675	.570	.3847	63.4	15000	Shell.

Tests of Steel Boiler Plate—Continued.

31 Marks.	MEASUREMENTS			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area	Percentage.		
12104 26035	.980	.870	.8526	38800 46200 50100 50200	39640 54200 58760 58880	Elastic Limit. .50 1.00 1.50 2.20	27.50	.645	.540	.3483	59.1	16200	Shell.
16189 29581	1.030	.855	.8805	30000 43000 45300 45900	34070 48840 51450 52130	Elastic Limit. .50 1.00 1.50 2.50	31.25	.610	.465	.2886	67.8	16300	Shell.
7143 28347	1.005	.855	.8590	29200 48200 52900 52900	34000 56110 61580 61580	Elastic Limit. .50 1.00 1.50 2.00	25.00	.680	.560	.3808	55.7	15400	Shell.
3182 26918	1.010	.865	.8735	30500 45600 48900 50000	34920 52200 55980 57240	Elastic Limit. .50 1.00 1.50 2.20	27.50	.665	.510	.3391	61.2	15700	Shell.
12104 26031	1.025	.880	.9020	30800 48600 52600 52800	34150 53880 58320 58540	Elastic Limit. .50 1.00 1.50 2.20	27.5	.665	.535	.3559	60.5	16100	Shell.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
12109 26635	1.005	.855	.8591	33300 42800 48200 48700	38760 49820 56100 56680	Elastic Limit. .50 1.00 1.50 2.30	28.75	.620	.500	.3100	63.9	16500	Shell.
15087 26287	1.010	.865	.8735	30900 44600 51700 52300	35370 51060 59180 59870	Elastic Limit. .50 1.00 1.50 2.60	32.50	.680	.540	.3672	58.0	19100	Shell.
12109 26629	1.005	.850	.8540	30700 45600 48700 49100	35950 53400 57020 57480	Elastic Limit. .50 1.00 1.50 2.14	26.75	.650	.520	.3800	60.4	15400	Shell.
7132 26773	1.000	.870	.8700	28300 48000 51100 51100	32530 55160 58740 58740	Elastic Limit. .50 1.00 1.50 2.10	26.25	.630	.510	.3213	63.1	15400	Shell.
16189 29576	1.005	.880	.8842	26500 42200 49700 50600	29970 47730 56210 57230	Elastic Limit. .50 1.00 1.50 2.26	28.25	.665	.540	.3591	59.4	16200	Shell.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
3182 26921	1.045	.855	.8934	30400 47200 51100 51600	34040 52830 57200 57760	Elastic Limit. .50 1.00 1.50 2.34	29.2	.670	.575	.3451	61.3	16900	Shell.
9111 26141	1.045	.875	.9144	35300 50200 51600 52300	38600 54900 56430 57200	Elastic Limit. .50 1.00 1.50 2.26	28.2	.665	.515	.3425	62.5	16200	Shell.
12104 26022	1.050	.830	.8714	30100 49000 53000 53000	34540 56230 60820 60820	Elastic Limit. .50 1.00 1.50 2.10	26.2	.705	.530	.3737	57.1	15900	Shell.
2132 26984	1.015	.880	.8932	32800 49900 52700 52700	36720 55870 59000 59000	Elastic Limit. .50 1.00 1.50 2.00	25.0	.675	.550	.3710	58.4	14700	Shell.
6111 27717	1.010	.880	.8887	30500 46500 52300 52300	34320 52320 58850 58850	Elastic Limit. .50 1.00 1.50 2.40	30.0	.670	.535	.3584	59.6	17700	Shell.

*Tests of Steel Boiler Plate—Continued.*

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
9115 26669	1.045	.875	.9144	52800 48000 51400 51600	35870 52500 56210 56430	Elastic Limit. .50 1.00 1.50 2.38	29.7	.650	.525	.3412	62.6	16800	
12109 26681	.970	.850	.8244	29600 44300 48300 48600	35910 53740 58600 58960	Elastic Limit. .50 1.90 1.50 2.16	27.00	.645	.530	.3418	58.5	15900	Shell.
3180 26656	1.025	.885	.9070	32900 48300 51900 51900	36280 53260 57220 57220	Elastic Limit. .50 1.00 1.50 1.92	24.00	.645	.540	.3483	61.6	13800	Shell.
7143 28348	1.020	.880	.8976	31600 48000 52000 52600	35200 53480 57940 58600	Elastic Limit. .50 1.00 1.50 2.30	28.70	.650	.535	.3478	61.2	16800	Shell.
9110 26945	1.065	.845	.9010	29500 48400 52600 53100	32780 53780 58450 59000	Elastic Limit. .50 1.00 1.50 2.00	25.00	.705	.515	.3631	59.6	14700	Shell.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds Per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
12105 26189	1.045	.855	.8934	33500 45000 49200 50000	37500 50370 55070 59700	Elastic Limit. .50 1.00 1.50 2.54	31.70	.655	.510	.3341	62.6	17400	Shell.
11131 27610	1.020	.880	.8976	31800 40400 50700 50700	35430 55040 56490 56490	Elastic Limit. .50 1.00 1.50 2.40	30.00	.640	.515	.3296	63.2	16900	Shell.
7132 26768	1.020	.860	.8772	30100 48800 51200 51800	34310 55630 58360 59050	Elastic Limit. .50 1.00 1.50 1.94	24.2	.645	.525	.3386	61.4	14300	Shell.
12109 26642	1.035	.870	.9004	31700  51400	35210  57090	Elastic Limit. .50 1.00 1.50 2.06	25.7	.695	.555	.3857	57.1	14700	Shell.
12105 26184	1.035	.850	.8798	30100 46400 49000 49600	34210 52740 55700 56380	Elastic Limit. .50 1.00 1.50 2.04	25.5	6.50	.515	.3348	61.9	14400	Shell.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
1113 28032	1.035	.885	.9160	29900 46500 50200 50900	32640 50760 54800 55570	Elastic Limit. .50 1.00 1.50 2.20	27.5	.650	.510	.3315	63.8	15300	Shell.
9111 26147	1.025	.875	.8968	31700 47400 50600 50600	35350 52860 56420 56420	Elastic Limit. .50 1.00 1.50 2.24	23.0	.650	.515	.3348	62.6	15800	Shell.
1088 29429	.900	.880	.7920	30600 40800 43000 43000	38640 51520 54300 54300	Elastic Limit. .50 1.00 1.50 2.20	27.5	.545	.530	.2888	63.5	15000	Shell.
7162 31388	1.010	.850	.8585	33200 48900 53600 54000	38670 56950 62440 62900	Elastic Limit. .50 1.00 1.50 1.88	23.50	.680	.560	.3804	55.7	18600	Shell.
7132 26761	.990	.880	.8712	23300 48000 52800 58400	31340 55090 60600 61300	Elastic Limit. .59 1.00 1.50 2.04	25.50	.675	.560	.3780	56.6	15600	Shell.



Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
3210 31300	1.020	.865	.8821	32200 45800 51600 52000	36510 51920 58500 58960	Elastic Limit. .50 1.00 1.50 2.12	26.50	.685	.565	.3870	56.1	15780	Shell.
16189 29575	1.015	.860	.8728	31300 43600 46100 46800	35860 49950 53160 53670	Elastic Limit. .50 1.00 1.50 2.40	30.00	.610	.495	.2929	66.4	16200	Shell.
32100 31303	1.020	.870	.8873	30700 45500 50100 50500	34600 51280 56160 56920	Elastic Limit. .50 1.00 1.50 2.22	27.75	.650	.530	.3445	61.2	15800	Shell.
3182 20983	1.020	.865	.8822	32000 45500 49500 49600	36280 51380 56100 56220	Elastic Limit. .50 1.00 1.50 2.30	28.75	.630	.500	.3150	64.3	16200	Shell.
3210 31297	.985	.810	.8274	29900 44600 48400 48800	36140 63900 58500 58980	Elastic Limit. .50 1.00 1.50 2.18	27.25	.630	.500	.3150	61.9	16100	Shell.

