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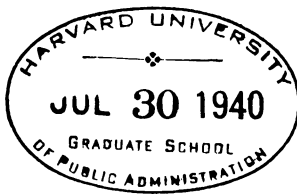
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NINETY-SECOND ANNUAL REPORT
OF THE
BUREAU OF WATER,

For the Year Ending December 31, 1893,

AND

THIRD 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, 1894.

1894.

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1894.

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HARVARD UNIVERSITY

OFFICE OF THE MAYOR,
PHILADELPHIA.

Mayor :

EDWIN S. STUART. "

Secretary :

LEWIS E. BEITLER.

Contract Clerk :

JAMES R. CALHOUN

Ass't Contract Clerk and Stenographer :

HENRY W. PEIRSON.

Ass't Stenographer and Typewriter .

HARRY M. FISLER.

Messenger :

WILLIAM G. LEE.

THIRD ANNUAL MESSAGE.

OFFICE OF THE MAYOR, CITY HALL.

Philadelphia April 2, 1894.

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

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

Finance.

Our Municipal Finances are in better condition than ever before in our history, the revenues being greater than in any previous year, and \$1,937,678.15 greater than during the year 1892, caused by increased receipts in the various departments and in current taxes, and by reason of the settlement with the City of her share of the Personal Property Tax, which has been held by the State since 1891, pending decision in the litigation thereon.

There also remained a greater surplus at the close of the year 1893, than ever before, the following table showing a comparison with the last seven years, covering the period during which the "Bullitt Bill" has been in effect:

	Surplus.	Deficit.
At the close of the year 1887,.....	\$ 265,137 34	
“ “ 1888,.....		\$ 19,172 70
“ “ 1889,.....		783,007 53
“ “ 1890,.....		46,173 99
“ “ 1891,.....		522,645 80
“ “ 1892,.....	100,626 11	
“ “ 1893,.....	1,248,746 17	

The loans maturing in 1894 are as follows :

Four per cent.....	\$400,000 00
Six per cent.....	500 00
Funded debt January 1, 1893.....	\$53,988,045 22
Unclaimed matured loans returned by the Loan and Transfer Agent.....	9,100 00
New Loan sold during 1893	3,500,000 00
	<u>\$57,497,145 22</u>
Loans redeemed in 1893.....	4,738,300 00
Funded debt January 1, 1894.....	52,758,845 22
Decrease in Funded debt during 1893.....	\$1,229,200 00
The assessed valuation of property January 1, 1894, was...	769,930,542 00
January 1, 1893.....	752,763,382 00
An increase of.....	<u>\$17,167,160 00</u>

Our Municipal Finances are in as good, and I may say, in better condition than any other large city in this country, for while theoretically our Funded Debt January 1, 1894, was \$52,758,845.22, this, less our holdings in the Sinking Fund of \$24,830,363.41, makes our actual debt but \$27,928,481.81, and the franchises we own, such as our Gas and Water Systems, together with our Real Estate, both improved and unimproved, if sold would realize at least six times the amount of our debt.

There was a great amount of money expended in 1893, completing many much needed permanent improvements which the welfare and progress of our City demanded should be no longer delayed. It is impossible to procure

from current taxation, at the present rate, the money necessary to continue these works, which will be a benefit not only to the present generation but also a still greater benefit to the generations to come, and it is therefore, in my judgment, good financial policy to adopt the same course pursued by all well regulated and successful corporations;—create loans, the proceeds of which shall be expended in such work, it being but equitable that the future generations should be compelled to bear their proper proportion of the expenses. Loans, however, should be authorized with the utmost care and conservatism, after the most careful and mature deliberation, and containing specific statements for what purposes their proceeds shall be expended, which should be only for such imperative permanent improvements as are essential to the proper growth and development of a great municipality, like Philadelphia.

DEPARTMENTS.

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 1893.

BUREAUS.

Bureau of Police.

During the year 1893, 141 officers and men were added to this Bureau, increasing the total force to 2,167, including officers, patrolmen, clerks, etc.

One new police station house and one new sub-police station were completed and occupied, and for the horses

in the mounted service two new stables and one hospital stable (the latter a model and much needed improvement) were also completed. One, new cell room was added to the Fifth Police District Station House, and an additional story to the Twelfth and Nineteenth Police District Station Houses respectively. Also three new buildings for the patrol service were commenced (and will be completed and occupied this year), one in the Second Police District to take the place of the rented property now occupied, and for the introduction of this service, one each in the Seventh, Twentieth and Twenty-Sixth Police Districts.

The almost utter absence during the year 1893 of professional thieves, burglars and other criminals of like degree best demonstrates the efficiency of the Police Force of Philadelphia, and the following table of the reported losses from robberies of all kinds and character, petty larceny, sneak thieves, pickpockets, burglars, etc., during the last quarter of the year, shows how insignificant the number of these offenses and their attending losses were when the area of the City and its population are taken into consideration.

	Days.	Reported Robberies.	Losses Claimed.
During October,.....	31	83	\$4,451 55
“ November	30	95	5,780 90
“ December,.....	31	122	5,908 76
Totals..	92	300	\$16,141.21

The amounts above stated, the greater proportion of which was recovered by the Police and restored to its owners, the thieves being also arrested, tried, convicted and sentenced, are the values as claimed by the losers themselves, and it is rarely, if ever, that a person robbed underestimates his losses, but, on the contrary, usually gives a figure that he considers will fully cover

their utmost value, and in some cases robberies and losses therefrom have been reported, which upon investigation have proved to be absolutely false, the claims having been made dishonestly, to conceal the real facts and motives. In so large a city as ours, there must always be many cases of petty larceny, sneak thieving, pocket picking and such petty crimes, and yet considering the terrible financial and business depression during the past twelve months any fair-minded citizen who will examine the official records of the Bureau of Police will be compelled to admit, and cannot help but give them credit therefor, that it is a record of as faithful, efficient and meritorious service as has ever heretofore been rendered in the history of the Police Force of Philadelphia.

If the present force of 1,704 patrolmen, which in proportion to the area of territory policed, is less than in any other city in the United States, should be properly increased, still greater safety to life and property would result.

Bureau of Fire.

During 1893 the efficiency of this Bureau was increased by the addition of eight hosemen to the force, and four Silsby Fire Engines, two Chemical Engines, two Combination Hose Wagons, 36 six-gallon Hand Extinguishers, and a total of 20,500 feet of hose to the equipment.

Three new fire stations were located, the buildings now being nearly completed, and six lots for fire purposes were purchased, upon one of which (on Market street, west of Twenty-first street), there will be erected, and it is hoped be properly manned, equipped and in operation before autumn of this year, a model fire house to accommodate one Assistant Engineer, three Foremen, forty-three men, two engines, two hose wagons with chemical extinguishers attached, a truck and a water tower.

The new iron and steel Fire Boat, the first owned by the City, was placed in service September 1, 1893, and will add greatly to the efficiency of the Bureau in its service along the river front and in the territory immediately adjacent thereto, having already performed excellent work when called upon. No better evidence of the faithful, courageous and successful service of our fire force can be obtained than from the Report of the Fire Underwriters' Association of Philadelphia, which shows that while the fire losses in many of the large cities in the Country were growing with alarming rapidity, the losses in Philadelphia were less than in any previous year since 1883, with the single exception of the year 1887.

Electrical Bureau.

During the year 1893, this Bureau laid about 300 miles of telephone, telegraph and electric light wire conductors underground.

I have always strongly recommended the removal, as rapidly as it can possibly be done, of all poles and overhead wires. The City, herself, now has 628 miles of underground service in most successful operation, and during the present year has removed all the poles and overhead wires on Broad Street, from Germantown Avenue on the north to McKean Street on the south, and placed all the wires in the City's underground conduits, and further, has completed the laying of an underground conduit on Market Street, from the Delaware River to Forty-third Street, and placed therein all the City's wires. There have been rented in our Market Street underground conduits, ducts to the Western Union Telegraph Company, in which it will in the near future place its wires which are at present overhead, and the Brush Electric Light Company having also laid its own underground conduit in Market Street, will shortly place its present over-

head wires therein. As soon as these two companies do so, there will be entirely removed from Market Street all the poles and overhead wires. To those who remember the vast net work of dangerous wires and unsightly poles that have so long disfigured this great highway, the splendid improvements made will be at once apparent. If this work but be continued as rapidly as possible, it would, and should not be long before in the closely built up portions of the City, at least, all such poles would disappear and all wires be placed underground.

Bureau of Health.

By the Act of Assembly approved June 5, 1893, the duty of enforcing quarantine regulations upon the shipping of this port, was taken from the Board of Health and placed under State officials. By this action the Board was relieved from a most onerous, responsible and unpleasant duty, and has since been enabled to devote its entire energies to the strictest enforcement of proper sanitary measures within the Municipality; the results achieved being most gratifying and beneficial. Some idea of the magnitude of the work thus performed may be gained from the fact that 68,639 houses were inspected, resulting in the discovery of 10,363, nuisances of greater or less degree, 9,128 of which were abated by the owners after the service of proper notice from the Bureau. I regret that the Commission appointed to secure a site for a new Municipal Hospital has failed as yet in its endeavors. By reason of this failure it has been necessary to make some temporary additions to the present hospital in order that it may be made as safe as possible until it is removed from the present location, which should be at the earliest possible moment, now having been much too long delayed, and to accomplish this removal I will de-

vote my best efforts. Among other important additions to the hospital there has been erected a complete disinfecting plant, which has been pronounced by the expert sent from the United States Marine Hospital Service to inspect it and report thereon, as the finest in this country, and, so far as he knows, in the world. During the past year the City's death rate, 21.20 per 1,000 living persons, was less than at any time during my administration, being 22.25 in 1892 and 21.85 in 1891, showing that the general sanitary conditions and health of the City are good. I desire to thank your Honorable Bodies for the prompt and liberal appropriations heretofore made this Bureau, whenever emergency demanded, and among these appropriations there has been none in my judgment that has so much assisted in preventing disease as that for repaving with sheet asphaltum the small streets in the Southeastern section of the City, where so many of the poorer classes live, for it not only made it possible to keep these streets in good sanitary condition but it also gives great comfort and is a benefit in many ways to the people who for the most part are compelled to remain there during the whole heated period of the year.

Bureau of Building Inspectors.

During the year 1893 there were 4,236 permits for 9,110 operations, involving an outlay of \$23,483,397.29, or 348 permits, 1,291 operations, and \$3,343,461.98, outlay less than in the year 1892, which decrease is explained by the great financial and business depression during the past twelve months. For many years past this Bureau has been operating under the old building laws of years standing, but by the Act of Assembly passed last June, an entirely new law became operative, making a complete reorganization of the Bureau necessary. By reason of the great power and authority given by the

new Act it will prove of advantage to the Municipality in insuring a proper inspection of all buildings, and further, by reason of the increased number of Inspectors the Act requires, it will be possible to give the inspection of all buildings that strict and careful attention which its importance demands, and which, owing to the inadequate force heretofore allowed by the old laws was impossible, so that now when small houses, which are usually sold to the working classes, are being built, this Bureau can and will see that they are in exact accordance with the law, and so be better constructed than at present, and yet not unnecessarily increase their cost.

Bureau of City Property.

This Bureau reports receipts during the year 1893 from all sources to have been \$87,989.30, as compared with \$84,607.67, during the year 1892.

The contract has been awarded for the new Morgue, and it is expected that it will shortly be ready for use, and be one of the most scientifically planned and constructed buildings for the purpose in this country, being considered a model of its kind.

This Bureau has charge of all the Public Squares, and it is due to the Chief's personal attention that the many improvements which so enhance their beauty and value have been accomplished.

Bureau of Boiler Inspectors.

This Bureau inspected and approved during the year 1893, 2,996 boilers, a decrease of 96 as compared with the year 1892, and the number of certificates of inspection issued, 2,564, was 38 less than in the year 1892. The number of new boilers erected was 462, there being now 3,302 under the supervision of the Bureau, and 3,290 under that of various Insurance Companies, making a

total of 6,592 high pressure boilers in use in the City December 31, 1893, an increase of 179 since the year 1892. The Bureau paid into the City Treasury \$2,595.29 over all 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 the various Bureaus thereof during the past year.

BUREAUS.

City Ice Boats.

The severe weather experienced in the latter part of the year 1892, and the early part of last year fully demonstrated the great importance it is to the large and growing shipping interest of our port that the Ice Boat Service of the City shall always be maintained in the highest state of efficiency, as without the excellent work it then performed it would have been impossible to have prevented serious interference with this great interest. The very severe service then undergone, necessitated the extensive repairs to the boats which have since been completed and while in the mild and open winter just passed, they were not placed in commission, they are in excellent condition for effective service should the severity of the coming winter demand their use.

Bureau of Gas.

The Itemized Statements of the Receipts and Expenditures of this Bureau are as follows :

In 1893 receipts.....	\$4,027,074 88
In 1892 receipts,	3,845,825 99
Increase.....	<u>\$181,248 89</u>

To these Receipts should be added the value, at \$1.50 per 1,000 cubic feet of the increased quantity of gas sold, for which payment is not yet due, as follows :

December 31, 1893.....	560,116,800 cubic feet,
December 31, 1892.....	524,671,400 cubic feet,
	<hr/>
	35,445,400 cubic feet,
	\$53,168 10.
Making total increase.....	\$234,416 99

There were also furnished the municipality free during the year 1893, 602,392,714 cubic feet of gas, as against 594,203,605 cubic feet in 1892, an increase of 8,189,109 cubic feet. Had this six hundred and odd millions cubic feet been sold at the regular rate, it would have amounted to \$903,589.07, and for this the Bureau receives neither cash nor credit.

During the last year, there were appropriated for the manufacture of gas by a private corporation, the sum of \$600,000, an increase of \$100,000 over 1892.

By Ordinance approved January 6, 1894, the price of gas to consumers was reduced from \$1.50 per 1,000 cubic feet to \$1.00 per 1,000 cubic feet. This was a very radical change but one entirely in the interests of the people, who are the stockholders. This is as low, if not lower, than the price of gas in any other large city, and if our gas works had been in the hands of a private corporation this great reduction to \$1 would not have taken place for many years, if at all. After the most careful consideration of this question by your Honorable Bodies, you were of the opinion that the additional revenue which would be derived from the increased consumption of gas this lower price would cause, would more than make up the deficiency which would otherwise be created by the reduction. As the Ordinance has been in actual effect but some two months now, it is at present impossible to give any accurate statement as to whether or not such is the case, but it is

hoped that in the next Annual Message such favorable statements can be made.

I most heartily concur in the recommendation of the Director of the Department of Public Works that you further appropriate money to make all the improvements necessary to thoroughly equip our Gas System in every detail with the latest, best, and most approved scientific appliances and methods it is possible to secure. The franchise and works of the Gas System owned by the City are perhaps the most valuable of her many possessions, and any improvements thereto, of whatever kind, character or description, should be made by the City herself, and under no circumstances or conditions should it ever be allowed to pass out of her possession or from under her control.

Bureau of Highways.

The appropriations to this Bureau for the year 1893 were \$2,312,221.17, the receipts being \$97,004.85, an increase over 1892 of \$15,536.88.

The work of repaving Broad street with sheet asphaltum between Germantown avenue and Moyamensing avenue has been completed, and Philadelphia now has as well paved and as fine a street (69 feet between curbs) as any City in the world, and lighted from an underground electric system.

The Belgian blocks taken from Broad street have been utilized in repaving adjacent streets, thereby removing many more miles of the old cobble-stone pavement.

This year has been a memorable one in the matter of paving and repaving with improved pavements. Some idea of the immense amount of work accomplished may be gained from the fact that there were paved and repaved a total of 25.23 miles of streets in such localities throughout the city as would extend the work of former years and

make connected and continuous lines of repaved streets. There were 17.05 miles of new streets opened and paved with Belgian Blocks, Asphalt, or Brick, 15.34 miles of Macadam roads built in the suburban districts, and in addition to this, 50.39 miles of repaving with improved materials were done on streets occupied by Passenger Railways, and 8.94 miles of sheet asphaltum and concrete pavements laid in the small streets in the Southeastern section of the City, aggregating a greater quantity of such work completed last year than in any other year in our City's history.

Your Honorable Bodies, by your liberal appropriation of \$400,000 enabled these 8.94 miles of improved paving to be laid in these small streets, and from the standpoint of practical municipal philanthropy in improving the health and surroundings of the people living in these streets it is in my judgment the most important work accomplished during the whole year. The houses there are as a rule very closely built and the residents compelled by their circumstances to remain there during the heated period. Heretofore it was utterly impossible with the cobble-stone pavements and their defective drainage to keep them clean enough to even approach a sanitary condition, and besides it was hardly humane to compel our fellow creatures to live among such municipal surroundings when by an appropriation such as you then so promptly made, these great improvements and benefits could be secured. In my judgment there has been no money so wisely appropriated and you could appropriate no amount too large for thus improving the small streets in all sections of the city. I most heartily recommend this subject to the early consideration of your Honorable Bodies, who so well know the unfortunate and deplorable results of such conditions and surroundings as heretofore existed in the above section and do still exist, only in less degree, in other parts of the city.

The repaved highways have also been greatly improved by substituting for the old straight-corner curbs the curved ones now so familiar to our citizens, thereby enhancing not only the appearance of the street, but also securing greater room for vehicles.

With the vast amount of work being done upon our highways throughout the entire city, it has been beyond our control to prevent some temporary inconvenience to the citizens while the work is in progress, although it has been, and will continue to be, the constant aim of the Department to reduce it in every possible way consistent with the vast amount of work to be done, and if the citizens generally will exercise as much patience as possible, I feel satisfied that when at last all this work shall have been completed they can but agree that the splendid results accomplished more than compensate for the temporary annoyances and inconveniences they suffered while securing same.

Bureau of Street Cleaning.

There were appropriated to this Bureau in the year 1893, \$617,698.00, an increase over that of 1892 of \$80,020.00. While there was this increase, yet the appropriation was much less than in any other large city with equal street area to supervise.

The contracts of 1894 for the removal of garbage and combustible waste throughout the entire city compel that it all shall be cremated. This has been brought about after repeated recommendations of the Director of the Department of Public Works as the only proper method to dispose of the same, and I am satisfied from our experience in the one district so conducted last year, that it will not only prove successful in its operations but will also conduce materially to a better sanitary condition throughout the City.

While the appropriations for the last year exceeded those of the previous, so do they this year exceed those of 1893, but it is caused by the increased and increasing territory to be covered and by the demands of the public for better service. No greater incentive toward securing such result could possibly have been given than that which the Department last year held forth by imposing penalties for neglect of duty by certain contractors, amounting to \$33,279.16, and by expending \$7,245.70 of the ten per cent. cash deposit of contractors delinquent in their work.

Bureau of Lighting.

On December 31, 1893, there were 16,975 lamps lighted by this Bureau, there being consumed by public lamps 503,869,600 cubic feet of gas during the year, an increase over 1892 of 2,709,319 cubic feet.

Total number, Municipal Electric Arc Lights, December 31, 1893.....	3,534
Total number, Municipal Electric Arc Lights, December 31, 1892.....	2,717
Increase.....	817
Total number, Gasoline Lamps, December 31, 1893.....	9,519
Total number, Gasoline Lamps, December 31, 1892.....	8,757
Increase.....	762

Bureau of Surveys.

The vast amount of improvements made upon the public highways during the past year has added very materially to the work of this Bureau, and some idea of what it has done may be learned from the fact that the total of 73.27 miles of sewers, main, branch, etc., built, was far greater than ever before accomplished in any one year, a most important achievement, for nothing is so essential to the good health of our city as a proper and sanitary system of sewerage.

There was also constructed in the Southeastern section of the city, by reason of special appropriation therefor,

7.63 miles of branch sewers and pipe drains, which is a greater amount of such work than has ever before been accomplished in a like period by this Bureau.

The bridge over the Schuylkill river at Walnut street, commenced in 1888, was completed and opened to the public July 4, 1893. The next location on the Schuylkill river where a bridge should be constructed is at or near the present site of the Grays Ferry bridge. There is no bridge for public travel between the one at South street and this point, and there is no location but this which would so completely meet the great and rapidly growing demands of the entire southwestern section of our city and of the steadily enlarging and improving southern portion of West Philadelphia. These sections contain a large proportion of our citizens, all of whom are now compelled to use the railroad bridge there erected, and not only is it inadequate for the great amount of travel now forced upon it, but there is also a grave question as to its present safety. There can, however, be no question but that it is unfair to thus make our citizens risk their lives upon a bridge which, if not already unsafe, must become so in the near future owing to the excessive travel constantly thereon.

The Department for some time past has sought to enter into an agreement jointly with the Pennsylvania Railroad Company and the Philadelphia Traction Company to there construct a new bridge which would be not only a credit to the City but also be of lasting benefit to that great body of our citizens whose wants in this respect are now so inadequately met by the present structure. Should it be successful, I will immediately advise your Honorable Bodies by Special Message concerning same. If, unfortunately, no conclusion be reached, I would then most strongly recommend and urge that the City erect the bridge at her own expense, owing to the great importance such

an improvement would be to the people of those sections.

Another point on the Schuylkill river where in the near future a bridge should be commenced and completed as rapidly thereafter as appropriations for it could be had is at the terminus of Passyunk avenue, where there are now located many large and constantly growing manufacturing establishments and other industries.

I am pleased to advise you that after many delays, the contract has been entered into and work commenced, for the abolishment of the very dangerous steam railroad grade crossings at North Penn Junction, the plans contemplating the depression of the tracks of the North Penn Railroad between Allegheny avenue and Pike street to pass under the Connecting Railroad; Ontario street, Glenwood, Sedgley and Erie avenues to be carried over the tracks by bridge, and so dispense with all grade crossings at these points, the delay in consummating this plan not having been caused by either the City or the Pennsylvania Railroad Company.

Bureau of Water.

The Roxborough Reservoir with a capacity of 148 million gallons was completed and in use during the present year. The storage capacity of that district is thereby increased from one to eleven days and a more adequate supply of water properly subsided is furnished. There was also completed one 12 million gallon pumping engine and boilers at Roxborough Station and one 20 million gallon pumping engine and boilers at Spring Garden Station. There will be completed during the present year the following work now under construction :

The Queen Lane Reservoir, with a capacity of 382,000,000 gallons, and an engine and boiler house.

Four 20-million gallon pumping engines and boilers.

Two 30-million gallon pumping engines and boilers, and an extension to the engine house at the Spring Garden Station.

One 15-million gallon pumping engine and boilers and an extension to the engine house at the Frankford Station.

One high service pumping station at Roxborough.

One high service pumping station at Belmont, West Philadelphia.

When all these permanent improvements have been perfected, that relief to our present greatly overtaxed pumping facilities which has been so long needed will at last be secured and much greater efficiency in the service will result.

My unqualified endorsement and approval is given to the recommendations and suggestions of the Director of the Department of Public Works concerning the many and important subjects affecting this Bureau, and I most respectfully call them to your prompt and careful consideration.



DEPARTMENT OF CHARITIES AND CORRECTION.

The Annual Report of the President of the Department of Charities and Correction is herewith transmitted, showing in detail the efficient service rendered therein during the past year.

Mr. John Huggard, appointed a member of the Board of Directors April 4, 1892, died January 24, 1894, and on February 1, 1894, Mr. John Shallcross was appointed to the vacancy thus caused. The Board lost by the death of Mr. Huggard an esteemed and honored associate and one who by reason of his former connection with such work brought to the discharge of his duties a most valuable knowledge and experience.

BUREAUS.

There was available for the expenses of the Bureau of Charities during the past year, \$473,711.19, of which amount there were expended but \$422,217.28, and in the Bureau of Correction there were \$199,945 available, but as \$22,708.97 was earned by this Bureau during the year and \$1,966.93 merged to the City Treasury, December 31, 1893, the actual expenses were but \$175,269.10. Your particular attention is called to the fact that throughout the entire year in both Bureaus of this Department there was a greatly increased population receiving its care, there being an increase of one hundred and thirty-seven in the average daily population in the Bureau of Charities, and of seventy-six in the average daily population of the Bureau of Correction, yet there was a decrease in the daily per capita cost for subsistence in both Bureaus. In view of these facts the general results obtained are most gratifying, and reflect great credit upon the efficient skill and faithful attention of the gentlemen composing the Board of Directors, who have thus rendered such excellent service to the City in caring for the welfare of our unfortunate fellow beings entrusted to their charge, and as this service has been given gratuitously, and often at the sacrifice of their own personal and private affairs, too much credit cannot be given the members of this Board.

Our Future Water Supply.

One of the most important questions now pending and one which I have repeatedly brought to the attention of your Honorable Bodies is that of the source or sources from which shall be obtained the future water supply of the City of Philadelphia. As early as October 8, 1891, I transmitted you by Special Message, the recommendations of the Director of the Department of Public Works thereon. After waiting a year for your action upon the

same, on September 1, 1892, I again transmitted you by Special Message, a request for authority to appoint a Commission of Three to inquire into this subject by utilizing the great amount of data thereon in the possession of the Bureau of Water and then make report and recommendations upon the best plan in their judgment to adopt and the course to pursue in its adoption. After mature deliberation you decided not to grant the request. On September 15, 1893, I again transmitted to you, by Special Message, the report and recommendations of the Director of the Department of Public Works as to what in his judgment was the proper source of supply and the policy to be pursued in securing same, in order that we might commence at once the project which would not only increase but also improve the supply of water. No matter from whence the source may come nor what the system may be, it must be so comprehensive that it would take many years to perfect, and every delay but renders it more difficult to bring to a successful conclusion.

If these reports and recommendations as already submitted you, do not, in your judgment, present plans and policies worthy of your adoption, then you yourselves should inaugurate and perfect some such general plan and policy as you believe will secure to the City the source from which at all times in the future, an adequate supply of water will be obtained for our great demands. This should be done at once, for it has now become a very serious question and one which must not be much longer delayed as this subject so closely affects the health, comfort and convenience of not only the present generation but also those to come, and they could not possibly be supplied from the same source that now but inadequately answers our purpose.

Action by your Honorable Bodies upon this whole subject has, I fear, been now entirely too long delayed, and

I feel that in transmitting you these various reports and recommendations, I have done my full duty and the responsibility for the lack of action therein and the failure to adopt some plan rests alone with the Legislative Department of the municipality, which only has the power to enact ordinances to provide for all of the City's needs, and for the carrying into effect of Executive recommendations. I therefore most respectfully and earnestly commend this whole subject to your immediate and most careful consideration.

The Boulevard.

On May 1st, 1893, the Department of Public Works, Bureau of Surveys, placed upon the City's plan the Boulevard authorized by Ordinance approved April 12, 1892. Since May, however, nothing has been done by your Honorable Bodies toward actually commencing the work thereon. This is unfair to the owners of the property which will be affected by the construction of this work, and there should be at the earliest possible moment an appropriation made to at least commence the work, for in its present status it prevents owners from improving their property, a hardship to which they should not be subjected and from which they should have immediate relief.

The Pennsylvania Avenue Subway.

Among the many plans prepared by the Department of Public Works, during the past year, the most important for our people generally was that to remove all the many grade crossings, which are now such a menace to life and limb, on Pennsylvania avenue, from Thirteenth street to the City's limits, by depressing the tracks on Pennsylvania avenue in an open subway to a point at or near Twenty-first street, and then continuing through a tunnel to a

point at or near Twenty-ninth street. This plan not only prevents the permanent disfigurement of our main thoroughfare, Broad street, which would have been necessitated by the previous Philadelphia and Reading Terminal Ordinance, but also removes all the grade crossings west of that street, and besides, leaves all the entrances to Fairmount Park entirely free from all the steam railroad grade crossings which now render them so disfigured and dangerous. As your Honorable Bodies have already passed the necessary ordinances authorizing this work and creating a loan wherefrom the funds therefor will be secured, this vast improvement will be commenced at the earliest practicable moment, and prosecuted with the utmost dispatch to the speediest conclusion possible; for, in my judgment, no money has ever been appropriated by our City to an object of more importance than this is for the improvement of the municipality and the safety, comfort, and convenience of the people of Philadelphia.

I have the honor to also transmit herewith for your consideration the complete Annual Reports of the following Departments:

Receiver of Taxes,
City Treasurer,
City Controller,
Law,
Education,
Sinking Fund Commissioners,
Board of Revision of Taxes,

This Message closes the Third Municipal Year of my administration, and I desire to tender to your Honorable Bodies my sincere thanks for the aid you have rendered me during that period, for by your legislation you have enabled me to make many much needed and most important permanent improvements in the City whose welfare is so dear to us all.

While the year 1893 has been attended throughout with the greatest depression in business and financial circles experienced for years, and consequently with the severest suffering among our people, yet material advances have been made in our City's progress, and as we enter upon the new year let it be with the sincerest hope and earnest determination to so continue until Philadelphia shall be the foremost in the front rank of American Municipalities.

I am respectfully,

EDWIN S. STUART,

Mayor.

ANNUAL REPORT

OF THE

Department of Public Works,

FOR THE

Year Ending December 31, 1893.

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—

STENOGRAPHER—GWILLEM S. DAVIS.

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.

SEVENTH ANNUAL REPORT
OF THE
DEPARTMENT OF PUBLIC WORKS.

JAMES H. WINDRIM, Director.

Philadelphia, January 2, 1894.

HON. EDWIN S. STUART,
Mayor of Philadelphia.

DEAR SIR:—In compliance with the Act of Assembly I have the honor to submit the Seventh Annual Report of the Department of Public Works, for the year ending December 31, 1893.

The reports of the Chiefs of the Bureaus of this Department herewith submitted, explain in detail the amount of work done under authority of Councils, and is largely in excess of that done in any previous year by the City. The large number of permanent improvements made during the year were essential to the comfort and welfare of the people, and will contribute to the business prosperity of the City.

In addition to the annual appropriation to the Department for general work, Councils, by ordinance approved April 7, 1893, made further appropriation out of a loan authorized by ordinance approved February 6, 1893, as follows:

For the construction of main sewers.....	\$1,250,000 00
For extensions to the Water Bureau.....	1,000,000 00
For repaving Broad street, and streets not occupied by passenger railways.....	850,000 00

and the sum of \$400,000 for repaving with improved pavement tramway streets, and streets of twenty feet or less in width, from curb to curb, in the section of the City south of Pine street to Washington avenue, and east of Broad street to the Delaware river, including the construction of sewers, the laying of water and gas pipe, and all municipal work incident thereto.

This locality is a section of the City densely populated by the poorer classes, and the improvements made have proved beneficial to the health and comfort of the people.

The ordinances of Councils authorizing the construction of the Electric Trolley System by passenger railways, under the condition that the companies should repave all streets occupied by them with improved pavements, has added a great amount of labor upon each of the Bureaus of this Department, in the revision of grades prior to the relaying of tracks and resetting of curbs, the construction of branch sewers and connections for surface drainage, the construction of inlets, the laying of water and gas mains, the resetting of curbs and the placing of curved curbing at intersections, and the repaving of streets.

All works under the direction of the Department have progressed in a satisfactory manner, and to the fullest extent, within the limit of appropriations.

City Ice Boats:

The severe winter of 1892-1893 required the Ice Boats of the City to be in continuous active service for sixty days and nights to keep the river channel open; during the month of January the ice in the river was from eighteen to twenty-two inches in thickness; this large amount of ice made the river impassable to vessels unassisted by the City Ice Boats; their constant trips over the course, between the City and Chester, kept the river channel open, so that the shipping business was uninterrupted.

The severe duty of the boats necessitated extensive repairs to the wheels, also the renewal of the boilers, and general repairs to the stacks, which were made during the past summer.

The boats are now in condition to do equally efficient work if required this winter.

The report of the Superintendent, H. E. Melville, gives in detail the operations of the boats.

The following comparative summary is an abstract of the work done by the City Ice Boats, and of the receipts for towage, and the expense of maintenance during the years 1890-91, 1891-92, and 1892-93.

	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	523
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 38
Amount received from the sale of old material.....	66 35	\$9 03	178 69
Total paid City Treasurer.....	\$489 99	\$9 03	\$2,420 07

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

Bureau of Gas.

During the year the following improvements and repairs have been made:

Point Breeze Works. Resetting of one stack of Fleming benches, removing two old stacks of benches, and in their stead building two new stacks of Fleming benches, with two discharging machines; one set of purifying boxes; a condenser and scrubber, and building for station meters and two meters; a Worthington pump and general repairs to retort house; dredging the dock, etc.

Ninth Ward Works. A new boiler was set complete, and general repairs made to the retort house, and the dock dredged.

Twenty-fifth Ward Works. The rebuilding of sponge shed destroyed by fire February last.

There has been no increase made to holders at either of the City stations.

There was laid thirty-four and three-quarter miles of mains and distributing pipe.

There has been no complaint of a short supply of gas except at Chestnut Hill and the upper portion of the Twenty-second Ward.

A sufficient supply of gas for this improving section of the City can be obtained by laying a twenty-inch distributing supply main from the Twenty-fifth Ward works to Chestnut Hill; the necessity for this main has been previously presented to the Gas Committee, with an estimate of the cost of the work, and the extension recommended.

The Department submitted its annual estimate for the amount of appropriation required for extensions to the plant at the several works of the City, and for the introduction of improved modern appliances, that the cost of manufacturing gas could be reduced to the lowest price; the estimate for the requirements of the several works

and for the extension of mains was \$1,080,500; the Committee on Finance reduced the amount to \$250,000, and this latter amount has not yet been appropriated.

To obtain the best results from the City's works there should be now provided at Point Breeze two exhaust engines and exhausts, four additional boilers, additional sponge shed, two station meters, repair to station meter, one holder of 3,000,000 cubic feet capacity, and a thirty-six-inch distributing main from Point Breeze to the Ninth Ward works; at the Ninth Ward works two exhaust engines and exhausts, boiler house and boiler, and one holder increased in capacity 500,000 cubic feet; at the Twenty-fifth Ward works two stacks of Fleming benches instead of the primitive stacks for making gas from coal, one station meter, one holder increased in capacity 500,000 cubic feet; at the Fifteenth Ward holder station one holder increased in capacity 500,000 cubic feet; at the Twenty-first Ward holder station one holder increased in capacity 150,000 cubic feet, one twenty-inch main from the Twenty-fifth Ward works to Chestnut Hill; the estimated cost of these improvements to the works is \$1,080,500.

It must be here stated that these additions are required now, and are necessary whether further additions to the City's works are made to manufacture gas from coal or by water-gas plant.

In estimating the income from the Bureau of Gas for the year 1894, the rate per thousand cubic feet was reduced from \$1.50 to \$1.25, and the report thereon suggested that an item be included in the annual appropriations to the Departments for the gas to be used by them during the year 1894, and that the Bureau of Gas should be credited with the bills for the gas used for public lighting. This was not done. Councils, by Ordinance, reduced the price of gas to \$1.00 per thousand cubic feet.

There has been an average reduction of about 500,000 cubic feet per day in the consumption of gas from July until December, compared with the consumption in the same period of the year 1892; the falling off is supposed to be due both to electric lighting, and the depression in business, which has caused many of our manufacturers either to suspend operations, or to run their establishments upon reduced time; whether there will be an increase in the demand for gas at the lower price, and the income to the City from the Bureau of Gas not affected by the reduction, will be best known at the time when the approximate estimate of receipts for the year 1895 is prepared for the City Controller.

There are proposals made by parties to build works and furnish gas under their patents to the City, at lower rates than the City is now either purchasing or manufacturing gas.

These tenders do not state in detail what the proposal represents, nor do they relieve the City from further expenditures necessarily connected with the system of distribution.

While such offers should be noticed, it is proper to consider what may be the disadvantages to the public, should a private corporation control the supply of gas, which, for its usefulness and adaptability for convenience in the household and for business, makes it a necessity to the community of continually increasing importance.

The ownership of works, and the manufacture of gas, should be reserved and controlled by the City, and, if the improvements and additions that have been suggested from time to time by the Department are authorized by Councils, the gas works under control of the City can be made as beneficial to the taxpayers as any offer of purchase or lease may appear to be.

The following table gives the manufacturing and holder

capacity, also comparative statements of the operations of the Bureau during the years 1891, 1892 and 1893 :

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	194	388			
Experimental Bench.....			3	991	6,600,000	
Twenty-first Ward.....	1	30	30	30	200,000	
Twenty-fifth Ward.....	6	120	720	720	4,000,000	
Twenty-sixth Ward.....	6	144	864		8,000,000	
						18,800,000

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	200,000	
“ “	1847	80 x 40	200,000	2,400,000
Twenty-fifth Ward Works.....	1876	140 x 70	1,000,000	
“ “ “	1876	140 x 70	1,000,000	
“ “ “	1885	140 x 70	1,000,000	
“ “ “	1885	140 x 70	1,000,000	
“ “ “	1889	110 x 70	1,000,000	5,000,000
Twenty-sixth Ward Works.....	1852	160 x 90	1,800,000	1,800,000
Twenty-first Ward Works.....		60 x 38	103,000	
“ “ “	1874	78 x 44	200,000	303,000
Frankford: Frankford avenue and Buckius street.....		506 x 1	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	1,500,000	
“ “ “	1874	140 x 70	1,500,000	3,000,000
Ninth and Mifflin 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	390,000	
“ “ “ “ ...	1888	80 x 42	203,000	593,000
Germantown: Near Wister Sta- tion, P. & R. R.....	1870	100 x 50	390,000	390,000
Total.....				15,908,000

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

	1891. Feet.	1892. Feet.	1893. Feet.
2 inch.....		62	653
3 ".....	8,072	6,933	23,796
4 ".....	130,978	111,770	120,564
6 ".....	5,420	36,784	19,612
8 ".....	25,436	972	3,856
12 ".....	33,494	16,148	2,924
16 ".....			
20 ".....	26,152	14,272	12,091
30 ".....	8,640		
Total.....	†238,192	†186,941	*183,496

†1891 equal to 45 $\frac{1}{2}$ miles. ‡1892 equal to 35 $\frac{1}{2}$ miles. *1893 equal to 34 $\frac{3}{4}$ miles.

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

Comparative Statement of Receipts.

Year.	Receipts.	Increase.
1891.....	\$3,774,072 09	
1892.....	3,845,825 99	\$71,753 90
1893.....	4,027,074 88	181,248 89

Comparative Statement of Expenditures.

	1891.	1892.	1893.
Current expenses.....	\$2,552,150 39	\$2,604,432 90	\$2,772,761 60
Extensions.....	274,124 31	207,466 64	217,870 66
Total.....	\$2,826,274 70	\$2,811,899 54	\$2,990,632 26

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

	For Gas, Services, etc.	Coke, Tar, etc.	Miscellaneous.
1893.....	\$3,640,147 66	\$368,772 26	\$18,154 96
1892.....	3,497,917 53	346,181 11	1,727 35
	Increase...\$142,230 13	Increase.....\$22,591 15	Increase.....\$16,427 61

To the receipts from gas should be added the value, at \$1.50 per 1,000 cubic feet, of the increased quantity of gas sold for which payment is not due, as follows :

December 31, 1893.....	560,116,800 cu. ft.	
December 31, 1892.....	524,671,400 "	
	<u>35,445,400 cu. ft.</u>	\$53,168 10

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

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

* † ‡ On December 4th, 19th and 17th.

a b c On December 24th, 24th and 22d

	Bushels.	Bushels.	Bushels.
Quantity of coke on hand January 1.....	256,090	110,615	148,600
Made during the year.....	5,905,109	6,712,032	7,391,471
Total.....	6,161,199	6,822,647	7,540,071
Coke sold during the year.....	3,005,163	3,389,513	3,684,193
Breeze sold during the year.....	606,000	807,520	1,123,445
Used under retorts.....	2,002,845	2,017,911	2,205,494
Used under boilers and lime-kilns.....	368,066	375,724	413,889
In offices, yards and in pipe-laying.....	68,510	83,379	92,050
On hand December 31.....	110,615	148,600	21,000
Total.....	6,161,199	6,822,647	7,540,071
	1891.	1892.	1893
Number of meters introduced during the year....	5,465	4,382	4,628
Total in use.....	138,755	148,637	148,265
Services introduced during the year.....	10,515	9,287	9,026
Total in use.....	169,420	173,707	187,733
Lights added during the year.....	120,284	111,486	104,641
Total in use.....	2,449,270	2,560,756	2,665,397
Total number of consumers.....	140,052	144,897	149,482
Number of public lamps.....	19,947	20,754	21,333

The following table gives in detail the total output of gas, and its distribution during the years 1891, 1892 and 1893.

Total output and distribution of Gas.

	1891.		1892.		1893.												
	Cubic feet.	Per ct.	Cubic feet.	Per ct.	Cubic feet.	Per ct.											
Stock delivered and not paid for, and on hand January 1.....	482,085,900		522,687,800		524,671,400												
Manufactured and purchased during the year.....	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"></td> <td style="text-align: center;">Manufactured.</td> <td style="text-align: center;">Purchased.</td> </tr> <tr> <td style="text-align: center;">1891</td> <td style="text-align: right;">2,092,315,000</td> <td style="text-align: right;">1,299,572,000</td> </tr> <tr> <td style="text-align: center;">1892</td> <td style="text-align: right;">2,223,188,000</td> <td style="text-align: right;">1,361,401,000</td> </tr> <tr> <td style="text-align: center;">1893</td> <td style="text-align: right;">2,339,119,000</td> <td style="text-align: right;">1,464,197,000</td> </tr> </table>			Manufactured.	Purchased.	1891	2,092,315,000	1,299,572,000	1892	2,223,188,000	1,361,401,000	1893	2,339,119,000	1,464,197,000	3,391,887,000	3,584,589,000	3,803,316,000
	Manufactured.	Purchased.															
1891	2,092,315,000	1,299,572,000															
1892	2,223,188,000	1,361,401,000															
1893	2,339,119,000	1,464,197,000															
Total to be accounted for.....	3,873,972,900		4,107,276,800		4,327,987,400												
	1891.		1892.		1893.												
	Cubic feet.	Per ct.	Cubic feet.	Per ct.	Cubic feet.	Per ct.											
Delivered to private consumers, for which bills have been rendered.....	2,270,595,900	58.61	2,400,497,000	58.45	2,506,092,000	57.90											
Delivered to consumers (bills not rendered), and in holders, December 31.....	522,687,800	13.49	524,671,400	12.77	560,016,800	12.94											
Public lighting, etc.	1891.		1892.		1893.												
	Cubic feet.	Per ct.	Cubic feet.	Per ct.	Cubic feet.	Per ct.											
Bureau of Police.....	16,415,900	00.42	15,767,600	00.38	19,753,600	00.46											
Bureau of Fire.....	10,747,400	00.27	9,969,400	00.24	12,732,300	00.30											
Bureau of Water.....	2,549,900	00.07	2,412,700	00.06	2,654,600	00.06											
Public Buildings.....	26,941,900	00.70	27,022,100	00.66	23,575,800	00.54											
Almshouse.....	13,793,100	00.36	15,944,600	00.39	17,374,400	00.40											
City Property.....	4,622,900	00.12	4,134,200	00.11	3,331,200	00.08											
Public Squares.....	7,203,342	00.19	7,151,024	00.17	7,302,614	00.17											
Park (Commission).....	376,300	00.01	322,800	00.01	364,600	00.01											
Schools.....	9,428,600	00.24	10,315,900	00.25	11,434,000	00.26											
	92,079,342	02.38	93,043,324	02.27	98,523,114	02.28											
Street lamps.....	495,318,986	12.79	501,102,281	12.21	503,869,600	11.64											
Used at works, offices, stations, etc.....	25,320,700	00.65	26,254,400	00.64	26,612,700	00.61											
Unaccounted for, leakage, etc.....	467,970,172	12.08	561,630,395	13.66	632,373,186	14.63											
Total.....	3,873,972,900	100.00	4,107,276,800	100.00	4,327,987,400	100.00											

The average candle power of the gas for the year 1893, was 19.07.

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 " "
Quantity of gas burned free in 1893.....	602,392,714 " "

Bureau of Highways.

Councils, by liberal appropriation from the Loan, enabled the Department to pave and repave during the past year, twenty-five and twenty-three one hundredths miles of streets, in such locations as would extend the work of former years, and make connected and continuous lines of repaved streets.

The appropriation of \$400,000 for the repaving of the small streets in the southeastern section of the City will result in more good, as a sanitary measure to the general public, than any expenditure during the year.

The district improved is in the old portion of the City, closely built up and densely populated ; the street paving had worn away past repair, was without drainage, without an adequate water supply, and scarcely lighted ; and people living there conformed to their surroundings.

These conditions have been changed by the repaving of eight and ninety-four one-hundredths miles of streets with sheet asphaltum and granolithic pavements,—materials impervious to the absorption of waste matter ; the streets are properly drained and can be easily cleaned and kept clean ; the people are better, the children have clean streets to play in, and the incentive of this change will be to improve the habits of many of those living in this locality.

The work of repaving Broad street with Trinidad lake asphalt was continued south from Fitzwater street to Passyunk avenue, a total distance now laid of two and forty-five one-hundredths miles of improved street south of the City Hall ; the old block paving taken from Broad street was, as in the previous work, utilized in repaving adjacent streets, removing the cobble.

In addition there were seventeen and five one-hundredths miles of new streets opened and paved with block, asphalt or brick paving.

There were fifteen and thirty-four one-hundredths miles of macadam road built in the suburban districts.

Fifty and thirty-nine one-hundredths miles of repaving have been laid by the passenger railway companies under the conditions of the ordinances granting privileges for the electric trolley system on streets occupied by them ; the materials have been asphaltum, granite block and brick paving.

With the many miles of improved street paving there has been neglect by owners to redress or place suitable curbing in front of their properties ; there is no compulsory law on the subject requiring a renewal or redressing of curb, the choice of the curbing is with the property owner, but the appearance of the streets of the City would be much improved, and the drainage in gutters less impeded, if the law required the renewal of worn out street curbing.

The Department has placed curved curb corners of granite at the intersections of all streets that were paved or repaved, to the full extent of the amount appropriated for the purpose.

The Department, from observations of the durability and fitness of materials used by the City in street paving, has recommended to the Committees of Councils, the selection of Belgian block for streets subject to heavy

traffic, and on steep grades; sheet asphaltum for business and residence streets; vitrified brick for suburban streets and for city streets not subject to heavy travel.

The streets repaved with vitrified bricks, which have been subjected to the wear of ordinary business travel, have not lasted five years; there are bricks in these streets disintegrated and gone,—others are in a fair condition to withstand longer wear; if all had shown the same endurance, bricks as a material for street paving would be in greater favor.

The maker knows the quality of his bricks. Those from the portion of the kiln that are “firsts” should be sold as such, after selection by the maker. The buyer or inspector cannot always know the grade of bricks by their looks; the maker does know their quality; but, as long as bricks are put on the market without selection to guarantee uniformity in their quality, there will be distrust, and their general use for street paving delayed.

All new contracts for paving by the City, for 1893, required the pavement to be laid upon a concrete foundation. This improvement in the construction of street pavements will be general to all work during the year 1894.

The Ordinance authorizing the widening of Chestnut street, between Seventh and Ninth streets, has been complied with by the property owners, and the wide footway obtained is a decided improvement to the street.

Councils have passed an Ordinance authorizing security to be entered into by the Mayor, for damages to property which may be occasioned by widening Walnut street, west of Twenty-second street, the eastern approach to Walnut Street Bridge. The Department will give notice to property owners at the time stated in the ordinance, and this work will be forwarded.

Opening and grading of streets. The unusual amount of

743,361 cubic yards of grading was done during the year 1893.

The recommendation in previous reports, that all grading ordinances should require the grading to extend the full width of the street, is now compulsory under the Ordinance of July 3, 1893.

The passage of this ordinance will economize the funds of the City for the work of grading, and tend to prevent accidents to the public in the use of newly-graded streets, which will hereafter have protection given from the curbs set, and sidewalks graded.

For the general preservation of the paved streets of the City the Department earnestly recommended the passage of an Ordinance regulating the width of tires on wheels of vehicles, to be proportioned to the load on the wheel. After long consideration of the matter in Committee, a special ordinance was passed, regulating the width of the tires on omnibuses having license to run on Broad street, weighing nearly three tons, with an additional load of forty passengers, drawn by three horses, to four inches; the front axles to be eight inches shorter than the rear axles, with a license charge of two hundred dollars per annum for each omnibus, there being no limit to the number of omnibuses that may be placed on the street.

Broad street is the principal street of the City, with a roadway sixty-nine feet between the curbs, paved with Trinidad Lake Asphalt; four and seventy-five one-hundredths miles of this street are used as the route of the Omnibus Company, and the cost to the City to repave this portion of the street, used by said company, has been \$580,000.

The City has three hundred and twelve road bridges, with additions made each year, those built by the City and those to which the railroad companies contribute in abolishing grade crossings; the valuation of this property approximates \$10,000,000.

It is found that portions of the trusses of iron bridges crossing over steam railroads, subject to gases from the engines, steam and condensation, rust out in about fifteen years, and require renewal at great expense.

The Department, from the appropriation for bridges for 1894 will experiment with a fire-proof false work to protect these structures.

The estimate for repairs to bridges for 1894 was \$80,000; the appropriation made was \$45,000.

There are at present three bridges which are not assuredly safe for public travel; the Department cannot keep in proper repair and maintenance the bridges of the City with the money provided; it is poor economy to permit these important properties to depreciate by neglect in making the repairs, which, if promptly made, would prevent the necessity for larger outlays for renewals.

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

Comparative Statement of Work done.

	1891.	1892.	1893.	
New Paving.....	197,511.00	227,438.60	270,420.15	Linear feet.
Macadamizing (new).....	34,344.00	19,729.00	80,986.80	" "
Grading.....	626,053.31	447,475.00	743,361.00	Cubic yds.
New footway paving.....	305,513.00	154,999.00	116,430.91	Square yds.
Repairs to paved streets.....	336,980.7	314,153.00	396,556.62	" "
Footways repaved.....	12,684.8	18,465.00	21,985.37	" "
Ditches repaved.....	64,366.	55,772.00	66,555.37	" "
Gutter stone laid.....	53,023.00	48,715.00	48,678.00	Linear feet.
Crossing stone laid.....	50,887.00	42,336.00	47,480.40	" "
Tramway stone laid.....	2,053.00	6,759.00	8,363.00	" "
Curbstone reset.....	272,137.5	350,689.00	643,362.00	" "
Wooden trunks.....	6,284.00	8,484.00	6,278.00	" "
Brick and stone drains.....	386.5	872.00	889.00	" "
Hand railings.....	2,907.00	1,248.00	2,716.00	" "
Broken stone used.....	23,429.7	6,668.00	24,166.27	Cubic yds.
Macadamizing (resurfaced).....	23,860.00	12,033.00	71,686.00	Linear feet.
Footway, curb and railroad notices served..	21,264.	32,806.	53,434.	

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

	1891.		1892.		1893.	
	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
Sheet asphalt.....	40,654.8	16,126	71,685.96	21,002	61,246.89	18,434.00
Vitrified bricks.....	192,692.00	53,122	143,953.82	48,474	119,914.93	40,350.00
Asphalt blocks.....	671.00	400			602.00	387.06
Macadamizing.....	74,900.00	34,344	47,603.00	19,729	148,059.23	80,986.80
Total.....	492,835.96	*166,288	397,858.16	†138,424	414,478.09	†171,017.86

*Replacing Cobblestone with Improved Pavements.
Old Streets.*

	1891.		1892.		1893.	
	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
Sheet asphalt.....	78,894.00	23,984	133,644.75	31,861	235,989.36	68,527.34
Vitrified brick.....	860.6	239			25,400.00	10,344.00
Granolithic.....					18,143.43	24,694.75
Total	174,342.6	*65,567	295,014.75	†107,743	439,406.08	†180,389.09

* 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.

In addition to the work done by the City of paving and repaving of streets, the following statement shows the work of repaving done by passenger railway companies during the year 1893 :

Granite blocks.....	156,477	linear feet.
Sheet asphalt.....	103,221	“ “
Vitrified bricks.....	6,370	“ “
Total.....	266,063	“ “

Equal to 50 miles 2,068 linear feet ; at an estimated cost of \$2,000,000.

Comparative Statement of Receipts.

Year.	Receipts.	Increase.
1891.....	\$71,815 89	
1892.....	81,467 97	\$9,652 08
1893.....	97,004 85	15,536 88

Comparative Statement of Expenditures.

	1891.	1892.	1893.
Current expenses.....	\$293,522 41	\$315,580 94	\$473,133 77
For extensions.....	820,401 64	856,283 09	1,839,087 40
Total.....	\$1,113,924 05	\$1,171,864 03	\$2,312,221 17

Board of Highway Supervisors.

During the past year applications for permits under Ordinances of Councils, for special work in all parts of the City, have largely increased, requiring frequent meetings of the Committees of the Board to examine the conditions before permits could be granted.

The authority already given corporations and others for the use of the streets has now so occupied them, that in a very little time it will be impracticable to give further privileges.

It is to be regretted that Councils do not appropriate money for the construction of the subway system in the streets in the business portions of the City to accommodate all the underground structures which are now distributed beneath the streets in the central section of the City. Plans and estimates for a subway conduit were prepared for Market street and submitted to Councils by the Committee on Surveys, but no action was taken.

Each separate underground system is subject to disorder, breakage or defects, and necessitates the breaking of the street pavement for search and repairs. It is usual to see the street paving displaced by either one or the other of the companies who control these underground structures, to remedy some imperfection. The breaks in the street are a constant annoyance to the public, and fix a blemish upon streets that have been repaved. The

revenue that could be collected by the City from an investment in a suitable subway system, has been shown by the return to the City, from the lease of the extra conduits laid by the Electrical Bureau on Market street in conjunction with the cables run for electric lighting, where the return pays 10 per cent. interest on the total outlay, and provides the necessary conduits for the City's service free.

With the introduction of the Electric Trolley System, the Board has required plans to be filed showing the location of conduits, and changes in positions of rails, curves, turnouts, etc., as far as practicable, before issuing permits for the work on the streets.

This has entailed a great deal of labor on the draughting division of the Board. These plans are essential for record, but, with the urgency of the companies to proceed with the work, and the limited appropriation for the purpose, the plans are not kept with the accuracy in detail that they should be.

The receipts for 1893 were \$4,786, and the expenditures were \$3,697.87, showing a return in profit to the City of \$1,088.23.

The amount of work done, and the necessity for the increase in draughtsmen, are shown by the report of the draughtsman of the Board of Highway Supervisors.

The following is a statement of the number of permits authorized to be issued to the several underground companies during the year 1893 :

Brush Electric Light Co.....	9
Philadelphia Traction Co.....	157
Edison Electric Light Co.....	5
Northern Electric Light Co.....	14
Pneumatic.....	1
Holy Trinity Church.....	1
Peoples Traction Co.....	18
Frankford & Southwark P. R. W. Co.	8

Hestonville, Mantua & Fnt. P. R. W. Co.....	2
Lehigh avenue.....	1
Kensington Electric Light Co.....	1

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

Transactions of the Board of Highway Supervisors.

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

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

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

Receipts and Expenditures.

	1891.	1892.	1893.
Receipts.....	\$3,730 00	\$4,521 00	\$4,786 00
Expenditures.....	3,427 90	3,600 00	3,697 77
Profit to the City.....	\$352 10	\$921 00	1,088 23

Bureau of Lighting.

The lighting of the streets of the City by electric lights, by gas lamps, and by gasoline lamps, is as follows:—

The electric lights were furnished by contract with nine electric light companies:

The total number of electric arc lights, December 31st, 1893, was, 3,534, at an average price, per light, per annum of \$161.62.

The gas lamps on the streets and in the public squares are erected and maintained by the City; on December 31st, 1893, there were lighted 16,975 lamps, and the consumption of gas was 503,869,600 cubic feet during the year, an increase over the previous year, 1892, of 2,709,319 cubic feet.

The total number of gasoline lamps erected and burning December 31st, 1893, was 9,519, located under Ordinance of Councils in the suburban districts, where gas mains have not yet been laid.

The Department recommended that the appropriations for electric lighting for the year 1894, and hereafter be made to the Electrical Bureau, Department of Public Safety, as the supervision and the erection of the lamps and the reports on their having been lighted each night, were under the inspection of the Electrical and Police Bureaus of that Department, and the appropriations for the year 1894 have been made accordingly.

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

	1891.		1892.		1893.	
	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	197,830 00
Gas Lamps supplied by the Northern Liberty Gas Company.....	317	7,420 51	264	6,785 76	245	5,772 36
Under charge of Bureau of Lighting.....	*19,947	161,260 89	20,754	175,800 45	21,333	195,697 69
Electric Arc Lights under charge of Board of Direc'rs of City Trusts	50	.....	50	.....	50	.....
Gas Lamps under charge of Bureau of Correct'n	197	.....	218	.....	219	.....
Total.....	30,141	\$563,327 08	32,710	\$690,930 11	34,900	\$866,521 45

* Not lighted because of proximity to Electric Lights—1891, 3,298; 1892, 4,200; 1893, 4,358.

The above table shows an increase of 579 gas lamps, 867 electric lights, and 762 gasoline lamps over the number in use in 1892.

Bureau of Street Cleaning.

In December, 1892, the Department recommended that proposals received for the cremation of garbage in each of the five districts for the year 1893, be accepted separate, but for all districts; the Committee of Councils included in the Appropriation Ordinance authority to accept the proposal for cremation in one district only. It is gratifying to note that better service was rendered the community in the district where the crematory was authorized for the destruction of garbage than in the others, and that there was less complaint from the public.

The satisfactory result from the cremation of garbage in one district during the past year, convinced Councils of the desirability of adopting cremation for the disposal of all garbage within the City limits, and appropriation has been made therefor and contracts awarded accordingly, for the year 1894.

The contracts for the year 1894 require garbage and combustible waste to be collected in each district of the City, from all properties, without any exception, six times each week. It is confidently expected, that with diligence on the part of the Officers of the Bureau, and with a full compliance with their contracts by the contractors, the system for the disposal of garbage now established will prove satisfactory, and will materially assist in maintaining the best sanitary condition for the City.

The improved street pavements laid each year by the City, and the large amount of repaving now being done by passenger railway companies, not only facilitate public travel and business, but will enable the streets to be kept cleaner than was possible upon the worn out cobble stones, with which so many of the principal streets of the City were originally paved.

It is proper here again to refer to the great benefit which has resulted from the appropriation made by Councils for the especial repaving of the small streets in the southeastern section of the City.

Before the improvements were made these streets were regularly cleaned, but in a few hours thereafter they had the appearance of neglect; the paving was rutted, out of grade, and without surface drainage; the conditions have been changed and the worn out pavements replaced by sheet asphalt and cement paving; they are regularly flushed, and the cleanliness of the streets has checked the habits of the residents of throwing into them the offal from their houses.

Receptacles for the reception of garbage and household

waste have been placed throughout this section in convenient places, the people are being taught to use them, bettering their condition, and a locality where contagious diseases would have had the fullest sway is now, more than ever, under the control of the Departments of the City whose duties are to keep it in the best sanitary condition.

While the appropriations to this Bureau have increased each year, and are greater for the current year than ever before, the amount of work required by the contracts has very largely increased, owing to the growth of the City and the demands of the public for better service. The Department has been much more exacting during the year, and has imposed penalties for neglect by contractors amounting to \$33,279.16, and has expended \$7,245.70 of the ten per cent. cash deposit of contractors delinquent in their work.

The appropriations to this Bureau are not much more than one-half of the amount expended for the same work in the City of New York, which has about one-half the mileage of streets there are in this City.

In this connection the Department wishes to acknowledge the good work of the Women's Health Protective Association in its effort to secure a better system for the householder in the matter of placing garbage, household waste and ashes, in separate receptacles, for removal by the City contractors. If the regulations proposed by this Association are acted upon by housekeepers, it will materially aid the Department in having all the waste and debris of the household collected and removed promptly by the contractors. This Department is in full sympathy with the object of the Association to improve the cleanliness of the City for the public welfare.

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

Total Work done during the Year 1893.

DISTRICTS.	CLEANED.					REMOVED.				Number of Complaints of all Kinds.
	Squares.	Inlets.	Crossings.	Market Houses.	Snow from Fire Plugs.	Number of Dead Animals.	NO. OF LOADS.			
							Dirt.	Ashes.	Garbage.	
First.....	139,639	66,337	32,342	620	3,364	1,676	54,827	96,892	13,197	782
Second.....	203,383	118,266	90,436	1,236	4,573	3,426	86,723	148,371	24,187	1,356
Third.....	64,343	16,921	25,106		1,828	499	35,925	57,930	12,680	454
Fourth.....	189,109	73,250	70,296		3,065	6,917	108,983	180,094	26,796	1,011
Fifth.....	66,776	36,791	33,416		8,211	1,388	33,085	96,572	20,676	1,347
Total, 1893.....	663,250	311,565	251,596	1,856	21,041	13,906	319,543	578,859	97,536	4,950
Total, 1892.....	561,608	352,788	180,578	1,872	3,776	9,956	218,213	488,833	71,929	1,963
Total, 1891.....	709,375	240,546	36,153	1,840	54	14,795	290,680	573,999	84,665	1,844

The total expenses for street cleaning for the year 1893 were \$584,281.90.

Bureau of Surveys.

On January 30, 1893, Samuel L. Smedley, on account of ill health, resigned the position of Chief Engineer of the Bureau of Surveys. Mr. Smedley had filled the office of Chief Engineer of the City for twenty-one years, and was a most capable and faithful officer.

During this period many municipal improvements were designed and carried into effect by him, and in important works, in conjunction with the railroads and in other public enterprises, he represented the City as its Chief Engineer in an efficient manner. The City, by his retirement, was deprived of the services of an earnest and experienced officer.

George S. Webster, the principal Assistant Engineer, was appointed Chief Engineer of the Bureau of Surveys February 1, 1893.

Here should be recorded the death of William Watmough Thayer, C. E., Surveyor of the Fourth District, on March 14, 1893.

Mr. Thayer was in the thirty-second year of his age, an efficient and painstaking officer, earnest and ambitious in his profession, and highly respected by his associate officers as a member of the Board of Surveyors and Regulators of the City.

During the year 1893 plans for important improvements in the revision of streets, construction of sewers, bridges and municipal work in connection with steam and passenger railroads, have been made; the placing upon the City plan of the Park Boulevard; the revision of streets for the abolishment of grade crossing of railroads, and plans for bridges connected therewith; plans for the widening of Delaware avenue; for the subway system of tracks of the Philadelphia and Reading Railroad Company, abolishing all grade crossings on Pennsylvania avenue; and studies for plans for city bridges.

The attention of this Department has been especially directed to completing plans for the system of sewers, and has recommended the extension of sewers as necessary improvements, closely connected with the health of the City.

Main Sewers. The liberal appropriation of Councils from the Loan Ordinance of \$1,250,000 enabled the construction of fourteen and fifty-three one-hundredths miles of main sewers.

A further special appropriation of \$100,000 was used for the extension of the Manayunk intercepting sewer and branches.

These new sections of sewers in Manayunk intercept the household and surface drainage from an extensively built up section, and, as far as completed, prevent pollution of the Schuylkill River.

This system of sewers should be further extended during 1894, in advance of the erection of the new pumping station in the East Park, opposite School street, for the supply of the Queen Lane reservoir.

Extensions were made during the year to the intercepting sewer, the Wissahickon High Level sewer, and the Cresheim Valley Branch, and several sections of the Wingohocking Main sewer have been connected, and a complete sewer now extends from Tulpehocken street, through the rapidly improving districts of Germantown, down to York street.

Councils, in the appropriation made from the loan for main sewers, set aside \$250,000 for the extension of the Aramingo Canal system; the plans were made and contracts awarded for the construction of the sewer in the bed of the canal between Girard and Lehigh avenues, and for rebuilding the lower portion of the Huntingdon street sewer to connect with it; this system provides drainage to a large area which has been into an open canal

drain, and had become a nuisance, and prejudicial to public health; by filling over the sewer the offensive canal is changed to a public street. This sewer system should be further extended to provide drainage for the surface water of the Northeastern section, where storm water now remains on the lots in ponds because there is no sewer to take it, and the large surfaces of stagnant water are prejudicial to the public health.

Main sewers were also built in the southern section of the City on Wolf street from Broad to Commercial avenue, and flows by open ditch to the Delaware River; a sewer on Shunk street to Passyunk avenue west of Eighteenth street discharging into the Schuylkill river.

In West Philadelphia, Mill creek main sewer is now completely covered from the river Schuylkill, to the City line, about five miles in length, excepting a small portion between Hunter's Dam, the Pennsylvania Railroad and Fifty-fifth and one-half street.

Branch Sewers. During the year there have been built fifty-eight and seventy-four one-hundredths miles of branch sewers, making an aggregate, including the main sewers, of seventy-three and twenty-seven one-hundredths miles of sewers constructed and inspected by the Bureau of Surveys.

This large amount of work in branch sewers was occasioned in building a number of sewers in streets occupied by the passenger railway companies, prior to repaving by the companies.

There were also constructed in the southeastern district under special appropriation, seven and sixty-three one-hundredths miles of branch sewers and pipe drains.

Bridges. The Walnut street bridge, commenced in 1888, was completed and opened to travel July 4, 1893. The length of the structure, including the approaches and river span, is 3,448 feet; the cost has been, \$751,423,30.

There were also completed the following bridges :—

Penn street, over the Norristown Branch of the Philadelphia & Reading Railroad ;

Frankford bridge, over the Pennypack Creek ;

Oxford street, over the branches of the Pennsylvania Railroad ;

Kensington avenue, over the Frankford Creek ;

Gillingham street, over Little Tacony Creek ;

Brown street, over the Richmond Branch of the Philadelphia & Reading Railroad ;

Morris street, over the Germantown & Chestnut Hill Branch of the Pennsylvania Railroad ;

And timber foot bridges over the Richmond Branch of the Philadelphia & Reading Railroad at Kensington and Midvale avenues.

There are now under construction the following bridges :

Woodbine avenue, over the Pennsylvania Railroad ;

Bridge over Shur's Lane ;

Baltimore avenue, over Cobb Creek, (being built jointly with the Commissioners of Delaware County) ;

Foot bridge at Thompson street, over Richmond Branch of the Philadelphia & Reading Railroad.

Plans have been made for the bridges and engineering work to abolish the North Penn grade crossings, and the work contracted for as authorized by Ordinance of Councils, February 4, 1892, by which the City contributes \$200,000 and the Pennsylvania Railroad Company \$100,000. The plans contemplate the depression of the tracks of the North Penn Railroad between Allegheny avenue and Pike street to pass under the Connecting Railroad ; Ontario street, Glenwood, Sedgely and Erie avenues to be carried over the tracks by bridges, dispensing with grade crossings at these streets.

Bridges have been constructed on the line of the Philadelphia and Trenton branch of the Pennsylvania Rail-

road over Market street and Orthodox street, and by the completion of five others at Unruh, Longshore, Princeton and Cottman streets, and at Delaware avenue all the grade crossings on this line will be abolished between this City and Holmesburg, a distance of twelve miles.

The Pennsylvania Railroad Company has widened the bridges for additional tracks to their Broad Street Terminal Station over all streets west of Fifteenth street to the Schuylkill river.

Bridges are being built over the streets by the Philadelphia and Bustleton Railroad, the Philadelphia and Frankford Railroad, and the Philadelphia and Newtown Connecting Railroad during the construction of these roads.

The Philadelphia and Reading Railroad Company has completed the approach and extension of tracks from Ninth and Green streets to the Terminal station at Twelfth and Market streets, and has made a revision of grade at Ninth and Columbia avenue and at Broad and Lehigh avenue by depressing and a realignment of their tracks, building bridges and approaches to take Columbia avenue and Broad street over the railroad, abolishing the grade crossings at the intersection of these streets.

The new Terminal station at Twelfth and Market streets was opened for business January 29, 1893.

Depressing Pennsylvania Avenue. There have been many conferences between the officers of the Philadelphia and Reading Railroad Company and the City officials to determine the best plan for changing the track system of the railroad west of the new Terminal Station.

It was conceded by the company that the plan authorized by Ordinance of Councils to elevate Broad street over the tracks to avoid grade crossings on Broad street was not desirable for the railroad company, as the crossing at grade of Fifteenth street and all streets west would

remain to disturb the free use of the tracks to the road, entail a constant expense upon the company for maintenance and watchmen, while the grade crossings would continue a menace to the lives of citizens.

Plans are now being matured for a subway system of depressing the tracks of the road from Broad street west, requiring the elevation of Broad street only four feet, and, by the revision of grades from Carlton and Twelfth streets, the track system will go under Broad street and continue in an open subway to the east of Twenty-second street, by tunnel to Poplar street, there connecting with the present subway system of the Baltimore and Ohio and the Philadelphia and Reading Railroad Companies.

The gain to the City is the abolishment of seventeen grade crossings; retaining Broad street, the grand highway of the City, the least impaired; the reinstatement of Pennsylvania avenue over the tunnel as an imposing entrance to Fairmount Park, while the present entrances by Green street and Fairmount avenue, now crossing the track system at grade, will be over the tunnel, and there will be no indication of the railroad on the surface from Twenty-second street to Poplar street.

The Citizens' Association of the Fifteenth Ward has manifested great interest in the adoption of the proposed plan, and it has been received with general favor by the public.

Gray's Ferry Bridge. In compliance with resolutions of Councils, plans have been prepared for a new bridge at Gray's Ferry, as the present bridge is not adequate to accommodate the travel. The plans are now being considered by the Pennsylvania Railroad Company, lessees of the Philadelphia, Wilmington & Baltimore Railroad, which latter company is under permanent obligation to the City to maintain and keep the bridge in order for public road travel; this matter has been in conference since last year,

and the Department expects to make report upon the conclusions arrived at in a short time.

Falls Bridge. Plans are also being prepared for the construction of a bridge at the Falls of Schuylkill, on the site of the old timber bridge, which was carried away by a wind storm August 6, 1893.

Both of these bridges are required for the convenience of the public, and the Department should receive as early as possible the necessary appropriations for their construction.

Improvement of Harbor. In connection with the removal, by the United States Government, of the islands from the Delaware river water front, for the improvement of the harbor, the Harbor Commission filed in the Bureau of Surveys plans showing the bulkhead lines, the widening of Delaware avenue and suggesting a plan for piers to extend to the line of the proposed river channel, and requested action of Councils in the matter.

Ordinances were passed directing the revision of plans and grades, and the widening of Delaware avenue from Christian street to an angle in Delaware avenue northeast of Laurel street.

Plans have been prepared showing the proposed revision, which will not be acted upon until satisfactory arrangements can be made with the railroad companies who have interests at the upper end of the avenue, and with owners at the lower end who desire greater length of piers in the interests of ship building.

The plans and proposed changes are now being considered by the Department, with Major Raymond, U. S. Engineer in charge of the improvements of the harbor. The work of the United States has so far progressed that the Engineer officer considers it necessary that certain piers should be built as soon as possible, to secure the

channel now being defined with the removal of the islands.

Report will be made on this subject as early as possible.

The Department recommends the further extension of the Manayunk branch of the intercepting sewer.

The extension of the Wissahickon high level sewer.

And that branch sewers be constructed to intercept the household waste which is now carried by surface drainage to the River Schuylkil, in the Manayunk district.

That the Wingohocking main sewer be extended.

That the Armingo system, with the necessary branch sewers be extended.

That the eastern end of Wolf street main sewer be completed from Commercial street to the Delaware river.

That main sewers be built to relieve Frankford from the drainage into Frankford creek and Little Tacony creek, into which the sewage of this section is collected ; these streams are now so polluted as to be injurious to the public health ;

That an appropriation be made, as early as possible, for the construction of a bridge at the Falls of Schuylkill.

The *Board of Surveyors and Regulators* have held thirty-seven meetings during the year, and, at the request of the Committee on Surveys, have taken testimony on plans for removing or changing streets on the City plan, revision of lines, grades, etc.

The work of the district surveyors has been very materially increased during the past year. In addition to the regular routine duties in the care of municipal work, each district surveyor has been required to give revised grades prior to the relaying of tracks, and the repaving of streets by passenger railway companies under the ordinances granting trolley privileges.

The thirteen districts have had under their direction

one hundred and nineteen assistants, and the work done by them aggregated in value \$255,931.43; the profit to the City from their offices for the year 1893 has been \$100,922.51.

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

Summary of Bridges, Main, Branch and Private Sewers built during the years 1891, 1892 and 1893:

	1891.		1892.		1893.	
	No.	Linear ft.	No.	Linear ft.	No.	Linear ft.
Bridges	4	.....	5	.....	6	
Intercepting sewer (section).....	1	3,184	1	5,855	.....
Intercepting sewer connections.....	.....	.....	.....	.....	4	10,260
Wissahickon Valley sewer (section).	3	5,600	4	7,564	3	10,712
Main sewers.....	20	27,318	26	31,705	40	55,743
Branch sewers.....	196	133,216	213	132,000	550	273,433
Private sewers.....	60	23,465	68	29,218	58	36,738
Total.....	284	*192,783	317	†206,342	661	‡386,836

*1891, equal to 36.50 miles. †1892, equal to 39.08 miles. ‡1893, equal to 73.27 miles.

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

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

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

Comparative Statement of Receipts.

Year.	Receipts of Bureau.	Receipts of District Surveyors.	Total.	Increase.
1891	\$45,246 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

Comparative Statement of Expenditures.

	1891.	1892.	1893.
Current expenses.....	\$146,668 60	\$174,600 77	\$210,223 87
For extensions.....	1,061,409 95	1,047,169 14	1,801,875 35
Total.....	\$1,208,078 55	\$1,221,769 91	\$2,011,599 22

The receipts and expenditures of the District Surveyors for the year 1893, are set out in the following table in detail by districts, and also in totals for the year 1891 and 1892 :

Summary of Receipts and Expenses of District Surveyors.

Districts.	Surveyors.	Cash Receipts.	Credit for Work Done for City.	Total Credit	EXPENSES.				Balance Profit to the City.	Profit to the City in 1892.	Increase.	Decrease.
					Salaries.	Pay of Assistants.	Miscellaneous.	Total.				
First.....	Thomas Daly.....	\$13,616 75	\$9,491 44	\$23,108 19	\$3,000 00	\$4,906 13	\$1,195 46	\$9,101 59	\$14,006 60	\$4,112 86	\$9,893 74	
Second.....	Charles W. Close.....	7,091 03	7,968 19	15,059 22	3,000 00	5,008 96	1,690 93	9,699 89	5,359 33	1,869 85	3,489 48	
Third.....	Wm. C. Cranmer.....	17,684 41	19,601 18	37,285 59	3,000 00	12,690 88	2,478 51	18,169 39	19,116 20	5,975 72	13,140 48	
Fourth.....	Fritz Bloch.....	9,888 81	12,949 75	22,838 56	2,958 33	7,468 07	2,261 35	12,687 75	10,150 81	3,706 10	6,444 71	
Fifth.....	Walter Brinton.....	5,415 69	7,204 68	12,620 37	3,000 00	6,263 45	1,590 94	10,854 39	1,765 98	1,010 52	755 46	
Sixth.....	Joseph Mercer.....	14,684 04	10,973 42	25,657 46	3,000 00	7,668 57	2,088 99	12,747 56	12,909 90	10,073 27	2,836 63	
Seventh.....	Wm. K. Carlisle.....	12,702 43	10,472 45	23,174 88	3,000 00	6,331 29	1,665 26	10,996 55	12,178 33	4,510 60	7,667 73	
Eighth.....	C. A. Sundstrom.....	4,540 15	8,388 56	12,928 71	3,000 00	7,704 16	2,129 45	12,833 61	95 10		95 10	
Ninth.....	Walter Jones.....	4,736 78	8,697 61	13,434 39	3,000 00	6,813 33	1,186 58	10,999 91	2,434 48	801 23	1,633 25	
Tenth.....	John Webster, Jr.....	7,815 57	11,279 52	19,095 09	3,000 00	10,282 52	2,266 79	15,549 31	3,545 78	4,019 71		473 93
Eleventh.....	Joseph Johnson.....	9,324 04	7,143 34	16,467 38	3,000 00	4,899 96	1,596 10	9,496 06	6,971 32	2,528 91	4,442 41	
Twelfth.....	William H. Jones.....	6,836 47	8,290 09	15,126 56	3,000 00	4,942 74	1,155 12	9,097 86	6,028 70	1,576 74	4,451 96	
Thirteenth.....	H. M. Fuller.....	11,635 25	7,499 78	19,135 03	3,000 00	7,983 64	1,791 41	12,775 05	6,359 98	6,932 52		572 54
	Total 1893.....	125,971 42	129,960 01	255,931 43	38,958 33	92,953 70	23,096 89	155,008 92	100,922 51	47,118 03	*54,850 95	1,046 47
	Total 1892.....	108,433 42	61,547 99	169,981 41	38,558 33	64,845 13	19,675 13	123,078 59	47,118 03	28,145 57	20,483 88	1,726 63
	Total 1891.....	98,155 30	33,838 55	131,993 85	36,000 00	46,143 85	21,704 43	103,848 28	28,145 57	21,210 83	8,690 63	1,755 89

* Net increase, \$53,804.48.