*Tests of Steel Boiler Plate—Continued.*

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds Per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage	Breadth.	Width.	Area.	Percentage.		
3200 29698	1.020	.850	.8668	32500 46700 49300 49600	37500 53870 56880 57230	Elastic Limit. .50 1.00 1.50 1.90	23.75	.650	.510	.3315	61.8	13600	Shell.
3210 31301	1.010	.870	.8787	32200 46800 51300 51400	36650 53260 58390 585 0	Elastic Limit. .50 1.00 1.50 2.24	28.00	.650	.545	.3542	59.7	16400	Shell.
3200 29611	1.000	.840	.8400	31600 42900 47600 48700	37620 51070 56670 57250	Elastic Limit. .50 1.00 1.50 2.40	30.00	.640	.510	.3268	61.1	17100	Shell.
12105 26179	1.025	.840	.8610	30500 44200 49200 49200	35420 51340 57140 57140	Elastic Limit. .50 1.00 1.50 2.00	25.00	.650	.500	.3250	62.2	14800	Shell.
7132 26762	1.040	.875	.9144	29900 50300 54000 54000	32700 55010 59060 59060	Elastic Limit. .50 1.00 1.50 2.00	25.00	.670	.525	.3517	61.5	14700	Shell.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
5144 31313	1.020	.875	.8823	28700 47300 56000 56400	32530 53600 63470 63930	Elastic Limit. .50 1.00 1.50 2.28	28.50	.710	.585	.4153	52.9	18200	Shell.
10188 29427	1.015	.855	.8676	31700 44000 47300 47750	36540 50720 54520 54980	Elastic Limit, .50 1.00 1.50 2.44	30.50	.640	.510	.3264	62.4	16800	Shell.
11131 27598	1.045	.875	.9144	32700 47000 51100 51700	35760 51400 55880 56540	Elastic Limit. .50 1.00 1.50 2.00	25.00	.665	.515	.3424	62.6	14100	Shell.
11134 28030	.990	.875	.8662	33000 44700 48700 49500	38700 51610 56220 57150	Elastic Limit. .50 1.00 1.50 2.28	28.5	.625	.520	.3250	62.5	16300	Shell.
32100 31295	1.00	.880	.8800	32700 47500 51400 51900	37160 53980 58410 58980	Elastic Limit. .50 1.00 1.50 2.30	28.75	.650	.545	.3542	59.7	16900	Shell.

*Tests of Steel Boiler Plate—Continued.*

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breath.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width	Area.	Percentage.		
5144 31321	1.000	.865	.8650	30500 51400 55300 55600	35260 59420 63920 64280	Elastic Limit. .50 1.00 1.50 2.24	28.00	.700	.575	.4025	53.5	18000	Shell.
7143 28346	1.000	.860	.8600	29700 47500 50400 50600	34540 55230 58610 58840	Elastic Limit. .50 1.00 1.50 1.84	23.00	.640	.540	.3456	59.8	13500	Shell.
15081 26295	1.000	.865	.8650	32600 47100 51100 51400	37690 54450 59090 59430	Elastic Limit. .50 1.00 1.50 2.32	29.00	.640	.530	.3392	60.8	17600	Shell.
7132 26769	1.005	.850	.8540	28900 49000 53600 54300	33840 57370 62760 63586	Elastic Limit. .50 1.00 1.50 2.10	26.25	.725	.590	.4278	49.9	16800	Shell.
16189 29582	.985	.855	.8420	28500 41880 46300 46900	33850 49650 55220 55700	Elastic Limit. .50 1.00 1.50 2.38	29.75	.620	.500	.3100	63.2	16600	Shell.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
16189 29568	1.000	.855	.8550	32400 43800 46300 46300	37900 51230 54160 54160	Elastic Limit. .50 1.00 1.50 2.46	30.75	.600	.490	.2940	65.6	16700	Shell.
6111 27718	.995	.870	.8656	31400 47600 51600 51900	36280 55000 59610 59960	Elastic Limit. .50 1.00 1.50 1.92	24.00	.675	.565	.3874	55.9	14400	Shell.
5144 31312	1.010	.850	.8585	30600 49209 53800 54300	35640 57310 62660 63260	Elastic Limit. .50 1.00 1.50 2.24	28.00	.680	.565	.8832	55.4	17700	Shell.
3200 29685	1.000	.850	.8500	30000 39700 46300 47500	35300 46700 54480 55880	Elastic Limit. .50 1.00 1.50 2.56	32.00	.620	.510	.3162	64.0	18200	Shell.
10188 29434	1.010	.870	.8787	31500 43000 49300 48700	35850 48930 54960 55420	Elastic Limit. .50 1.00 1.50 2.38	29.75	.640.	.510	.3264	62.8	16300	Shell.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
3210 31302	1.015	.865	.8778	31400 46400 50500 50900	35780 52860 57540 57980	Elastic Limit. .50 1.00 1.50 2.14	26.75	.610	.500	.3050	65.3	15500	Shell.
7142 28287	1.050	.860	.9030	27500 47500 51000 51300	30150 52600 56470 56800	Elastic Limit. .50 1.00 1.50 2.20	27.50	.660	.500	.3300	63.5	15600	Shell.
2154 28307	1.050	.845	.8872	32800 48900 53700 54100	36970 55110 50 20 60970	Elastic Limit. .50 1.00 1.50 1.96	24.50	.695	.530	.3683	58.5	14500	Shell.
2154 28350	.990	.850	.8585	30200 43300 48700 49500	35180 50130 56720 57650	Elastic Limit. .50 1.00 1.50 2.10	26.25	.630	.580	.3339	61.1	14500	Shell.
16189 29677	.990	.860	.8686	27300 39100 48000 50900	31430 45360 55260 58600	Elastic Limit. .50 1.00 1.50 2.06	25.75	.680	.580	.3944	55.4	15100	Shell.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
9111 26151	.985	.860	.8730	26600 39500 49100 49900	30470 45240 56240 57160	Elastic Limit. .50 1.00 1.50 2.40	30.00	.650	.550	.3575	59.0	17100	Shell.
9115 26673	.985	.850	.8372	31400 45300 49100 49400	37510 54120 58640 59000	Elastic Limit. .50 1.00 1.50 2.14	26.75	.630	.510	.3213	61.6	15800	Shell.
10188 29421	.990	.870	.8612	32600 44400 46800 47200	37860 51560 54350 54810	Elastic Limit. .50 1.00 1.50 2.48	31.00	.600	.500	.3000	65.2	17000	Shell.
3210 31296	1.020	.875	.8924	29600 44200 51300 51400	33170 49530 57590 57600	Elastic Limit. .50 1.00 1.50 2.18	27.25	.660	.520	.3432	61.5	15800	Shell.
7143; 28352	1.000	.850	.8500	34600 50100 53700 54000	40700 58940 63180 63530	Elastic Limit. .50 1.00 1.50 1.96	24.50	.700	.550	.3850	54.7	15600	Shell.

*Tests of Steel Boiler Plate—Continued.*

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds Per Square Inch.	ELONGATION, In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage	Breadth.	Width.	Area.	Percentage.		
12109 26646	.995	.865	.8692	30700 50000 52100 52100	35320 57530 59940 59940	Elastic Limit. .50 1.00 1.50 2.10	26.25	.670	.560	.3852	55.7	15800	Shell.
7139 27875	1.000	.850	.8500	27400 44800 49900 50300	32240 52700 58700 59170	Elastic Limit. .50 1.00 1.50 2.16	27.00	.635	.530	.3365	60.4	16000	Shell.
3200 29697	.905	.860	.8730	30200 43700 47700 48700	34590 50060 54630 55090	Elastic Limit. .50 1.00 1.50 2.20	27.50	.640	.530	.3292	62.3	15210	Shell.
3180 26698	1.000	.865	.8650	29200 41500 45800 46500	33760 47980 52950 53760	Elastic Limit. .50 1.00 1.50 2.40	30.00	.600	.490	.2940	70.6	16200	Shell.
7139 27876	1.000	.850	.8500	34600 50100 53700 54000	40700 58940 63180 63530	Elastic Limit. .50 1.00 1.50 1.96	24.50	.700	.550	.3850	54.7	15600	Shell.



Tests of Steel Boiler Plate—Continued.

Marks	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION in Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
12109 26640	1.000	.855	.8550	28700 43200 46200 46400	32870 50580 54030 54200	Elastic Limit. .50 1.00 1.50 2.28	28.50	.600	.485	.2850	66.7	15400	Shell.
15102 29637	1.000	.850	.8500	28500 48400 50700 50800	33530 55940 59650 59770	Elastic Limit. .50 1.00 1.50 2.20	27.50	.690	.560	.3864	54.5	16300	Shell.
11126 26585	.990	.860	.8686	31000 47300 49600 49600	35690 54460 57100 57100	Elastic Limit. .50 1.00 1.50 1.46	18.25	.660	.210	.3366	61.2	10500	Shell rejected.
7142 28283	.985	.870	.8832	28500 40600 46700 47450	32270 45960 52870 53670	Elastic Limit. .50 1.00 1.50 2.50	31.25	.610	.520	.3172	64.1	16800	Shell.
7139 27821	1.000	.865	.8650	26300 44400 51300 51900	30410 51340 59300 60000	Elastic Limit. .50 1.00 1.50 2.10	26.25	.680	.560	.3808	56.0	15800	Shell.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
15102 29635	1.000	.865	.8650	31600 46300 50400 50500	36540 58520 58270 58380	Elastic Limit. .50 1.00 1.50 2.20	27.50	.7 0	.560	.3920	54.7	16100	Shell.
3182 26987	1.005	.870	.8741	30800 42300 48800 49800	35240 48400 55820 56980	Elastic Limit. .50 1.00 1.50 2.50	31.25	.640	.500	.8200	63.4	17800	Shell.
2154 28299	1.010	.850	.8585	31100 46600 51000 51400	36280 54290 59400 59870	Elastic Limit. .50 1.00 1.50 2.20	27.50	.680	.540	.3672	57.2	16500	Shell.
7132 26760	1.010	.865	.8735	25900 46600 52700 53300	2 650 53350 60340 61020	Elastic Limit. .50 1.00 1.50 2.40	30.00	.665	.540	.3591	58.9	18300	Shell.
12109 26630	1.015	.860	.8728	29600 40600 46000 46700	33920 46510 52700 58500	Elastic Limit. .50 1.00 1.50 2.40	30.00	.620	.485	.3007	65.5	16200	Shell.

Tests of Steel Boiler Plate—Continued.

32 Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth	Width.	Area.	Percentage.		
12105 26187	.990	.850	.8585	29100 40800 47500 48100	33900 47520 53320 56020	Elastic Limit. .50 1.00 1.50 2.48	31.00	.625	.500	.3125	63.6	17400	Shell.
11126 26582	.985	.865	.8782	28900 47700 51500 51700	32910 54320 58640 58860	Elastic Limit. .50 1.10 1.50 1.94	24.25	.670	.570	.3879	56.5	14300	Shell.
9115 26676	1.000	.845	.8450	29000 45300 49400 49500	34320 53610 58460 58580	Elastic Limit. .50 1.00 1.50 1.90	23.75	.620	.510	.3162	62.6	14000	Shell.
9115 26674	.990	.890	.8870	30900 46600 51500 51800	35070 52900 58450 58800	Elastic Limit. .50 1.00 1.50 2.50	31.25	.640	.560	.3584	59.3	18400	Shell.
7132 26765	.990	.875	.8662	29600 44700 49900 50300	34170 51610 57610 58080	Elastic Limit. .50 1.00 1.50 2.60	32.50	.610	.510	.3111	64.1	18900	Shell.

Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load	Strain in Pounds per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
7142 28287	1.010	.860	.8686	27400 45000 49200 49750	31550 51810 56640 57220	Elastic Limit. .50 1.00 1.50 2.40	30.00	.630	.525	.3307	61.9	17100	Shell.
9110 26050	1.010	.860	.8686	31800 49400 51800 52000	36620 56880 59640 59860	Elastic Limit. .50 1.00 1.50 2.28	28.50	.660	.520	.3432	60.5	17100	Shell.
2154 28292	1.015	.880	.8981	31600 46400 50500 51300	35380 51950 56540 57440	Elastic Limit. .50 1.00 1.50 2.20	27.50	.650	.540	.3510	60.7	15800	Shell.
7162 31390	1.000	.840	.8400	31200 47500 50200 51100	37140 56540 59760 60840	Elastic Limit. .50 1.00 1.50 2.26	28.25	.690	.560	.3864	54.0	17200	Shell.
3219 31294	1.005	.870	.8742	31600 46200 50200 50500	36150 52860 57430 57780	Elastic Limit. .50 1.00 1.50 2.08	26.00	.640	.530	.3392	61.2	15000	Shell.

Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
544 31307	1.010	.850	.8686	30100 49600 54600 55000	34650 57100 62860 63320	Elastic Limit. .50 1.00 1.50 2.12	26.50	.700	.570	.3990	54.1	17200	Shell.
16189 29583	1.020	.870	.8872	32000 41800 46500 47000	36070 47120 52420 52970	Elastic Limit. .50 1.00 1.50 2.46	30.75	.620	.500	.3100	65.1	16400	Shell.
10188 29128	1.010	.875	.8836	31600 43000 47300 47900	35760 48660 53530 54200	Elastic Limit. .50 1.00 1.50 2.50	31.25	.615	.490	.3013	65.9	17000	Shell.
7142 28288	1.000	.875	.8750	30100 44900 49800 50500	34400 51320 56920 57720	Elastic Limit. .50 1.00 1.50 2.30	28.75	.635	.520	.3302	62.3	16700	Shell.
3200 29636	1.045	.845	.8830	30300 44900 50800 51200	34320 50850 57540 57990	Elastic Limit. .50 1.00 1.50 2.24	28.00	.720	.540	.3888	56.0	16200	Shell.

Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION in Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
11126 26595	1.010	.855	.8635	32800 46900 49800 50000	37990 54320 57680 57910	Elastic Limit. .50 1.00 1.50 2.08	26.00	.640	.510	.3264	62.2	15100	Shell.
5144 31820	1.025	.865	.8866	34600 49900 55100 55400	39020 56280 62140 62480	Elastic Limit. .50 1.00 1.50 2.28	28.50	.670	.525	.3517	60.3	17800	Shell.
9110 26041	.960	.865	.8302	29400 44200 48700 49200	35660 53240 58660 59260	Elastic Limit. .50 1.00 1.50 2.14	26.75	.615	.520	.3198	61.5	15900	Shell.
16189 29567	1.020	.845	.8620	28500 42700 46700 46900	33060 49530 54180 54420	Elastic Limit. .50 1.00 1.50 2.30	28.75	.635	.485	.3080	64.3	15700	Shell.
2154 28306	1.010	.875	.8837	26600 46400 51700 52500	30100 52510 58500 59110	Elastic Limit. .50 1.00 1.50 1.80	22.50	.715	.650	.3022	65.6	13400	Shell. Duplicate. Rejected.

Test of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
3182 26982	.985	.860	.8470	30200 44500 49100 49900	35650 52540 57960 58910	Elastic Limit. .50 1.00 1.50 2.26	28.25	.630	.500	.3150	628.	16700	Shell.
11126 26591	.980	.865	.8478	32700 44600 47500 48700	38570 52610 56020 56740	Elastic Limit. .50 1.00 1.50 2.20	27.50	.610	.500	.3050	64.0	15800	Shell.
12109 26641	1.010	.870	.8787	33000 44000 48400 49000	37550 50070 55080 55760	Elastic Limit. .50 1.00 1.50 2.36	29.50	.610	.500	.3050	65.3	16500	Shell.
7143 28355	1.050	.860	.9030	29900 46400 52400 53000	33110 51400 58020 58690	Elastic Limit. .50 1.00 1.50 2.40	30.00	.680	.520	.3586	60.8	17700	Shell.
11134 28097	1.010	.860	.8686	33600 47800 52300 53000	38680 53020 60022 61020	Elastic Limit. .50 1.00 1.50 2.20	27.50	.690	.575	.3967	54.3	16800	Shell.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
3210 31253	.965	.855	.8249	25100 42900 46000 46600	30430 52000 55760 56490	Elastic Limit. .50 1.00 1.50 2.10	26.25	.600	.500	.3000	63.6	14900	Shell.
7142 28280	1.005	.870	.8742	49300 51700 52200	56400 59140 59710	Elastic Limit. .50 1.00 1.50 2.36	29.50	.660	.535	.3531	59.6	17600	Shell.
12105 2188	.980	.855	.8380	29700 45800 51400 51800	35440 54660 61340 61820	Elastic Limit. .50 1.00 1.50 2.00	25.00	.690	.565	.3898	53.5	15400	Shell.
2154 28300	.985	.845	.8285	32000 46800 50200 50400	38630 56490 60600 60840	Elastic Limit. .50 1.00 1.50 1.90	23.75	.655	.525	.3439	58.5	14500	Shell.
3182 26923	.980	.860	.8428	30600 40600 46200 47100	36310 48170 54830 56880	Elastic Limit. .50 1.00 1.50 2.40	30.00	.610	.470	.2887	66.3	16800	Shell.



Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
10188 29136	.980	.865	.8478	27000 40900 44900 45600	31850 48250 52960 53800	Elastic Limit. .50 1.00 1.50 2.50	31.25	.605	.495	.2995	64.7	16800	Shell.
3180 26657	.985	.870	.8530	33800 44000 48600 49000	39630 51580 56970 57440	Elastic Limit. .50 1.00 1.50 2.28	23.50	.610	.510	.3111	63.5	16300	Shell.
3200 29687	1.005	.865	.8692	29400 42700 48500 49000	33360 49130 55800 56370	Elastic Limit. .50 1.00 1.50 2.30	28.75	.650	.510	.3315	61.9	16300	Shell.
11126 26534	1.000	.845	.8450	31800 46400 50600 51000	37630 54920 59880 60360	Elastic Limit. .50 1.00 1.50 2.00	25.00	.670	.530	.3551	57.9	15000	Rejected.
7132 766	1.005	.855	.8591	34200 48200 50500 50500	39810 56100 58780 58780	Elastic Limit. .50 1.00 1.50 1.86	23.25	.635	.510	.3228	62.4	13700	

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain In Pounds Per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
15081 282	.990	.850	.8414	30000 435 0 50000 50900	35650 51700 59420 60500	Elastic Limit. .50 1.00 1.50 2.40	30.00	.640	.510	.3264	61.2	18300	
7137 27582	1.000	.870	.870	33400 42800 47200 47500	38400 49200 54260 54600	Elastic Limit. .50 1.00 1.50 2.00	25.00	.610	.490	.2989	65.6	13600	
3260 29692	.990	.865	.8562	29500 41400 47600 48900	34460 43360 56600 57120	Elastic Limit. .50 1.00 1.50 2.32	29.72	.670	.575	.3852	55.0	16900	
7162 31889	1.020	.845	.8618	31300 45400 50300 50900	36320 52630 58360 59060	Elastic Limit. .50 1.00 1.50 .264	33.00	.640	.520	.3328	61.4	19500	Shell.
7142 28286	1.050	.865	.9082	33000 48400 53200 53700	36340 53280 58580 59120	Elastic Limit. .50 1.00 1.50 1.86	23.25	.675	.530	.3577	60.6	18800	Rejected Shell.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
7132 26774	.975	.855	.8335	31300 45100 48300 48800	37550 54110 57940 58540	Elastic Limit. .50 1.00 1.50 2.60	32.50	.615	.510	.3165	62.0	19000	Shell.
6111 27719	.970	.865	.8389	27300 43400 48600 49400	34930 51720 57930 58880	Elastic Limit. .50 1.00 1.50 2.34	29.25	.625	.520	.3250	61.3	17300	Shell.
7143 28360	.900	.855	.8379	32600 44600 48900 49200	38910 53230 58360 58710	Elastic Limit. .50 1.00 1.50 2.46	30.75	.620	.520	.3224	61.5	18100	Shell.
16189 29578	.995	.845	.8407	28200 42000 49300 50100	33540 49960 58640 59590	Elastic Limit. .60 1.00 1.50 2.36	29.50	.710	.580	.4218	49.8	17600	Shell.
12109 26636	.990	.865	.8562	32400 42800 46500 46800	37840 49990 54210 54600	Elastic Limit. .50 1.00 1.50 2.40	30.00	.620	.495	.3060	64.2	16500	Rejected.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
11126 26789	1.005	.960	8643.	32100 47500 51100 52500	37150 54960 60290 60760	Elastic Limit. .50 1.00 1.50 1.80	22.50	.700	.570	.3990	53.8	13700	Rejected.
5144 31321	1.030	.865	.8908	32300 47400 54700 55200	36260 53210 61400 61960	Elastic Limit. .50 1.00 1.50 2.30	28.75	.685	.550	.3767	57.7	17900	Rejected.
12109 26634	.995	.870	.8656	26000 50200 53800 53800	30040 58000 62150 62150	Elastic Limit. .50 1.00 1.50 1.80	22.50	.680	.550	.3740	56.8	14000	Rejected.
10188 29430	.970	.870	.8438	29300 40300 44900 45600	34730 47760 53220 54050	Elastic Limit. .50 1.00 1.50 2.40	30.00	.590	.500	.2950	65.0	16200	Rejected.
15081 26289	1.000	.860	8.600	30700 42400 50600 51900	35700 49300 58840 60360	Elastic Limit. .50 1.00 1.50 2.40	30.00	.675	.550	.3712	56.8	18000	Rejected.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
15081 26285	.980	.870	.8525	30100 42600 48400 49100	35560 49970 56760 57600	Elastic Limit. .50 1.00 1.50 2.40	30.00	.630	.520	.3276	61.6	17400	Shell.
7132 26774	1.000	.855	.8550	34300 45300 50300 50500	40120 52980 58830 59060	Elastic Limit. .50 1.00 1.50 2.00	25.00	.630	.510	.3213	62.4	14700	Shell.
7143 2 364	1.010	.870	.8787	28300 51700 56200 56500	32210 58840 63960 64300	Elastic Limit. .50 1.00 1.50 2.00	25.00	.710	.600	.4260	51.5	16000	Shell.
12105 26178	1.000	.870	.8700	32800 46800 50200 50700	37700 53800 57700 58280	Elastic Limit. .50 1.00 1.50 2.12	25.00	.630	.510	.3213	63.1	14500	Shell.
						Elastic Limit. .50 1.00 1.50							

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.	
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area	Percentage.			
11131 27610	1.025	.885	.9071	33300 46800 50500 50500	36710 51600 55670 55670	Elastic Limit. .50 1.00 1.50								
						Elastic Limit. .50 1.00 1.50 2.40	30.00	.635	.525	.3333	63.2	16800	Shell.	
7130 26576	1.000	.875	.8750	31970 46700 48900 48900	36460 53370 55880 55880	Elastic Limit .50 1.00 1.50 2.16	27.00	.670	.550	.3685	57.8	15100	Shell.	
7142 28258	.970	.865	.8390	32900 46000 49400 49400	39220 54330 58880 58880	Elastic Limit. .50 1.00 1.50 2.30	28.70	.610	.525	.3263	61.8	16900	Shell.	
12105 26180	1.010	.870	.8787	31700 47070 50400 50400	36070 53180 57360 57360	Elastic Limit. .50 1.00 1.50 2.20	27.50	.645	.510	.3289	62.6	15800	Shell.	