Registry Division. Each year the improved facilities given to the public for searching the records increase the usefulness of this division. The report of the Registrar shows in detail the work in his office for the year past.

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

	1891.	1892.	1893.
Number of certificates registered owners issued....	10,522	11,053	11,188
Number issued for use of the Law Department.....	507	212	212
Receipts from certificates of registered owners.....	\$2,617 00	\$2,765 00	\$2,979 00
Number of original lots plotted.....	11,705	12,387	11,796
Number of transfers registered.....	22,365	22,540	24,315
Number of plans made for use of City Departments, Bureaus, etc.....	543	440	561
Number of examinations of registry plan books made by the public.....	21,396	23,824	24,703
Number of descriptions of property filed for registry.....	34,070	35,195	35,279
Number of titles perfected	1,858	2,215	2,093
Number of certificates of legal opening of streets, issued to Bureaus, etc.....	3,071	3,112	3,245
Number of certificates of registered owners in municipal lien cases for Law Department.....	6,527	5,825	4,833

Bureau of Water.

Extensions completed during the year 1893.

Reservoir at Roxborough, capacity 148,000,000 gallons.

One 12,000,000 gallon pumping engine and boilers at Roxborough Station.

One 20,000,000 gallon pumping engine and boilers at Spring Garden Station.

Extensions under construction, to be completed during the year 1894.

Two 30,000,000 gallon pumping engines at the Spring Garden Station.

Extension to engine house, Spring Garden Station.

Queen Lane Reservoir, capacity 382,000,000 gallons.

Building of engine and boiler house, Queen Lane Pumping Station.

20,000,000 gallon pumping engine, Queen Lane Station (one of four).

Extension to engine house, Frankford Pumping Station.

One 15,000,000 gallon pumping engine and boilers, Frankford Pumping Station.

One high service pumping station, Roxborough.

One high service pumping station, Belmont, West Philadelphia.

By the completion of the Roxborough reservoir the storage capacity has been increased from one to eleven days; this supply to the district will give time for subsidence in the reservoirs and improve the quality of the water before distribution through the mains.

With the acceptance and use by the City of the 20,000,000 gallon pumping engine (Worthington), the pumping facilities of the Spring Garden Station will be increased an amount equal to the yearly increase in the quantity of water required by the consumers at the present time, and the supply of water for 1894 should be as satisfactory as that furnished in 1893, provided all the engines at the stations are available for constant use, and there is sufficient water to pump.

The completion of the work now under construction by the Bureau of Water will greatly improve the service and give a reserve in the pumping capacity so long needed.

There was pumped during the year 1893, in the aggregate, 65,352,736,978 gallons of water, and the average

daily consumption was 150 gallons per capita. The minimum flow of the river Schuylkill, which furnishes ninety-four per cent. of the water supply of the City, is about 200,000,000 gallons per day; the daily consumption that the Bureau records is 180,000,000 gallons per day, closely approaching the available flow of the river when it is not increased by freshets.

During last summer the entire flow of the river was pumped. While the pumping facilities may be adequate, neither the quantity of water in the river or the storage capacity of the reservoirs will be sufficient to provide for the annual increase in the consumption of water.

A report and recommendation was made by the Department on the subject of a future water supply on September 3d, 1891, respectfully requesting the attention of Councils to this all-important subject.

On September 15, 1893, the Department again called attention to the water supply by a further statement and recommendation, made necessary from the experience of last summer; the continuance of low water in the river indicates that unless some action is taken to provide storage reservoirs to retain the water, which in time of freshets rushes by the City, for use when it is needed, that the flow of the river in time of drought will not be sufficient to supply water for the necessities and conveniences of the public.

From the records of the Water Bureau during the year 1893, water flowed over the dam at Fairmount but eighty-seven days; at all other times the water was pumped or used for power on the turbine wheels at Fairmount; it must be remembered that the surplus water at Fairmount is useful only for water power in pumping.

The experience of most cities has been that a time comes when a water supply that was all-sufficient, gradually becomes insufficient for the demand made by the

increase in growth and prosperity, and that the first method adopted to secure a supply is to prevent the waste of the water they may have. The present condition of the water supply of Philadelphia makes it most desirable that some way should be adopted to prevent the waste of water; and, wishing to profit from other cities, the Department has urged upon the Committee on Water of Councils the introduction of water meters into manufacturing establishments, club houses, hotels and public places. Those opposed to meters claim that they do not waste water, and object to be assessed by meter measure, even at the very low rate fixed by Councils,—thirty cents per thousand cubic feet, which is as low, or lower, than water is furnished by any City in this country.

The recommendation of the Department for the introduction of meters was made as a business necessity, to economize the water supply for the benefit of the entire City, knowing that a large percentage of the water that passes the connections of many industrial establishments is not utilized for the purposes of business, and that in hotels, club houses and public places a large quantity of water through neglect is permitted to waste.

Payment of water rates by the tap is not just to the consumers; if he uses much or little the cost is the same, and by the tap system of payment the general tax-payer assists to pay for the excess in use, or the waste of water by other consumers. By the meter the charge is equitable to all consumers, what they use is paid for, and what they waste is paid for.

The prevention of waste is a saving in coal and the cost of pumping to the City, will reserve the water in storage in the reservoirs, improve the distribution, increase the pressure and cause the water to flow at higher elevation in buildings, and make available any waste as an increase to the supply.

While this Department is criticised for desiring to economize in the use of water, it must be remembered that the daily consumption in New York is ninety gallons per day per capita, with 30,000 meters in use, while in Philadelphia the consumption is equal to one hundred and fifty gallons per day per capita. If the same method of economizing in the use of water is introduced here, there would be a saving of forty per cent., equivalent to a reserve of forty per cent. in the water supply, and would in this way provide for some years for an annual increase in the demand for water which will be made necessary by the growth of the City.

The Department again earnestly recommends that a system for the prevention of waste of the water supply be determined and adopted, and that immediate action be taken to provide a water supply adequate for the demands of this great City.

During the past year there was laid fifty miles of distributing mains and small service pipes, more than has been laid in any previous year.

In the southeastern district, paid for under the special appropriation, there were six and eight-tenths miles of water pipe laid; one hundred and twenty-five fire hydrants placed, for fire and sanitary purposes, and five hundred and sixty new service attachments made to properties.

Filtration. Specifications for a filtering plant to be located at Belmont Pumping Station were approved by Councils June 21, 1892, and proposals received; as no appropriation was made the contract could not be awarded.

The Department recommends the trial of a filtering plant at this station; the reservoir capacity at Belmont is but 39,758,000 gallons, and the daily consumption about 21,000,000 gallons, so that practically the water supply to West Philadelphia is by direct pumpage; there is no

storage capacity for subsidence; the water is pumped to the reservoir and at once distributed.

An efficient filtering plant in this location will postpone the necessity to at once increase the reservoir capacity, which should be provided to improve the quality of the water by subsidence, if filtration should not be successful.

The following tables give the number and type of engines, location of reservoirs, also a comparative summary of the operations of the Bureau for the years 1891, 1892 and 1893:

The following statement gives 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	130,000,000
	" ".....	5	Compound Rotary.....	20,000,000	
	" ".....	6	Simpson Compound Rotary	10,000,000	
	" ".....	7	Marine Compound Rotary..	20,000,000	
	" ".....	8	Worthington Duplex.....	10,000,000	
	" ".....	11	Gaskill.....	20,000,000	
	New Station.....	9	Worthington Duplex.....	15,000,000	
" ".....	10	" ".....	15,000,000		
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	500,000	
".....	3	" ".....	250,000		
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	20,000,000	
".....	2	Corliss Compound Rotary..	10,000,000		
Fairmount.	New House.....	1	Turbine Wheels.....	2,000,000	33,290,000
	" ".....	3	" ".....	5,330,000	
	" ".....	4	" ".....	5,330,000	
	" ".....	5	" ".....	5,330,000	
	" ".....	7	" ".....	5,100,000	
	Old House.....	8	" ".....	5,100,000	
	" ".....	9	" ".....	5,100,000	
Total.....					280,040,000

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.	Height above City datum.	Capacity in Gallons.								
Fairmount { Lehigh { Section 1..... " 2..... " 3.....	East Fairmount Park.....	1815 1821 1827 1835 1836 1836	94	26,350,800								
					Sixth and Lehigh avenue.....	1852 and 1871	114	26,394,000				
									Twenty-sixth and Master streets.....	1844	120	12,000,000
									Corinthian avenue and Poplar street.....	1852	120	37,341,400
					Spring Garden.....							
Corinthian.....												
East Park { Section 1..... " 2..... " 3.....	East Fairmount Park.....	1887 1888 1889	133	62,787,632 306,400,622 304,736,360								
					Frankford.....	1877	167	36,046,000				
					Belmont.....	1870	212	39,758,000				
Mount Airy.....	Allen's lane and Mower street, Germantown.....	1851	363	4,546,000								
Roxborough.....	Ridge and Shawmont avenues.....	1866	366	12,838,000								
New Roxborough.....	Port Royal avenue and Ann street.....	1893	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								
Total.....				1,017,288,814								

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

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

Total pipe laid, 1,081 miles 2.278 feet.

* Adds nothing to feet in ground.

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

Receipts.

	1891.	1892.	1893.
Receipts from water rents.....	\$2,057,417 39	\$2,147,447 98	\$2,220,083 24
“ “ fractional rents.....	200,868 36	214,678 24	237,125 48
“ “ water pipes.....	138,180 98	152,916 45	114,531 78
“ “ City Solicitor's office.....	34,394 49	58,768 25	44,265 44
“ “ penalties.....	29,672 21	27,136 90	30,981 84
“ “ delinquent rents.....	25,183 85	15,422 75	13,745 58
“ “ Chief Engineer's office.....	6,503 70	10,274 24	5,886 84
“ “ searches.....	5,046 75	5,718 50	5,830 25
“ “ delinquent penalties.....	3,495 00	2,092 71	1,874 79
Total.....	\$2,500,762 73	\$2,634,456 02	\$2,674,275 24

Expenditures.

	1891.	1892.	1893.
Current expenses.....	\$781,227 83	\$814,332 89	\$1,121,555 91
For extensions.....	749,066 21	558,124 42	1,471,834 90
Total.....	\$1,530,294 04	\$1,372,457 31	\$2,593,390 81

Pumpage.

	1891. Gallons.	1892. Gallons.	1893. Gallons.
Pumped to reservoirs.....	55,665,648,000	59,787,584,178	65,352,736,978
Equal to gallons pumped 100 feet high.....	93,490,106,725	102,443,373,631	110,590,708,479

NOTE.—The “pumped to reservoirs,” etc., includes 785,726,060 gallons of repumpage to higher levels at Mount Airy, Roxborough, and East Park Reservoirs.

This, deducted from the total pumped, gives 64,567,010,918 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.
Pumped by water-power.....	11,380,824,570	10,401,951,806	9,911,609,325
Pumped by steam-power.....	44,284,823,430	49,385,632,372	55,441,127,653
Largest quantity pumped in 24 hours.....	183,421,163	199,996,713	222,518,845
Smallest quantity pumped in 24 hours.....	73,057,433	83,599,844	108,970,675

Year.	Average consumption in gallons per capita per day, estimating the population at*	Increase of	Increase per capita per day.	Cost per 1,000,000 gallons pumped 100 ft. high.	Reduct'n in cost of pumpage per 1,000,000 gallons
	Gallons.	Gallons.	Gallons.		
1891	140	4,405,019,920	9	2 99	6 cents.
1892	143	4,121,936,178	3	2 68	31 cents.
1893	150	5,565,162,300	7	3 22	*54 cents.

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

*Increase.

The cost of pumping one million gallons lifted 100 feet high was \$3.22 or 54 cents greater than in the previous year.

Fifteen per cent. of the total pumpage was by water-power, the turbine wheels using..... 297,348,279,750 gallons.
To pump..... 9,911,509,325 “

The Department during 1893 paid sixteen (16) cents a ton more for coal than in 1892. Councils by ordinance increased the regular force of engineers, firemen and oilers, to permit these employees to have one day's rest out of the seven. On account of the break at Flat Rock Dam, the Bureau of Water had to provide and equip temporary pumps to supply the wells of the permanent engines at the Roxborough Pumping Station. These additional expenditures have been the cause of this increase in the cost of pumpage.

Director's Office.

The following resolutions were received from Councils March 9, 1893, requesting the Director of the Department of Public Works to confer with the officials of the Philadelphia and Reading Railroad Company as to the best means to abolish grade crossings on the Richmond Branch at Frankford avenue and Kensington avenue, which was complied with, and bridges for foot passengers have been provided at these crossings for the safety of the public travel.

Resolution of June 20, 1893, requesting the Mayor and the Director of the Department of Public Works to formulate, from the various reports on file, a plan for securing a better water supply for the City, which was replied to by a report forwarded to Councils by the Mayor on September 15, 1893, and which was referred to the Committee on Water. No further action has been taken by Councils in the matter.

The Department recommended to Councils the increase of five Assistants to the Chief of the Bureau of Highways, making ten Assistants, and the increase of five Inspectors to the Bureau of Street Cleaning, making ten Inspectors. The districts allotted to five Assistants and five Inspectors were too large for them to attend to the duties satisfactorily, and it is expected that by the subdivision—making ten districts—the works of the Bureaus will be more closely inspected, and the public interests advanced.

Councils acted on the recommendations of the Department of Public Works, by enacting ordinances authorizing all paving by the City to be laid upon a concrete foundation; that all ordinances for grading streets should include grading of footways and setting of curbs; the general ordinance to provide that all connections with sewers, gas and water pipe, shall be made and extended within the curb line of the street prior to paving or repaving.

SUMMARY OF APPROPRIATIONS, EXPENDITURES, RECEIPTS, ETC., OF THE DEPARTMENT OF PUBLIC WORKS,
PHILADELPHIA, IN 1891, 1892 AND 1893.

BUREAUS.	Appropriations for 1893.	Balances available from previous years.	Additional appropriations and transfers.	Total.	Number of warrants drawn.	AMOUNT OF WARRANTS DRAWN.			Transfer from	Balance available 1894.	Total.	Amount merging.	Receipts.	Number of employees December 31, 1893.
						Current expenses.	Extensions.	Total.						
Director's Office.....	\$19,720 00		\$481 69	\$20,201 69	156	\$20,197 39		\$20,197 39			\$20,197 39	\$4 30		8
City Ice Boats.....	34,900 00		48,724 00	83,624 00	134	83,341 75		83,341 75			83,341 75	282 25	\$2,420 07	10
Gas.....	3,014,968 00	\$4,233 61	240,029 32	3,259,230 93	1,277	2,772,761 60	217,870 65	2,990,632 26	\$225,000 00	\$6,534 63	3,222,166 89	37,064 04	4,027,074 88	1,604
Highways.....	1,145,428 88	280,531 23	1,617,236 00	3,043,196 11	3,412	473,133 77	1,839,087 40	2,312,221 17	174,979 84	536,141 49	3,023,342 50	19,853 61	97,004 85	85
Board of Highway Supervisors.....*													4,786 00	5
Lighting.....	878,366 00	423 70	1,500 00	880,289 70	394	802,532 31	63,989 14	866,521 45	5,829 76		872,351 21	7,938 49	150 46	342
Street Cleaning.....	617,698 00			617,698 00	259	584,281 90		584,281 90	31,919 10		616,201 00	1,497 00		7
Surveys.....	661,940 00	921,991 64	1,685,800 60	3,269,731 64	3,866	210,223 87	1,801,375 35	2,011,599 22	140,969 50	1,111,702 26	3,264,270 98	5,460 66	73,073 59	216
District Surveyors.....†													125,971 42	13
Water.....	1,405,739 00	1,099,234 92	1,309,000 00	3,813,973 92	2,612	1,121,565 91	1,471,834 90	2,593,399 81	15,746 49	1,197,638 01	3,806,775 31	7,198 61	2,674,275 24	1,119
Total, 1893.....	\$7,778,759 88	\$2,306,415 10	\$4,902,771 01	\$14,987,945 99	12,110	\$6,068,023 50	5,394,157 45	\$11,432,185 95	\$594,444 69	\$2,852,016 39	\$14,908,647 03	\$79,298 96	\$7,004,756 51	3,409
Total, 1892.....	\$7,451,639 93	\$1,131,865 28	\$1,742,455 81	\$10,325,961 02	10,373	\$5,092,022 43	2,744,380 78	\$7,836,443 21	\$124,235 81	\$2,306,415 10	\$10,267,094 12	\$58,866 90	\$6,725,012 87	2,775
Total, 1891.....	\$7,071,680 00	\$1,225,390 63	\$2,160,148 99	\$10,457,219 62	10,250	\$4,890,503 09	2,951,306 06	\$7,841,809 06	1,081,959 51	\$1,131,865 28	\$10,055,633 85	\$401,585 77	\$6,494,430 42	2,599

* Included in the appropriation and in the Expenditures of the Bureau of Highways.

† Included in the Appropriation and in the Expenditures of the Bureau of Surveys.

The following is a comparative statement of the expenditures of the Director's office for the years 1891, 1892 and 1893 :

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

Appropriations, 1894.

The following is an abstract of the ordinance making appropriations to this department for the year 1894, with a statement of balances available from previous years for work ordered, and for which contracts are executed :

BUREAUS.	Annual Appropriation for the Year 1894.	Balance Available from Previous Years.	Total.
Director's office.....	\$20,720 00	.....	\$20,720 00
City ice boats.....	34,900 00	.....	34,900 00
Gas.....	2,922,288 00	\$6,534 63	2,928,822 63
Highways.....	1,123,691 00	536,141 49	1,659,832 49
Lighting.....	421,879 00	.....	421,879 00
Street cleaning.....	893,393 75	.....	893,393 75
Surveys.....	293,010 00	1,111,702 26	1,404,712 26
Water.....	1,372,554 00	1,197,638 01	2,570,192 01
Total.....	\$7,082,435 75	\$2,852 016 39	\$9,934,452 14

The Department respectfully submits the following recommendations :

Bureau of Gas. That appropriations be made for the increase of the holder capacity, for exhaust engines and

exhausters, and other details stated, which are now required to make effective the present plant. These additions are necessary, should Councils either increase the manufacturing plant to make gas from coal or by water gas plant.

Bureau of Highways. For the improvement of the City and for the convenience of the public, the City should obtain legislation by Act of Assembly, requiring all owners of property to have set six-inch granite curbing upon the fronts of all property to be paved or repaved by Ordinance of Councils, and that all owners of property shall have all footways and pavements in front of property where streets are to be paved or repaved by Ordinance of Councils, laid with either flagstone or cement pavement.

Bureau of Street Cleaning. As Councils have by appropriation provided for the collection and disposal of all garbage from all properties within the City limits, there should be ordinances passed making it unlawful for anyone to collect garbage by private contract, to cart it through the streets or to deposit it within the City limits. This legislation will be protective of the public health and prevent nuisances.

Bureau of Surveys. As the entire area between the curbs in the centre of the City is occupied by private corporations with conduits and underground structures, it is recommended that the City construct in the main streets, in connection with the construction of sewers to be hereafter built or rebuilt, a subway or conduit to be of a capacity to receive the underground cables and systems of pipes or conduits now in the streets, and for others; space in the subway or conduit to be leased to the companies having privileges on the streets; and that Councils will direct the extension of main sewers referred to in this report.

Bureau of Water. That Councils, at an early day, determine upon a system for the increase of the water supply of the City and direct its construction.

During the past year a great amount of work devolved upon the Bureaus of the Department of Public Works. The Ordinances of Councils authorizing so many municipal improvements, the extension and repaving of streets by the passenger railway companies required many regulations to be observed, from the serving of notices and the direction of the work, to the inspection of each detail in connection with the underground structures required to be placed before the paving or repaving could be completed.

I desire to express my respect of the capable and diligent services of each of the chiefs of the Bureaus and their assistants, for the attention and energy which assisted in having completed the great amount of work assigned to them; also to the chief clerk and the clerical force of my office, whose duties were greatly increased, and their hours of work prolonged from nine o'clock A.M. to six o'clock P.M., daily.

In submitting this report, I desire to thank you for the consideration and counsel you have always given me in all matters of public interest in this Department, and which have aided in the successful completion of the year's work.

Very respectfully yours,

JAS. H. WINDRIM,
Director.

ANNUAL REPORT

OF THE

BUREAU OF WATER,

FOR THE YEAR 1893.

OFFICERS OF THE BUREAU OF WATER.

Chief,
JOHN L. OGDEN.

Assistants,
ALLEN J. FULLER, WILLIAM WHITBY.

Draughtsmen,
John E. Codman, William Farrell, Martin Murphy,
 John R. Gorman.

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 Abranis. *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 1893.

Philadelphia, January 31 1894.

JAMES H. WINDRIM, Esq.,
Director Department of Public Works.

SIR:—The operations of the Bureau of Water for the
year 1893, are herewith respectfully submitted.

Receipts.

The following tables furnished by the Receiver of
Taxes show in detail the receipts from water rents and
other sources.

Total Receipts Bureau of Water for the Year 1893.

MONTHS.	Searches.	Delinquent Rents.	Delinquent Penalties.	Rents 1893.	Penalties 1893.	Fractional Rents.	Water Pipe.	Bureau of Water, Department of Public Works.	TOTALS.
January.....	\$107 75	\$1,415 65	\$102 69	.....	.....	\$22,860 67	\$6,236 91	\$255 88	\$31,288 05
February.....	411 25	718 50	61 28	\$245,055 66	.....	10,630 99	2,308 87	235 77	259,422 32
March.....	523 00	4,036 18	589 12	276,520 64	.....	13,987 32	9,391 26	223 50	305,271 02
April.....	563 50	1,192 00	178 08	462,227 59	.....	33,456 69	3,603 14	910 36	502,131 36
May.....	645 25	1,565 50	221 91	922,521 11	.....	25,031 27	5,614 42	448 04	956,477 50
June.....	578 25	2,098 00	301 07	61,873 80	\$2,827 62	15,165 17	5,971 60	877 52	89,606 03
July.....	464 25	591 .0	88 71	27,000 85	1,317 26	30,780 79	8,880 74	677 54	69,801 67
August.....	405 00	403 50	60 23	66,733 50	3,334 64	16,392 28	17,541 47	360 23	10,230 85
September.....	409 50	315 50	47 33	32,508 60	4,784 54	8,801 66	12,177 93	172 46	59,217 42
October.....	511 00	401 50	60 24	80,811 93	12,066 17	27,475 61	19,652 81	541 66	141,527 92
November.....	475 60	248 50	37 29	19,518 60	2,918 92	17,172 92	13,973 41	530 99	54,875 63
December.....	436 50	845 25	126 81	21,907 96	3,732 69	15,361 21	9,146 22	603 39	55,160 03
Totals.....	\$5,830 25	\$13,745 58	\$1,874 79	\$2,220,083 24	\$30,981 84	\$237,125 48	\$114,531 78	\$5,836 84	\$2,630,009 80
Receipts through the Office of the City Solicitor, 1893.....									\$44,265 44
Total Receipts of the Bureau of Water, 1893.....									2,674,275 24
Receipts as Previously Estimated.....									\$2,400,000 00

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Comparative Statement of Fractional Rents.

YEAR.	Rents.	Meter Rents.	Ferrules.	Repairs.	TOTALS.
1893.....	\$57,868 54	\$140,871 44	\$33,530 00	\$4,855 50	\$237,125 48
1892.....	56,350 51	125,705 73	28,409 00	4,213 00	214,678 24
Increase.....	\$1,518 03	\$15,165 71	\$5,121 00	\$642 50	\$22,447 24
Decrease.....	.....	.....	.....	.....	.....

Fractional Rents, 1893.

MONTHS.	Rents.	Ferrules.	Repairs.	Meters.	Totals.
January.....	\$2,865 65	\$215 00	\$285 25	\$19,503 77	\$22,869 67
February.....	4,540 70	365 00	307 00	5,418 29	10,630 99
March.....	7,655 90	1,680 00	496 00	4,155 42	13,987 32
April.....	6,906 88	2,731 00	441 00	23,377 81	33,456 69
May.....	9,532 47	3,970 00	353 25	11,175 55	25,031 27
June.....	7,218 95	5,395 00	455 00	2,096 22	15,165 17
July.....	4,747 60	4,434 00	363 00	21,231 19	30,780 79
August.....	3,992 33	3,195 00	281 00	8,923 95	16,392 28
September.....	2,974 12	3,374 00	432 00	2,021 44	8,801 56
October.....	2,868 40	3,525 00	605 00	2,477 21	27,475 61
November.....	2,126 64	3,516 00	621 00	10,909 28	17,172 92
December.....	2,438 90	1,130 00	211 00	11,581 31	15,361 21
Totals.....	\$57,868 54	\$33,530 00	\$4,855 50	\$140,871 41	\$237,125 48

Revenue for Ten Years, 1884 to 1893, inclusive.

YEARS.	Delinquent Water Rents.	Delinquent Penalties.	Water Rents.	Penalties.	Fractional Rents.	Water Pipe.	Searches.	Chief's Office.	City Solicitor's Office.	TOTALS.
1884.....	\$19,837 72	\$2,492 97	\$1,566,027 57	\$22,797 76	\$77,557 40	\$71,542 00	\$461 50	\$10,670 89	\$21,098 20	\$1,792,486 01
1885.....	11,267 25	1,561 03	1,577,031 94	22,298 78	101,643 88	92,182 18	1,988 75	9,197 00	18,993 23	1,826,164 04
1886.....	15,049 50	1,964 42	1,637,296 69	21,377 89	7,219 62	122,743 91	2,960 00	10,121 36	24,594 95	1,933,328 34
1887.....	19,040 87	2,705 79	1,721,488 83	24,453 03	115,939 21	106,602 48	3,412 75	7,257 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	2,241,999 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 89	29,672 21	200,868 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 43	114,531 78	5,830 25	5,836 84	44,265 44	2,674,275 24
Totals.....	\$182,422 18	\$25,090 72	\$18,517,320 46	\$252,822 16	\$1,473,878 23	\$1,213,863 53	\$39,868 75	\$88,728 62	\$325,876 39	\$22,119,871 04

Comparative Statement.

1893.....	\$13,745 58	\$1,874 79	\$2,220,083 24	\$30,981 84	\$237,125 43	\$114,531 78	\$5,830 25	\$5,836 84	\$44,265 44	\$2,674,275 24
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
Increase.....	.....	.....	\$72,635 26	\$3,844 94	\$22,447 24	.....	\$112 75	.....	.....	\$39,819 22
Decrease.....	\$1,677 17	\$217 92	.....	.....	.....	\$88,384 67	.....	\$4,437 40	\$14,502 81	.....

The increase of receipts for 1893 over that of 1892 amounts to \$39,819.22. This small increase, compared with that of the preceding year, is no doubt due to the general business depression.

The unpaid claims sent to the Law Department for collection amount to \$44,169.93.

Appropriations.

For current expenses.....	\$1,128,754 52
For extensions.....	585,984 48
From loan.....	1,000,000 00
Available balance from 1892.....	1,099,234 92
	<hr/>
Total.....	\$3,813,973 92

The work under progress, considered as extensions, was as follows :

New reservoir at Queen lane.

New reservoir at Roxborough.

Two engines of 30,000,000 gallons capacity each at Spring Garden station.

An engine of 20,000,000 gallons capacity at Spring Garden station.

An engine of 15,000,000 gallons capacity at Frankford station.

An engine of 12,000,000 gallons capacity at Roxborough station.

An engine of 20,000,000 gallons capacity at Queen lane station.

Boilers for the several stations.

New engine house at the Spring Garden station.

New engine house at the Frankford station.

Two new high service stations.

New engine and boiler house at Queen lane station.

Large pumping and supply mains.

Expenditures.

For current expenses.....	\$1,121,555 91
For extensions.....	1,471,834 90
	<hr/>
Total.....	\$2,593,390 81
Amount merging.....	7,198 61
Amount not merging.....	1,197,638 01
Amount due on unpaid bills, ninety-five per cent. of which is for coal.....	50,000 00

For expenditures in detail, see Appendix B.

Appropriations and Expenditures.

Appropriation December 31, 1892.	Amount appropria'd.	Amount expended.	Amount merging.	Amount not mergi'g.
Item 1. Salaries:				
Office, Chief of Bureau.....	\$113,629 00			
Fairmount Pumping Station.....	11,720 00			
Spring Garden Pumping Station.....	51,525 00			
Belmont Pumping Station.....	15,400 00			
Roxborough Pumping Station.....	17,820 00			
Mt. Airy Pumping Station.....	3,070 00			
Chestnut Hill Pumping Station.....	1,500 00			
Frankford Pumping Station.....	13,450 00			
	\$228,114 00			
Transferred from.....	6,500 00	\$221,614 00	\$220,637 29	\$926 71
Item 1½. Salaries, Pumping Stations...	\$17,625 00			
Transferred from.....	2,000 00	15,625 00	14,554 50	1,070 50
Item 2. Regular supplies, including fuel, oil, and small stores.....	\$150,000 00			
Transferred to.....	22,000 00	172,000 00	171,710 96	289 04
Item 3. Repairs to machinery, including the conveyance of workmen incident thereto.....	\$60,000 00			
Transferred to.....	17,500 00	77,500 00	77,425 19	74 81
Item 4. Maintenance and repairs to buildings, grounds and reservoirs.....	\$75,000 00			
Transferred to.....	19,000 00	94,000 00	93,987 95	12 05
Item 5. Maintenance and improvement to the distribution, including the purchase of material and cost of labor connected therewith and expenses incident thereto.....	\$110,000 00			
Transferred to.....	39,000 00	149,000 00	148,573 51	426 49
Item 6. For supplies and labor at City shop.....	\$75,000 00			
Transferred to.....	15,000 00	90,000 00	88,939 91	1,010 09
Item 7. For general and incidental and contingent expenses, including \$1,200 for keep of horse for Chief of Bureau, General Superintendent and assistant.....	\$15,000 00			
Transferred to.....	1,500 00	16,500 00	16,326 34	173 66

Appropriations and Expenditures.—Continued.

Appropriation December 31, 1893.	Amount appropriated.	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 pipes and expenses incidental thereto... \$225,000 00 Transferred to..... 34,000 00	\$259,000 00	\$258,802 18	\$197 82	
Item 8½. For relaying small pipe and for water meters.....	30,000 00	29,998 08	1 92	
Item 9. Extensions..... \$420,000 00 Transferred from..... 52,746 49	367,253 51	289,412 59	1,386 85	76,454 07
Item 9½. New Roxborough Reservoir, balance from January 1, 1893.....	35,100 00	35,100 00		
Item 10. Extensions, balance January 1, 1893..... \$210,294 92 Transferred to..... 15,000 00	225,294 92	119,265 25	933 23	105,096 44
Item 11. New Reservoir, Queen lane, balance January 1, 1893.....	853,840 00	549,388 40		304,451 60
Item 11a. Completion of Queen lane Reservoir. Appropriation May 15, 1893..... \$225,000 00 Transferred from..... 34,000 00	191,000 00	29,134 10	695 43	161,170 46
Item 12. Extensions at Spring Garden Station. Appropriation April 7, 1893..... \$405,000 00 Transferred from..... 70,853 00	334,147 00	128,635 23		205,511 77
Item 13. Extension at Frankford Station. Appropriation April 7, 1893.....	370,000 00	320,899 33		49,100 67
Item 14. New Pumping Station for Queen Lane Reservoir. Appropriation August 10, 1893..... \$225,000 00 Transferred from..... 72,570 00	152,430 00			152,430 00
Item 15. Boilers for Frankford and engine house for Georges Hill. Appropriation Dec. 4, 1893.....	67,636 00			67,636 00
Item 16. Pumping engine for Queen Lane Station. Appropriation December 4, 1893.....	75,787 00			75,787

Pumpage.

The total number of gallons pumped was as follows :

Fairmount Station.....	9,911,609,325
Spring Garden Station.....	38,931,885,305
Belmont Station.....	6,360,507,689
Roxborough Station.....	5,221,872,165
Chestnut Hill Station.....	34,484,890
Frankford Station.....	4,106,651,544
Total.....	64,567,010,918

High service or supplementary lift :

Roxborough.....	15,718,520
Mt. Airy.....	606,238,660
East Park.....	163,768,880
Total.....	785,726,060

Grand Total..... 65,352,736,978

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

Total Gallons Pumped During 1893.

Month.	Water Power.	Steam Power.	Totals.	Average gallons per day.
January.....	751,701,872	4,142,829,349	4,894,531,221	157,888,103
February.....	1,097,764,318	3,527,049,616	4,624,813,934	165,171,926
March.....	1,193,953,225	3,290,441,882	4,484,395,107	144,657,906
April.....	1,168,390,911	3,717,749,609	4,886,140,520	162,871,850
May.....	1,074,195,622	4,323,311,757	5,397,507,379	174,113,141
June.....	821,436,893	5,189,910,060	6,011,346,953	200,378,231
July.....	415,065,575	5,666,000,484	6,081,066,059	196,163,421
August.....	315,988,027	5,712,685,848	6,028,673,875	194,473,850
September.....	446,255,221	5,350,725,986	5,796,981,207	193,232,706
October.....	527,427,267	5,451,505,880	5,978,933,147	192,863,811
November.....	922,950,371	4,435,517,619	5,358,467,990	178,615,599
December.....	1,176,480,022	4,633,399,563	5,809,879,586	187,415,470
Total.....	9,911,609,325	55,441,127,653	65,352,736,978	179,048,594

The following table shows the gallons pumped, the cost per million gallons, and the daily consumption per capita during the ten years from 1884 to 1893, inclusive :

Pumpage Tables for the years 1884 to 1893, inclusive.

Year.	No. of gallons pumped to Reservoirs.	No. of gallons pumped 100 feet high.	Cost per million gallons pumped 100 feet high.	Gallons per capita per day.	Estimated population.
1881	25,495,179,353	39,001,865,294	\$5 51	74	932,000
1885	25,165,020,072	39,908,901,886	4 70	72	953,000
1886	28,678,966,569	46,255,361,203	4 13	80	975,000
1887	32,426,779,765	51,289,918,331	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	69,034,118,431	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	102,443,373,631	2 68	143	†1,142,650
1893	65,352,736,978	110,590,708,479	3 22	150	1,190,493

* United States census.

† City census.

The following table shows the quantity of water pumped at Fairmount from 1882 to 1893, both inclusive :

Year.	Gallons per 100 feet.	Repairs.	Cost per million gallons.
1882.....	9,377,468,535	\$2,735 95	\$1 74
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 83	1 18
1888.....	11,241,113,108	6,955 00	1 44
1889.....	11,413,836,469	4,500 44	1 24
1890.....	12,352,987,130	4,900 00	91
1891.....	11,880,824,730	5 900 00	1 14
1892.....	10,401,951,805	4,750 85	1 14
1893.....	9,911,609,325	5,675 46	1 44

PUMPAGE DIAGRAM FOR THE YEAR 1893



Fairmount Pumping Station, 1893.

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	689,022,397	6,835	45	1,776	.....	.....	104
3	2,168,921,722	7,995	55	613	.....	.....	97
4	1,823,191,843	6,745	56	1,653	.....	56	250
5	1,683,886,863	6,417	63	2,164	.....	69	47
7	1,168,402,400	5,074	32	3,494	.....	89	71
8	1,187,506,300	4,761	544	3,016	.....	82	357
9	1,190,677,800	4,766	30	3,477	.....	113	374
Totals..	9,911,609,323	42,593	825	16,193	.....	409	1,300

The quantity of water pumped during 1893 exceeded that of the preceding year by 5,565,152,800 gallons, an increase of 8.5 per cent. ; while the increase in the revenue was only 1.5 per cent. This increase represents the capacity of a fifteen million (15,000,000) gallon pump running every day during the year.

The total pumping capacity of the Bureau was 210,040,000 gallons during a portion of the year, or until after June 5, when a new engine was started, making it 230,040,000 gallons.

The largest quantity pumped during twenty-four hours was 222,518,845, and the daily average during the entire year 179,048,594 gallons.

We have, as yet, practically no reserve steam power. The pumpage by water at Fairmount was less than during any year since 1886, and the pumps were shut down on account of low water 1687 hours longer than in the preceding year. This represents an average of ten (10) days for each of the seven pumps. The average available flow of the river has gradually decreased since 1890.

For several reasons the cost of pumping has been greater than in 1892. The price of coal was sixteen cents per ton higher, making a total of \$14,736.48 ; the cost of repairs exceeded by \$25,000, and additional employees appointed for the purpose of giving each engineer, oiler and fireman the privilege of being absent from work one day weekly, increased the pay rolls \$14,554.50. The decrease in the pumpage at Fairmount also added to the cost.

Consumption.

The average daily consumption per capita was one hundred and fifty (150) gallons, an increase of seven (7) gallons over the year 1892, due to the increase of appliances for the waste of water.

The consumption per capita for nine years has been as follows :

1885.....	72 gallons.
1886.....	80 "
1887.....	89 "
1888.....	100 "
1889.....	110 "
1890.....	131 "
1891.....	140 "
1892.....	143 "
1893.....	150 "

It is impossible to account for this increase except to consider the greater part of it as waste. The sanitary plumbing and carelessness appear to be responsible for most of this extravagance. Manufacturing industries have certainly not doubled in eight years.

It is a fact well worth considering that while the consumption per capita has more than doubled since 1885, the revenue of the Water Bureau has increased only 46 per cent.

New York, a large manufacturing city, uses but ninety (90) gallons per capita ; Boston, on the Cochituate supply, only 89.3.