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
6111 27712	1.030	.875	.9013	32500	36060	Elastic Limit.	26.00	.670	.535	.3584	60.2	16300	Shell.
				49400	54820	.50							
				53900	59800	1.00							
				54600	59920	1.50 2.24							
12109 26648	1.000	.880	.8800	33100	37610	Elastic Limit.	27.50	.605	.495	2995	65.9	15400	Shell.
				44300	50340	.50							
				48600	55220	1.00							
				49400	56140	1.50 2.20							
9110 26089	1.010	.870	.8787	32500	36990	Elastic Limit.	25.00	.665	.535	.3558	59.5	14700	Shell.
				49000	55760	.50							
				51700	58840	1.00							
				51700	58840	1.50 2.00							
9110 26051	1.030	.850	.8806	31800	36110	Elastic Limit.	27.50	.670	.520	.3484	60.4	16500	Shell.
				49200	55860	.50							
				52200	59270	1.00							
				52700	59840	1.50 2.20							
3180 26650	1.025	.875	.9188	31000	34960	Elastic Limit.	30.00	.635	.495	.3143	64.5	16800	Shell.
				46200	52110	.50							
				48900	55160	1.00							
				49400	55720	1.50 2.40							

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.*				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
3180 26640	1.040	.870	.9408	83200 49200 51900 52000	85290 52300 55170 55270	Elastic Limit. .50 1.00 1.50 2.10	26.20	.655	.510	.3340	65.5	14500	Shell.
7139 27814	.990	.880	.8712	32700 50000	37530 57390	Elastic Limit. .50 1.00 1.50 2.20	27.5	.675	.565	.3814	56.2	15800	Shell.
9110 26040	1.020	.860	.8772	30600 48500 52000 52800	4880 55290 69280 60200	Elastic Limit. .50 1.00 1.50 2.26	24.2	.675	.535	.3718	57.6	14600	Shell.
3182 26948	1.005	.845	.8489	32000 46400 51700 51700	37700 54650 60910 60910	Elastic Limit. .50 1.00 1.50 1.64	20.5	.715	.570	.4095	51.8	12500	Shell rejected.
9111 26154	1.045	.840	.8778	29800 44000 48000 48700	33950 50120 54680 56480	Elastic Limit. .50 1.00 1.50 2.40	30.0	.640	.465	.2976	66.1	16500	Shell.



Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds Per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
15031 26288	.980	.880	.8624	29800 52500 56000 56000	34550 50880 64940 64940	Elastic Limit. .50 1.00 1.50 2.00	25.0	.680	.585	.3978	53.8	16200	Shell.
3182 26944	1.000	.875	.8750	31150 50100 50100 50100	35600 57260 57260 57260	Elastic Limit. .50 1.00 1.50 2.20	27.5	.630	.525	.3807	62.2	15800	Shell.
12105 26180	.985	.870	.8670	29900 47400 50600 50600	34890 55300 59040 59040	Elastic Limit. .50 1.00 1.50 2.20	27.5	.700	.560	.3920	54.2	16200	Shell.
3182 26945	1.005	.870	.8744	30300 47300 50700 50800	34650 54100 57980 58100	Elastic Limit. .50 1.00 1.50 2.16	27.0	.650	.525	.3412	60.9	15700	Shell.
7132 26776	1.050	.875	.9188	32900 50900 55500 55500	35310 55400 60400 60100	Elastic Limit. .50 1.00 1.50 2.30	28.7	.685	.545	.3733	59.3	17300	Shell.

*Tests of Steel Boiler Plate—Continued.*

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breath.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width	Area.	Percentage.		
3180 26699	1.085	.860	.9384	32200 52500 54400 54400	34310 55940 57970 57970	Elastic Limit. .50 1.00 1.50 2.00	25.0	.680	.515	.5502	62.6	14500	Shell.
9115 26675	1.020	.870	.8874	29900 44500 43300 48900	33700 50140 54430 55100	Elastic Limit. .50 1.00 1.50 2.48	31.0	.625	.485	.3031	65.8	17100	Shell.
15081 26280	.985	.870	.8570	29900 47800 50100 50600	34890 55780 58460 59040	Elastic Limit. .50 1.00 1.50 2.28	28.5	.620	.515	.3193	62.7	16800	Shell.
11126 26588	.985	.865	.8520	32500 44500 48200 48200	38140 52280 56570 56570	Elastic Limit. .50 1.00 1.50 2.04	25.5	.630	.520	.3276	61.5	14400	Shell.
3200 29692	.985	.865	.8520	31800 47700 49200 49200	37320 55980 57740 57740	Elastic Limit. .50 1.00 1.50 2.14	26.7	.670	.550	.3685	56.7	15400	Shell.

Tests of Steel Boiler Plate—Continued.

53 Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
9110 26040	1.000	.855	.8550	32500 46660 51600 51600	38010 54500 60850 60350	Elastic Limit. .50 1.00 1.50 2.36	29.5	.710	.595	.4224	50.6	17800	Shell.
2154 28293	1.040	.875	.9100	32500 52800 56000 56000	35720 58020 61540 61540	Elastic Limit. .50 1.00 1.50 2.15	26.8	.710	.580	.4118	54.7	16500	Shell.
11126 26593	1.000	.875	.8750	31800 47200 50000 50000	36340 53940 57140 57140	Elastic Limit. .50 1.00 1.50 2.04	25.5	.640	.520	.3328	61.9	14600	Shell.
7130 26576	.970	.870	.8440	32500 42400 46400 47200	38510 50240 54980 55920	Elastic Limit. .50 1.00 1.50 2.08	26.0	.635	.545	.3461	59.0	14500	Shell.
9110 26049	1.055	.870	.9180	32800 54000 59100 59900	35730 59800 64380 65250	Elastic Limit. .50 1.00 1.50 2.06	25.7	.815	.625	.5094	44.5	16800	Shell.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
9115 26668	1.010	.880	.8880	33900 47100 50900 50000	38140 53000 56 60 56260	Elastic Limit. .50 1.00 1.50 2.04	25.5	.610	.520	.3172	64.3	14400	Shell.
3182 26922	1.000	.865	.8650	30800 43800 47600 48700	35610 50640 55039 56300	Elastic Limit. .50 1.00 1.50 2.28	28.5	.630	.515	.3245	62.4	16000	Shell.
9115 26662	1.010	.865	.8736	32100 46300 49600 49700	36740 53000 56780 56890	Elastic Limit. .50 1.00 1.50 1.92	24.0	.615	.500	.3075	64.8	18700	Shell.
9111 26139	.985	.865	.8520	29900 48630 51200 51200	35090 57040 60100 60100	Elastic Limit. .50 1.00 1.50 2.20	27.5	.685	.585	.4007	52.9	16500	Shell.
7130 26570	1.010	.860	.8686	29700 39400 44600 45300	34190 43360 51340 52150	Elastic Limit. .50 1.00 1.50 2.20	27.5	.605	.480	.2904	66.5	14400	Shell.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area	Percentage.		
12104 26034	1.010	.835	.8433	31000 47000 49800 50700	36760 55730 59060 60120	Elastic Limit. .50 1.00 1.50 2.36	29.5	.680	.530	.3604	57.2	17700	Shell.
11126 26581	1.040	.875	.9100	30700 48000 51200 51200	39740 52750 56270 57260	Elastic Limit. .50 1.00 1.50 2.16	27.0	.665	.520	.348	62.0	15500	Shell.
7139 27329	.980	.850	.8330	29900 46206 50000 50400	35900 54460 60030 60510	Elastic Limit. .50 1.00 1.50 1.80	22.5	.680	.560	.3808	54.7	13600	Shell Duplicate.
12101 26027	.980	.885	.8379	27800 39200 46100 47000	33180 46780 55020 56100	Elastic Limit. .50 1.00 1.50 2.54	31.25	.610	.510	.3111	62.9	17500	Shell.
7143 28353	.985	.880	.8667	35000 48200 52000 52000	40390 35610 60000 60240	Elastic Limit. .50 1.00 1.50 2.06	25.75	.630	.545	.3433	60.4	15500	

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds Per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage	Breadth.	Width.	Area.	Percentage.		
2154 28309	.980	.860	.8427	26300 46500 52700 58200	31210 55180 62530 63190	Elastic Limit. .50 1.00 1.50 2.08	26.00	.675	.570	.3847	54.4	16400	
9110 26052	.980	.865	.8476	31200 48000 48500 49100	36370 50780 57220 57980	Elastic Limit. .50 1.00 1.50 2.30	28.75	.625	.535	.3344	60.5	16600	
9110 26046	.990	.860	.8513	29700 44800 50000 51000	34890 52040 58780 59910	Elastic Limit. .50 1.00 1.50 2.10	26.25	.675	.560	.3712	56.4	15800	
12104 26028	1.035	.855	.8850	30800 46800 51800 52000	34800 52880 57960 58760	Elastic Limit. .50 1.00 1.50 1.98	24.70	.695	.510	.3544	60.0	14500	Shell.
7142 28258	1.040	.860	.8944	30700 50500 52100 52100	34320 56460 58250 58250	Elastic Limit. .50 1.00 1.50 2.30	28.70	.685	.585	.3665	59.0	16700	Shell.