If we could reduce our consumption to the same figures as these cities we would save half of the cost of the coal ; have ample storage reservoirs and the reservoirs full ; could keep one-half of our steam plant in reserve and not require any addition thereto for several years ; the pressure in the mains and supply-pipes would be increased ; the water rise higher in the buildings, and low water in the river would not cause any anxiety.

If we were to adopt the same methods as those cities the above-given results would certainly follow.

Extensions.

At the Spring Garden Station the pumping capacity has been increased by the addition of one twenty-million (20,000,000) gallon engine, built by Henry R. Worthington under a contract dated May 26, 1892. It was finished and started on June 5, 1893. Its cost was \$67,800.

Two vertical triple expansion engines of thirty millions gallons capacity each, are being constructed by the Holly Manufacturing Company, under a contract dated June 30, 1893, for the sum of \$162,570.

A new boiler house and stack have been almost completed on the west side of the forebay, in which are to be placed twelve new boilers. The contractor for the building is J. R. Garber, who agreed to do the work for \$34,621. Mr. Garber was unable to complete the building, which is now being done by his assignee.

Six (6) of the twelve (12) new boilers referred to above have been furnished by the Southwark Foundry and Machine Company, under contract dated February 13, 1893, for the sum of \$31,900, and six (6) are under construction by the Harlan & Hollingsworth Company, under

contract dated September 12, 1893, for the sum of \$41,508, all being internally-fired Marine Tubular steel boilers, eleven (11) feet nine (9) inches in diameter, and ten (10) feet ten (10) inches long. The corrugated steel furnace flues are three (3) feet seven (7) inches in diameter, and eight (8) feet long. Each boiler will have one hundred. and eighty-eight (188) three (3) inch lap-welded boiler tubes about eight (8) feet long.

An addition to the engine house in which the two new engines are to be set up is under construction. The contract was awarded to H. C. Nichols on October 13, 1893, for the sum of \$39,222, and the excavation, which is mostly in hard rock, is nearly completed.

Two forty-eight (48) inch pumping mains have been laid from this station to the East Park Reservoir for the use of the new engines.

The present daily pumping capacity of this station is one hundred and thirty millions (130,000,000) of gallons, and additional engines under construction will make it one hundred and ninety millions (190,000,000) of gallons.

Belmont.

A high service station is to be built at the George's Hill Reservoir for the better supply of the western part of the Thirty-fourth (34th) Ward.

The engine and boiler house is under contract. Bids were received for its construction August 22, 1893, and the contract was awarded to R. C. Ballinger for the sum of \$36,596, subject to an appropriation which was not provided until near the end of the year. An old engine will be used temporarily to repump the water from the basin.

Boilers for the works are to be built by the Edge Moor Iron Company for the sum of \$12,760.

A stand-pipe is to be constructed and erected by the

Warden Manufacturing Company for the sum of \$10,475. At some future time this will be surrounded by an ornamental tower.

The supply main, twenty (20) inches in diameter, has been laid from the reservoir down Fifty-second street to Lancaster avenue, thence to Lansdowne avenue, thence to Sixty-third street to Haverford avenue, a distance of 10,837 feet.

When completed this station will furnish an ample supply for some years to the western section of the city, which is being rapidly built up with a fine class of dwelling houses.

Roxborough Station.

A new engine for this station, of ten millions (10,000,000) of gallons capacity, was contracted for on January 19, 1892. It was constructed and erected by the Southwark Foundry and Machine Company, for the sum of \$72,000.00, and is of the vertical compound fly-wheel type. It was started on April 24, 1893, and has pumped 12,765,840 gallons of water in twenty-four hours, thereby exceeding its contract capacity twenty-five per cent.

At the old Roxborough basin a high-service station is in course of construction, for the supply of the highest ground of the Twenty-first and Twenty-second Wards.

The engine and boiler house, and stack, were contracted for by R. C. Ballinger & Co., for the sum of \$36,596.00. The contractor began work thereon October 5, 1893, and has the buildings well under way.

The erection of a stand-pipe eleven (11) feet in diameter and one hundred and fifty (150) feet high, has been awarded to the Warden Manufacturing Co. for the sum of \$10,475.00.

A thirty (30) inch supply main has been laid from the new reservoir along Ann street to Shawmont avenue,

thence to Wise's Mill road, thence to the Wissahickon drive, thence to Hartwell avenue, thence to Germantown avenue.

The new reservoir, which was begun on January 13, 1891, was completed and water pumped therein on September 21, 1893.

The water level was carried up slowly in order to test the work, and careful examinations were made in order to discover if any leaks existed. When the water reached a height of twenty (20) feet, the increased flow of a spring on an adjoining property was detected. This water may come from the reservoir through seams in the rock bottom, which were not observed. All seams or holes that could be found were filled with concrete before the clay and concrete lining were put in, but it is probable that some may have escaped notice, which may account for the supposed leak.

Frankford Station.

At the Frankford station, a new engine house, boiler house and stack, are being built by Thomas Gamon, under contract, for the sum of \$75,500.00. Work thereon was begun May 12. The boiler house and stack are finished, but the engine house has not been completed owing in a great measure to the difficulty in constructing the foundation, which is about sixteen feet below high water mark.

The contract for a vertical compound fly-wheel engine was awarded to the Southwark Foundry and Machine Company for the sum of \$47,690.00. Its capacity is to be not less than fifteen millions (15,000,000) of gallons, but it is expected that it will be able to deliver twenty or twenty-five millions of gallons daily into the reservoir. The foundation was completed several months ago, and

the engine is set up in the shop ready for delivery as soon as the building is in condition to receive it.

A forty-eight (48) inch pumping main has been laid from this station to the Wentz Farm reservoir, and the present pumping main can in the future be used in supplying from the basin the northern part of the Twenty-fifth and the southeasterly part of the Thirty-fifth Ward, now unsupplied.

The work on the Queen lane reservoir, begun October 10, 1892, has been pushed with great rapidity. The banks have been completed with the exception of the dressing on the outside. They have been lined with clay, and a quantity nearly sufficient for the bottom has been hauled.

The location for a pumping station for this reservoir has been selected and staked out in Fairmount park opposite School lane, and contracts have been awarded for the erection thereof, as well as for one engine. The proposed building will be arranged for the reception of four engines, of twenty millions of gallons capacity each, to be built by the Southwark Foundry and Machine Co., for \$299,148.00. The twenty-four boilers to provide steam for these engines will be built by Messrs. Riter & Conley, of Pittsburg, for the sum of \$84,700.00.

A detailed account of the work done at the pumping stations is given in Appendix C.

Rainfall.

The rainfall in Eastern Pennsylvania was three inches below the average of the ten previous years, and two and one-quarter inches less than during the previous year.

The effect of this is shown very clearly in the table giving the quantity of water pumped at Fairmount during twelve years.

Rainfall observations are given in considerable detail

in Appendix F, where also will be found the Hydrographic observations conducted by the Bureau on several streams near the City.

Flow of the River.

The rainfall in the Schuylkill Valley was somewhat greater than that for the Eastern District of Pennsylvania, it being 44.9 inches—an increase of 4.5 over the year 1892.

The quantity of water wasting over the flash-boards on Fairmount dam was equal to a total of 53 feet in 24 hours, which was 18.5 feet less than during 1892.

The estimated flow of the Schuylkill for the year was 315,900,043,280 gallons, giving an average daily flow of 865,480,000 gallons.

There were but eighty-seven (87) days during the year when water flowed over Fairmount dam. At all other times all of the water was either pumped to the reservoirs or used for power on the turbine wheels.

The highest water on the dam was on May 4, when the gauge showed 39 inches.

Distribution.

More than fifty miles of pipe of various sizes have been added to the distribution during the year, in addition to which 96,066 feet of six-inch, and larger, were substituted for small and old service pipe.

The total quantity of pipe handled for all purposes amounted to 41,730,372 pounds.

Twenty-four thousand (24,000) feet of pumping mains, mostly of 48 inches in diameter, have been laid, and fifty-five thousand five hundred and thirty-seven (55,537) feet of supply mains have been put down in order to increase the pressure and to meet the requirements in sections of the city heretofore inadequately supplied.

The repaving of streets by the city and the railway companies necessitated a large amount of work in relaying pipe, setting fire hydrants, repairing stops, and the putting in of lead pipe for service connections.

Fifteen thousand and ninety-nine (15,099) feet of six-inch pipe were laid by citizens under the ordinance of June 19, 1890, when the city was unable to comply with the requests.

For a full account of all items connected with the distribution, see Appendix D.

Pipe Inspection.

Cast iron pipes and special castings were received from the following named foundries :

Donaldson Iron Co., Emaus, Pa.

Reading Foundry Co., Reading, Pa.

Gray's Ferry Foundry & Boiler Co., Phila.

Camden Iron Works, Camden, N. J.

McNeal Pipe & Foundry Co., Burlington, N. J.

The following table shows the results of inspection and the number of each size of pipe accepted during the year :

Size.	Inspected.	Rejected.	Accepted.	Ordered	Cancelled.	Remarks.
6-inch.....	22,617	3,480	19,137	19,137		
8-inch.....	3,714	379	3,335	3,335		
10-inch.....	4,496	805	3,691	3,691		
12-inch.....	3,293	893	2,400	2,400		
20-inch.....	2,899	789	2,110	2,110		Camden Iron Co.
30-inch.....	2,543	483	2,060	2,060		
36-inch.....	5	0	5	5		
48-inch.....	2,564	353	2,211	2,211	173	
Small Spec- ials.....	7,987	877	7,110	7,110		
Large Spec- ials.....	1,027	89	938	938		
Totals.....	51,145	8,148	42,997	42,997		

Meters.

The charge for water when measured by meter has been reduced from sixty (60) to thirty (30) cents per one thousand (1,000) cubic feet, making the rate the lowest of any city in the United States. Notwithstanding this fact there is considerable opposition to their use in some manufacturing industries which do not pay by schedule rates as much as they should for the quantity of water they use.

Meters prevent waste, detect leaks, and equalize the charge for water to all consumers. They are accurate within a small percentage and do not retard the flow of water to any appreciable extent. Traps are, in every instance, placed in front of them to prevent fish and sediment from reaching the working parts and stopping the flow of water or injuring the meters. The retarding of the flow of water takes place in this trap by the filling of the screen, and it is the work of a few minutes only, daily or weekly, to remove the cover and clean it out. This is made an objection to the meters by those who do not want them on their establishments.

At present only those whose water rents would be reduced by meter rates desire to use them; those whose rents would be increased object, and the city is placed in the position of losing revenue in both cases. The city is not interested in placing meters where a loss of revenue results therefrom, but as a matter of justice to the consumer.

The waste of water cannot be prevented either as easily or as cheaply as by the meter system.

In the majority of cases, it being to the advantage of the consumer to pay by meter, he should be required to purchase it, subject only to a test for accuracy at stated periods by city officials. He should keep it in repair, and within five (5) per cent. of accuracy at all times.

The prejudice against meters will no doubt soon disappear when a great majority of manufactories find out the advantage they will have in decreased water rents.

When water is paid for by meter rates means are taken to prevent waste, because it is a saving of money, and by so doing, both the city and consumer are benefited.

In some instances the meters show where the city is losing money.

A sugar refinery paying \$17.00 annually, presumably for drinking purposes, uses water to the amount of \$963.60.

A morocco factory which paid \$335.70 by schedule rates, should have paid \$2,247.30.

A textile mill which was assessed at \$1,792.00 per annum, should have paid \$14,823.35.

A medical college which pays but \$20.40, uses, or rather wastes, water to the amount of \$2,170.95.

A hotel paying \$300.00 yearly would pay by meter the sum of \$1,549.14.

A theatre paying \$154.00 annually uses, through meter, water to the amount of \$793.50.

A public library which pays \$13.50 should pay \$111.03 for water mostly wasted through urinals.

A club house paying \$86.00, should pay \$154.33 per year.

Another club house paying \$104.00 uses water to the value of \$472.00 yearly.

A railroad company which pays \$445.00, should pay \$1,771.93 per year.

The greatest difference appears where saloons have gutters in front of their bars in which a stream of water is running continuously.

Nineteen establishments have this kind, on which meters were placed, showed the following result :

Their rents by schedule amounted to a total of \$554.00, while the meters showed that they should pay \$2,619.50.

When we consider that there are hundreds of these gutters in use it is evident that the city is paying a very handsome sum for useless waste.

The low rate of the consumption per capita in large cities, such as New York and Boston, is due to the use of meters. In the former there are 30,000 in use, and in latter 4,000.

Wherever meters have been generally introduced the effect is seen in the use of less coal, less waste, better service, greater pressure, and more general satisfaction both to the city and to the consumer.

Construction and Repair Shop.

Among the articles made at this shop during the year were 2,099 stop-valves of various sizes from six (6) to forty-eight (48) inches in diameter, and 924 fire hydrants.

The repairs to machinery at shop charges have amounted to nearly four thousand (4,000) dollars.

All tools for firing and for pipe-laying have been made and repaired.

The advantage in having this shop is that our repairs can be done promptly and satisfactorily at reasonable cost, while we can also make and repair our own fire-hydrants and stops.

The amount of work done has been greater than during any previous year, but the probability is that it will be exceeded during the current year.

Respectfully,

JOHN L. OGDEN,
Chief of Bureau.

APPENDIX A.

*Receipts through the Office of Bureau of Water, Department
of Public Works, for the year 1893.*

January	9.....	W. Moss.....	Repairing main.....	\$11 66
	24.....	Phila. & Read. Terminal Co..	Supply connection.....	72 94
	24.....	Phila. & Read. Terminal Co..	Supply connection.....	57 96
	24.....	Phila. & Read. Terminal Co..	Supply connection.....	82 29
	27.....	Robert Leithead.....	Supply connection.....	30 53
February	3.....	Beamont Mills Co.....	Repairing stop.....	4 60
	7.....	Baldwin & Co.....	Repairing stop.....	19 96
	9.....	Clark, Thomas & Co.....	Fire connection.....	56 83
	11.....	Phila. & Read. Railroad Co...	Removing fire hydrant.....	21 67
	21.....	W. Root.....	6 months rent, farm No. 4....	102 50
	25.....	Penna. Railroad Co.....	Repairing supply connection.	30 22
March	8.....	S. S. Keeley & Son.....	Repairing fire connection....	5 80
	4.....	H. M. Harris.....	6 months rent, farm No. 1....	100 00
	17.....	Gaiety Star Theatre.....	Supply connection.....	17 70
	23.....	J. W. Harris.....	6 months rent, farm No. 2....	100 00
April	4.....	Phila. Pneumatic Tel. Co.....	Hauling tools, etc.....	21 00
	6.....	Phila. County Prison.....	Repairing leak.....	21 35
	6.....	M. Burke.....	Old iron.....	600 00
	6.....	D. S. Filbert.....	Old slate.....	20 00
	6.....	Overdrawn warrant.....	No. 2291.....	83 37
	6.....	Overdrawn warrants.....	No. 2377 and 304.....	60 56
	10.....	Quaker City Croquet Club...	Rent of ground.....	10 00
	20.....	D. McMahon.....	Removing and replacing pipe	28 27
	29.....	Poth Brewing Co.....	Fire connection.....	65 81
	May	1.....	Joseph McGlathery.....	Raising pipe.....	20 75
9.....		N.W.cor. Park ave. & Berks st	Removing fire hydrant.....	11 75
10.....		W. P. Ogelsby.....	Supply connection.....	65 41
10.....		Phila. & Read. Terminal Co...	Fire hydrants.....	52 04
12.....		Stokes & Newton.....	Supply connection.....	53 42
13.....		John Bonhage.....	Raising 6-inch pipe.....	22 59

*Receipts through the Office of Bureau of Water, Department
of Public Works, for the year 1893—Continued.*

May	16.....	Allison Manufacturing Co.....	Repairing supply connection	9 44
	17.....	Phila. & Read. Terminal Co..	Digging for leak.....	3 45
	23.....	Bradbury Sons.....	Supply connection.....	63 24
	23.....	Philadelphia Traction Co.....	Removing stops.....	21 42
	25.....	J. J. Ryan.....	Moving fire hydrant.....	42 44
	29.....	Phila. & Read. Railroad Co...	Fire connection.....	82 09
June	1....	H. Snyder.....	Rent of saloon, Fairmount...	500 00
	3....	D. McMahon.....	Repairing pipe.....	6 42
	6....	Overdrawn warrant.....	No. 1114.....	1 20
	6....	J. Ladley.....	For stone.....	67 60
	8....	Harrington & Co.....	Fire connection.....	46 16
	9....	Germantown Spinning Co.....	Fire connection.....	65 98
	15....	Northern Ice Co.....	Supply connection.....	15 45
	19....	Philadelphia Traction Co.....	Repairing service pipe.....	4 78
	21....	J. Miller Sons & Co.....	Supply connection.....	7 14
	22....	Peoples' Passenger Rail. Co...	Moving stops.....	41 07
	26....	Winter Circus Co.....	Fire connection.....	94 96
	28....	Dungan, Hood & Co.....	Supply connection.....	26 76
July	21....	Pennsylvania Railroad Co.....	Moving pipe.....	52 45
	27....	McIlvaine & Bro.....	Fire connection.....	47 79
	27....	H. Snyder.....	Rent of saloon, Fairmount...	500 00
	28....	Phila. & Read. Railroad Co...	Fire hydrant.....	77 30
August	3....	Philadelphia Traction Co.....	Shifting stops.....	84 40
	3....	Philadelphia Traction Co.....	Shifting stops.....	38 35
	3....	Philadelphia Traction Co.....	Removing fire hydrant.....	22 94
	9....	Philadelphia Traction Co.....	Removing stops, etc.....	35 65
	14....	H. Warden.....	Chang. location fire hydrant..	21 31
	18....	Philadelphia Traction Co.....	Chang. location fire hydrant..	57 86
	22....	Achuff & Wynne.....	Redriving ferrules.....	14 50
	26....	Womens Christian Associat'n	Supply connection	39 20
September	26....	McManus & Riley.....	Fire hydrant.....	46 02
	1....	Vulcanite Paving Co.....	Repairing leak.....	18 78
	5....	Pennsylvania Railroad Co.....	Changing location water pipe	18 53
	5....	Burnham, Williams & Co.....	Supply connection.....	51 40
	7....	Ajax Metal Co.....	Digging ditch.....	4 60

*Receipts through the Office of Bureau of Water, Department
of Public Works, for the year 1893—Continued.*

September	9.....	Women's Hospital.....	Supply connection.....	79 15
October	6.....	D. McMahon.....	Redriving ferrules.....	6 00
	7.....	J. Sellers Kite.....	Supply connection.....	46 57
	11.....	Franklin Sugar Refinery.....	Fire connection.....	58 28
	11.....	W. P. Ogelsby.....	Supply connection.....	56 55
	12.....	Vulcanite Paving Co.....	Redriving ferrules.....	7 25
	13.....	W. Newell & Bro.....	Supply connection.....	7 43
	17.....	Holmesburg Water Co.....	3—No. 1 Fire hydrants.....	81 00
	19.....	Peoples' Traction Co.....	Altering line of pipe.....	17 10
	19.....	Malone.....	Removing pipe.....	9 82
	23.....	Calvary P. E. Church.....	Motor connection.....	5 08
	24.....	J. E. Eyanson.....	Supply connection.....	25 30
	24.....	J. S. Pennock.....	Fire connection.....	55 15
	25.....	Dales.....	Supply connection.....	55 56
	30.....	Philadelphia Traction Co.....	Shifting stop.....	32 95
	30.....	Philadelphia Traction Co.....	Shifting stop.....	39 42
	30.....	Philadelphia Traction Co.....	Shifting stop.....	35 20
November	2.....	Baltz Brewing Co.....	Supply connection.....	32 16
	3.....	Philadelphia Traction Co.....	Shifting stop.....	69 72
	3.....	Philadelphia Traction Co.....	Shifting stop.....	44 77
	10.....	J. Sellers Kite.....	Breaking stop.....	18 00
	13.....	J. F. Pngh.....	Altering water main.....	40 27
	16.....	R. G. Loughrey.....	Supply connection.....	52 67
	18.....	Pennsylvania R. R. Co.....	Repairing stop.....	2 80
	18.....	Pennsylvania R. R. Co.....	Repairing stop.....	7 20
	20.....	Philadelphia Traction Co.....	Changing stop.....	26 52
	22.....	Pennsylvania R. R. Co.....	Supply connection.....	72 28
	27.....	Onderdonk, H. & V. Co.....	Fire connection.....	112 96
	27.....	J. E. Eyanson.....	Supply connection.....	10 52
	28.....	Philadelphia Traction Co.....	Changing location stop.....	28 12
	29.....	Philadelphia Traction Co.....	Removing stop.....	13 00
December	2.....	H. M. Harris.....	Rent farm No. 1.....	100 00
	6.....	Philadelphia Traction Co.....	Changing location stop.....	28 06
	7.....	John W. Harris.....	Rent farm No. 2.....	100 00
	7.....	Samuel Walker.....	Supply connection.....	77 12

*Receipts through the Office of Bureau of Water, Department
of Public Works, for the year 1893—Continued.*

7....	Samuel Walker.....	Supply connection.....	74 99
15....	Philadelphia Traction Co.....	Changing location stop.....	70 82
15....	Philadelphia Traetion Co.....	Changing location stop.....	64 48
16....	Philadelphia Traction Co.....	Changing location stop.....	40 94
20....	Caven Silk Mills.....	Fire connection.....	46 98
Total.....			\$5,836 84

STATEMENT BY WARDS OF THE NUMBER AND KIND OF PREMISES AND APPLIANCES ON THE GENERAL BOOKS OF THE BUREAU OF WATER, JANUARY 1, 1894.

APPLIANCES.	WARDS.																																		Total.		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34			
Aquaria						2		1					1	1	1							2						1			2		1			12	
Arsenals																							1									1				2	
Asylums										2								1					4										1			8	
Bakeries	88	43	40	33	35	9	39	28	12	20	26	14	28	30	63	45	32	39	86	62	25	31	15	32	44	74	25	55	62	33	53	28	37	19	1,310		
Barber shops	63	41	24	43	51	32	40	25	44	18	31	25	39	32	54	33	25	33	72	61	37	33	31	36	45	58	21	54	38	27	39	21	24	18	1,268		
Bars	122	45	28	31	66	76	40	48	76	44	30	26	31	33	58	38	28	44	81	55	38	44	38	46	38	93	34	53	66	38	46	13	54	19	1,620		
Basins and sinks in dwellings	348	81	163	88	229	147	1,519	3,499	1,246	1,611	53	451	1,043	797	5,262	160	140	212	637	2,783	528	2,687	297	3,361	413	1,046	2,834	4,231	5,861	171	197	4,378	593	236	47,422		
Basins and sinks in offices and stores	243	126	101	86	2,387	2,447	418	2,464	2,937	870	335	373	469	566	1,830	246	185	301	786	382	181	652	163	416	181	643	1,024	398	1,522	208	304	124	243	124	23,735		
Baths in dwellings	8,364	1,583	799	618	887	864	1,871	2,976	1,085	2,188	464	1,041	1,938	2,217	6,379	847	853	2,091	6,527	6,643	2,042	5,454	1,448	8,106	3,736	10,067	4,546	12,468	9,903	3,390	5,148	8,281	6,618	2,447	132,880		
Baths, public	20	2	21	11	27	23	20	28	83	122			7		53			4	46	17	8	167	11	118	11	54	149	49	50	32	4	3	44	1,184			
Baths, shower					2	1	19	25	4	5				2	16					5		4		2				4	11						100		
Baths, foot									15			2			21					5		4		1			2						9		59		
Beam houses and tanneries											7					3	2																				12
Bidets					2	1	34	161	22	13			7	3	67				2	21		38	2	27		2	4	3	11			1		2	423		
Bottling establishments	21	11	12	14	52	47	5	12	28	5	29	21	10	8	22	9	16	8	36	24	15	12	12	11	12	15	7	24	36	7	14	5	15	8	582		
Brick yards																					1	1					12	4	6	1			1	4		30	
Brick yards, gangs of men																				5	1					25	24	24	3			8	14		104		
Breweries	1		2	1							4	3	2		4	4	5	1	6	5	1	2	3	1	3	1	1	8	15		2		3		78		
Barrels brewed	1,400		9,400	800							11,500	139,708	8,400		98,367	53,761	48,342							33,000	15,654		67,000		15,700	565,483		35,400		43,576	1182,491		
Cars, steam and horse	90							83					46	30	109															61	89	147			655		
Carriages and wagons	131	143	47	122	118	26	148	176	224	171	72	121	273	237	692	92	106	103	267	468	263	1,301	167	354	172	194	161	361	448	36	85	21	47	93	7,440		
Ceilar drainers										1												3														5	
Ceneteries	1	1																														2	1	1		6	
Churches	23	6	9	5		6	12	20	11	11	2	7	7	14	21	7	4	8	17	23	23	44	17	21	18	17	16	30	24	19	16	10	14	13	495		
Coal yards	3	13					1		1	1		2	2	1	15	12					8	10	7	2		20	19		24			1	4	1	168		
Coloring rooms											6	6				8	39		74	2									2			6		4		147	
Condensers																2			4						1	3						2				12	
Depot and railroad stations							1	1	2	1	5		1	1	5			1	6			9	23	8	16	3	1	1	15	2	2	2		3	111		
Dwellings with water	12,966	4,602	2,528	2,185	2,753	1,066	3,847	2,714	1,140	2,907	1,396	1,839	2,866	3,541	8,465	2,293	2,543	5,251	10,679	8,103	4,446	7,414	3,487	9,298	7,661	13,905	5,650	13,241	11,491	5,625	6,631	7,665	9,476	3,821	193,525		
Dwellings without water	18	64	86	33	6	14	62	14	21	14	24	13	14	33	83	98	36	21	22	4	395	541	544	68	351	29	91	276	14	13	142	12	98	242	3,493		
Dwellings, half, with water	131	214	54	293	144	249	596	84	106	176	96	544	103	40	296	143	163	122	138	174	150	194	89	109	21	117	20	30	39	168	51	14	66	34	4,968		
Dwellings, half, without water	153	704	760	701	89	23	552	140	96	329	628	67	319	297	515	889	1,179	1,219	450	386	146	29	17	10	3	89	60	15	11	13	151	8	11	18	10,077		
Dyers	31	16	13	12		8	21	17	16	19	6	12	19	24	39	20	13	21	47	31	17	25	12	24	26	36	18	35	18	16	29	16	48	14	719		
Drug stores	21	13	8	5	16	3	10	5	4	6	3	3	4	6	13	4	11	6	27	5	6	11	14	6	18	6	5	11	34	4	18		8	4	318		
Dye houses	4	7		1		3	4				5	4	11		60	14	79	19	90	5	13	18	16		21			31	4	3	116	4	41		573		
Engines on railroads	5	6			3								2		30	1	50		49			5		42		12	43						6	27	290		
Factories, foundries and mills	43	11	5	4	6	17	14	15	15	24	75	42	8		97	92	46	54	129	49	48	86	87	33	56	62	33	39	32	23	62	26	71	15	1,419		
Filters								3	3	3														1					2						1	13	

STATEMENT BY WARDS OF THE NUMBER AND KIND OF PREMISES AND APPLIANCES ON THE GENERAL BOOKS OF THE BUREAU OF WATER, JANUARY 1, 1894.—Continued.

APPLIANCES.	WARDS.																																		Total.		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34			
Fire stations.....	1	1			1	2	2	1	1	1	1			1	3		1	1	3	1	1	3	2	2	2	2	2	1	2	1	1				1	41	
Fountains, counter.....	13	4	5	4	7	11	6	13	12	16	2	5	12	7	23	4	7	9	21	36	14	15	10	10	12	21	8	25	24	7	9	9	6	6	393		
Fountains, garden.....	5	2	2		1	1	5	6	4	6	1	5	5	6	18	1		1	2	9	2	23	5	17	3	2	20	12	13	3	4	2	2	11	199		
Forges.....	16	14	9	12	21	4	9	11	47			26	5	9	23	227	21	12	171	44	36	18	34	46	28	47	35	44	42	18	18	9	8	19	12	606	
Furnaces.....												13											3													16	
Gas works and holders.....	1								1						1	5									2											13	
Glass works.....																		5	2													1	3			11	
Green houses.....	10					9	4	19	2	1			1	2	3	2			2	3	11	38	230	38	21	58	46	141	76	10	5			54	18	804	
Grind stones.....					6		6	4	3			4	1	2							21	6			28		15		10		8	2		15	2	146	
Halls and club houses.....	4	3	1	2	3	3	3	12	5	2	1	1	13	5	14			1	2	6	15	5	21	7	11	4	9	2	13	3	2	3	1	2	2	181	
Hatters' planks, per set.....	11				6	3						1																								22	
Hydrants.....	13,379	4,803	2,646	2,879	2,882	3,842	4,544	3,275	1,798	3,116	1,529	1,857	2,992	3,749	9,028	2,406	2,753	5,348	10,942	8,312	4,651	7,718	3,701	9,473	7,921	14,221	5,842	13,406	11,641	5,718	6,781	7,853	9,763	3,987	204,756		
Hospitals.....	1						3	1			6					2			1	3			1	5		3		1		2	3	1				1	34
Hotels.....					2	3		16	6	1	4	5	1			3										4											45
Hydraulic elevators.....	2				36	34	13	26	61	11			2			2												3	4	4			1		2	213	
Ice cream saloons.....	13	6	4	3	6	3	7	8	7	5	4	3	4	3	6	4	2	6	7	9	10	7	5	31	10	21	6	8	18	4	5	3	2	3	243		
Institutions, charitable.....	1						5				2					7											4	8	4			1		1		5	57
Ice machines.....	2	1	1	1	4	8	1		4			8	6	5		6		3		8	3	1	6	3	2	2	3	4	8	20		5		1	116		
Laundries.....	31	19	15	14	14	9	22	24	13	12	11	10	16		17	10	6	9	18	24	8	15	9	24	12	35	22	17	31	16	11	8	7	5	514		
Lawn sprinklers.....								1	1	2											6	49	93	8	3											245	
Laboratories.....	1	1			3	3	3					3	2	1		2	1						2			3	4	5	2	3	3			3		46	
Machines for washing, scouring, etc.....	44	9		3	47	56	22	14	18	26	168	108	12	41	82	87	426	61	258	23	38	34	131	21	221	41	6	155	10	10	95		47		2,314		
Marble yards.....	1					1	3	4	4	2				1		2					1	3	1	1	2		9	2	10	5	8	1	1	2	2	66	
Malt houses.....						1					2				1	2					4								2	12						24	
Market houses.....	1	2	1		4	1	4		4		3		2	2	1	2		2		2					2		3		2	6	3	2	2	2	1	55	
Milk houses.....	29	13	9	9	12	5	12	5	6	5	7	3	11	6	16	4	12	16	12	21	10	6	7	6	8	26	7	10	25	10	11	6	7	4	356		
Mint.....											1																										1
Motors, beer.....	108	41	26	27	67	74	38	40	72	43	28	24	27	30	56	35	26	43	80	54	37	43	37	45	38	91	33	52	64	37	45	12	54	18	1,545		
Motors, organ.....	1		2	2	1		8	16	4	6		4	3	3	6	3	2	3	5	12	6	5	2	10	2	6	8	5	7	4	3	3	2	1	145		
Photograph galleries.....	1	1	1	3	7	2	4	11	16	3	3	1	7		5	3	3	2	6	9	2	4	3	4	3	4	3	4	8	3	4	2	4	1	137		
Photograph gallery operators.....					10		6	19		4					7		3								5		4			4		3				77	
Police and patrol stations.....	1	1			1	1	2	1	2	1	1	1		1	2		2	1	1	1	3	4	2	1	2	3	1	3	1	1	1	1	1	1	1	45	
Polishing wheels.....	1					7			1					2				1									3	3			1					2	21
Pools, swimming.....		1			2			2	1					1	6									2			2	2		2						21	
Pools in churches.....	3	2	1	2	1		2	1	1	1	1		1	2	2				1		4	4	6	2	4	1	3	3	5	2		2	2		61		
Printing establishments.....					12					12										3												7				34	
Prisons.....															1												1									2	
Rectifying establishments and distilleries.....		2	2	2	5											1																				12	

STATEMENT BY WARDS OF THE NUMBER AND KIND OF PREMISES AND APPLIANCES ON THE GENERAL BOOKS OF THE BUREAU OF WATER, JANUARY 1, 1894.—Continued.

APPLIANCES.	WARDS.																																		Total.		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34			
Restaurants and eating saloons.....	31	19	10	28	55	71	19	52	65	24	15	9	41	25	18	19	15	24	37	56	9	12	15	21	17	28	10	20	35	23	27	12	14	9	855		
Screw nozzles.....	72	50	22	11	171	24	79	171	26	8	96	78	106	82	273	118	121	106	223	206	177	731	114	207	84	91	298	215	199	77	142	21	50	81	4,530		
Shot towers.....		1																																	1		
Slaughter houses.....	33	3		2	1						3	2	4	7	11	8	31	18	36	8	11	8	7	14	21	4		44	14	3	36	16	34	46	425		
Soap-boiling establishments.....	1	1			1						1						1		6		2		4												20		
Stand pipes for watering engines.....							1	1			1	1																							1	23	
Stables.....	118	46	56	95	49	39	214	324	81	89	67	78	75	106	309	115	147	331	516	318	299	745	251	260	304	167	293	354	129	234	285	68	197	228	6,981		
Stalls in stables.....	2,887	741	321	536	276	344	742	778	1,316	1,054	686	391	608	813	3,243	876	636	1,976	2,227	1,854	816	2,878	1,145	3,368	1,171	2,322	1,384	3,525	2,208	1,124	2,271	688	594	656	46,455		
Stalls, country.....	78	15	91	236	30		14				168	114	133	41	23	142																	18	48	646		
Stalls, cow.....																																				4,672	
Stalls in markets.....			140		331	221	199		1,182		321			451	350		204		221	520	128			383		228	465	69	1,062	171	26				67		
Stalls, fish.....			2		4		3		3		4			5	5		2		2	5	2			4		2			18	3	3				2,821		
Steam boilers, number.....	98	53	14	20	28	198	24	115	178	43	76	46	37	47	195	98	81	64	293	64	103	106	84	50	96	87	51	84	100	35	129	13	97	19	2,821		
Steam boilers, horse-power.....	2,487	1,502	493	263	264	5,212	786	3,941	5,973	2,402	1,896	1,274	1,033	1,394	6,974	2,603	2,705	2,074	7,963	1,541	6,048	3,253	3,233	1,424	4,115	3,693	2,452	2,594	4,193	862	3,103	374	4,626	502	92,293		
Steam boilers, heating, number.....	74	62	7	23	62	36	12	63	29	17		9	9	7	18	9	5	6	23	15	4	58	10	24	6	12	19	17	5	9	7	9	6	8	635		
Steam boilers, heating, horse-power.....					141	248	48	884	442	394			58		38		18		116		498		18		134	546	56		44	40	44	22	246		4,635		
Steam engines, number.....	37	29	17	12	224	166	18	69	81	37	40	33	22	36	43	45	207	39	97	60	15	52	36	24	26	35	3	32	38	30	60	8	23	23	1,717		
Steam engines, horse-power.....	881	815	178	168	3,461	1,624	424	1,993	2,751	991	402	473	506	881	823	904	1,303	1,007	2,485	930	206	509	382	306	741	632	39	481	1,439	440	797	38	687	244	29,341		
Steam saws.....								9																												9	
Steam presses and hammers.....	9																1																			10	
Shops and stores with water.....	6	9	14	34		1,742	73	124	698	243	211	88	113	67	69	39	28	71	84	108	46	83	46	54	22	54	81	23	36	114	69	12	24	22	4,553		
Shops without water.....	18	16	13	28	24	15	41	109	28	12	24	18	46	38	29	18	20	38	44	33	27	14	18	59	41	33	67	46	16	14	52	8	22	29	1,058		
School houses.....	15	5	7	8	4	4	12	10	3	9	5	5	2	10	11	5	4	4	7	16	12	18	9	12	6	13	3	9	14	7					18		
Theatres.....				1		1		5	3	4		1		2																				1			2,299
Tubs, vats and tanks.....	18				82	44	12	48	14		281	147	10	23	122	251	374	44	304	87			64	14	118	26	5	73		61	3		74		2,299		
Turbine wheels.....											1	6								8																21	
Urinals in dwellings.....					6	1	21	51		4			4		14		1			7		20		8		6	4		37						184		
Urinals in stores, offices, etc.....	37	26	18	16	794	564	48	397	535	64	37	30	80	92	141	27	15	23	137	75	21	117	18	63	12	30	170	82	188	37	27	21	49	36	4,027		
Urinal troughs.....	12	6	5	6	19	14	13	17	37	9	8	13	13	12	24	11	8	10	15	8	10	14	7	12	7	20	9	14	114	9	12	5	16	5	514		
Vinegar establishments.....	1										1						1			2			1	1												7	
Wash paves.....	2,710	560	432	228	372	283	1,362	1,484	518	1,379	189	659	1,372	1,460	4,721	467	423	940	3,314	5,748	616	2,318	804	4,566	1,672	3,772	2,390	8,721	6,306	1,771	1,573	7,665	3,406	712	75,443		
Wash paves for watering horses.....	40	14	16	7	9	6	15	14	15	7	13	11	5	7	11	8	17	26	30	18	9	19	7	25	26	32	8	22	17	9	27	3	21	12	525		
Wash tubs stationary.....	48	33	42	21	27	46	767	1,701	308	603	9	184	263	166	1,313	64	8	22	41	631	80	1,482	31	842	34	197	1,539	780	1,320	54	33	542	37	98	13,366		
Water-closets in dwellings.....	2,476	435	426	387	514	478	2,350	4,248	1,106	2,355	275	976	2,119	2,258	7,840	721	598	581	4,960	5,896	718	5,818	506	9,993	1,826	3,064	5,481	14,665	11,030	1,181	1,031	8,987	6,930	2,031	114,260		
Water-closets in stores, etc.....	177	187	71	26	3,758	3,767	379	812	2,756	798	342	262	292	642	1,884	230	198	152	1,151	395	180	562	121	110	734	541	364	375	395	274	480	185	478	135	23,213		
Wool washers.....																	2		8															3		13	

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STATEMENT OF PERMITS ISSUED DURING THE YEAR 1893 BY WARDS.