Tests of Steel Boiler Plate—Continued.

Marks.]	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
12109 26643	1.065	.875	.9318	31200 46200 49800 49800	39480 49580 58440 58440	Elastic Limit. .50 1.00 1.50 2.20	27.50	.650	.485	.3152	66.1	14700	Shell.
12109 26637	.985	.865	.8520	31200 44500 47200 47200	36620 52230 55100 55400	Elastic Limit. .50 1.00 1.50 2.20	27.50	.595	.500	.2975	65.0	15200	Shell.
7130 26563	1.010	.885	.8938	31800 41300 45700 46500	35580 46770 51130 52030	Elastic Limit. .50 1.00 1.50 2.44	30.50	.605	.485	.2934	67.1	15700	Shell.
7130 26564	1.010	.870	.8787	30700 41700 45400 45900	34940 47460 51680 52240	Elastic Limit. .50 1.00 1.50 2.44	30.5	.625	.475	.2969	66.2	15800	Shell.
10188 29423	.985	.865	.8520	23900 40900 45300 45900	33920 48000 53170 53880	Elastic Limit. .50 1.00 1.50 2.56	32.00	.600	.500	.3000	64.8	17300	Shell.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds Per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage	Breadth.	Width.	Area.	Percentage.		
5144 31312	.990	.850	.8415	31100 48000 53100 53500	36960 57040 63100 63580	Elastic Limit. .50 1.00 1.50 2.22	27.75	.680	.550	.3740	55.5	17700	Shell.
5144 31314	.995	.850	.8458	30500 48200 53000 53600	36060 56980 62680 63370	Elastic Limit. .50 1.00 1.50 2.28	28.50	.690	.565	.3898	53.9	18100	Shell.
10188 29437	1.000	.850	.8500	30200 39800 49700 51500	35740 47100 58810 60950	Elastic Limit. .50 1.00 1.50 2.20	27.50	.720	.600	.4820	48.9	16800	Shell.
14189 29573	1.020	.850	.8670	30000 45300 50000 51100	34600 52250 57660 58940	Elastic Limit. .50 1.00 1.50 2.26	28.50	.715	.580	.4147	52.2	16800	Shell.
3216 32111	1.005	.870	.8742	32000 49300 54000 54500	36610 56400 61760 63340	Elastic Limit. .50 1.00 1.50 2.00	25.00	.715	.600	.4290	50.9	15800	Shell.



Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
16189 29579	1.020	.860	.8770	28500 43300 47300 47700	82500 49370 53940 54390	Elastic Limit. .50 1.00 1.50 2.62	32.75	.625	.500	.3125	64.4	17900	Shell.
16189 29572	1.010	.840	.8484	29700 47200 50600 50900	35010 55630 59640 60000	Elastic Limit. .50 1.00 1.50 2.30	28.75	.720	.580	.4176	50.8	17300	Shell.
3200 29699	1.000	.850	.8500	31600 43600 47500 47600	37180 51300 55880 56000	Elastic Limit. .50 1.00 1.50 2.26	28.25	.620	.490	.3038	64.3	15900	Shell.
3210 31250	1.020	.850	.8668	31100 46200 49300 49600	35880 53300 56880 57230	Elastic Limit. .50 1.00 1.50 2.20	27.50	.630	.500	.3150	65.6	15790	Shell.
3220 29693	1.020	.835	.8517	30600 43400 47600 48300	35930 50960 55890 56720	Elastic Limit. .50 1.00 1.50 2.34	29.25	.660	.510	.3366	60.5	16600	Shell.

Tests of Steel Boiler Plate—Continued.

Marks	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION in Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
10188 29422	.995	.870	.8656	32000 42500 46600 47000	36960 49100 53840 54300	Elastic Limit. .50 1.00 1.50 2.28	28.50	.620	.500	.3110	61.4	15500	Shell
3180 26701	.995	.625	.6218	22900 33700 33900 34400	36880 54200 54530 55330	Elastic Limit. .50 1.00 1.50 2.70	33.75	.630	.350	.2205	64.5	18700	Head.
7162 31319	.980	.620	.6075	23800 33300 37000 37300	39180 54820 60910 61410	Elastic Limit. .50 1.00 1.50 2.46	30.75	.635	.360	.2296	62.2	18900	Head.
10188 29426	1.010	.605	.6110	23600 32800 36600 37000	38630 53690 59900 60560	Elastic Limit. .50 1.00 1.50 2.00	25.00	.720	.375	.2700	55.8	15100	Head.
7137 27590	1.020	.620	.6322	24200 32200 35400 35700	38280 50940 56000 56480	Elastic Limit. .50 1.00 1.50 2.18	27.25	.660	.350	.2310	63.5	15400	Head.

Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION in Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
11126 26597	1.010	.630	.6863	25100 31900 36700 36600	39450 50140 56110 57530	Elastic Limit. .50 1.00 1.50 2.10	30.00	.630	.350	.2205	65.3	17400	Head.
7137 27579	1.010	.620	.6262	23400 30300 33600 34100	37370 48390 53360 54460	Elastic Limit. .50 1.00 1.50 2.60	32.5	.620	.330	.2046	67.3	17700	Head.
7162 81378	1.040	.620	.6418	24000 35900 39700 40400	37220 55690 61570 62660	Elastic Limit. .50 1.00 1.50 2.20	28.25	.710	.375	.2662	58.7	17700	Head.
7162 381	1.020	.620	.6322	24500 32400 37200 37700	38750 51260 58830 59620	Elastic Limit. .50 1.00 1.50 2.20	27.50	.665	.360	.2394	62.1	16400	Head.
7162 377	1.020	.630	.6426	24700 35000 38900 39200	38440 54460 60530 61000	Elastic Limit. .50 1.00 1.50 1.84	28.00	.685	.360	.2466	61.6	14000	Head.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
27824 7139	2.010	.600	.1260	43600 63200 69100 69100	34600 50160 54840 54840	Elastic Limit. .50 1.00 1.50 2.54	31.70	1.435	.335	.4807	61.8	17400	Head.
27595 11131	1.510	.620	.9362	33700 46400 50900 51700	36000 49560 54370 55220	Elastic Limit. .50 1.00 1.50 2.04	25.50	1.030	.355	.3656	60.0	14100	Head.
27813 7139	1.525	.600	.9150	29600 46300 50500 51100	32350 50600 55190 55850	Elastic Limit. .50 1.00 1.50 2.45	30.50	1.065	.360	.3834	58.1	17100	Head.
28093 11134	1.530	.605	.9256	32400 ..... ..... 58200	35000 ..... ..... 62880	Elastic Limit. .50 1.00 1.50 2.12	26.50	1.140	.380	.4332	53.2	16700	Head.
27923 11133	1.505	.600	.9030	32500 45700 50300 51100	35990 50610 55700 56590	Elastic Limit. .50 1.00 1.50 2.64	32.70	1.050	.325	.3412	62.2	18500	Head.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience. ●	Remarks.
	Breath.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width	Area.	Percentage.		
27596 11181	1.545	.610	.9424	34100	36190	Elastic Limit.	29.50	1.045	.330	.3448	63.4	16200	Head.
				47200	50090	.50							
				51100	54220	1.00							
				51800	54970	1.50							
26666 9115	1.470	.608	.8938	33100	37030	Elastic Limit.	27.00	1.025	.355	.3638	59.3	15700	Head.
				46700	52250	.50							
				51700	57840	1.00							
				51900	58070	1.50							
28094 11134	1.505	.608	.9250	33100	36180	Elastic Limit.	25.70	1.075	.365	.3024	57.1	15000	Head.
				47800	52240	.50							
				52500	57380	1.00							
				53300	58260	1.50							
27716 6111	1.490	.620	.9238	33200	35940	Elastic Limit.	25.70	1.085	.385	.4177	54.7	15100	Head.
				49000	53040	.50							
				53900	58340	1.00							
				54400	58880	1.50							
26048 9110	1.415	.615	.9070	33500	36940	Elastic Limit.	32.70	.990	.325	.3217	64.5	18500	Head.
				46700	51490	.50							
				50500	55680	1.00							
				51200	56450	1.50							
						2.64							