APPLIANCES.	WARDS.																																		Total.				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34					
Aquaria.....																																						1	
Bakeries.....	4	2	1	3	2	1	4	2	1	1		2		1	2	1		1	2	2	2	3		2	3	6	2	4	1		2		3	2		62			
Barber shops.....	3	1	2	1	3	1	8	2	4		2	1	2		4	2	1	3	6	2	1	2		1	3	6	2	6	2	2	4	1	8	3		89			
Bars.....	29	9	3	5	6	3	2	9	7	8		1	3	5	19	3		4	12	5	4	3	3	5	5	34	7	13	8	6	7	3	18	3		243			
Basins and sinks in dwellings.....	69	35	14	15	17	18	176	167	14	16	4	21	23	16	185	8	21	48	57	61	49	185	16	197	42	194	110	840	291	18	19	363	312	57		3,688			
Basins and sinks in offices and stores.....	28	4	8	11	29	82	19	71	202	106	14	18	21	11	23	14	13	29	56	28	24	64	14	29	28	17	84	52	27	17	53	73	85	12		1,366			
Baths in dwellings.....	612	34	12	16	14	3	68	61	13	16	9	19	14	26	160	28	51	85	94	47	141	361	122	442	307	403	217	1,841	235	95	73	295	492	201		6,612			
Baths in public buildings.....					4			12																													32		
Bidets.....								2																														5	
Bottling establishments.....	3	1	1	2	3		2	1	2	1	3	1		1	2	1	3	2	4	1	2	1	1	2	3	4	2	4	2	1	3	1	3	2		65			
Building purposes, number.....	36	4	1	1	2	2	1	1	4	1	1		1		5	1	2	4	8	4	53	85	71	28	43	30	39	88	21	4	6	22	72	22		663			
Carriages and wagons.....	16	18	6	16	12		10	4	3	4				3	11		4	8	11	4	5	21	14	15	10	19	8	11	16	9	4	6	14	12		303			
Cellar drainers.....																																						1	
Cut-offs.....	92	53	18	15	21	14	74	61	33	41	18	61	43	74	61	40	51	48	62	95	31	63	61	39	33	71	39	42	33	41	39	18	29	18		1,532			
Dwellings, half.....	12	10		4								3		4			6	3			8																50		
Drug stores.....	3	2		1	1			1	1		2	1	2		3		1			2	1	1	2		2	1	2	1		2	1		1	2	1		37		
Dye houses.....																				2																		3	
Factories.....	3	1		2	1				2						1					3				2														16	
Ferrules, number.....	638	326	152	198	105	39	287	124	68	114	32	98	102	161	319	73	136	121	166	289	174	401	286	309	590	858	343	2,356	204	137	141	95	633	350		10,302			
Filters.....																																						1	
Fountains, counter.....	2		1		2		3	2	1		1			1	1		2			1			2		1	1	2	1	2		1	1			1		29		
Fountains, garden.....																																						1	
Forges.....	4			2														8																				18	
Green houses.....																																							6
Hatters' planks.....																1						1																2	
Heating boilers.....	1		1		3			2	3	1											3																	28	
Hydrants in new buildings.....	478	3	1	2	4	12	6	4	7	6	2	3	2	1	185	1	2	7	86	12	122	336	197	206	401	562	228	1,763	161	43	36	36	1,433	195		6,433			
Ice cream saloons.....	2	1			1		2	1	1	1				2	3																							29	
Lawn sprinklers.....																																							3
Laundries.....	3	2	1	1	2		2	3	2																														41

STATEMENT OF PERMITS ISSUED DURING THE YEAR 1893 BY WARDS—Continued.

APPLIANCES.	WARDS.																																		Total.	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34		
Machines, scouring, rinsing, etc.....	4	1			3				2			3	1		6	4	2		3		6		3		2				4		6		3	2	55	
Milk houses.....	2	3	2	4	1		3	4	1			1		1	2		1	2			1	2		1	1	2	1		1	3	1	2	1	1	44	
Motors, beer.....	6	5	2	4	6	2	2	6	4	5		1	2	4	8	2		3	10	4	3	1	2	1	3	4	18	5	6	3	4	3	12	1	142	
Motors, organ.....	1							1	1			1		1	2				1		1	3		1		1	1			1	1			18		
Photograph galleries.....		1		1	1	1		1				1			1				1			1												10		
Plug permits.....	15	21		4	6		2		3		2	1		1		2		1	3				2			3	4	1	2	1		2	3	4	3	86
Pools in churches.....															1																				1	
Restaurants and eating saloons.....	5	4	5	6	5			1	2	1	2	2	1	1	3	2		2	4	3		3	1	2	3	1	1	1	4		3	1	2		71	
Screw nozzles.....	4			3	1				2			1					1	2	1		2			1		2	1				1		2		26	
Slaughter houses.....	2																							1											7	
Stables.....	10	1	3	2	4	1	1	2	1	2	2	1	1		3	1	2	3	4	1	2	4	3	4	5	4	2	1	4	1	2	2	4	3	86	
Stalls in stables.....	48	15	19	32	11	8	7	5	4	12	3	4	12		9	6	14	12	19	5	23	13	22	26	33	38	46	13	8	28	15	13	41	36	600	
Steam boilers, number.....	8	4	2	3	6	8	2	7	4	2	3	1		2	4	1	2	1	2	2	1	3	3	2	3	2	1	1	4	1	5	1	4	2	97	
Steam boilers, horse-power.....	98	51	14	32	81	62	23	39	45	36	18	9		22	41	6	15	5	14	23	4	18	41	42	47	18	2	16	67	14	81	13	63	44	1,154	
Steam engines, number.....	3	2	3	1	2	6	2	4	7	3	3	2		3	2	2	3	4	6	2	5	5	4	2	6	3	2	1	3	1	4		4	2	102	
Steam engines, horse-power.....	41	9	19	12	16	128	14	62	81	38	42	18		36	28	18	44	80	132	19	122	38	78	39	162	68	24	14	62	18	78		68	26	1,634	
Street sprinklers.....																																			216	
Shower baths, public.....					2			5							3																				10	
Tubs, vats and tanks.....	4				3					3							4	6	12						7							3		8	50	
Urinals in dwellings.....							2								1																				5	
Urinals in stores, offices, etc.....	5			2	1	3			8		2	1		2	3	4	2	3	5	1	2	3	4	3	5	2	1	3	2	2	7	3	5	3	87	
Urinal troughs.....	6	2	1	3	5	2	1	4	3	6	2		1	3	4	1	2	2	5	3	1	2	1	3	4	10	4	3	4	3	4	2	13	2	112	
Wash paves.....	365	1	3	2	1	9	4	3	4	6	2	3	4	3	106	2	5	12	33	26	115	341	168	174	336	421	211	1,683	108	41	21	41	1,186	172	5,612	
Wash paves for watering horses.....	6	2	1	1	2	1	2	1	1	2				2	3	2	1	2	4	2	1	1		3	2	10	2	3	2	1	2	1	4	1	68	
Wash tubs, stationary.....	12	4	3		8		14	36	6	12			8	4	28						12	6	42	3	32	12	14	18	212	106	6	42	24	18	682	
Water-closets in dwellings.....	398	76	42	47	29	4	22	36	22	34	21	18	19	12	196	4	21	31	103	42	168	415	212	351	545	714	386	1,945	212	78	64	104	1,721	261	8,353	
Water-closets in stores, etc.....	17	12	3	7	14	18	4	24	39	4	7	2	1	6	28	14	8	21	36	6	8	2	3	7	18	6	4	5	4	2	13	3	16	5	367	
Watering vessels.....	14	92		21							9																								136	
Washing cars.....	18																								14										48	

APPENDIX B.

REPORT OF CHIEF CLERK.

BUREAU OF WATER.

Philadelphia, January, 1894.

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 1893.

Respectfully,

J. T. HICKMAN,

Chief Clerk.

Detailed Expenditures of the Bureau for 1893.

General Appropriation.	Amount appropriat'd	Amount expended.	Amount merging.	Amount not merging
An Ordinance to make an appropriation to the Bureau of Water, approved December 31, 1892.....	\$1,405,739 00			
Balance from books of 1892.....	1,099,234 92			
Increased by extra ap- propriations.....	1,309,000 00			
	\$3,813,973 92			
Diminished by transfer	15,746 49			
Net appropriation.....	\$3,798,227 43			
Item 1. Salaries.....	\$228,114 00			
Diminished by transfer	6,500 00			
Net appropriation to Item.....	221,614 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 superin- tendent.....	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	1,122 53		
Inspectors.....	19,000 00	18,580 47		
Permit clerks.....	2,300 00	2,300 00		
Purveyors.....	9,200 00	9,200 00		
Clerks to purveyors.....	4,300 00	4,800 00		
Assistant clerks to pur- veyors.....	4,500 00	4,493 75		
Hydrant inspectors.....	7,050 00	6,027 19		
General foremen.....	6,634 00	6,232 30		
Foreman of repairs.....	3,900 00	3,900 00		
Superintendent of shop... Clerk to superintendent of shop.....	1,500 00 900 00	1,500 00 900 00		
Watchmen, offices & yards	5,400 00	5,287 23		
Storekeepers.....	1,400 00	1,394 16		
Foreman machinists.....	1,500 00	1,500 00		
“ bricklayers.....	1,100 00	1,100 00		
“ carpenters.....	1,000 00	1,000 00		
“ stone-masons.....	900 00	900 00		
“ painters.....	900 00	900 00		
“ riggers.....	900 00	900 00		
“ laborers.....	840 00	770 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		
Yard keeper, Fourth Dis- trict.....	915 00	915 00		
SALARIES AT PUMPING STATIONS.				
Fairmount engineers, oilers, etc.....	11,720 00	11,591 41		
Spring Garden engineers, oilers, etc..	51,625 00	49,360 92		

Detailed Expenditures of the Bureau for 1893.

General Appropriation.	Amount appropriat'd	Amount expended.	Amount merging.	Amount not merging
Item 1—Continued.				
Belmont engineers, oilers, etc.....	15,400 00	14,556 41		
Roxborough engineers, oilers, etc.....	17,820 00	16,097 85		
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.....	13,450 00	12,997 37		
		220,687 29	926 71	
Item 1½. Salaries, pump-				
ing stations..... \$17,625 00				
Diminished by transfer.... 2,000 00				
Net appropriation to Item.....	15,625 00	14,554 50	1,070 50	
Item 2. For general sup-				
plies, including fuel,				
oil and small stores..... \$150,000 00				
Increased by transfer.... 22,000 00				
Net appropriation to Item.....	\$172,000 00			
Deficiencies of 1892:				
Hauling ashes.....	\$237 89			
Hauling ashes.....	70 35			
Coal for stations.....	32,049 33			
		\$32,357 57		
Chandlery.....		134 20		
COAL FOR OFFICES AND SHOPS.				
1 ton nut.....	\$6 50			
8 tons stove, at \$6.75.....	20 25			
6 tons nut, at \$6.00.....	36 00			
10 tons stove, at \$6.25.....	62 50			
10 tons stove, at \$7.50.....	75 00			
13 tons stove, at \$7.00.....	91 00			
29 tons stove, at \$5.69.....	165 01			
60 tons 18 c w l. bitumi-				
nous, at \$3.59.....	223 25			
314 tons 16 cwt. pea, at \$3.24.	1,019 88			
		1,699 39		
COAL AT STATIONS.				
Chestnut Hill, 755.17 tons				
buckwheat, at \$2.00.....	\$1,511 70			
Roxborough, 1,908.19 tons				
pea, at \$2.38.....	4,543 30			
Frankford, 7,695.03 tons				
buckwheat, at \$1.74.....	13,389 57			
Belmont, 10,358.04 tons				
buckwheat, at \$1.73.....	17,919 66			
Roxborough, 10,779.18 tons				
buckwheat, at \$1.73.....	18,649 23			
Spring Garden, 42,991.17				
tons buckwheat, at \$1.78..	74,375 91			
		130,389 37		
Coke.....		568 90		
Electric lamps.....		88 00		
Fire bricks.....		147 00		
Hauling ashes and coal:				
Coal: Roxborough to				
Auxiliary.....	\$20 58			
Coal: Chestnut Hill to				
Mt. Airy.....	508 20			

Detailed Expenditures of the Bureau for 1893.

General Appropriation.	Amount appropriat'd.	Amount expended.	Amount merging.	Amount not merging
Item 2—Continued.				
Ashes: From Roxbor- ough	\$837 79.			
Linseed oil, 155 $\frac{1}{10}$ gallons, at 47c.....		\$1,366 57 73 23		
OIL.				
50 gals. Arctic, at 9c.....	\$4 50			
49 gals. paraffine, at 9 $\frac{1}{2}$ c.....	4 66			
105 gals. engine, at 30c.....	31 50			
519 $\frac{1}{2}$ gals. black, at 7c.....	39 18			
105 gals. cylinder, at 35c.....	36 75			
519 gals. gasoline, at 8c.....	45 56			
57 gals. cnstor, at \$1.00.....	57 00			
105 gals. engine, at 52c.....	65 10			
2,629 $\frac{1}{2}$ gals. headlight, at 6 $\frac{3}{4}$ c.....	170 79			
525 gals. lard, at 90c.....	472 50			
4,427 gals. engine, at 40c.....	1,770 80			
5,212 $\frac{1}{2}$ gals. cylinder, at 40c.....	2,084 88			
Paints.....		4,783 22		
Tallow.....		17 40		
		86 09		
Total.....		\$171,710 96	\$289 04	
Item 3. For repairs to ma- chinery and the convey- ance of workmen inci- dent thereto.....				
Increased by transfer.....	\$60,000 00 17,500 00			
Net appropriation to Item.....	\$77,500 00			
Deficiencies of 1892:				
Packing.....	\$88 44			
Lumber.....	985 63			
Brass fittings.....		\$1,074 09		
Beltng.....		1,320 16		
Chandlery.....		92 53		
Drill press.....		1,000 00		
Fire bricks and clay.....		259 90		
Freight.....		428 75		
Gum goods.....		70 92		
Gum valves.....		1,089 41		
Hardware.....		503 25		
Hauling.....		820 84		
Holting engine.....		500 00		
Iron fittings.....		850 00		
Lumber.....		1,951 78		
Pumps.....		2,000 00		
Repairs to Boilers:		2,043 24		
Fairmount.....	\$21 00			
Shop.....	126 06			
Belmont.....	147 70			
Frankford.....	585 78			
Spring Garden.....	1,010 60			
Roxborough.....	3,894 37			
Repairs to coal cars:		\$5,785 51		
Frankford.....	\$70 00			
Roxborough.....	140 00			

Detailed Expenditures of the Bureau for 1893.

General Appropriation.	Amount appropriat'd	Amount expended.	Amount merging.	Amount not merging.
Item 3—Continued.				
Belmont.....	\$293 50			
Spring Garden.....	451 22			
		\$954 72		
Repairs to condensers.....		83 50		
Repairs to engines:				
Belmont.....	\$185 35			
Spring Garden.....	2,931 25			
Frankford.....	1,140 78			
Roxborough.....	3,195 99			
		7,453 37		
Repairs to jacks.....		83 33		
Repairs to pulleys.....		37 00		
Repairs to pipe covering:				
Frankford	\$100 52			
Belmont	154 08			
Roxborough	186 72			
Spring Garden.....	365 61			
		806 93		
Repairs to wharf.....		133 00		
Separators.....		741 00		
Sponge cloths.....		89 25		
Transportation		1,722 40		
Wages:				
Painters	\$78 00			
Helpers	104 00			
Carpenters	5,397 34			
Stone masons.....	6,684 84			
Laborers	7,501 75			
Bricklayers	8,056 24			
Machinists	17,705 12			
		45,527 29		
Totals.....		\$77,125 19	\$74 81	
Item 4. Maintenance and repairs to buildings, grounds, and reservoirs.				
.....	\$75,000 00			
Increased by transfer.....	19,000 00			
Net appropriation to Item.....		\$94,000 00		
Deficiencies of 1892:				
Harness.....	\$9 80			
Incidentals.....	16 50			
Sand.....	42 16			
Lumber	115 61			
Ice	185 37			
		\$369 44		
Belting.....		34 55		
Bricks.....		862 12		
Cement.....		2,000 00		
Chandlery.....		1,195 71		
Coping stone.....		259 70		
Curbing stone.....		973 35		
Electric supplies.....		834 76		
Forage.....		1,599 57		
Gum goods.....		1,397 93		
Hardware.....		3,191 58		
Horse shoeing.....		125 70		
Incidentals.....		207 85		
Iron (bar).....		184 75		
Iron beams.....		330 02		
Lime.....		169 92		
Linseed oil, 103 $\frac{2}{10}$ gals. at 47 cts.....		48 85		

Detailed Expenditures of the Bureau for 1893.

General Appropriation.	Amount appropriat'd	Amount expended.	Amount merging.	Amount not merging.
Item 4—Continued.				
Lumber		4,000 00		
Paints.....		607 79		
Plants.....		83 84		
Repairs to harness..... \$103 50				
Repairs to reservoir..... 255 00				
Repairs to roof..... 2,173 62				
Repairs to wharf..... 4,160 00				
Repairs to wagons..... 70 55				
		6,762 67		
Sand.....		462 15		
Slag.....		17 82		
Telephone rental.....		1,305 00		
Tin.....		395 00		
Towing		112 50		
Use of hoisting machine.....		177 00		
Wages. Buildings, grounds, and reservoirs:				
Stone masons..... \$276 75				
Drivers..... 413 00				
Horses, carts and drivers.. 2,427 50				
Painters..... 5,285 80				
Carpenters..... 7,716 69				
Helpers..... 8,448 42				
Laborers..... 32,026 98				
		56,600 14		
Wages: Fourth District.....		5,856 51		
Wages: New Roxborough Reservoir..		3,881 73		
Total.....		\$93,987 95	\$12 06	
Item 5. For repairs and improvement of the dis- tribution, including the purchase of material and cost of labor in con- nection therewith, and expenses incident thereto				
thereto..... \$110,000 00				
Increased by transfer..... 39,500 00				
Net appropriation.....	\$149,500 00			
Deficiency of 1892, parts of meters.....		\$198 00		
Brass fittings.....		862 60		
Bricks.....		42 50		
Cement.....		496 45		
Chandlery		14 92		
Corporation cocks, 229 ½-inch at 60 c.		137 40		
Forge.....		952 60		
Gum goods.....		500 00		
Hardware.....		1,270 75		
Harness.....		235 00		
Hauling.....		1,500 00		
Hire of scows.....		2,348 00		
Horses, 4 at \$164.00.....		656 00		
Horse shoeing.....		25 00		
Iron (bar).....		753 30		
Iron fittings.....		1,564 55		
Iron pipe and specials:				
4,850, 6-inch, 2,781,567				
lbs. at 1.09 cts.....	\$19,419 11			
842, 8-inch, 407,893 lbs.				
at 1.09 cts.....	4,445 91			

Detailed Expenditures of the Bureau for 1893.

General Appropriation.	Amount appropriat'd.	Amount expended.	Amount merging.	Amount not merg'd.
Item 5—Continued.				
1,828, 10-inch, 1,224,800 lbs. at 1.10 cts.....	13,467 32			
109, 12-inch, 98,425 lbs. at 1.10 cts.....	1,082 68			
24,800 lbs. specials at 2½ cts.....	5,115 01			
		43,530 03		
Lead (pig), 75,754 lbs. at 4.49 cts.....		3,400 00		
Lead pipe, 65,000 lbs. at 5 cts.....		2,750 00		
Lumber		2,000 00		
Plumbing		5 00		
Repairs to gauge..... \$1 75				
Repairs to pavement..... 221 51				
Repairs to pump..... 4 00				
		227 26		
Services of diver.....		250 00		
Stone		48 40		
Traveling expenses.....		186 01		
Transportation.....		191 05		
Towing		270 00		
Wood.....		16 13		
Wages:				
Improvement	\$11,919 64			
First District.....	11,714 13			
Second District.....	11,162 10			
Third District.....	15,184 88			
Fourth District.....	18,586 45			
Fifth District	8,870 31			
Sixth District.....	7,214 05			
		84,651 56		
Totals.....		\$149,073 51	\$426 49	
Item 6. For supplies, including fuel and labor at the city construction and repair shop.....				
Increased by transfer.....	\$75,000 00			
	15,000 00			
Net appropriation.....	\$90,000 00			
Deficiency of 1892, lumber.....		\$660 01		
Ajax metal, 2,413 lbs. at 22 cts.....		530 86		
Belting.....		7 07		
Brass castings:				
11,971 lbs. red at 13⅞ cts. \$1,661 01				
33,675½ lbs. yellow at 11¼ cts.....	4,496 03			
	\$6,157 04			
Cr.				
68 lbs. red at 13⅞ cts... \$8 74				
289 lbs. yellow at 11¼ cts 30 10				
4,000 lbs. scrap at 6 cts. 240 00				
9,860 lbs. turnings at 5 cts	493 00			
	\$771 84	5,385 20		
Brass fittings.....		45 85		
Chandlery.....		1,023 02		
Expansion metal.....		364 41		
Forge		150 00		

Detailed Expenditures of the Bureau for 1893.

General Appropriation.	Amount appropriat'd	Amount expended.	Amount merging.	Amount not merg'g.
Item 6—Continued.				
Gum goods.....		\$2,003 79		
Hardware.....		2,428 33		
Horse shoeing.....		24 00		
Iron (bar).....		2,063 84		
Incidentals.....		8 75		
Lathe.....		790 00		
Lead coating, 15,409 lbs. at 4 cts.....		616 36		
Listing.....		15 00		
Lumber.....		3,000 00		
OIL.				
153 gals. black at 7 cts.....	\$10 71			
104 gals. lard at 90 cts.....	93 60			
449 ⁵ / ₁₆ gals. cylinder at 40 cts	179 72			
54 ¹ / ₁₆ gals. engine at 40 cts.....	216 00			
		500 03		
Plug valves:				
461 small at \$2.50.....	\$1,402 50			
134 large at \$4.00.....	536 00			
		1,938 50		
Repairs to boring machine.....		9 40		
Shaping machine.....		1,274 00		
Shop castings:				
4,555 lbs. at 1.35 cts.....	\$61 49			
177,915 lbs. at 1 ³ / ₄ cts.....	2,446 31			
19,045 lbs. 1 ³ / ₄ cts.....	317 42			
17,407 lbs. at 1.85 cts.....	322 03			
451,955 lbs. at 1 ⁷ / ₈ cts.....	8,474 17			
196,191 lbs. at 1.93 cts.....	3,792 29			
461,102 lbs. at 2 ¹ / ₁₆ cts.....	9,990 63			
178,226 lbs. at 2 ¹ / ₁₆ cts.....	4,473 17			
42,313 lbs. at 3 ⁷ / ₈ cts.....	1,640 80			
175 hours machine work at 90 cts..... machine work	157 50			
		31,675 81		
Wages.....		34,475 68		
Totals.....		\$88,989 91	\$1,010 09	
Item 7. For general, incidental, and contingent expenses, including keep of horse for Chief of Bureau, General Superintendent, and assistant to Chief, each four hundred (400) dollars.....				
Increased by transfer.....	\$15,000 00			
	1,500 00			
Net appropriation to item.....	\$16,500 00			
Deficiency of 1892, printing.....		\$1,000 66		
Advertising.....		425 15		
Awning for window.....		7 60		
Badges.....		9 00		
Chairs and table.....		46 00		
Carriage hire.....		35 00		
Care of clocks.....		15 00		
Clocks.....		10 00		
Curtain for bookcase.....		8 30		
Examination of water.....		150 00		
Gauge chain.....		6 00		
Ground rent, 918 Cherry street.....		26 66		
Hardware.....		5 97		

Detailed Expenditures of the Bureau for 1893.

General Appropriation.	Amount appropriat'd.	Amount expended.	Amount merging.	Amount not merg'g.
Item 7—Continued.				
Ice.....		\$545 53		
Incidentals.....		328 15		
Keep of horses.....		1,200 00		
Maps.....		103 55		
Meters.....		77 75		
Messenger service.....		32 18		
Morning papers.....		23 92		
Oil.....		354 65		
Photographic supplies.....		40 22		
Repairs to badges.....	\$1 00			
Repairs to pens.....	1 50			
Repairs to chairs.....	6 50			
Repairs to instruments.....	145 74			
		154 74		
Services of typewriter.....		32 00		
Stationery and printing.....		7,765 63		
Subscription.....		13 50		
Test tools.....		110 60		
Transportation.....		106 00		
Traveling expenses, Hydrographic.....		98 53		
Typewriter supplies.....		10 35		
Washing towels.....		84 00		
Writing duplicates.....		1,939 20		
Wages, Hydrographic Corps.....		1,560 00		
Total.....		\$16,326 34	\$173 66	
Item 8. For the purchase of material and cost of labor in connection with the laying of service pipe and expenses incident thereto..				
	\$225,000 00			
Increased by transfer.....	34,000 00			
Net appropriation to item.....	\$259,000 00			
Deficiencies of 1892:				
Iron castings.....	\$16 36			
Rent of shop.....	25 00			
Hauling.....	447 00			
		\$488 36		
Brass fittings.....		1,209 65		
Cement.....		493 50		
Chandlery.....		4,567 63		
Clay.....		19 60		
Coke.....		238 45		
Corporation cocks:				
8,756 $\frac{1}{2}$ -in. at 60 cents.....	\$5,253 60			
300 $\frac{3}{4}$ -in. at 63 cents.....	189 00			
100 $\frac{3}{4}$ -in. at 74 cents.....	74 00			
350 1-in. at \$1.....	350 00			
100 2-in. at \$4.15.....	415 00			
		6,281 60		
Dynamite.....		179 55		
Forage.....		2,242 08		
Gum goods.....		2,383 73		
Hardware.....		1,880 25		
Harness.....		340 82		
Hauling.....		1,617 76		
Horses, four, at \$164.....		656 00		
Horse shoeing.....		472 63		
Iron (bar).....		40 83		

Detailed Expenditures of the Bureau for 1893.

General Appropriation.	Amount appropria'd.	Amount expended.	Amount merging.	Amount not merg'g.
Item 8—Continued.				
Iron pipe and specials:				
8,687 6-in., 3,172,472 lbs., at 1.09 cts.....	\$34,579 90			
2,858 8-in., 1,144 749 lbs., at 1.09 cts.....	12,477 74			
1,672 10-in., 1,125,147 lbs., at 1.10 cts.....	12,376 63			
1,276 12-in., 1,186,343 lbs., at 1.10 cts.....	13,049 76			
95 20-in., 172,377 lbs., at 1.07 cts.....	1,841 43			
5 30-in., 29,500 lbs., at 1.8 cts.....	531 00			
265 30-in., 1,031,100 lbs., at 1.06 cts.....	10,505 67			
155 30-in., 532,469 lbs., at 1.11 cts.....	5,910 33			
53,955 lbs. specials, at 13 ¹ / ₂ cts.....	741 89			
540,151 lbs. specials, at 2 ¹ / ₂ cts.....	10,934 34			
230,487 lbs. specials, at 2 ¹ / ₂ cts.....	5,416 19			
18,391 lbs. specials, at 3 ⁷ / ₈ cts.....	712 66			
32,244 lbs. breeches pipes, at 3 ¹ / ₂ cts.....	1,296 51			
41 hours machine work, at 60 cts.....	24 60			
336 hours machine work, at 90 cts.....	302 40			
		\$110,704 05		
Lead (pig), 178,173 ³ / ₄ lbs. at 4.49c.....		8,000 00		
Lead pipe, 20,000 lbs., at 5 cts.....		1,000 00		
Lime.....		78 88		
Ludlow valves, 4 30-in., at \$240.00.....		960 00		
Lumber.....		5,000 00		
Oil:				
51 gals. gasoline, at 8c.....	\$4 08			
308 gals. headlight, at 6 ³ / ₄ c.....	20 80			
		24 88		
Photographic supplies.....		24 22		
Professional services.....		96 00		
Repairs to pump.....	\$38 60			
Repairs to tools.....	2 75			
Repairs to stop valves.....	229 11			
Repairs to wagons.....	654 13			
		918 99		
Rent of shop.....		100 00		
Sand.....		296 40		
Slag.....		88 43		
Services of assistant Pipe Inspector.....		542 50		
Spherical joints.....		470 00		
Stetion pipe.....		1,202 13		
Stone.....		867 88		
Stop valves:				
50 6-in. 3 way, at \$28.50.....	\$1,425 00			
50 6-in. 4 way, at \$62.00.....	3,100 00			
7 10-in. 3 way, at \$66.00.....	462 00			
		4,987 00		
Tallow.....		11 18		
Transportation.....		1,167 47		
Traveling expenses (pipe inspectors).....		1,297 63		
Wagons.....		1,162 00		
Wood.....		60 00		

Detailed Expenditures of the Bureau for 1893.

General Appropriation.	Amount appropriated.	Amount expended.	Amount merging.	Amount not merging.
Item 8—Continued.				
Wages:				
Improvement	\$7,979 51			
First District.....	16,820 68			
Second District.....	12,510 52			
Third District.....	19,790 20			
Fourth District.....	22,365 33			
Fifth District.....	5,915 40			
Sixth District.....	11,398 51			
		96,680 15		
Totals.....		\$258,802 18	\$197 82	
Item 8½. For relaying small pipe and for the purchase of water meters.....				
	30,000 00			
Hauling.....		\$2,500 00		
Lead, 53,730¾ lbs., at 4.49cts.....		2,500 00		
Water meters:				
1¾-in. Nash.....	\$14 00			
10¾-in. crown, at \$13.50.....	135 00			
175¾-in. crown, at \$22.50.....	3,937 50			
150 1-in. crown, at \$30.....	\$4,500 00			
45 1½-in. crown, at \$55.....	2,475 00			
45 2-in. crown, at \$75.....	3,375 00			
13-in. crown, at.....	150 00			
14-in. crown, at.....	300 00			
20 3-in. gem, at \$99.....	1,980 00			
20 4 in. gem, at \$198.....	3,960 00			
5 6-in. gem, at \$450.....	2,250 00			
2 4-in. Deacon, at \$245.40.....	491 00			
3 6-in. Deacon, at \$330.....	990 00			
Parts of meters.....	440 58	\$24,998 08		
Total.....		\$29,998 08	\$1 92	
Item 9. Extension.....\$420,000 00				
Diminished by transfer.....	52,746 49			
Net appropriation to item.....	\$367,253 51			
Boilers, Spring Garden.....		17,013 34		
Boiler house, Spring Garden.....		18,228 00		
Cement.....		500 00		
Engine house, Roxborough Station.....		9,916 80		
Excavating pipe trench:				
5,384.1 cubic yards earth, at 25c.....	\$1,333 53			
7,452.4 cubic yards rock, at 35c.....	6,334 54			
9,581 cubic ya'ds earth, at 95c.....	\$9,099 77			
less 20 per cent.....	1,819 96			
	7,279 81			
675.4 cubic yards earth, at \$1.25.....	\$844 25			
less 20 per cent.....	168 85			
	675 40			
1,074.4 cubic yards earth, at \$1.35.....	1,450 44			
3,088.5 cubic ya'ds earth, at \$1.35.....	\$4,179 47			
less 20 per cent.....	995 89			
	3,983 58			
2,025.4 cubic yards earth, at \$1.38.....	2,795 05			

Detailed Expenditures of the Bureau for 1893.

General Appropriation.	Amount appropria'd.	Amount expended.	Amount merging.	Amount not merging.
Item 9—Continued.				
10,421.4-7 cubic yards earth, at \$1.40.....	14,589 96	\$42,442 31		
2,424.24 cubic yards earth, at \$1.65.....	4,000 00			
Hauling.....		500 00		
Iron pipes and specials:				
911 12-in., 830,060 lbs., at 1.10c.....	\$10,281 17			
702 20-in., 1,180,367 lbs., at 1.198c.....	14,140 80			
1,162 20-in., 2,079,464 lbs., at 1.07c.....	22,250 36			
339 30-in., 1,457,193 lbs., at 1.06c.....	15,446 25			
14 30-in., 84,635 lbs., at 18-10c.....	1,523 43			
1,254 30-in., 4,908,238 lbs., at 1.11c.....	54,481 99			
44 48-in., 413,559 lbs., at 1.2785c.....	5,287 36			
159,080 lbs. specials, at 2 1/2c.....	3,977 02			
430,052 lbs. specials, at 23-10c.....	9,893 84			
71,147 lbs. breeches pipe, at 3 9-10c.....	2,774 74			
1,024 hours machine work, at 60c.....	\$614 40	\$140,671 36		
Lead (pig), 357,789 lbs. at 4.49c.....		16,100 00		
Services of pipe inspector.....		87 75		
Wages:				
Second District.....	\$5,120 62			
Third District.....	9,444 79			
Fourth District.....	5,665 38			
Fifth District.....	13,910 58			
Sixth District.....	9,811 66	43,953 03		
Total		\$289,412 59	\$1,386 85	\$76,454 07
Item 9 1/2. New Roxborough Reser- voir, balance, January 1, 1893.....				
	\$35,100 00	35,100 00		
Item 10. Extensions, balance, Janu- ary 1, 1893.....\$210,294 92				
Increased by transfer.....	15,000 00			
Net appropriation to item.....	225,294 92			
Boilers:				
Spring Garden.....		4,385 11		
Roxborough.....		7,768 44		
Frankford.....		6,890 90		
Engines:				
Spring Garden.....		23,163 20		
Engine:				
Frankford.....		16,942 40		
Roxborough.....		9,204 00		
Excavating pipe trench.....		4,316 77		
New Roxborough Reservoir.....		46,594 43		
Total		\$119,265 25	\$933 23	\$105,096 44
Item 11. For the construction of a new reservoir in the Twenty-eighth Ward, balance January 1, 1893.....				
	853,840 00			

Detailed Expenditures of the Bureau for 1893.

General Appropriation.	Amount appropriat'd	Amount expended.	Amount merging.	Amount not merging.
Item 11—Continued.				
New Reservoir Queen Lane.....		\$549,388 40		\$304,551 60
Item 11a. For the completion of Queen Lane Reservoir, appropria- tion, May 5, 1893.....\$225,000 00				
Diminished by transfer..... 34,000 00				
Net appropriation to item.....	191,000 00			
Iron pipe and specials:				
152-4 inch, 1,098,306 lbs., at 1.15c.....\$13,812 55				
24,010 lbs., specials, at 3.1- 16c..... 840 35				
66,447 lbs. specials, at 2.3-10c..... 1,528 29				
266 hours machine work, at 60c..... 159 65		16,341 14		
Wages:				
Fifth District..... 1,178 73				
Sixth District..... 200 00				
Engineer corps, Queen Lane Reservoir..... 11,414 23		12,792 96		
Total.....		329,134 10	695 44	161,170 46
Item 12. For extending the build- ings, constructing new boilers, building and erecting engines, in- cluding connections at Spring Garden, appropriation April 7, 1893.....\$405,000 00				
Diminished by transfer.. 70,853 00				
Net appropriation to item.....	334,147 00			
Boiler house, Spring Garden.....		6,966 40		
Engines, Spring Garden.....		51,000 00		
Engine house, Spring Garden.....		2,100 00		
Excavating pipe trench:				
5,831.5 cubic yards				
earth, at 79 cts.....\$4,606 89				
Less 20 per cent... 921 36				
.....\$3,685 53				
2,953.2 cubic yards				
rock at \$2.17.....\$6,408 44				
Less 20 per cent... 1,281 68				
.....\$5,126 76				
Hauling.....		8,812 29		
.....		3,036 00		
Iron pipe and specials:				
400 48-inch, 3,308,157 lbs., at 1-15c.....\$38,043 82				
120,238 lbs. specials, at 2½c. 3,005 96				
112½ hours machine work at 60 cts..... 67 50				
.....		41,117 28		
Services of pipe inspectors.....		156 00		
Traveling expenses, pipe inspectors... 309 35				
Wages:				
Buildings, grounds, and reservoirs.....\$4,958 92				
Fourth District..... 9,178 99				
.....		14,137 91		
Totals.....		\$128,635 23		\$205,511 77

Detailed Expenditures of the Bureau for 1893.

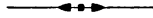
General Appropriation.	Amount appropriat'd.	Amount expended.	Amount merging.	Amount not merging
Item 13. For extending buildings, and for a new pumping main at Frankford Pumping Station, appropri- ated April 7, 1893.....	\$370,000 00			
Engine House, Frankford.....		\$42,120 00		
Excavating pipe trench:				
39,148.3 cubic yards				
earth, at 49 cts.....\$19,191 50				
Less 20 per cent. 3,838 30				
\$15,353 20				
2,625.4 cubic yards				
rock, at \$1.25.....\$3,281 74				
Less 20 per cent... 656 34				
\$2,625 40				
		17,978 60		
Hauling.....		6,500 00		
Iron pipe and specials:				
143 20-inch, 243,782 lbs., at 1.198 cts.....	\$2,920 50			
384 48-inch, 3,507,941 lbs., 1.2785 cts.....	44,848 99			
1,437 48-inch, 11,850,762 lbs., at 1.2433 cts.....	147,315 62			
73,128 lbs. specials, at 2½ cts.....	1,828 71			
43,013 lbs. specials, at 3 9-10 cents.....	1,697 10			
19,206 lbs. specials, at 4 cts. 88 hours machine work, at 60 cts.....	768 24			
223 hours machine work, at 90 cts.....	200 70			
		199,632 61		
Lead (pig) 890,868½ lbs., at 4.49 cts.....		39,999 96		
Lumber.....		2,994 54		
Services of pipe inspector.....		159 00		
Wages:				
Third District.....	\$6,044 98			
Fourth District.....	3,609 76			
Buildings, grounds and reservoirs.....	1,859 90			
		11,514 62		
Totals.....		\$320,899 33		\$49,100 67
Item 14. New Pumping Station for Queen Lane, appropriation April 7, 1893.....	\$225,000 00			
Diminished by transfer.....	72,570 00			
Net appropriation to Item.....	152,430 00			\$152,430 67
Item 15. Boilers for Frankford and engine house, Georges Hill, appro- priation December 12, 1893.....	67,636 00			67,636 00
Item 16. Pumping Engine for Queen Lane Station, appropriation Decem- ber 12, 1893.....	75,787 00			75,787 00

Detailed Expenditures of the Bureau for 1893.

RECAPITULATION.