*Tests of Steel Boiler Plate—Continued.*

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
26183 12105	1.500	.615	.9225	32700 46900 51300 51300	35450 50840 55610 55610	Elastic Limit. .50 1.00 1.50 2.44	30.50	1.030	.350	.3605	60.9	17000	Head
26020 12104	1.510	.620	.9362	33900 49900 54400 54400	36210 53300 58100 58100	Elastic Limit. .50 1.00 1.50 2.30	28.70	1.035	.355	.3674	60.7	16600	Head.
26648 3180	1.495	.625	.9314	34300 45100 50100 51300	36710 48200 53610 54900	Elastic Limit. .50 1.00 1.50 2.60	32.50	1.005	.335	.3367	63.9	17900	Head.
26697 3180	1.550	.615	.9532	33300 46100 51400 52400	34930 48360 53920 54970	Elastic Limit. .50 1.00 1.50 2.50	31.20	1.040	.335	.3484	63.4	17200	Head.
27867 11133	1.535	.615	.9440	33900 5 000 54800 55400	35910 52960 58050 58680	Elastic Limit. .50 1.00 1.50 2.06	25.70	1.100	.355	.3905	58.6	15100	Head.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area	Percentage.		
26655 3180	1.475	.615	.9070	34200 46500 51900 52400	37710 51270 57120 57780	Elastic Limit. .50 1.00 1.50 2.44	30.50	1.040	.365	.3796	58.1	17600	Head.
27581 1137	1.540	.615	.9470	32500 44600 49900 52000	34320 47100 52690 54900	Elastic Limit. .50 1.00 1.50 2.30	32.50	1.015	.330	.3349	64.6	17800	Head.
26082 12104	1.455	.630	.9166	34600 45700 51900 53300	37750 49860 56620 58150	Elastic Limit. .50 1.00 1.50 2.30	36.20	.985	.365	.3595	60.7	21100	Head.
27601 11131	1.460	.618	.9022	32000 43600 47900 48900	35470 43330 53100 54200	Elastic Limit. .50 1.00 1.50 2.74	34.20	.985	.345	.3398	62.3	18500	Head.
27591 7137	1.495	.620	.9270	32600 45600 48500 49300	38170 49190 52320 53180	Elastic Limit. .50 1.00 1.50 2.14	26.70	.995	.315	.3134	66.1	14200	Head.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth	Width.	Area.	Percentage.		
26569 7130	1.495	.635	.9494	33100	35180	Elastic Limit.	33.70	.985	.825	.3201	66.2	18200	Head.
				44600	46970	.50							
				50500	53190	1.00							
				51300	54030	1.50							
						2.70							
26561 7130	1.505	.635	.9557	34400	35990	Elastic Limit.	31.20	1.000	.380	.3300	65.4	16700	Head.
				44900	46980	.50							
				50000	52320	1.00							
				51000	53360	1.50							
						2.50							
26696 3180	1.570	.610	.9210	33300	36160	Elastic Limit.	30.50	1.020	.345	.3024	61.7	16700	Head.
				46800	50820	.50							
				51400	55810	1.00							
				51700	56140	1.50							
						2.44							
26574 7130	1.580	.615	.9410	32500	34540	Elastic Limit.	34.20	1.015	.315	.3197	66.0	17700	Head.
				42800	45490	.50							
				48800	51860	1.00							
				48800	51860	1.50							
						2.74							
26033 12104	1.495	.620	.9270	32100	34950	Elastic Limit.	29.20	1.045	.365	.3814	58.8	17600	Head.
				48600	52430	.50							
				53800	58040	1.00							
				55900	60300	1.50							
						2.34							



Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
28101 11134	1.475	.625	.9218	32500 47000 52200 53100	35260 50990 56630 57600	Elastic Limit. .50 1.00 1.50 2.34	29.20	.995	.365	.3631	60.6	16800	Head.
26638 12109	1.245	.625	.7782	25900 37200 41600 42700	33280 47800 53460 54870	Elastic Limit. .50 1.00 1.50 2.20	27.50	.825	.335	.2765	64.4	15100	Head.
26732 16171	1.460	.605	.8833	31000 45700 50600 51200	35090 51740 57280 57960	Elastic Limit. .50 1.00 1.50 2.46	30.70	1.030	.355	.3656	58.6	17800	Head.
27643 11131	1.480	.630	.9324	31100 45600 49400 50400	33350 48910 52980 54060	Elastic Limit. .50 1.00 1.50 2.48	31.00	1.010	.345	.3485	62.6	16800	Head.
11113 28034	1.010	.500	.5050	21500 28300 32400 32600	42590 56040 64170 64560	Elastic Limit. .50 1.00 1.50 2.03	26.00	.700	.310	.2170	57.0	16800	Butt Strap.

Test of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
15102 29628	1.010	.510	.5151	20100 28500 31100 31400	39030 55340 60890 60970	Elastic Limit. .50 1.00 1.50 2.20	27.50	.685	.290	.1986	61.4	16800	Butt Strap.
6105 26747	1.020	.495	.5048	19500 25600 28600 29000	38640 50720 56660 57460	Elastic Limit. .50 1.00 1.50 2.50	31.25	.675	.260	.1755	65.2	18000	Butt Strap.
3204 30829	1.005	.500	.5025	18900 24700 27700 28400	37620 49150 55120 56520	Elastic Limit. .50 1.00 1.50 2.46	30.75	.65	.260	.1690	66.4	17400	Butt Strap.
7131 26686	1.025	.550	.5637	22600 30300 52700 33400	40090 53740 58090 59250	Elastic Limit. .50 1.00 1.50 2.20	27.50	.685	.330	.2360	58.1	16300	Butt Straps.
3204 30322	1.010	.530	.5353	21200 25400 29300 30000	39600 47450 54740 56050	Elastic Limit. .50 1.90 1.50 2.40	30.00	.640	2.90	.1856	65.4	16800	Butt Straps.

Tests of Steel Boiler Plate—Continued.

34 Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds Per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
11133 27865	1.015	.560	.5684	22000 30100 33200 33400	38710 52900 58420 58780	Elastic Limit. .50 1.00 1.50 2.16	27.00	.680	.340	.2312	59.4	15900	Butt Straps.
3204 30328	1.025	.495	.5073	20000 26900 28900 29300	39430 53060 56970 57760	Elastic Limit. .50 1.00 1.50 2.24	28.00	.695	.280	.1886	62.8	16200	Butt Straps.
27825 7139	1.505	.580	.8730	29000 42000 46200 46800	33220 43110 52910 53610	Elastic Limit. .50 1.00 1.50 2.12	26.50	1.070	.335	.3585	58.9	14200	Butt Straps.
26758 6105	1.475	.565	.8334	30000 45200 50400 50800	36000 54240 60400 60960	Elastic Limit. .50 1.00 1.50 2.52	31.50	1.075	.355	.3811	54.2	19200	Butt Straps.
6105 26751	1.015	.515	.5228	20100 24600 28000 28500	38450 47050 53560 54520	Elastic Limit. .50 1.00 1.50 2.54	31.75	.625	.265	.1656	68.3	17300	Butt straps.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
7181 26691	1.020	.490	.4998	19900 25300 28200 28700	39820 50620 56420 57430	Elastic Limit. .50 1.00 1.50 2.38	29.75	.670	.270	.1809	63.8	17100	Butt straps.
6105 26748	1.010	.490	.4949	19600 27000 29800 30100	39610 54560 60220 60820	Elastic Limit. .50 1.00 1.50 2.18	27.25	.730	.310	.2263	54.3	16600	Butt straps.
11124 26322	1.015	.570	.5786	22200 26400 31200 31800	38870 45630 53920 54960	Elastic Limit. .50 1.00 1.50 2.60	32.50	.660	.310	.2046	64.7	17900	Butt straps.
6105 26752	1.020	.575	.5865	22000 28200 31900 32300	37510 48090 54400 55080	Elastic Limit. .50 1.00 1.50 2.20	27.50	.650	.320	.2080	64.5	15200	Butt straps.
6105 26755	1.025	.565	.5790	23300 31200 34500 346.0	40250 53900 59600 59760	Elastic Limit. .50 1.00 1.50 2.00	26.00	.710	.350	.2485	57.1	14900	Butt straps.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain In Pounds Per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
26321 11124	1.700	.555	.9435	80200 46300 50600 52200	32000 49070 53630 55330	Elastic Limit. .50 1.00 1.50 2.80	35.00	1.165	.305	.3553	62.3	19400	Butt Steaps.
26693 7131	1.680	.480	.8064	31900 48400 47000 48000	39560 53820 58290 59530	Elastic Limit. .50 1.00 1.50 2.15	26.80	1.215	.280	.3402	57.8	16000	Butt Straps.
26323 11124	1.530	.495	.7573	27900 42000 45300 46000	36840 55460 59820 60740	Elastic Limit. .50 1.00 1.50 2.24	28.00	1.085	.285	.3092	59.1	17000	Butt Straps.
26317 11124	1.490	.565	.8418	30100 41000 45500 46300	35760 48700 54050 55000	Elastic Limit. .50 1.00 1.50 2.50	31.20	1.010	.300	.3030	64.0	17200	Butt Straps.
26316 11124	1.725	.540	.9314	33700 48200 52700 53500	36180 51750 56580 57440	Elastic Limit. .50 1.00 1.50 2.34	29.20	1.225	.315	.3859	58.5	16800	Butt Straps.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
26690 7131	1.730	.570	.8822	30200	34230	Elastic Limit.	30.00	1.180	.260	.8068	65.2	16800	Butt Straps.
				44600	50560	.50							
				48600	55090	1.00							
				49400	55000	1.50							
26315 11124	1.465	.505	.7398	32200	43520	Elastic Limit.	27.00	1.025	.295	.3024	59.1	15900	Butt Straps.
				41600	52320	.50							
				43500	58800	1.00							
				43500	58800	1.50							
26746 6105	1.485	.510	.8464	31500	37210	Elastic Limit.	29.00	1.025	.320	.3280	61.3	16400	Butt Straps.
				47200	55760	.50							
				47000	56470	1.00							
				47000	56470	1.50							
26318 11124	1.710	.488	.8344	31100	37270	Elastic Limit.	26.50	1.255	.290	.3640	56.4	16300	Butt Straps.
				47000	56830	.50							
				51100	61240	1.00							
				51400	61600	1.50							
26754 6105	1.355	.510	.6910	25000	36180	Elastic Limit.	30.00	.915	.270	.2471	64.2	16800	Butt Straps.
				35300	51090	.50							
				38000	55000	1.00							
				38400	55570	1.50							
						2.40							

Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load	Strain in Pounds per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
7131 26679	1.025	.480	.4919	20900 26000 28100 28700	42500 52860 57140 58360	Elastic Limit. .50 1.00 1.50 2.24	28.00	.690	.280	.1932	60.7	16400	Steam Dome.
7131 26687	1.000	.420	.4200	18000 22800 24100 24300	42860 54290 57370 57850	Elastic Limit. .50 1.00 1.50 2.40	30.00	.650	.230	.1495	64.4	17400	Steam Dome.
3204 30331	1.005	.420	.4222	18300 23700 26100 26300	43340 56130 61820 62300	Elastic Limit. .50 1.00 1.50 2.26	28.25	.710	.250	.1775	58.0	17600	Steam Dome.
3182 26920	.990	.440	.4356	18500 21200 24800 25800	42470 48670 56940 59240	Elastic Limit. .50 1.00 1.50 2.10	26.25	.670	.230	.1541	64.6	15600	Steam Dome.
7131 26681	1.025	.425	.4355	17200 23500 24800 24700	39500 53960 55800 56720	Elastic Limit. .50 1.00 1.50 2.60	32.25	.670	.220	.1474	66.2	18300	Steam Dome.

Tests of Steel Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
7142 28257	1 010	.415	.4494	18300 23500 25800 26200	40720 52300 57410 58300	Elastic Limit. .50 1.00 1.50 2.38	29.75	.675	.250	.1687	62.5	17400	Steam Dome.
26744 6105	1.735	.430	.7460	28700 37500 41500 41900	38470 50270 55630 56170	Elastic Limit. .50 1.00 1.50 2.50	31.20	1.220	.230	.2806	62.3	17500	Steam Dome.
15102 29635	.990	.430	.4257	17700 22100 24900 25500	41580 51910 58490 59900	Elastic Limit. .50 1.00 1.50 2.20	27.50	.680	.240	.1632	61.7	16500	Steam Dome.
26324 11124	1.735	.445	.7720	28500 43000 47200 47500	36720 55700 61140 61'30	Elastic Limit. .50 1.00 1.50 2.04	25.50	1.250	.260	.3250	67.9	15700	Steam Dome.
26748 6105	2.025	.420	.8504	29400 42100 47500 48300	34570 49500 55850 56800	Elastic Limit. .50 1.00 1.50 2.60	32.50	1.445	.215	.3106	63.4	18500	Steam Dome.



Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	Remarks.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
26339 11124	2.025	.435	.8808	30900 49400 53800 53800	35080 56090 61080 61080	Elastic Limit. .50 1.00 1.50 2.12	26.50	1.480	.240	.3552	59.6	16200	Steam Dome.
26684 7131	2.000	.435	.8700	31800 45600 49600 50500	35980 52300 57010 58040	Elastic Limit. .50 1.00 1.50 2.50	31.20	1.415	.230	.3255	62.5	18100	Steam Dome.
27580 7137	1.960	.435	.8526	32500 44000 47200 47900	38120 51600 55360 56180	Elastic Limit. .50 1.00 1.50 2.00	25.00	1.410	.285	.3313	61.1	14000	Steam Dome.
26753 6105	2.020	.435	.8786	30700 45000 50000 50600	34940 51220 56910 57590	Elastic Limit. .50 1.00 1.50 2.84	35.50	1.455	.240	.3492	60.2	22000	Steam Dome.
13122	Diam.	.990	.7697	27200 42000 46600 46600	35340 54570 60540 60540	Elastic Limit. .50 1.00 1.50 2.04	25.50	Diam.	.705	.3903	49.3	15400	2½-in. Stay Rods.

Tests of Steel Boiler Plate—Continued.

Marks.	MEASUREMENTS.			Applied Load.	Strain in Pounds per Square Inch.	ELONGATION. In Eight Inches.		REDUCTION OF AREA.				Relative Resilience.	REMARKS.
	Breadth.	Width.	Area.			Elongation in Inches.	Elongation in Percentage.	Breadth.	Width.	Area.	Percentage.		
11152	Diam.	.990	.7697	29800	38720	Elastic Limit.	28.50	Diam.	.660	.3421	55.6	16800	2½-in. Stay Rods.
				38100	49500	.50							
				45390	58970	1.00							
				45390	58970	1.50							
						2.28							
11142	Diam.	.990	.7697	28400	36900	Elastic Limit.	31.20	Diam.	.635	.3166	58.9	16700	2½-in. Stay Rods.
				35700	46390	.50							
				40500	52620	1.00							
				41200	53530	1.50							
						2.50							
16193	Diam.	1.002	.7854	28100	35780	Elastic Limit.	26.20	Diam.	.670	.3521	55.1	15500	2½-in. Stay Rods.
				40500	51560	.50							
				46000	58570	1.00							
				46000	59200	1.50							
						2.10							
7609	6' x 3½"	Angle	Iron.	42600		Elastic Limit.	28.2				56.4	16700	
						.50							
						1.00							
						1.50							
7533	4" x 3½"	Angle	Iron.	38450		Elastic Limit.	27.5				59.1	16100	
						.50							
						1.00							
						1.50							
				58460		2.20							















UNIVERSITY OF ILLINOIS-URBANA



3 0112 112103368