General Appropriation.	Amount appropriat'd			
Balance from books of 1892.....	1,099,234 92			
Special appropriations.....	1,309,000 00			
		2,408,234 92		
Annual appropriation.....		1,405,739 00		
			3,813,973 92	
Transferred to other Bureaus.....	15,746 49			
Expended for deficiencies.....	36,148 13			
Expended for maintenance.....	1,085,407 78			
Expended for extensions.....	1,471,834 90			
		2,609,137 30		
Amount merging.....	7,198 61			
Amount not merging.....	1,197,638 01	1,204,836 62	3,813,973 92	

APPENDIX C.



REPORT

OF THE

GENERAL SUPERINTENDENT

OF

Work done during 1893 to Buildings, Grounds and Reservoirs, and Boilers and Machinery of the Several Pumping Stations,



OFFICE OF THE GENERAL SUPERINTENDENT,

BUREAU OF WATER.

Philadelphia, January, 1894.

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 1893 :

There were pumped during the year 65,352,736,978 gallons of water, an increase of 5,565,152,800 gallons over the pumpage of 1892.

The maximum daily pumpage was 222,518,845 gallons, an increase of 22,522,132 gallons over the maximum pumpage of the preceding year. The average daily pumpage was 179,048,594 gallons, an increase of 15,246,994 gallons over the average of 1892.

There have been pumped from the East Park Reservoir to the district supplied by direct pumpage 163,768,830 gallons of water during the year.

There has been added during the year at the Spring Garden Works one 20,000,000 gallon pumping engine, built by Henry R. Worthington, of New York, and which was started pumping June 5th.

At the Roxborough Station one 12,000,000 gallon pumping engine has been erected by the Southwark Foundry and Machine Company of this City. It was started pumping April 24th.

On February 10th a portion of the dam at Flat Rock gave way, and on March 10th another portion, extending two-thirds of the entire length, broke. It then became necessary to make provision for pumping from the river into the pump wells, for fear the water in the river should fall below the suction pipes of the pumps. Six centrifugal pumps were placed on the tow-path, two 8 inch and four 10 inch, with engines to run them, and kept ready for immediate use.

On April 10th the gates from the pump well to the river were shut and the centrifugal pumps started to pump in the wells, and continued to pump in this way until July 13th, when the repairs to the dam were completed. The repairs being only temporary the entire plant of pumps was left ready for immediate use.

The Reservoir at Roxborough was completed and water first pumped in September 21st. The following are the total quantities of materials furnished and work done on the Reservoir :

Excavations.....	386,797	cubic yards.
Clay	79,000	“ “
Stone masonry.....	1,900	“ “
Brick masonry.....	290	“ “
Brick lining.....	31,726	square “
Concrete lining.....	77,953	“ “

Vitrified brick paving.....	125 square yards.
Granite curb.....	284 linear feet.
Coping stone.....	1,050 " "
Picket fence.....	3,818 " "
Foot walk.....	6,910 square "

The Reservoir has now twenty feet of water in it.

The following is a report of operations at the Queen Lane Reservoir during the year. The building of the embankments was resumed March 20th, and they have all been completed, with the exception of a few thousand yards in front of the openings in the roadways. The following will show the progress of the excavations during the year :

January	1,400 cubic yards.
March.....	50,461 " "
April.....	100,771 " "
May.....	136,212 " "
June.....	137,067 " "
July	45,204 " "
August	45,808 " "
September.....	16,671 " "
October	1,355 " "

The clay lining has been placed on all the inside slopes, and sufficient clay for lining the bottom of the South Section has been stored in it. The clay for the bottom of the North Section is now being stored. The following work has also been completed: The pass pipe connections; the blue stone lining in front of the pass pipes and inlet pool; the wall on Thirty-third street; the stop houses; the inlet pool; the blue stone steps at the stop houses, and the large steps at the east end of the division bank.

The Spring Garden Reservoir was cleaned out and 11,000 loads of mud removed and dumped on Thirty-third street around the foot of the East Park Reservoir bank and covered over with soil. The east and west

division bank on the East Park Reservoir for a distance of 350 feet gave way and slid into the northeast section. The water in this section was drawn off and repairs made to the bank.

The pumps at all the stations have been worked beyond their capacities, but have been kept in good running order. During several days in August there was no pumpage at Fairmount, all the water flowing in the river being pumped by steam.

The buildings, grounds and reservoirs are in good condition, and many improvements have been made.

Respectfully,

F. L. HAND,

General Superintendent.

No. 9.—Worthington Duplex.—
Capacity, 15,000,000 gallons
per day.
No. 10.—Worthington Duplex.—
Capacity, 15,000,000 gallons
per day.

NEW SPRING GARDEN STATION.

Total Capacity—30,000,000 gal-
lons per day.

1893.	Running Time of each Engine in Hours.		Gallons pumped by each Engine.		Total pump- age of each Month.	Average pumpage per Day.	Coal.		Percentage of ashes.	OILS.		Mean Water Pressure and Mean Suction Lift in Pounds per sq. in.	Gallons raised 100 feet per pound of Coal.	
	No. 9.	No. 10.	No. 9.	No. 10.			Tons.	Lbs.		Cylinder.	Engine.			
														Qts.	Qts.	No. 9.	No. 10.
January	744	744	527,719,000	517,352,025	1,045,271,115	33,711,971	1,701	1,368	.20	589	62	66	66	412.2
February	670	634	455,782,920	433,733,570	895,516,590	31,982,735	1,378	2,059	.20	511	56	66	66	436.6
March.....	670	632	447,016,730	409,023,714	855,040,444	27,614,207	1,399	859	.20	558	62	70	72	411.2
April.....	712	671	461,659,465	431,760,990	896,720,455	29,890,681	1,443	880	.20	551	62	72	72	417.6
May	744	739	508,572,135	490,706,680	999,278,815	32,284,800	1,498	1,598	.20	598	63	72	72	448.2
June	717	718	508,335,898	490,715,090	999,250,988	33,308,365	1,529	1,170	.20	561	61	66	65	439.2
July.....	739	741	527,592,940	523,834,560	1,051,427,500	33,917,016	1,646	1,006	.20	600	62	65	65	429.3
August.....	736	741	530,952,810	528,449,078	1,059,401,918	34,174,255	1,636	2,085	.20	583	72	62	62	435.1
September	717	717	525,591,360	514,010,795	1,039,602,155	34,653,405	1,671	1,952	.20	578	68	65	65	418.0
October.....	741	742	548,336,205	507,798,425	1,054,134,630	34,004,342	1,781	188	.20	574	72	64	64	397.9
November	636	718	439,161,790	488,944,785	928,106,575	30,936,885	1,953	1,942	.20	562	66	65	65	401.5
December	744	742	533,662,960	506,820,240	1,040,483,200	33,663,974	1,738	522	.20	538	64	65	66	402.4
Totals and averages.....	8,500	8,539	6,018,084,333	5,847,150,052	11,865,234,385	32,507,491	18,983	.....	.20	6,863	769	66	66	430.2

Jonval Turbines—Double-acting horizontal plunge pumps.
Total capacity, 33,200,000 gallons per day.

FAIRMOUNT PUMPING STATION.

Capacity, No. 1—2,000,000 gallons per day.
Capacity, Nos. 3, 4 and 5—5,300,000 gallons per day.
Capacity, Nos. 7, 8 and 9—5,100,000 gallons per day.

1893.	Running Time of each Turbine in Hours.							Gallons Pumped by each Turbine.							Total Gallons Pumped each Month.	Average Pumpage per day.	Oils.	
	No. 1	No. 3	No. 4	No. 5	No. 7	No. 8	No. 9	No. 1.	No. 3.	No. 4.	No. 5.	No. 7.	No. 8.	No. 9.			Castor.	Engine.
January	742	737	723	522	171	205	187	79,323,648	200,638,966	195,561,732	142,248,926	39,467,675	48,721,725	45,739,200	751,701,872	24,248,447	13	159
February	653	654	656	647	645	651	638	67,561,344	178,938,072	178,303,275	172,682,302	166,935,925	168,080,250	165,263,150	1,097,764,318	39,205,868	18	157
March	721	718	720	719	722	730	720	70,211,328	196,688,877	191,412,732	191,088,188	180,507,725	183,893,625	180,150,750	1,193,953,225	38,514,620	19	224
April	715	711	709	711	709	715	699	68,793,856	194,565,745	190,563,570	188,187,115	175,333,600	177,687,575	173,259,450	1,168,390,911	38,946,363	22	214
May	651	666	711	697	727	414	724	64,832,640	183,737,082	190,633,642	183,963,433	172,588,975	99,377,200	179,062,650	1,074,195,622	34,651,471	30	322
June	709	717	718	593	310	288	248	71,515,520	195,920,539	194,681,222	157,566,112	71,989,775	69,258,800	60,504,925	821,436,893	27,381,229	23	175
July	371	580	360	264	120	64	36	38,943,245	155,634,061	101,436,135	65,689,734	29,168,425	16,423,550	7,770,425	415,065,575	13,889,212	16	130
August	234	347	77	393	130	114	105	21,985,402	93,613,887	11,075,986	103,128,927	31,322,525	28,520,700	26,340,600	315,988,027	10,193,162	12	101
September	254	688	238	327	93	114	113	26,144,768	184,281,984	76,511,248	76,323,621	23,427,925	29,944,200	29,621,475	446,253,221	14,875,174	16	140
October	390	714	392	289	174	201	113	39,268,224	190,497,647	105,789,358	75,019,913	42,041,025	48,380,150	26,430,950	527,427,267	17,013,782	11	124
November	651	719	712	525	565	565	489	65,710,752	195,068,462	192,591,970	138,768,837	63,526,450	143,402,025	123,881,875	922,950,371	33,098,345	22	198
December	744	744	729	730	708	700	694	74,731,670	199,335,400	194,630,973	189,219,755	172,092,375	173,816,500	172,652,350	1,176,480,023	37,950,968	21	217
Totals	6,835	7,995	6,745	6,417	5,074	4,761	4,766	689,022,397	2,168,921,722	1,823,191,843	1,683,886,863	1,168,402,400	1,187,506,300	1,190,677,800	9,911,609,325	27,155,094	223	2,161

Totals and averages.....

Total Capacity, 100,000,000 gallons per day.

OLD SPRING GARDEN STATION.

No. 4.—Worthington Duplex, Capacity, 20,000,000 gallons per day.
 No. 5.—Vertical Compound, Capacity, 20,000,000 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.

1893.	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 Pounds per Square Inch.					Gallons raised 100 ft. per pound of Coal.		
	No. 4.	No. 5.	No. 6.	No. 7.	No. 8.	No. 11.	No. 4.	No. 5.	No. 6.	No. 7.	No. 8.			No. 11.	Gallons.		Gallons.	Tons.	Lbs.	Qts.	Qts.	No. 4.	No. 5.		No. 6.	No. 7.
												No. 4.	No. 5.			No. 6.										
January.....		726	389		742	731		683,637,800	141,563,500		383,596,160	600,330,500	1,809,127,960	58,358,966	2,475	1,862	.20	573	667		50	50		66	50	491.2
February.....		464	576		592	662		416,967,100	212,835,500		304,539,200	540,266,400	1,474,608,200	52,664,578	1,886	576	.20	546	482		50	50		68	50	518.4
March.....		557	433		642	537		285,603,000	160,430,000		330,982,800	421,442,400	1,198,458,200	38,659,941	1,581	332	.20	484	421		50	50		70	50	509.5
April.....		714	705	148	712	717		320,014,800	275,638,000	109,661,720	364,775,600	574,672,000	1,644,762,120	54,825,404	1,904	602	.20	595	469		50	50	54	72	50	580.6
May.....		718	545	710	743	670		322,031,700	219,169,400	596,003,080	382,614,400	546,640,000	2,066,458,580	66,650,276	2,375	2,216	.20	630	546		50	50	54	72	50	584.7
June.....	512	682	697	694	116	717	373,565,650	505,470,000	300,629,000	592,176,700	381,237,360	593,544,800	2,746,623,510	91,554,117	2,720	730	.20	829	759	46	50	50	54	66	50	475.9
July.....	742	726	695	725	737	714	534,750,300	695,199,700	294,357,000	592,110,000	360,057,600	586,816,000	3,063,290,600	98,815,825	3,156	1,324	.20	692	795	46	50	50	54	65	50	652.4
August.....	697	729	658	743	740	720	567,217,950	696,849,740	282,105,000	588,079,900	360,769,360	600,360,000	3,095,381,950	99,851,030	3,046	2,047	.20	995	833	46	50	50	54	62	50	683.0
September.....	646	713	701	712	718	702	452,832,400	690,707,130	301,589,000	556,888,500	350,053,200	512,261,200	2,864,322,430	95,477,414	3,013	1,250	.20	875	926	46	50	50	54	65	50	639.0
October.....	675	715	616	735	742	736	540,836,300	682,218,500	269,464,000	579,232,100	361,346,000	628,840,000	3,061,936,900	98,772,158	3,131	522	.20	929	904	46	50	50	54	63	50	657.4
November.....	259	311	380	652	711	683	209,295,500	297,073,600	145,797,890	523,407,800	346,209,360	569,788,000	2,091,572,150	69,419,071	2,493	1,128	.20	594	566	46	50	50	54	65	50	563.9
December.....	401	348	457	742	719	716	33,983,000	292,599,900	209,430,000	622,815,500	350,296,800	604,752,000	2,113,877,200	68,189,587	2,424	2,063	.20	740	642	46	50	50	54	65	50	586.0
Totals and averages..	3,932	7,403	6,852	5,861	7,914	8,305	2,712,481,100	5,888,372,970	2,812,999,290	4,760,375,300	4,276,477,840	6,779,713,800	27,230,419,800	74,603,889	30,210	1,212	.20	8,482	8,010	46	50	50	54	66	50	606.0

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.

1893.	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.		Cylinder.	Engine.	No. 1.	No. 2.	No. 3.	
January	452	693	552	110,267,100	184,127,424	209,750,935	504,145,459	16,262,756	1,154	1,590	20	155	46	88	88	88	421.8
February	89	662	657	22,770,100	174,844,176	251,155,795	448,770,071	16,027,502	1,011	93	20	140	42	88	88	88	436.7
March	69	716	740	22,389,900	188,886,536	267,265,190	477,541,626	15,436,826	1,018	300	20	155	47	88	88	88	462.4
April	42	720	688	10,402,200	187,404,360	256,929,440	454,736,000	15,157,866	936	2,145	20	150	45	88	88	88	477.5
May	462	744	456	115,946,700	195,520,104	167,056,310	478,523,114	15,436,229	1,017	1,935	20	155	46	88	88	88	462.5
June	637	719	676	162,415,800	181,855,557	229,814,340	574,085,697	19,136,189	1,188	1,230	20	193	57	88	88	88	474.8
July	719	744	612	176,526,900	190,731,216	211,451,450	578,709,566	18,668,050	1,188	1,097	20	202	58	88	88	88	481.4
August	729	744	725	176,537,100	189,475,116	248,082,350	614,094,566	19,809,502	1,292	1,690	20	216	61	88	88	88	467.3
September	720	716	720	167,685,490	172,447,864	246,760,720	586,891,074	19,563,135	1,228	1,370	20	210	60	88	88	88	470.0
October	641	571	744	152,611,500	189,068,076	263,782,795	585,462,371	17,918,141	1,201	1,832	20	209	60	88	88	88	461.6
November	482	716	710	109,737,000	177,560,505	256,094,550	543,392,055	18,113,068	1,234	778	20	198	58	88	88	88	433.1
December	434	744	744	93,305,900	183,035,038	266,812,152	543,153,090	17,521,067	1,319	587	20	193	57	88	88	88	405.0
Totals and averages..	5,526	8,489	8,024	1,320,595,590	2,161,955,972	2,871,956,027	6,360,507,689	17,426,918	13,792	1,207	20	2,176	637	88	88	88	452.2

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.

1893.	Running time of each Engine in hours.			Gallons pumped by each Engine.			Total pumpage each month.	Average pumpage per day.	Coal.		Percentage of ashes.	Oils.		Mean water pressure and mean 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.	Pounds.		Qts.	Qts.	No. 1.	No. 2.	No. 3.	
January	694	738		161,058,200	228,338,521	389,396,721	12,561,184	1,731		.25	263	103		145	142	350.4	
February	610	672		139,453,390	207,662,656	347,116,046	12,397,001	1,474	1,906	.25	284	88		145	142	378.1	
March	661	701		150,742,590	214,142,324	364,884,914	11,770,481	1,571	1,127	.25	295	99		145	142	861.7	
April	673	682		149,393,020	217,716,682	367,109,702	12,236,990	1,584	1,229	.25	373	25		145	142	360.9	
May	508	294	243	243,688,780	61,475,350	76,791,454	381,955,584	12,321,147	1,450	.25	568	866	140	145	142	410.3	
June	621	429	280	260,882,438	96,852,630	87,195,019	444,930,087	14,831,002	1,446	.25	465	738	140	145	140	479.3	
July	692	610	729	180,417,100	130,991,268	235,063,217	546,471,585	17,628,115	1,884	2,145	.25	570	823	140	145	140	451.9
August	679	381	547	275,282,130	76,353,415	171,173,396	522,808,941	16,864,804	1,705	.25	534	1,022	140	145	140	477.6	
September	646	270	237	321,041,908	61,293,625	58,269,144	435,604,677	14,520,155	1,402	.25	527	1,227	140	157	140	484.0	
October	585	135	226	271,970,700	28,717,721	71,618,675	372,307,096	12,009,906	1,257	2,056	.25	796	1,223	140	145	140	461.1
November	687	636	600	188,308,440	130,800,050	189,582,097	508,690,587	16,956,352	1,828	.25	576	751	140	155	140	433.5	
December	684	686	512	229,195,848	148,600,555	162,799,822	54,596,225	17,435,362	1,938	.25	547	790	140	160	140	434.6	
Tot'ls & averag's.	5,102	6,079	6,167	1,970,787,844	1,335,781,814	1,915,353,007	5,221,872,165	14,306,498	19,274	1,444	.25	5,748	7,755	140	148	141	422.1

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.

1893.	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.	Pounds.			Qts.	No. 2.	No. 3.
January.....	68	70	724,020	781,810	1,505,860	48,576	10	625	.20	5	36	36	
February.....	42	66	454,740	710,640	1,165,380	41,620	7	800	.20	4	36	36	
March.....	68	54	719,400	599,760	1,319,160	42,553	7	1,435	.20	4	36	36	
April.....	51	54	625,140	578,880	1,204,020	40,134	6	399	.20	4	36	36	
May.....	56	68	697,460	621,360	1,318,820	42,542	6	2,180	.20	5	36	36	
June.....	88	39	996,880	986,400	1,983,280	66,109	7	1,340	.20	6	36	36	
July.....	64	72	718,820	829,440	1,548,260	49,943	6	210	.20	5	36	36	
August.....	56	59	621,060	647,280	1,268,340	40,914	5	809	.20	4	36	36	
September.....	54	58	641,520	607,860	1,249,380	41,644	5	1,059	.20	5	36	36	
October.....	46	63	505,580	728,640	1,234,220	39,813	5	250	.20	5	36	36	
November.....	30	64	332,640	712,140	1,044,780	34,826	4	1,045	.20	4	36	36	
December.....	39	41	438,240	438,780	877,020	28,290	4	1,365	.20	3	36	36	
Totals and averages.....	662	758	7,475,500	8,213,020	15,718,520	43,064	77	308	.20	54	36	36	

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.

1893.	Running Time of each Engine, in Hours.			Gallons pumped by each Engine.			Total pumpage each Month.	Average pumpage per Day.	Coal.		Percentage of ashes.	Oils.		Mean water pressure and mean suction lift in pounds per square inch.			Gallons raised 100 ft. per pound of coal.
	No. 1.	No. 2.	No. 3.	No. 1.	No. 2.	No. 3.	Gallons.	Gallons.	Tons.	Lbs.	Qts.	Cylinder.	Engine.	No. 1.	No. 2.	No. 3.	
January.....	738	468	.....	33,264,350	16,690,560	.....	49,954,910	1,611,449	112	620	.20	62	62	60	70	.....	293.9
February.....	670	289	.....	31,127,500	10,635,000	.....	41,762,500	1,491,517	137	120	.20	49	49	60	70	.....	298.5
March.....	698	385	.....	31,717,500	13,522,500	.....	45,240,000	1,459,354	107	820	.20	51	51	60	70	.....	278.4
April.....	214	695	.....	9,027,600	28,376,150	.....	37,403,750	1,246,791	89	2,140	.20	38	38	60	70	.....	274.7
May.....	488	728	.....	22,122,500	30,010,000	.....	52,162,500	1,682,661	125	1,500	.20	53	53	60	70	.....	274.2
June.....	673	556	.....	31,336,250	24,345,000	.....	55,681,250	1,856,041	136	1,860	.20	59	59	60	70	.....	263.8
July.....	739	478	.....	34,701,350	20,694,900	.....	55,396,250	1,786,975	137	620	.20	56	56	60	70	.....	266.6
August.....	727	532	.....	34,498,000	23,698,000	.....	58,196,000	1,877,290	139	640	.20	62	62	60	70	.....	276.0
September.....	713	450	.....	33,276,750	19,474,500	.....	52,751,250	1,758,375	120	1,200	.20	60	60	60	70	.....	289.1
October.....	723	501	.....	34,121,250	21,123,750	.....	55,245,000	1,782,096	127	20	.20	62	62	60	70	.....	287.3
November.....	705	468	.....	31,650,000	19,192,750	.....	50,842,750	1,694,758	115	900	.20	60	60	60	70	.....	291.0
December.....	738	468	.....	32,633,750	18,968,750	.....	51,602,500	1,664,596	114	140	.20	62	62	60	70	.....	293.9
Totals and averages.	7,826	6,018	.....	359,476,800	246,761,860	.....	606,238,660	1,660,927	1,462	1,620	.20	674	674	60	70	.....	273.8

Total Capacity—750,000
gallons per day.

CHESTNUT HILL PUMPING STATION.

No. 2—Knowles—Capacity
250,000 gallons per day.
No. 3—Worthington Duplex—
500,00 gallons per day.

1893.	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.	Oils.		Mean Water pressure and mean Suction Lift in Pounds per sq. inch.		Gallons raised 100 feet per pound of coal.
	No. 2.	No. 3.	No. 2.	No. 3.	Gallons.	Gallons.	Tons.	Lbs.	Cylinder.		Engine.	No. 2.	No. 3.		
														Qts.		Qts.	No. 2.	No. 3.
January	8		260,760		260,760	8,411	10	1,799	.22	2		53		13.2	
February	135		4,333,290		4,333,290	154,760	16	705	.22	13		53		145.2	
March	101		3,279,180		3,279,180	105,780	12	588	.37	12		53		146.2	
April	208	73	7,020,840	2,277,600	9,298,440	309,948	22	330	.35	31		53	53	229.6	
May	24	18	1,086,500	561,600	1,648,100	53,164	10	62	.33	7		53	53	89.8	
June	108		3,382,500		3,382,500	112,750	15	315	.33	13		53		122.1	
July	125		4,036,700		4,036,700	130,216	17	2,180	.33	20		53		122.8	
August	133		4,664,160		4,664,160	150,456	18	1,295	.26	16		53		137.2	
September	34		1,170,960		1,170,960	39,032	10	1,367	.26	8		53		60.3	
October	42		1,446,480		1,446,480	46,660	11	1,279	.26	9		53		68.3	
November	15		516,600		516,600	17,220	9	8	.26	3		53		31.3	
December	13		447,720		447,720	14,412	9	79	.26	2		53		27.1	
Totals and averages.	946	91	34,484,890	2,839,200	34,481,890	91,479	163	1,047	.28	136		53	53	115.3	

Total capacity—20,000,000 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.

1893.	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 Pounds, per sq. in.		Gallons Raised 100 ft. per Pound of Coal.
	No. 1.	No. 2.	No. 1.	No. 2.	Gallons.	Gallons.	Tons.			Qts.	Qts.	No. 1.	No. 2.	
							Tons.	Lbs.						
January	737	457	272,814,747	70,351,817	343,166,564	11,069,889	626	1,580	25	192	254	85	85	513.1
February	558	531	231,453,976	82,323,563	313,777,539	11,206,340	595	380	25	239	186	85	85	494.0
March	680	719	226,375,349	116,303,009	342,678,358	11,054,140	698	1,880	25	239	253	85	85	456.6
April	711	348	253,821,210	52,693,912	306,515,122	10,217,170	550	1,600	25	210	279	85	85	521.5
May	717	516	255,973,467	85,992,777	341,966,244	11,031,169	628	1,887	25	255	319	85	85	509.5
June	715	701	248,466,841	115,505,907	363,972,748	12,182,424	753	780	25	262	323	85	85	462.7
July	724	711	245,446,365	119,673,658	365,120,023	11,778,065	800	300	25	271	332	83	88	427.6
August	687	679	240,439,120	116,430,853	356,869,973	11,511,934	762	1,920	25	266	319	85	85	438.3
September	714	623	253,918,797	115,212,268	369,131,060	12,304,368	812	820	25	242	302	84	84	425.7
October	638	551	245,226,231	104,512,952	349,739,183	11,281,909	679	440	25	249	308	82	82	482.5
November	641	338	240,375,411	70,976,711	311,352,122	10,378,404	548	280	25	203	268	82	82	531.3
December	691	677	218,884,542	123,478,066	342,362,608	11,043,915	664	840	25	264	324	85	85	482.8
Totals and average ..	8,203	6,851	2,933,190,056	1,173,455,488	4,106,651,544	11,251,100	8,138	1,507	25	2,892	3,467	84	84	472.8

CURRENT EXPENSES AND WORK OF THE PUMPING STATIONS FOR THE YEAR 1893.

Stations.	Pay of employees at the stations.	COAL.			LUBRICATING OILS.		LIGHTING STATIONS.		Repairs to boilers and machinery.	Small stores.	Total expenses.	Total gallons pumped.	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.
		Tons.	Price per ton.	Cost.	Gallons.	Cost.	Oil.	Electricity.									
Fairmount.....	\$8,139 67				596	\$272 00	\$16 00		\$5,675 46	\$208 34	\$14,311 47	9,911,609,325	100.0	9,911,609,325	\$1 44	8.86	90.00 115.00 120.00
Spring Garden.....	51,232 56	49,194	\$1 73	\$85,105 62	6,029	2,411 60	43 00	\$800 76	45,212 10	710 10	185,515 74	39,095,654,185	150.6	58,868,456,331	3 15	53.18	102.00 179.00 *114.00
Belmont.....	15,606 01	13,792	1 73	23,860 16	703	281 20	15 00	480 00	7,342 18	245 08	47,829 63	6,360,507,689	220.4	14,016,205,574	3 41	12.57	198.08
Boxborough.....			2 38														317.00
		19,275	1 73	39,364 10	3,376	1,350 40	13 00	495 00				5,221,872,165	349.0	18,223,997,384		16.42	395.00
		13,622 85							8,934 11	250 96	64,245 91				3 52		
Roxborough Auxiliary.....		77	2 22	198 89	14	5 60	11 00					15,718,520	83.2	13,077,808		.10	† 80.00
Mount Airy.....	3,445 00	1,463	2 40	3,511 20	387	134 80	4 00		1,000 00	42 85	8,137 85	606,238,660	148.0	897,012,676	9 07	.80	† 128.00
Chestnut Hill.....	1,375 00	163	2 00	326 00	34	13 60	12 00		329 15	24 92	2,080 67	34,484,890	122 5	42,243,990	49 25	.33	128.00
Frankford.....	10,072 37	8,139	1 74	14,161 86	1,589	635 60	13 00	449 00	8,932 19	199 00	34,463 02	4,106,651,544	209.9	8,618,105,391	3 99	7.74	168.53
Totals and averages deducted from totals.....	\$103,493 46	92,103	\$1 80	\$166,527 83	12,678	\$5,104 80	\$127 00	\$2,224 76	77,425 19	\$1,681 25	\$356,584 29	65,352,736,978	169.2	110,590,708,479	\$3 22	100.00	

* Repumpage from East Park.
 † Repumpage from Roxborough.
 ‡ Repumpage from Mount Airy.

TOTAL GALLONS PUMPED DURING 1893.

1893.	Fairmount.	Spring Garden.	Belmont.	Roxborough.	Chestnut Hill.	Frankford.	Consumption.	SUPPLEMENTARY PUMPAGE.				Total Pumpage.	Average per day.	Percentage of pumpage.	Maximum Gallons for one day.	Minimum Gallons for one day.	Total Steam Pumpage.	Total Water Pumpage.
								Rox. Auxiliary.	Mount Airy.	East Park.	Total.							
January	751,701,872	2,776,220,995	504,145,459	389,396,721	260,760	343,166,564	4,764,892,371	1,505,860	49,954,910	78,178,080	129,638,850	4,894,531,221	157,888,103	7.49	169,949,055	145,181,210	4,142,829,349	751,701,872
February.....	1,097,764,318	2,984,533,990	448,770,071	347,116,046	4,333,290	313,777,539	4,406,295,254	1,165,380	41,762,500	85,590,800	128,518,680	4,624,813,934	165,171,926	7.08	180,358,193	119,449,559	3,527,049,616	1,097,764,318
March	1,193,953,225	2,054,498,614	478,541,626	364,884,914	3,279,180	342,678,358	4,437,835,947	1,319,160	45,240,000	.....	46,559,160	4,484,395,107	144,657,906	6.87	165,672,561	108,970,675	3,290,441,882	1,193,953,225
April	1,168,390,911	2,541,482,575	454,736,000	367,109,702	9,298,440	306,515,122	4,847,532,750	1,204,020	37,403,750	.....	38,607,770	4,886,140,520	162,871,350	7.47	183,785,158	143,046,780	3,717,749,609	1,168,390,911
May.....	1,074,195,622	3,065,737,395	478,523,114	381,955,584	1,648,100	341,966,244	5,344,026,059	1,318,820	52,162,500	.....	53,481,320	5,397,507,379	174,113,141	8.25	192,906,681	144,661,362	4,323,311,757	1,074,195,622
June.....	821,436,893	3,745,874,498	574,085,697	441,930,087	3,382,500	363,972,748	5,953,682,423	1,983,280	55,681,250	.....	57,664,530	6,011,346,953	200,378,231	9.20	218,316,497	168,481,382	5,189,910,060	821,436,893
July.....	415,065,575	4,114,718,100	578,709,566	546,471,535	4,036,700	365,120,023	6,024,121,549	1,548,260	55,396,250	.....	56,944,510	6,081,066,059	196,163,421	9.31	221,100,354	177,821,410	5,666,000,484	415,065,575
August	315,988,027	4,154,783,868	614,094,566	522,808,941	4,664,160	856,869,973	5,969,209,535	1,268,340	58,196,000	.....	59,464,340	6,028,673,875	194,473,350	9.23	213,785,923	182,307,335	5,712,685,848	315,988,027
September.....	446,255,221	3,903,924,585	586,894,074	435,604,677	1,170,960	369,131,060	5,742,980,577	1,249,380	52,751,250	.....	54,000,630	5,796,981,207	193,232,706	8.87	222,518,845	169,666,222	5,350,725,986	446,255,221
October	527,427,267	4,116,071,530	555,462,371	372,307,096	1,446,480	349,739,183	5,922,453,927	1,234,220	55,245,000	.....	56,479,220	5,978,933,147	192,868,811	9.15	216,509,134	169,254,454	5,451,505,880	527,427,267
November.....	922,950,371	3,019,678,725	543,392,055	508,690,587	516,600	311,352,122	5,306,530,460	1,044,780	50,842,750	.....	51,887,530	5,358,467,990	178,615,599	8.19	197,622,762	161,136,096	4,435,517,619	922,950,371
December.....	1,176,480,023	3,154,360,400	543,153,090	540,396,225	447,720	342,362,608	5,757,400,966	877,020	51,602,500	.....	52,479,520	5,809,879,586	187,415,470	8.89	203,314,608	172,065,603	4,633,399,563	1,176,480,023
Total averages.....	9,911,609,325	38,931,885,305	6,360,507,689	5,221,872,165	34,484,890	4,106,651,544	64,567,010,918	15,718,520	606,238,660	163,768,880	785,726,060	65,352,736,978	179,048,594	100.00	.....	.....	55,441,127,653	9,911,609,325
Increase over 1892.....	.....	4,568,431,465	704,557,629	756,574,972	7,656,130	324,183,221	5,871,060,936	.....	29,136,410	.....	.....	5,565,152,800	15,246,994	.....	22,522,132	25,370,831	6,055,495,281	.....
Decrease from 1892.....	490,342,481	.....	.....	.....	.....	.....	.....	4,620,640	.....	330,423,906	305,908,136	.....	.....	.....	.....	.....	.....	490,342,481

APPENDIX D.

REPORT

ON THE

OPERATIONS IN CONNECTION WITH THE
DISTRIBUTION SYSTEM,
DURING 1893.

BUREAU OF WATER.

Philadelphia, January, 1894.

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

SIR:—During the past year there has been a great increase in the quantity of work performed for the Distribution System. The highest percentages for previous years have been exceeded, as follows :

Feet of pipe handled.....	38 per cent. increase over 1891.
Tons of pipe castings handled.....	44 per cent. increase over 1891.
Stops put in.....	38 per cent. increase over 1891.
Fire hydrants put in.....	2 per cent. increase over 1887.
Meters put in.....	29 per cent. increase over 1892.
Service attachments put in.....	16 per cent. increase over 1890.

The percentage of increase in the number of service attachments includes all those put in by the City from the main to the curb, so as to avoid breaking the street pavement whenever water supply may be needed in the future.

There were twenty-seven hundred and nineteen (2,719) of these attachments introduced.

The average water supply throughout the City is good. The several water systems are practically supplied in the same manner as in 1892, but are much improved by the laying of new supply mains. The localities in which the supply is now somewhat inadequate are the northwest sections of the Twenty-fifth and Twenty-eighth Wards, and the southeast portion of the Twenty-second Ward. By using water from the new Roxborough reservoir during the coming summer, it is expected that there will be an ample supply for these sections.

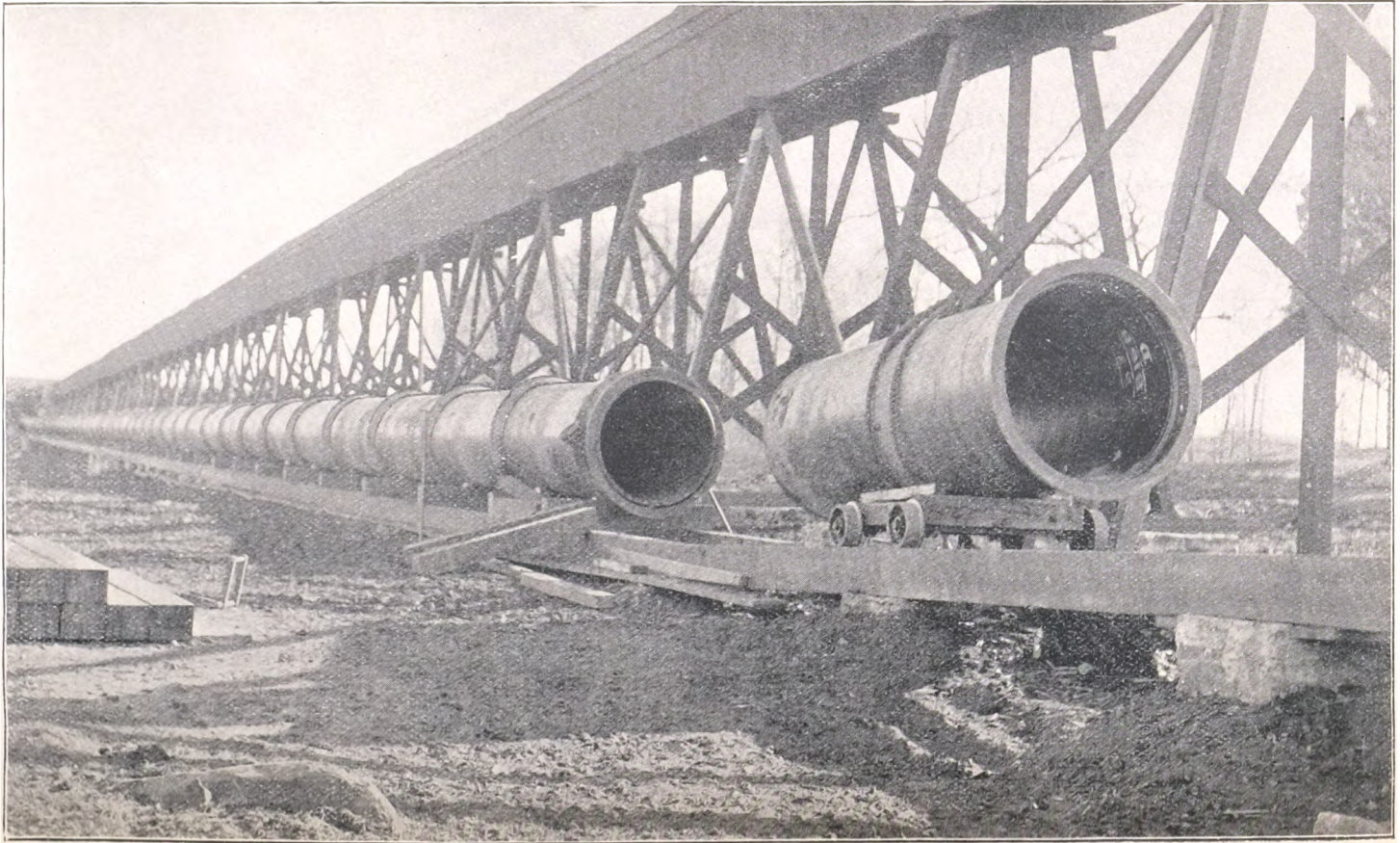
A twenty (20) inch supply main has been laid from George's Hill reservoir to Sixty-third street and Lansdowne avenue, to supply the high level in the western part of the Thirty-fourth Ward. This main is not yet in use—the new stand-pipe and pumping station at the reservoir not being completed.

A twenty (20) inch supply main has been laid in Fourth street, from Vine to Norris, thence continued north by a thirty (30) inch main to Susquehanna avenue, thence east to American street, where it connects with the thirty-six (36) inch main. Since this main has been laid the locality east of Sixth street and North of Vine has had an abundant supply.

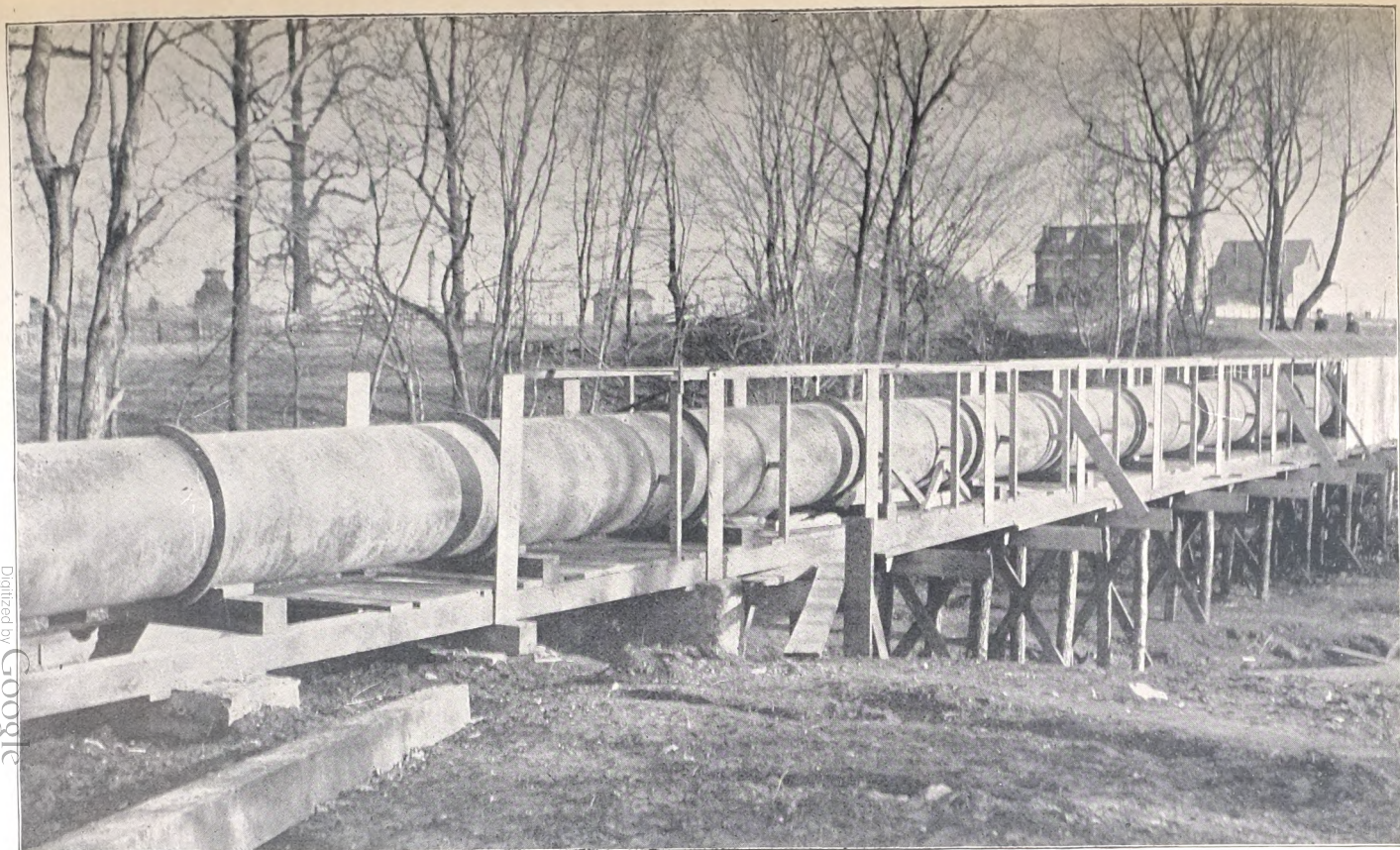
A thirty (30) inch supply main has been laid in Lehigh avenue, from Cedar to Richmond street, thence continued by a twenty (20) inch main in Richmond street to Allegheny avenue—a locality in which the supply was formerly inadequate, but which now has an abundance of water.

A thirty (30) inch supply main was also laid in Kensington avenue, from Lehigh to Allegheny avenue, thereby improving the supply to this section.

Fourteen thousand nine hundred and two (14,902) feet



FORTY-EIGHT INCH PUMPING MAIN, FRANKFORD.



FORTY-EIGHT INCH PUMPING MAIN, FRANKFORD.

of forty-eight (48) inch pipe were laid for a pumping main from Lardner's Point Pumping Station to Wentz Farm reservoir during the past year, and at this date the work is nearly completed.

Owing to the proposed street where this pipe is laid not being graded, the excavation was exceedingly deep and dangerous. In some places the depth was 23 feet, and considerable credit is due the contractor for excavation for the manner in which he performed his work, as well as all the men employed by the City who handled the pipe.

The work of excavating the pipe trench was begun October 4, and finished (with the exception of crossing four streets) within ninety-two (92) days therefrom.

Part of the main is laid upon trestle work 896 feet long, ranging from 0 to 15 feet high, and on piling 715 feet long, ranging from 0 to 10 feet in height. On both the trestles and piling the pipes were placed on a car upon the stringers and run endwise into position.

A twenty (20) inch supply main has been laid in Haverford avenue, from Thirty-third to Thirty-fifth street.

A thirty (30) inch supply main has been laid in Girard avenue from Broad street to 41 feet east of Eleventh street, the intention being to continue to Sixth street at some future time. So far as laid this main gives a much needed improvement in the supply.

A forty-eight (48) inch supply main was laid in Green street from Twenty-fifth to Twenty-fourth street to connect the 48-inch main from East Park reservoir to the 48-inch main in Twenty-fourth street which supplies the old city. This gives a full 48-inch supply to that section, and has improved the pressure considerably.

Two forty-eight (48) inch pumping mains from the new pumping station at the Spring Garden Works to the East Park reservoir are nearing completion. The work will be finished during 1894.

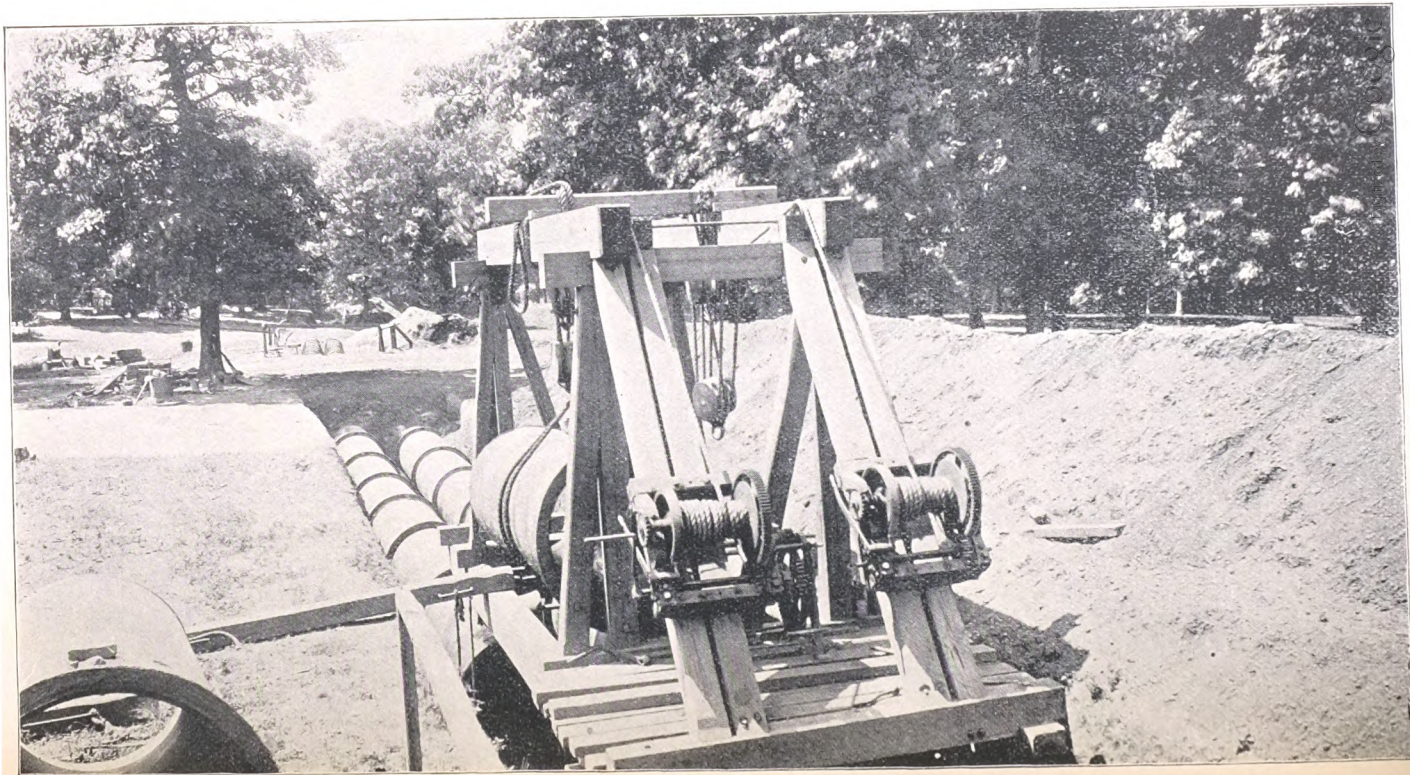
The laying of these two mains was done by means of an apparatus especially constructed for the purpose. The forward part rested upon a framing of timbers, which in turn were supported by the axles of four wheels, the latter running on planks in the bottom of the ditch. The rear end was supported by two iron rollers running upon rails resting on the top of the pipes. On top of the frame work, extending from the wheels in front to the rollers at the rear end, were trestles supporting the overhead timbers to which the ropes for lifting and lowering the pipes were attached. The manner of operating was to roll the pipe on skids directly under the "fall," then lift the pipe by means of a "crab," remove the skids and lower into place. After both pipes were lowered and in position the whole machine was moved forward and the operation repeated. Thirty-six pipes were thus put in in one day.

It was demonstrated that this plan for laying two lines of pipe at the same time was a great improvement over the means usually employed, and greatly facilitated the labor connected therewith. About nine men were required to handle the apparatus.

A thirty (30) inch supply main from the Upper Roxborough reservoir to Chestnut Hill has been laid, but awaits the completion of the new pumping station near the Roxborough reservoir before being put into service.

A 30-36 inch pumping main was laid from the old 30-inch main in Shaws lane to the upper basin, and is now in service.

A forty-eight (48) inch supply main from the rear of the Upper Roxborough reservoir to Shawmont avenue and Bean street is nearing completion, and at the latter point alterations have been made so as to connect the old twenty (20) and thirty (30) inch mains in Shawmont avenue and in Bean street to the new forty-eight (48) inch main.



TWO LINES 48-INCH PUMPING MAINS, between Spring Garden Pumping Station and East Park Reservoir.

Two lines of forty-eight (48) inch pumping mains have been laid in Penn street from Ridge avenue northeast 379 feet. These are intended for part of the pumping mains from the proposed new pumping station on the Schuylkill river below Wissahickon creek, to supply Queen lane reservoir.

Mains.

One hundred and sixty-three thousand and two (163,002) feet of service mains, fifty-five thousand five hundred and thirty-seven (55,537) feet of supply mains, and twenty-four thousand three hundred and thirty-two (24,332) feet of pumping mains have been laid, which in addition to the connections and other new work, make a total of two hundred and sixty-five thousand nine hundred and eleven (265,911) feet, or fifty (50) miles and nineteen hundred and eleven (1,911) feet added to the distribution system, and a total of one thousand and eighty-one (1,081) miles and twenty-two hundred and seventy-eight (2,278) feet now in use.

Ninety-six thousand and sixty-six (96,066) feet of pipe have been used for relaying old and defective service mains, of which eighty-two thousand four hundred and fifteen (82,415) feet were taken up, and twenty thousand seven hundred and fifty-two (20,752) feet were disconnected from the water system and abandoned.

The total quantity used for relays and repairs was one hundred and four thousand six hundred (104,600) feet; and of that taken up, lowered, raised and shifted, eighty-eight thousand one hundred and seventy (88,170) feet, making the total handled for repairs one hundred and ninety-two thousand seven hundred and seventy (192,770) feet.

The total quantity handled for all purposes throughout the year was four hundred and fifty-eight thousand six

hundred and eighty-one (458,681) feet, weighing forty-one millions seven hundred and thirty thousand three hundred and seventy-two (41,730,372) pounds.

Abandoned Pipes.

Twenty thousand nine hundred and seventy-four (20,974) feet of pipe have been cut off from the distribution system and abandoned, as follows :

2-inch.....	293 feet.
3-inch.....	1,716 "
4-inch.....	15,011 "
6-inch.....	3,882 "
16-inch.....	72 "
	<hr/>
Total.....	20,974 "

Fire Hydrants.

One thousand (1,000) new-style fire hydrants have been put in new locations; three hundred and twenty-three (323) new and ten (10) old-style have been substituted for defective ones of the old pattern; making a total of thirteen hundred and twenty-three new and ten (10) old-style put in during the year.

There were removed three hundred and eighty-seven (387) old and one hundred and seventy-six (176) new-style fire hydrants. The total number added to the distribution system was four hundred and thirty-seven (437). The total number in use December 31, 1893, was eight thousand eight hundred and eighty-four (8,884), of which two thousand six hundred and ninety (2,690) are of the old pattern, and six thousand one hundred and ninety-four (6,194) of the new pattern, equal to seventy per cent. of the total in use.

Drills and Shut-offs.

Eleven thousand eight hundred and ninety-two (11,892) new attachments have been made, as follows :

$\frac{1}{4}$ -inch, 11,010 area of openings.....	2,158 square inches.		
$\frac{3}{8}$ -inch, 413 " "	124 " "		
$\frac{1}{2}$ -inch, 181 " "	80 " "		
1-inch, 198 " "	156 " "		
1 $\frac{1}{2}$ -inch, 44 " "	78 " "		
2-inch, 46 " "	145 " "		
Total, 11,892	Total, 2,741		"
Total, 1892, 8,900	2,198		"
Increase, 1893, 2,992	Total, 543		"

Of the above, 2,390 one-half inch, 137 five-eighths inch, and 3 one-inch were attachments put in from the main to the curb by the Bureau of Water.

The total number of shut-offs for repairs, etc., by permit, was one thousand four hundred and forty-two (1,442), and the number without permit twenty-two hundred and seventy (2270.)

Broken Mains.

The following list shows the sizes and number of mains broken or burst, no reason for which can be assigned, as the castings appear to have been made properly and of good material.

Districts.	3-in.	4-in.	6-in.	8-in.	10-in.	12-in.	18-in.	20-in.	30-in.	36-in.	Totals.
First.....		8	14								22
Second.....	5	7	24			1					37
Third.....		3	8					2			13
Fourth.....		3	11	1	2		2		1	1	21
Fifth.....		1	4	1	3	2					11
Sixth.....		1	8		4	2					15
Total.....	5	23	69	2	9	5	2	2	1	1	119

The following were broken by sewer contractors or others in excavating or blasting near the mains, with the exception of one old 6-inch pipe, and a thirty-inch pipe which was defective in casting.

Districts.	3-in.	4-in.	6-in.	8-in.	12-in.	30-in.	Totals.
First.....			1				1
Second.....	1	3	2				6
Third.....			1				1
Fourth.....		1	2				3
Fifth.....		1	1	1	2	1	6
Sixth.....	2		3				5
Totals.....	3	5	10	1	2	1	22

The purveyors have each been furnished with a horse and wagon for their personal use while on duty, and the First, Second, Third and Fourth Districts have the necessary horses, wagons and drivers for the work of their districts, while the Fifth and Sixth Districts have none. The last-named districts should be placed on equal footing with the former as soon as practicable, and for this purpose district yards and stables should be provided. Both are greatly needed.

The Fourth District stable and shed were badly damaged by fire on the morning of December 28, 1893, necessitating repairs to one end and roof of the former, and the rebuilding of the latter.

Meters.

Three hundred and fifty-two (352) meters have been set in new locations; one hundred and forty-nine (149) that were defective or where a different size or style was required have been renewed, and twenty-five (25) taken out where the use of water by meter was discontinued.

The total number of meters in use December 31, 1893, was one thousand one hundred and fifteen (1,115); the number in stock three hundred and thirty-one (331); making a total of one thousand four hundred and forty-six (1,446) in use and on hand.

The meter shop is still located at the Second District, 918 Cherry street, where the facilities for the proper testing of meters are entirely inadequate, and other accommodations for the proper conduct of the business are proportionately deficient. A new shop suitable for the business should be established at the earliest possible date.

In addition to the usual work performed by the meter men, over six (6) miles of service attachments were manufactured by them, and this class of work will be greatly increased during the current year.

Wasting Water.

It was intended to make extensive examinations with the "Deacon Meters," to ascertain throughout as great an area as possible the quantity of water wasted, but the meters for this work were not received in time to begin early in the year, and the most that could be accomplished was to re-examine the district inspected in 1892.

Contrary to expectations the consumption of water was found to have increased nearly five per cent., or at the rate of 12.5 gallons per capita, per diem: while the waste from leaks, etc., had been reduced by the inspection 52,253,400 gallons per annum, or at the rate of 28 gallons per capita per diem, making the total increased consumption 12.5 plus 28, or 40.5 gallons per capita per diem.

Tables "A," "B" and "C" show: ("A") the time of the day when the consumption was greatest and least; ("B") the increase and decrease of water consumed at time of inspection (between midnight and 6 A. M.) and ("C") the appliances causing the increase or decrease.

The latter table also shows that there were combinations of "appliances" in 1892 which do not appear in 1893, the leaks, waste, etc., having been checked by the inspection. Those appearing in 1893 and not in 1892 indicate new sources of waste.

The following is a recapitulation of the inspection :

Total consumption of water, 1893.....	504,334,735 gallons.
Total consumption per capita per diem.....	264 gallons.
Total waste during the night inspection, less quantity "used" and 50 per cent. of "used" and "wasted"—(See Table "D").....	266,867,640 gallons.
Total wasted per capita, per diem.....	140 gallons.
Total used per capita, per diem.....	124 gallons.

A.

Total Consumption throughout the District for one year.

Time of inspection.	Year.	Total gallons.	Decrease gallons.	Increase gallons.
6 A. M. to 12 M	1892	127,939,800		
	1893	140,090,285		12,150,485
12 M. to 6 P. M.....	1892	131,093,400		
	1893	146,149,650		15,056,250
6 P. M. to 12 P. M.....	1892	117,223,400		
	1893	117,452,985		229,585
12 P. M. to 6 A. M.....	1892	104,141,800		
	1893	108,641,815		3,499,985
Total.....	1892	480,398,400		
	1893	504,334,735	3,499,985	27,436,320
				3,499,985
Net increased consumption for 1893.....				28,936,335

B.

Water running at time of inspection.

	Year.	Total gallons.	Increase during 1893.	Decrease during 1893.
	1892	52,454,880		
Leakage.....	1893	45,779,760		6,675,120
	1892	165,248,640		
Water running.....	1893	176,689,200	11,440,560	
	1892	35,145,120	17,520	
Leaking and running.....	1893	35,162,640		
	1892	91,936,200		
Used and wasted.....	1893	78,472,080		13,464,120
	1892	74,267,280		
Used.....	1893	30,695,040		43,572,240
	1892	419,032,120		
Total.....	1893	336,798,720	11,458,080	63,711,480
				11,458,080
Total decrease.....				52,253,400

C.

APPLIANCES.	Total Gallons.		Decrease.	Increase.	Total Gallons.		Decrease.	Increase.
	1892.	1893.	1893.	1893.	1892.	1893.	1892.	1893.
Urinals.....	28,207,200	38,105,000		9,898,800				
Urinals and water closets.....	43,116,720	22,758,480	20,358,240					
Urinals, water closets and faucets.....	2,628,000	5,256,000		2,628,000				
Urinals, water closets and service pipe.....	3,679,200		3,679,200					
Urinals, faucets and wash stand.....	2,102,400		2,102,400					
Urinals and fountain.....	1,576,800		1,576,800					
Urinals and faucets.....	20,323,200	10,879,920	9,443,280					
Urinals and tank.....	3,153,600		3,153,600					
Urinals and beer pump.....	5,256,000		5,256,000					
Urinals and bar trough.....	3,679,200		3,679,200					
Urinals, hydrant and tank.....	1,138,800		1,138,800		114,861,120	77,000,400	50,387,520	12,526,800
Water closets.....	81,581,880	120,397,440		38,815,560				
Water closets and hydrant.....	3,066,000	3,994,560		928,560				
Water closets and faucets.....	15,067,200	14,296,320	770,880					
Water closets and fountain.....	840,960		840,960					
Water closets and bar trough.....	4,380,000		4,380,000					
Water closets and service pipe.....		840,960		840,960				

C—Continued.

APPLIANCES.	Total Gallons.		Decrease.	Increase.	Total Gallons.		Decrease.	Increase.
	1892.	1893.	1893.	1893.	1892.	1893.	1892.	1893.
Water closets and tank.....	7,402,200		7,402,200					
Water closets, faucets and stop cocks.....	10,512,000		10,512,000					
Water closets, faucets and service pipe.....	2,715,600		2,715,600		125,565,840	139,529,280	26,621,640	40,588,980
Hydrants	29,442,360	2,838,240	26,604,120					
Hydrants and faucets.....	2,102,400	210,240	1,892,160	2,943,360				
Hydrants, faucets and service pipe.....		2,943,360			31,544,760	5,991,840	28,496,280	2,943,360
Wash pave.....	630,720		630,720					
Faucets	13,630,560	8,146,800	5,483,760					
Faucets and tank.....		5,045,760		5,045,760				
Faucets and service pipe.....	2,838,240		2,838,240					
Tanks.....	12,088,800		12,088,800					
Fountains.....	3,153,600		3,153,600					
Bar.....		2,102,400		2,102,400	32,341,920	15,294,960	24,195,120	7,148,160
Abandoned pipe.....		4,204,800		4,204,800				
Unknown connection found.....	2,102,400		2,102,400					
Service pipe.....		5,150,880		5,150,880				
Curb stop.....		210,240		210,240	2,102,400	9,665,920	2,102,400	9,665,920

C—Continued.

APPLIANCES.	Total Gallons.		Decrease.	Increase.	Total Gallons.		Decrease.	Increase.
	1892.	1893.	1893.	1893.	1892.	1893.	1892.	1893.
Stop, fire hydrant and joint on main.....	17,344,800	.....	17,344,800	.....	.....	.....	.....	.....
Stop.....	.....	262,800	.....	262,800	.....	.....	.....	.....
Service main.....	.....	9,986,400	.....	9,986,400	17,344,800	10,249,200	17,344,800	10,249,200
Establishments running at night.....	31,536,000	78,472,080	.....	46,936,080	.....	.....	.....	.....
On meter.....	63,755,280	30,695,040	33,060,240	.....	95,291,280	109,167,120	33,060,240	46,936,080
Total.....	419,052,120	366,798,720	182,208,000	129,954,600	419,052,120	366,798,720	182,208,000	129,954,600
Total decrease.....	.....	.....	52,253,400	.....	.....	.....	52,253,400	.....

D.

	WASTE.									USED AND WASTED.			USED.			TOTAL.			
	LEAKING.			RUNNING.			LEAKING AND RUNNING.			Gallons.	Cost at Meter Rate.	Present Cost.	Gallons.	Cost at Meter Rate.	Present Cost.	Gallons.	Cost at Meter Rate.	Present Cost.	
	Gallons.	Cost at Meter Rate.	Present Cost.	Gallons.	Cost at Meter Rate.	Present Cost.	Gallons.	Cost at Meter Rate.	Present Cost.										
1. Urinals.....				38,106,000	\$3,048 48	\$1,219 40											38,106,000	\$3,048 48	\$1,219 40
2. Urinals and Water Closets.....				19,604,880	1,568 40	397 50	3,153,600	\$252 28	\$67 00								22,758,480	1,820 68	464 50
3. Urinals, Water Closets and Faucets.....							5,256,000	420 48	304 00								5,256,000	420 48	304 00
4. Urinals and Faucets.....							10,879,920	870 48	124 00								10,879,920	870 48	124 00
5. Water Closets.....	17,765,280	\$1,421 22	\$727 00	100,845,120	8,067 62	1,489 00	1,787,040	142 96	60 00								120,397,440	9,631 80	2,276 00
6. Water Closets and Hydrants.....				3,994,560	319 56	6 00											3,994,560	319 56	6 00
7. Water Closets and Faucets.....	1,051,200	84 09	54 00				13,245,120	1,059 60	242 00								14,296,320	1,143 69	296 00
8. Water Closets and Service Pipe.....							840,960	67 28	10 00								840,960	67 28	10 00
9. Hydrants.....	2,207,520	176 61	61 50	630,720	50 46	18 00											2,838,240	227 07	79 50
10. Hydrants and Faucets.....	210,240	16 82	16 00														210,240	16 82	16 00
11. Hydrants, Faucets and Service Pipe.....	2,943,360	235 47	31 00														2,943,360	235 47	31 00
12. Faucets.....	1,787,040	142 97	75 00	6,359,760	508 77	213 00											8,146,800	651 74	288 00
13. Faucets and Tank.....				5,045,760	403 66	23 00											5,045,760	403 66	23 00
14. Bar.....				2,102,400	168 19	24 00											2,102,400	168 19	24 00
15. Service Pipe.....	5,150,880	412 08	72 00														5,150,880	412 08	72 00
16. Curb Stop.....	210,240	16 82	26 00														210,240	16 82	26 00
17. Abandoned Pipe.....	4,204,800	336 28															4,204,800	336 28	
18. Stop.....	262,800	21 03															262,800	21 03	
19. Service Main.....	9,986,400	798 91															9,986,400	798 91	
20. Establishments Running at Night.....										78,472,080	\$6,277 78	\$2,614 40					78,472,080	6,277 78	2,614 40
21. On Meter.....													30,695,040	\$2,455 60			30,695,040	2,455 60	
	45,779,760	\$3,662 38	\$1,062 50	176,689,200	\$14,135 14	\$3,389 90	35,162,640	\$2,813 03	\$807 00	78,472,080	\$6,277 78	\$2,614 40	30,695,040	\$2,455 60			366,798,720	\$29,343 91	\$7,873 80

It is evident from the above tables that the efforts to restrict the unnecessary waste of water by such inspections are without practical benefit. The new "appliances" put in annually waste more water than can be saved by the inspection, and that which is saved is so little in proportion to the whole that it is not worth the cost.

Inspection, in order to be effective and of value in proportion to the expense, must be supplemented by using meters in all cases where the waste of water is persisted in after due notice has been given.

In this connection it may be stated that in all large cities there is a time when there is either an insufficient supply of water, because of inability to obtain it, or the annual expense to keep up with the ever increasing waste becomes so great as to be burdensome. When either of these conditions is reached meters have to be used, and it is safe to predict that the state of affairs in this respect will be the same in Philadelphia as in other cities.

The following tables show in detail all work done :

Respectfully,

ALLEN J. FULLER,

Assistant Engineer in charge of Distribution.

IRON SERVICE AND SUPPLY MAINS LAID IN 1893.

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>			
Agnes street, from 1 foot 6 inches south of north curb line of Oliver to Christian.....		6	163
Albert street, from Twelfth street to Thirteenth street.....		6	447
Alexander street, from 37 feet south of south house line of Clymer to Fitzwater.....		6	168
Allison street, from Reed street, north.....		6	25
Alter street, from east house line of Nineteenth street, west.....		6	25
Ashbury street, from Alaska to South street.....		6	162
Bailey street, from 117 feet south of south house line of Leib street, north.....		6	119
Barlow place, from centre of Baker, north.....		6	112
Barrow street, from Trout to South street.....		6	160
Beck street, from Front to Sutherland.....		6	318
Beckwith street, from Catharine to Bainbridge.....		6	730
Bismark street, from south house line of Reed street, north.....		6	25
Bradford street, from east house line of Clifton to Carbon..		6	201
Broad street, east side, from southeast house line of Moyamensing avenue to Ritner.....		6	1,208
Broad street, east side, from dead end, north house line of Jackson to Snyder.....		6	396
Broad street, east side, from Passyunk avenue to dead end 2 feet south of south house line of Miiflin.....		6	403
Broad street, west side, from southeast house line of Moyamensing avenue to centre of Wolf.....		6	1,722
Broad street, west side, from 30 feet north of north house line of Wolf to Miiflin.....		6	1,760
Cantrell street, from 1 foot west of west curb line of Fourth street, west to connect dead end.....		6	68
Chadwick street, from south house line of McKean north to dead end.....		6	12
Chadwick street, from dead end, north curb line of McKean, north.....		6	12
Clifton street, from dead end, north house line of Bainbridge to South street.....		6	295
Clymer street, from dead end, east house line of Alexander, west.....		6	109
Cobb street, from Queen to Catharine.....		6	254
Corn street, from centre of Drayton (or Decatur) to dead end south house line of Marion.....		6	117
Darcy street, from centre of Spafford, west.....		6	188

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Dickinson street, from centre of Twenty-third, west.....		6	25
Dillmore street, from 6 feet south of north curb line of Snyder avenue, north.....		6	21
Dudley street, from centre of Eighteenth, west.....		6	25
Dudley street, from east to west house line, Nineteenth...		6	50
Durfor street, from centre of Eleventh to Twelfth.....		6	446
Earp street, from east house line of Twenty-third street, west.....		6	25
Eleventh street, east side, from Christian to dead end south house line of Catharine.....		6	250
Eleventh street, west side, from dead end, 10 feet north of north house line of Thurlow to dead end 1 foot south of south house line of Catharine.....		8	100
Eleventh street, east side, from centre of Fitzwater to dead end south house line of Bainbridge.....		6	332
Eleventh street, west side, from dead end 67 feet south of north house line of Washington avenue to dead end south house line of Carpenter street.....		6	439
Emily street, from 2 feet east of east curb line of Eleventh street, west.....		6	14
Emily street, from dead end 7 feet east of west curb line of Fifteenth, west.....		6	19
Ericsson street, from Ninth street, west.....		6	125
Erie street, from Christian to south house line of Catharine.....		6	251
Ernest street, from east house line of Twenty-eighth street, west.....		6	32
Fifteenth street, from 3 feet south of southeast house line of Passyunk avenue to dead end 12 feet north of south house line of McKean.....		6	232
Fernon street, from Point Breeze avenue to west curb line of Twenty-third.....		6	232
Florence street, from Carpenter to Milton.....		6	174
Freytag alley, from Bainbridge to Alaska.....		6	164
Gerritt street, from east house line of Twenty-third street, west.....		6	50
Grove street, from 2 feet south of south curb line of Gray's Ferry road, north.....		6	31
Grove street, from 2 feet south of north house line of Reed street north to dead end.....		6	78
Hall street, from 11 feet 6 inches east of west curb line of Florence, west.....		6	10
Harmony street, from north house line of Reed street north to dead end.....		6	202
Harmony street, from dead end 305 feet north of Wharton to south house line of Gray's Ferry road.....		6	140
Harmony street, from 3 feet south of south curb line of Gray's Ferry road, north.....		6	29
Hicks street, from south house line of McKean, north to dead end.....		6	12

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Hoffman street, from centre of Eighteenth to west house line of Nineteenth street.....		6	472
Home or Twelford street, from 42 feet south of north curb line of Metcalfe, north.....		6	39
Jackson street, from centre of Second, west to dead end....		6	268
Jackson street, from 38 feet west of east curb line of Broad, west.....		6	56
Jackson street, from 8 feet east of west house line of Broad street, west.....		6	14
Jessup street, from centre of Fitzwater, north.....		6	306
Juniper street, from south house line of Snyder avenue, north.....		6	24
Juniper street, from centre of Jackson street, north.....		6	30
Kates street, from Thirteenth street, west.....		6	32
Kates street, from east house line of Fifteenth street, west..		6	50
Kimball street, from dead end, east curb line of Twenty-fifth street, west.....		6	32
Krider's alley, from Swanson to Front.....		6	366
La Grange, from north curb line of Washington to Carpenter.....		6	414
Latona street, from dead end, east curb line of Twenty-third street, west.....		6	38
Lebanon street, from Christian to dead end south house line of Catharine.....		6	258
Leib street, from 9 feet east of west house line of Bailey to Annapolis.....		6	116
Lentz street, from centre of Clarion, west.....		6	6
Letitia street, from north curb line of Jackson to dead end south curb line of Snyder.....		6	416
Lilly Ann street, from 133 feet south of south house line of Catharine to Fitzwater.....		6	530
Lingo street, from north curb line of McKean, north.....		6	12
Lydia street, from south house line of Carpenter, north ..		6	25
Lydia street, from 113 feet south of south house line of Carpenter, north to dead end.....		6	113
McClellan street, from centre of Seventeenth street, west..		6	25
McCrea street, from dead end 3 feet west of west curb line of Juniper to Espey.....		6	179
McIllery street, from Milton to Milton.....		6	362
Martin place, from south house line of Carpenter street, north.....		6	25
Mechanic street, from dead end 3 feet east of east curb line of Parker, west.....		6	13
Mercy street, from Otsego to Front.....		6	262
Metcalfe street, from Griswold to east house line of Shirker's.....		6	69
Midlin street, from centre of Sixteenth, west.....		6	33
Midlin street, from east house line of Seventeenth, west...		6	50
Millman street, from 2 feet west of east house line of Pennington, west.....		6	13

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Mole street, from south house line of McKean, north to dead end.....		6	12
Montana street, from centre of Wharton to Gray's Ferry road.....		6	554
Moore street, south side, from dead end 7 feet west of east curb line of Front street west to connect.....		6	16
Moore street, from 1 foot east of east curb line of Eleventh street, west.....		6	14
Moore street, from dead end 129 feet west of west house line of Eleventh street west to connect.....		6	21
Moore street, from centre of Twenty-first street, to east curb line of Twenty-second.....		8	433
Moore street (Third Ward), from Espey to Ritchie.....		6	124
Mott street, from centre of Thirteenth street to 5 feet west of east curb line of La Grange.....		6	388
Mount Holly street, from dead end, north house line of Snyder to dead end south curb line of McKean.....		6	400
Mount Holly street, from centre of McKean, north.....		6	25
Moyamensing avenue, from east to west house line of Broad.....		6	113
Napa street, from 7 feet south of south curb line of Gray's Ferry road, north.....		6	25
Native street, from centre of Fifth street, west.....		6	163
Nineteenth street, from centre of McKean to dead end 17 feet south of south house line of Millin.....		6	408
Oakford street, from dead end east house line of Twenty-third, west.....		6	38
Oliver, or Donnelly street, from Tenth to Milton.....		6	380
Parker street, from dead end north house line of Washington avenue to dead end south house line of Carpenter.....		6	387
Paschall street, from Tenth to Eleventh.....		6	431
Pennington street, from dead end north house line of Carpenter to centre of Marriott.....		6	215
Placid place, from centre of Second street, west.....		6	220
Porter street, from 22 feet east of east curb line of Broad street, west.....		6	99
Porter street, from 4 feet west of west curb line of Broad street, west.....		6	13
Porter street, from east house line of Twenty-eighth street, west.....		6	32
Rawle street, from south house line of Reed street, north.....		6	25
Reed street, from east curb line of Twenty-third, west.....		6	38
Ritchie street, from dead end, 2 feet south of north house line of Catharine to dead end, 2 feet north of south house line of Fitzwater.....		6	327
Ritchie street, from Fitzwater to Rose.....		6	229
Ritner street, from 17 feet east of east curb line of Broad street, west.....		6	94

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Ritner street, from 4 feet west of west curb line of Broad, west.....		6	13
Robin avenue, from Temperance street, north.....		6	146
Robin avenue, from 132 feet east of centre of Russell, west.....		6	132
Say street, from Bainbridge to Alaska.....		6	164
School street, from Bainbridge to South.....		6	327
Scott (or Wilder) street, from Ninth to Tenth.....		6	445
Sears street, from east house line of Twenty-third, west....		6	25
Seventeenth street, from dead end, north curb line of McKean, north.....		6	12
Seventeenth street, from south house line of Mifflin to dead end south curb of Moore.....		6	462
Shunk street, from east house line of Broad, west.....		6	113
Shunk street, from east house line of Twenty-eighth, west		6	32
Sigel street, from centre of Eleventh, west.....		6	25
Sigel street, from centre of Seventeenth, west.....		6	25
Snyder avenue, south side, from 6 feet west of east curb line of Broad, west.....		6	90
Snyder avenue, south side, from dead end east of west house line of Lingo to dead end east house line of Eighteenth.....		6	121
Snyder avenue, south side, from dead end west house line of Eighteenth to west house line of Ward.....		6	149
Snyder avenue, north side, from 5 feet west of east curb line of Broad, west.....		6	92
Snyder avenue, north side from dead end 2 feet east of west house line of Lingo to dead end east house line of Eighteenth.....		6	121
Snyder avenue, north side, from dead end west house line of Eighteenth to west house line of Ward.....		6	149
Spafford street, from Bainbridge to Alaska.....		6	167
Stewart street, from Moyamensing avenue to Wolf.....		6	388
Tasker street, from east house line of Meadow to Otsego...		6	785
Temperance street, from Lisle to Russell.....		6	168
Tudor street, from centre of Dickinson street, north.....		6	25
Tyler street, from Faulkner street, west.....		6	188
Thirty-fifth street, from dead end 305 feet north of north house line of Wharton, north.....		6	88
Thirty-fifth street, from 5 feet south of south curb line of Gray's Ferry road, north.....		6	12
Thirty-fourth street, from centre of Wharton, north.....		6	140
Thirty-fourth street, from 7 feet south of south curb line of Gray's Ferry road, north.....		6	39
Thirty-sixth street, from north house line of Reed to dead end 206 feet south of south house line of Wharton....		6	211
Tiernan street, from south house line of Reed street, north.....		6	25
Titan street, from dead end east house line of Twenty-third, west.....		6	50

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Twenty-eighth street, from 33 feet south of north house line of Shunk, north.....		6	8
Twenty-eighth street, from dead end 158 feet north of north house line of Porter to northeast fence line of Old Passyunk avenue.....		6	185
Twenty-fifth street, from 13 feet south of north curb line of Washington avenue to Carpenter.....		12	417
Twenty-fifth street, east side, from south to north house line of Wharton.....		6	50
Twenty-fifth street, west side, from south to north house line of Wharton.....		6	50
Twenty-fourth street, from south to north house line of Wharton.....		6	50
Twenty-second street, from 3 feet south of north house line of Tasker street, north to dead end.....		12	74
Twenty-sixth street, from dead end 226 feet north of north house line of Ellsworth to south curb line of Washington avenue.....		6	76
Twenty-third street, from 4 feet south of south curb line of Fernon to south curb line of Tasker.....		6	157
Twenty-third street, from dead end, north curb line of Tasker to Dickinson.....		6	411
Twenty-third street, from centre of Wilder to dead end north curb line of Oakford.....		6	1,165
Victoria street, from south house line of Snyder avenue, north.....		6	24
Victoria street, from centre of Jackson street north.....		6	30
Ward street, from 7 feet south of north curb line of Snyder avenue, north.....		6	21
Warfield street, from north house line of Reed to centre of Wharton.....		6	428
Washington avenue, north side, from centre of Twelfth, west.....		6	25
Washington avenue, north side, from east house line of Broad, west.....		6	26
Washington avenue, south side, from centre of Fifteenth street, west.....		6	25
Washington avenue, south side, from east house line of Sixteenth, west.....		6	50
Weccacoe street, from dead end 3 feet south of north house line of Queen, north to connect dead end.....		6	136
Wharton lane, from east house line of Front street, west.....		6	30
Wharton street, from dead end 3 feet west of east house line of Twenty-third to dead end east house line of Twenty-sixth.....		6	1,427
White street, from east house line of Fifteenth, west.....		6	25
Wilder street, from east house line of Twenty-third, west.....		6	50
Wilson street, from centre of Otsego street, west.....		6	173
Winton street, from dead end 5 feet west of west curb line of Fourth to Fifth.....		6	438

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Winton street, from dead end west curb line of Eleventh to Tweifth.....		6	433
Wolf street, from 2 feet east of east house line of Broad, west.....		6	32
Wolf street, from 6 feet east of west curb line of Broad, west.....		6	25
Yhost street, from centre of Queen to dead end 2 feet north of north house line of Catharine.....		6	229
Total			33,769
<i>Supply Mains.</i>			
Broad street, from south house line of Ritner to dead end, 3 feet south of south house line of Wolf street.....		20	457
Broad street, from 12 feet south of southeast house line of Moyamensing avenue to south house line of Ritner street.....		20	1,224
Snyder avenue, from 24 feet east of west curb line of Broad street, west.....		16	54
Total			1,735
<i>Supply Main Connections.</i>			
Broad street and Shunk street, between 20-inch main on Broad street and 6-inch main on Shunk street.....		10	11
Broad street and Porter street, between 20-inch main on Broad street and 6-inch main on Porter street.....		10	11
Broad street and Ritner street, between 20-inch main on Broad street and 6-inch main on Ritner street.....		10	12
Broad street and Moyamensing avenue, between 20-inch main on Broad street and 6-inch main on Moyamensing avenue.....		10	18
Total			52
<i>Service Supply Connections.</i>			
Broad street, west side, 6 feet north of north house line of Jackson.....		4	9
Broad street, east side, 8 feet north of north house line of Jackson.....		4	10
Broad street, east side, 7 feet south of south house line of Snyder avenue.....		4	9

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Broad street, west side, 5 feet north of north house line of Snyder avenue.....		4	9
Broad street, west side, 6 feet south of south house line of Snyder avenue.....		4	10
Broad street, west side, 12 feet south of southeast house line of Passyunk avenue.....		4	9
Broad street, west side, 120 feet north of north house line of Christian street.....		4	8
Broad street, west side, 8 feet 6 inches north of north house line of Christian street.....		4	10
Broad street, west side, 47 feet north of north house line of Catharine.....		4	11
Broad street, west side, 10 feet south of south house line of Catharine.....		4	11
Nineteenth street, west side, 6 feet north of north house line of McKean street.....		4	18
Nineteenth street, west side, 9 feet south of south house line of Mifflin street.....		4	17
Total			131
Fire hydrant connections.....		6	2,598
<i>Fire Connections (private).</i>			
Delaware avenue, west side, 63 feet south of south house line of Bainbridge street, for Franklin Sugar Refining Company.....		4	21
Passyunk avenue, south side, 28 feet east of east house line of Twenty-third street, for Clark, Thomas and Company.....		4	7
Total			28
<i>Supply Connections (private).</i>			
Mole street, west side, 121 feet south of south house line of Reed street, for J. Miller, Son and Company.....		3	
Old Passyunk road, 176 feet west of west house line of Thirty-first street, between 10-inch main on Old Passyunk road and 4-inch service-pipe in Point Breeze Gas Works, for Bureau of Gas.....		6	37
Total		6	37

Street.	Location.	Size in inches.	Distance in feet.
<i>Motor Connections (private).</i>			
Broad street, east side, 120 feet south of south house line of Federal street, for Hollond Memorial Chapel.....		3	
<i>Drains.</i>			
Broad street, east side, 25 feet south of south house line of Porter street from 20-inch main.....		6	23
<i>Pipe Relaid.</i>			
Afton street, from centre of Sixteenth, west.....		6	27
Alter street, from centre of Seventeenth to centre of Eighteenth.....		6	446
Alter street, from centre of Nineteenth to centre of Twenty-fourth.....		6	2,373
Aman street, from centre of Dickinson street, north.....		6	32
Aman street, from 2 feet east of east house line of Twelfth, west.....		6	31
Anthony street, from 3 feet south of south house line of Dickinson, north.....		6	56
Auburn street, from centre of Eighth to 7 feet west of east curb line of Ninth.....		6	445
Auburn street, from Ninth to Tenth.....		6	445
Baker street, from west house line of Seventh to Eighth..		6	420
Bancroft street, from 2 feet south of south house line of Reed, north.....		6	54
Barnett street, from centre of Eighth, west.....		6	27
Bayard street, from 2 feet east of east house line of Eighth, west.....		6	27
Beck (or Bulletin) street, from Swanson street to Front...		6	545
Borden street, from 3 feet east of east house line of Fourth, west.....		6	46
Brinton street, from 110 feet east of east house line of Eighth, west.....		6	135
Brinton (or Rose) street, from Twelfth to Thirteenth.....		6	476
Camilla street, from 6 feet east of west curb line of Eleventh to centre of Twelfth.....		6	418
Canal street, from centre of Fourth street, west.....		6	26
Carbon street, from north house line of Bainbridge to centre of South street.....		6	297
Chadwick street, from 2 feet south of south house line of Reed, north.....		6	54
Clarion street, from 2 feet south of south house line of Jackson, north.....		6	32
Clarion street, from centre of Reed to south house line of Federal.....		6	978

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Clymer street, from Campbell to east house line of Alexander		6	332
Cross street, from centre of Eighth, west.....		6	27
Cross street, from 2 feet east of east house line of Tenth, west.....		6	52
Cross street, from 2 feet east of southeast house line of Passyunk avenue, west.....		6	30
Dean street, from centre of Wharton, north.....		6	255
Dean street, from south house line of Dickinson, north...		6	25
Denmark street, from centre of Front street, west.....		6	30
Dudley street, from 2 feet east of east house line of Eighth, west.....		6	54
Earp street, from centre of Eighth street, west.....		6	27
Eleventh street, west side, from 96 feet south of south house line of Wharton to south house line of Federal		6	597
Eleventh street, west side, from north house line of Federal to 33 feet north of south house line of Washington avenue.....		6	836
Eleventh street, east side, from north house line of Carpenter to Christian street.....		6	343
Eleventh street, east side, from north house line of Catharine to Fitzwater.....		6	347
Emeline street, from centre of Eighth to Ovington.....		6	326
Eneu street, from centre of Eighth, west.		6	27
Erie street, from 3 feet north of north house line of Catharine to south house line of Bainbridge.....		6	677
Espey street, from north house line of Catharine to south house line of Fitzwater.....		6	323
Evangelist street, from west house line of Seventh to Eighth.....		6	419
Everett street, from centre of Twelfth to Thirteenth.....		6	445
Evergreen street, from centre of Twentieth to centre of Twenty-second.....		6	997
Fallon street, from north house line of Catharine to Fitzwater.....		6	347
Faulkner street, from centre of Carpenter, north.....		6	27
Faulkner street, from Carpenter to centre of Marriott....		6	215
Fernon street, from centre of Eighth, west.....		6	27
Fernon street, from 2 feet east of east house line of Tenth, west.....		6	54
Fernon street, from 2 feet east of east house line of Eleventh, west.....		6	27
Florida street, from north house line of Catharine to south house line of Fitzwater.....		6	322
Francis street, from centre of Twelfth, west.....		6	27
Front street, from south house line of Moore, north.....		6	21
Front street, east side, from 6 feet north of south curb line of Moore, north.....		6	131
Front street, west side, from 6 feet north of south curb line of Moore, north.....		6	131

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Fulton street, from Twelfth to Thirteenth.....		6	442
Gaffney street, from 225 feet south of south house line of Fitzwater, north.....		6	250
Godey street, from centre of Wall to south house line of Catharine.....		6	185
Greenwich street, from east house line of Fourth, west.....		6	25
Greenwich street, from west house line of Fourth, west....		6	27
Griswold street, from Fitzwater to Metcalf.....		6	297
Grover street, from Christian to Queen street.....		6	384
Guirey street, from Centre of Passyunk avenue, west.....		6	28
Guirey street, from 2 feet east of east house line of Twelfth, west		6	34
Guirey street, from 2 feet south of south house line of Dickinson, north.....		6	71
Hazel street, from 9 feet east of west curb line of Front, west		6	28
Hicks street, from centre of Reed, north.....		6	27
Hoffman street, from west house line of Fourth, west.....		6	28
Hoffman street, from 2 feet east of east house line of Eighth, west.....		6	27
Hoffman street, from 2 feet east of east house line of Tenth, west.....		6	27
Home (or Twelfthford) street, from 3 feet south of north curb line of Metcalf to south house line of Bainbridge		6	97
Hummell street, from centre of Gray's Ferry road, west....		6	37
Jamison street, from east house line of Eighth, west.....		6	25
Jane street, from Yhost to southeast house line of Passyunk avenue.....		6	258
Jarvis street, from 4 feet east of east house line of Fourth, west.....		6	32
June street, from west house line of Seventh to Eighth....		6	420
Juniper street, from 2 feet south of south house line of Jackson, north.....		6	32
Juniper street, from Centre of Reed to centre of Wharton		6	452
Kates street, from 2 feet east of east house line of Broad street, west.....		6	30
Kanffman street, from Morton to Fourth.....		6	335
Latona street, from centre of Sixteenth, west.....		6	27
Latona street, from east house line of Point Breeze avenue, west.....		6	22
Lebanon street, from north house line of Catharine to south house line of Fitzwater.....		6	322
Lentz street, from Eleventh to Thirteenth.....		6	856
Linnard street, from centre of Eighth, west.....		6	27
Lisle street, from Fitzwater to south house line of Bainbridge.....		6	332
Lukens street, from centre of Fifteenth to Sixteenth.....		6	451
McClellan street, from centre of Front, west.....		6	35
McClellan street, from 2 feet east of east house line of Second street, west.....		6	54

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
McClellan street, from 2 feet east of east house line of Eighth, west.....		6	54
McClellan street, from 2 feet east of east house line of Tenth, west.....		6	27
McIlwain street, from centre of Fourth, west.....		6	25
Martin street, from north house line of Catharine to south house line of Fitzwater.....		6	323
May street, from west house line of Seventh to Eighth....		6	420
Metcalf street, from Home to Griswold.....		6	117
Mole street, from centre of Reed, north.....		6	27
Montcalm street, from Christian to south house line of Catharine.....		6	258
Montcalm street, from north house line of Catharine to Fitzwater.....		6	347
Montrose street, from 265 feet east of east house line of Fifteenth to centre of Twenty-fourth.....		6	4,446
Moore street, south side, from east curb line of Front, west		6	7
Moore street, south side, from 7 feet east of west curb line of Front, west.....		6	22
Moore street, north side, from east house line of Front, west.....		6	22
Moore street, north side, from 7 feet east of west curb line of Front, west.....		6	7
Moore street, from west house line of Juniper to Espy....		6	155
Morton street, from north house line of Queen to Kauffman		6	96
Moss street, from 2 feet east of east house line of Eighth, west.....		6	27
Mountain street, from Beulah to 2 feet west of west house line of Eighth.....		6	311
Mountain street, from 2 feet east of east house line of Tenth, west.....		6	54
Mountain street, from 2 feet east of east house line of Eleventh street, west.....		6	27
Ovington street, from 2 feet south of north house line of Bainbridge street to South street.....		6	295
Parade street, from centre of Twelfth to Dean.....		6	301
Patton street, from 5 feet south of south curb line of Gray's Ferry road, north.....		6	22
Peter street, from 2 feet east of east house line of Twelfth, west.....		6	54
Pierce street, from centre of Fourth, west.....		6	27
Pierce street, from 2 feet east of east house line of Eighth, west.....		6	56
Pierce street, from 8 feet east of east house line of Tenth, west.....		6	33
Pierce street, from 2 feet east of east house line of Eleventh, west.....		6	27
Pierce street, from 2 feet east of east house line of Twelfth, west.....		6	27

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Pierce street, from 2 feet east of east house line of Thirteenth, west		6	27
Pritchett street, from centre of Thirteenth, to centre of Juniper.....		6	395
Ronaldson, from north house line of Bainbridge to South Rose street, from Thirteenth to east house line of Juniper		6	295
Rose street, from west house line of Juniper to east house line of Broad.....		6	144
Salter street from 10 feet east of west curb line of Seventh to centre of Eighth.....		6	378
Sanderson street, from centre of Fifteenth, west.....		6	416
Sanderson street, from 2 feet east of east house line of Sixteenth, west.....		6	27
Scott street, from centre of Eighth, west.....		6	54
Selfridge street, from north house line of Fitzwater, to south house line of Bainbridge.....		6	27
Sigel street, from centre of Front, west.....		6	307
Sigel street, from 2 feet east of east house line of Eighth, west		6	38
Sigel street, from 2 feet east of east house line of Second, west		6	27
Silbert street, from 14 feet south of north curb line of Reed, north.....		6	54
South Marshall street, from centre of Thirteenth to 2 feet west of east curb line of Broad street.....		6	31
South Marshall street, from 4 feet east of west curb line of Broad, west.....		6	575
Starr street, from 6 feet south of north curb line of Snyder avenue, north.....		6	331
Stewart street, from 2 feet south of north house line of Catharine to Fitzwater.....		6	23
Suffolk street, from centre of Eighth to 7 feet west of east curb line of Ninth.....		6	349
Suffolk street, from 3 feet east of west curb line of Ninth to Tenth.....		6	447
Taylor street, from 3 feet east of east house line of Tenth, west		6	441
Taylor street, from 2 feet east of southeast house line of Passyunk avenue, west.....		6	55
Temple street, from centre of Twelfth to 5 feet west of east house line of La Grange.....		6	30
Tiernan street, from centre of Reed, north.....		6	836
Titan street, from 2 feet east of east house line of Point Breeze avenue, west.....		6	27
Trellis street, from centre of Front, west.....		6	24
Tudor street, from 4 feet south of south house line of Dickinson, north.....		6	32
Wall street, from 17 feet east of northwest house line of Passyunk avenue to 18 feet west of east house line of Seventh.....		6	29
		6	391

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Watkins street, from 9 feet east of west curb line of Front west		6	28
Watkins street, from centre of Fourth, west.....		6	27
Watkins street, from 2 feet east of east house line of Eighth, west.....		6	54
Watkins street, from 4 feet east of east house line of Tenth, west.....		6	56
Watkins street, from 2 feet east of east house line of Eleventh, west.....		6	123
Watkins street, from 2 feet east of east house line of Twelfth, west.....		6	27
Weccacoe street, from 70 feet south of south house line of Catharine, north.....		6	73
Whitney street, from Passyunk avenue to Eighth.....		6	390
Worth street, from 2 feet east of east house line of Fourth, west		6	52
Total.....			34,896
<i>Pipe Connections Relaid.</i>			
Fire hydrant connections relaid.....		6	682
Repairs, general.....		4	44
" "		6	2,632
" "		8	28
" "		10	47
" "		12	19
" "		16	21
" "		20	29
" "		30	10
Total.....			2,830
<i>Pipe Taken up.</i>			
Afton street, from centre of Sixteenth, west.....		4	27
Alter street, from centre of Seventeenth to centre of Eighteenth.....		4	450
Alter street, from centre of Nineteenth to centre of Twenty-fourth.....		4	2,386
Aman street, from centre of Dickinson, north.....		6	32
Aman street, from 2 feet east of east house line of Twelfth, west		4	31
Anthony street, from 3 feet south of south house line of Dickinson, north.....		4	56
Auburn street, from Eighth to Tenth.....		3	990
Baker street, from west house line of Seventh to Eighth.....		4	420
Bancroft street, from 2 feet south of south house line of Reed, north.....		4	54

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken up—Continued.</i>			
Barnett street, from Eighth street, west.....		3	27
Bayard street, from 2 feet east of east house line of Eighth, west.....		4	27
Beck (or Bulletin) street, from Swanson street to Front.....		3	545
Borden street, from 3 feet east of east house line of Fourth, west.....		4	46
Brinton street, from 110 feet east of east house line of Eighth, west.....		4	225
Brinton street, from Twelfth to Thirteenth.....		4	448
Camilla street, from centre of Twelfth to 6 feet east of west curb line of Eleventh.....		4	418
Canal street, from centre of Fourth, west.....		4	26
Carbon street, from north house line of Bainbridge to South street.....		3	297
Chadwick street, from 2 feet south of south house line of Reed, north.....		4	54
Clarion street, from Centre of Jackson, north.....		4	27
Clarion street, from Reed to south house line of Federal.....		4	989
Clymer street, from Campbell to Sixth.....		4	168
Clymer street, from Sixth street to east house line of Alexander.....		3	164
Cross street, from centre of Eighth, west.....		4	27
Cross street, from 2 feet east of east house line of Tenth, west.....		4	51
Cross street, from 2 feet east of east house line of Passyunk avenue, west.....		4	30
Dean street, from centre of Wharton, north.....		4	255
Dean street, from south house line of Dickinson street, north.....		4	25
Denmark street, from centre of Front, west.....		4	30
Dudley street, from 2 feet east of east house line of Eighth, west.....		4	52
Earp street, from Eighth street, west.....		4	27
Eleventh street, west side, from 96 feet south of south house line of Wharton to south house line of Federal.....		4	597
Eleventh street, west side, from north house line of Federal to 33 feet north of south house line of Washington avenue.....	{ 4 10	4	818
		10	18
Eleventh street east side, from north house line of Carpenter to Christian.....		4	343
Eleventh street, east side, from north house line of Catharine to Fitzwater.....		4	347
Emeline street, from centre of Eighth to Ovington.....		4	340
Eneu street, from centre of Eighth, west.....		4	27
Erie street, from 3 feet north of north house line of Catharine to south house line of Bainbridge.....		3	677
Espey street, from north house line of Catharine to south house line of Fitzwater.....		4	323
Evangelist street, from west house line of Seventh to Eighth.....		4	419

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken up—Continued.</i>			
Everett street, from centre of Twelfth to Thirteenth.....		4	445
Evergreen street, from centre of Twentieth to Twenty-second		4	1,007
Fallon street, from north house line of Catharine to Fitzwater.....		4	347
Faulkner street, from Carpenter, north.....		3	19
Faulkner street, from north house line of Carpenter to Marriott		3	215
Fernon street, from centre of Eighth, west.....		4	27
Fernon street, from 2 feet east of east house line of Tenth, west.....		4	52
Fernon street, from 2 feet east of east house line of Eleventh, west.....		4	27
Florida street, from north house line of Catharine to south house line of Fitzwater.....		4	322
Francis street, from centre of Twelfth, west.....		4	27
Front street, from south house line of Moore, north.....		4	4
Front street, east side, from 6 feet north of south curb line of Moore, north.....		4	131
Front street, west side, from 6 feet north of south curb line of Moore, north.....		4	131
Fulton street, from Twelfth to Thirteenth.....		4	442
Gaffney street, from 225 feet south of south house line of Fitzwater, north.....		4	250
Godey street, from Wall to south house line of Catharine		4	185
Greenwich street, from east house line of Fourth, west....		4	51
Griswold street, from Fitzwater to Metcalf.....		3	297
Grover street, from Christian to Queen.....		{ 2	192
		{ 3	192
Guirey street, from 2 feet east of east house line of Twelfth, west.....		4	34
Guirey street, from centre of Passyunk avenue, west.....		4	28
Guirey street, from 2 feet south of south house line of Dickinson street, north.....		4	71
Hazel street, from 9 feet east of west curb line of Front, west.....		4	28
Hicks street from south house line of McKean, north.....		6	24
Hicks street, from centre of Reel, north.....		4	25
Hoffman street, from centre of Fourth, west.....		4	28
Hoffman street, from 2 feet east of east house line of Eighth, west.....		4	27
Hoffman street, from 2 feet east of east house line of Tenth, west.....		4	27
Home (or Twelveford) street, from Metcalf to south house line of Bainbridge.....		3	97
Jamison street, from east house line of Eighth, west.....		4	25
Jane street, from Yhost to southeast house line of Passyunk avenue.....		4	253
Jarvis street, from 4 feet east of east house line of Fourth street, west.....		3	29

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken up—Continued.</i>			
June street, from west house line of Seventh to Eighth....		4	420
Juniper street, from 2 feet south of south house line of Jackson, north.....		4	27
Juniper street, from centre of Reed to centre of Wharton.		4	449
Kates street, from 2 feet east of east house line of Broad street, west.....		4	30
Kauffman street, from 32 feet west of west house line of Motion to Fourth.....		3	296
Latona street, from centre of Sixteenth, west.....		4	27
Latona street, from east house line of Point Breeze avenue, west.....		4	22
Lebanon street, from north house line of Christian to south house line of Fitzwater.....		4	322
Lentz street, from Eleventh to east house line of Thirteenth.....		4	825
Lentz street, from east house line of Thirteenth, west.....		6	25
Linnard street, from centre of Eighth, west.....		4	27
Lisle street, from Fitzwater to south house line of Bainbridge.....		4	332
Lukens street, from centre of Fifteenth to centre of Sixteenth.....		4	451
McClellan street, from centre of Front, west.....		4	10
McClellan street, from 2 feet east of east house line of Eighth street, west.....		4	54
McClellan street, from 2 feet east of east house line of Tenth street, west.....		4	27
McClellan street, from centre of Second, west.....		4	27
McClellan street, from 2 feet east of east house line of Second street, west.....		4	27
McIlwain street, from centre of Fourth, west.....		4	25
Martin street, from north house line of Catherine to south house line of Fitzwater.....		4	323
May street, from west house line of Seventh to Eighth....		4	420
Metcalf street, from Home to Griswold.....		3	117
Mole street, from south house line of McKean, north.....		6	24
Mole street, from centre of Reed, north.....		4	28
Montcalm street, from Christian to Catherine.....		3	258
Montcalm street, from north house line of Catherine to Fitzwater.....		4	347
Montrose street, from 265 feet east of east house line of Fifteenth to east curb line of Twenty-second.....		4	3,506
Montrose street, from centre of Twenty-third to Twenty-fourth.....		4	942
Moore street, south side, from East curb line of Front street, west.....		4	7
Moore street, south side, from 7 feet east of west curb line of Front street, west.....		4	22
Moore street, north side, from east house line of Front, west.....		4	22

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken up—Continued.</i>			
Moore street, north side, from 7 feet east of west curb line of Front, west.....		4	7
Moore street, from West house line of Juniper to Espey...		4	155
Moss street, from 2 feet east of east house line of Eighth street, west.....		3	27
Mountain street, from Beulah to Eighth street.....		4	311
Mountain street, from 12 feet east of east house line of Tenth, west.....		4	52
Mountain street, from 2 feet east of east house line of Eleventh, west.....		4	27
Ovington street, from 2 feet south of north house line of Bainbridge to South street.....		3	290
Parade street, from centre of Twelfth to Dean.....		4	301
Peter street, from 2 feet east of east house line of Twelfth street, west.....		4	54
Pierce street, from centre of Fourth street, west.....		4	27
Pierce street, from 2 feet east of east house line of Eighth street, west.....		4	56
Pierce street, from 8 feet east of east house line of Tenth street, west.....		4	31
Pierce street, from centre of Eleventh street, west.....		4	27
Pierce street, from 2 feet east of east house line of Twelfth street west.....		4	27
Pierce street, from 2 feet east of east house line of Thirteenth street, west.....		4	27
Pritchett street, from centre of Thirteenth street west.....		3	27
Pritchett street, from west house line of Thirteenth to centre of Juniper.....		4	368
Ronaldson street, from north house line of Bainbridge to South street.....		2½	295
Rose (or Brinton) street, from Thirteenth to east house line of Juniper.....		3	144
Rose (or Brinton) street, from west house line of Juniper to east house line of Broad.....		3	378
Salter street, from 10 feet east of west curb line of Seventh to centre of Eighth.....		4	450
Sanderson street, from centre of Fifteenth, west.....		4	27
Sanderson street, from 2 feet east of east house line of Sixteenth, west.....		4	54
Scott street, from centre of Eighth, west.....		4	27
Selfridge street, from north house line of Fitzwater to south house line of Bainbridge.....		4	307
Sigel street, from centre of Front street, west.....		4	33
Sigel street, from 2 feet east of east house line of Eighth street, west.....		4	27
Sigel street, from 2 feet east of east house line of Second street, west.....		4	27
Sigel street, from centre of Second street, west.....		4	27
Silbert street, from Reed street, north.....		3	31

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken up—Continued.</i>			
South Marshall street, from centre of Thirteenth to 2 feet west of east curb line of Broad.....		4	575
South Marshall street, from 4 feet east of west curb line of Broad, west.....		4	331
Starr street, from 6 feet south of north curb line of Snyder avenue, north.....		4	23
Stewart street, from 2 feet south of north house line of Catharine to Fitzwater.....		{ 3 4	{ 33 316
Suffolk street, from Eighth street to 7 feet west of east curb line of Ninth street.....		3	447
Suffolk street, from 3 feet east of west curb line of Ninth street to Tenth.....		3	441
Taylor street, from 3 feet east of east house line of Tenth, west.....		4	52
Taylor street, from 2 feet east of southeast house line of Passyunk avenue, west.....		4	28
Temple street, from centre of Twelfth to 2 feet east of east house line of Thirteenth.....		3	419
Temple street, from west house line of Thirteenth to 5 feet west of east house line of LaGrange.....		4	365
Tiernan street, from centre of Reed street, north.....		4	27
Titan street, from 2 feet east of east house line of Point Breeze avenue, west.....		4	24
Trellis street, from centre of Front, west.....		4	31
Tudor street, from 4 feet south of south house line of Dickinson street, north.....		3	8
Wall street, from 17 feet east of northwest house line of Passyunk avenue to 18 feet west of east house line of Seventh.....		3	391
Watkins street, from 9 feet east of west curb line of Front street, west.....		4	28
Watkins street, from centre of Fourth street, west.....		4	27
Watkins street, from 2 feet east of east house line of Eighth street, west.....		4	54
Watkins street, from 4 feet east of east house line of Tenth, west.....		4	53
Watkins street, from intersection of Eleventh.....		4	5
Watkins street, from 2 feet east of east house line of Twelfth street, west.....		4	27
Weccacoe street, from 70 feet south of south house line of Catharine, north.....		4	73
Worth street, from 2 feet east of east house line of Fourth street, west.....		4	52
Total.....			34,290

Street.	Location.	Size in inches.	Distance in feet.
Fire-hydrant connections taken up.....		3	38
“ “ “		4	845
“ “ “		6	257
Total.....			1,140
<i>Pipe Raised.</i>			
Fourth street, from 14 feet south of north curb line of Washington avenue, north.....		6	9
<i>Pipe Shifted.</i>			
Point Breeze Gas Works, from 4 feet north to south wall of new meter house		10	196
Wolf street, from west house line of Old Second street, west.....		6	278
Total.....			474
<i>Pipe cut off and abandoned.</i>			
Front street, from 4 feet north of south house line of Moore street, north.....		4	34
Kauffman street, from 2 feet east of west house line of Morton, west.....		3	34
Morton street, from 4 feet north of north house line of Queen street, north.....		3	100
McClellan street, from 10 feet west of centre of Front street, west.....		4	24
Tudor street, from 4 feet north of south house line of Dickinson, north.....		3	21
Watkins street, across northwest corner of Eleventh street		4	93
Whitney street, from Passyunk avenue to Eighth.....		3	390
Total.....			696
Fire-hydrant connections cut off and abandoned.....		3	23
“ “ “ “		4	506
“ “ “ “		6	393
Total.....			922

Recapitulation of First District.

Purposes for which Used.	Size—Inches.										Total in feet and pounds.		
	2	2½	3	4	6	8	10	12	16	20		30	
New Pipe—feet added.	Service mains.....					32,745	533		491				33,769
	Supply mains.....									51	1,681		1,735
	Supply main connections.....							52					52
	Service supply connections.....				131								131
	Fire hydrant connections.....					2,598							2,598
	Fire connections (private).....				28								28
	Supply connections (private).....					37							37
	Drains.....					23							23
Total..... { Feet.....				139	35,403	533	52	491	54	1,681		38,373	
{ Pounds.....				3,021	1,168,299	22,386	2,850	35,352	5,940	267,279		1,505,137	
Pipe used but adding nothing to feet in the ground.	Pipe relaid.....					35,578							35,578
	Repairs general.....				44	2,632	28	47	19	21	29	10	2,830
	Pipe taken up.....	192	295	6,888	27,675	362		18					35,430
	Pipe raised.....					9							9
	Pipe shifted.....					278		196					474
	Total..... { Feet.....	92	295	6,888	27,719	38,859	28	261	19	21	29	10	74,321
{ Pounds.....	1,920	3,540	103,320	526,661	1,282,347	1,176	14,355	1,368	2,310	4,611	3,320	1,944,928	
Total handled..... { Feet.....	192	295	6,888	27,878	71,262	561	313	510	75	1,710	10	112,694	
{ Pounds.....	1,920	3,540	103,320	529,682	2,440,646	23,562	17,215	36,720	8,250	272,890	3,320	3,450,065	
Pipe cut off and abandoned.....			568	657	393								1,618

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>			
Adeline street, from east house line of Ann street, west...		6	20
Alford street, from 228 feet east of east house line of Sixth street, west.....		6	253
Ann street, from Seventy-first to northwest house line of Adeline.....		6	244
Aspen street, from centre of Fiftieth street, west.....		6	30
Barley street, from centre of Eleventh to centre of Quince		6	224
Berlin street, from north house line of South street to centre of Gaskill.....		6	172
Carolina place, from Barley street to Plume place.....		6	81
Cherry street, from 45 feet east of west house line of Broad street, west.....		6	38
Coburn street, from South street to Gaskill street.....		6	190
Cowley street, from centre of Thirteenth street, west.....		6	27
Cope street, from centre of Locust street, north.....		6	25
Craig's place, from 3 feet east of east house line of Raspberry, west.....		6	26
Cuthbert street, from east house line of Broad street, west		6	29
Dohan street, from east house line of Fiftieth street, west		6	30
Dorsey street, from centre of Thirteenth street, west.....		6	27
Dover street, from Coburn street to Barrow street.....		6	120
Drury street, from centre of Thirteenth street, west.....		6	27
Dutton street, from 93 east of east house line of Fifth street, west.....		6	124
Eaglesfield street, from east curb line of Thirty-ninth street, west.....		6	18
Eaglesfield street, from Forty-first street to 14 feet west of east house line of Forty-second street.....		6	678
Fairmount avenue, from east house line of Markoe to Forty-seventh street.....		6	300
Fifteenth street, from Arch street to Race street.....		6	668
Fifteenth street, from Race street to Vine street.....		6	702
Fiftieth street, from centre of Parrish street, north.....		6	30
Fiftieth street, from south house line of Hoopes street to Westminster avenue.....		6	217
Fifty-five-and-one-half street, from Lansdowne avenue to dead end, south house line of Oxford.....		6	1,055
Fifty-eighth street (or Gray's lane), from 100 feet south of south house line of Thomas avenue to centre of Ashland avenue.....		6	433
Fifty-sixth street, from Lansdowne avenue to north house line of Jefferson.....		6	792
Fisher's avenue (or Fifty-sixth street), from centre of Vine to centre of Haverford.....		6	706

Street.	Locotion.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Forty-third street, from centre of Sansom to centre of Chestnut.....		6	278
Forty-third street, from Chester avenue to south house line of Baltimore avenue.....		6	376
Forty-ninth street, from centre of Fairmount avenue to dead end south house line of Prescott.....		6	180
Forty-ninth street, from dead end north house line of Prescott to north house line of Aspen.....		6	213
Forty-ninth street, from south house line of Hoopes street, north.....		6	30
Forty-sixth street, from south house line of Linmore street, north.....		6	44
Forty-sixth street, from centre of Westminster avenue, north.....		6	32
Forty-sixth street, from Westminster avenue to Lancaster avenue.....		6	325
Forty-sixth-and-one-half street, from centre of Linmore street, north.....		6	18
Forty-sixth-and-one-half street, from south house line of Woodland avenue, north.....		6	36
Forty-sixth-and-three-quarter street, from south house line of Linmore street, north.....		6	18
Forty-sixth-and-three-quarter street, from south house line of Woodland avenue, north.....		6	36
Forty-seventh street, from south to north house line of Fairmount avenue.....		6	60
Fox's court, from centre of South street, north.....		6	130
Gray's avenue, from east house line of Seventy-second street to 12 feet west of east house line of Seventy-third street.....		6	538
Grace street, from 2 feet east of east house line of Sixteenth street, west.....		6	33
Harmony court, from Sixth street, west.....		6	114
Hazel avenue, from dead end 5 feet east of centre of Sixty-first street, west.....		6	35
Hoopes street, from east house line of Forty-ninth to Fiftieth street.....		6	540
Hunter's lane from centre of Fifty-five-and-one-half street to west house line of Fifty-sixth street.....		6	291
Henry street, from Lombard to Barley streets.....		6	200
Jefferson street, from east house line of Fifty-five-and-one-half street, west.....		6	40
Jefferson street, from east house line of Fifty-sixth street, west.....		6	60
Lavinia street, from Oakford to Third streets.....		6	128
Linmore street, from Forty-sixth street to Forty-seventh street.....		6	596
Linwood street, from 8 feet east of east house line of Fiftieth street, west.....		6	25

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Lisbon street, from 13 feet 6 inches east of east house line of Hurst street, west.....		6	64
Locust street, from centre of Twenty-fourth, west.....		6	26
Lombard street, from east house line of Sixty-first street, west.....		6	60
Mantua avenue, from dead end 22 feet east of east house line of Orion to west house line of Thirty-fifth street.....		6	333
Marston street, from 98 feet north of north house line of Budden's alley to centre of Cherry.....		6	63
Markoe street, from south to north house line of Fairmount avenue.....		6	60
Media street, from centre of Fifty-fourth street, west.....		6	270
Melrose street, from east house line of Fisher's avenue or Fifty-sixth street, west.....		6	30
Morrell street, from Fifty-second street to Fifty-third street.....		6	390
Mulberry street, from east house line of Sixty-first street, west.....		6	60
Nineteenth street, from centre of Spruce to 2 feet north of north house line of Ann street.....		6	152
Oakford street, from Lavinia to Gaskill.....		6	84
Orion street, from south house line of Mantua avenue, west.....		6	27
Parrish street, from centre of Fiftieth, west.....		6	30
Paschall avenue, from east house line of Seventy-second street, west.....		6	60
Paxson street, from Warren street to centre of Lancaster avenue.....		6	327
Peach street, from southwest house line of Lancaster avenue, northeast.....		6	28
Pearl street, from 2 feet east of east house line of Thirty-sixth street, west.....		6	64
Pentridge street, from centre of Fiftieth street to west house line of Fifty-first street.....		6	506
Perry's court, from centre of South street, north.....		6	126
Plume place, from centre of Carolina place, west.....		6	163
Poplar street, from east house line of Eaglesfield street, west.....		6	37
Ralston street, from centre of Ralston street, north.....		6	60
Race street, from 12 feet 6 inches east of centre of Sixtieth street west.....		6	25
Reno street, from Fortieth street to centre of Preston.....		6	311
Saybrook street, from east house line of Seventy-first street, west.....		6	70
Seventy-first street, from south house line of Saybrook street, north to dead end.....		6	50
Seventy-first street, from dead end, 72 feet 6 inches northwest of northwest house line of Greenway avenue to Ann street.....		6	3

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Seventy-second street, from south house line of Gray's avenue to dead end 6 feet north of south house line of North street.....		6	905
Sixtieth street, from south house line of Race street to dead end south house line of Vine street.....		10	560
Sixty-first street, from south house line of South street, to centre of Pine street.....		6	1,173
Sixty-two-and-one-half street, from 400 feet south of south house line of Vine street, north.....		6	439
Sixty-six-and-one-half street from centre of Woodland avenue to centre of Yocum.....		6	189
Shellbark street, from centre of Thirteenth, west.....		6	27
South street, from dead end 18 feet west of west house line of Sixty-first street, west.....		6	239
Spruce street, from centre of Twenty-fifth, west.....		6	25
St. David street, from centre of Race street, north to connect dead end.....		6	317
Tenor place, from centre of Fourth street, west.....		6	312
Thirty-first street, from centre of Ludlow to centre of Market.....		6	296
Thirty-third street, from Spruce to Locust street.....		6	550
Thirty-ninth street, from centre of Eaglesfield to Girard avenue.....		6	255
Thomas avenue, from east house line of Fifty-eighth street, west.....		6	60
Thompson street, from dead end west house line of Conestoga to east house line of Fifty-fifth street.....		6	221
Viola street, from dead end 438 feet east of east house line of Belmont avenue west to connect.....		6	443
Willow avenue, from Fiftieth street to 100 feet west of west house line of Fifty-first.....		6	609
Winter street, from Sixteenth street, west.....		6	24
Woodland avenue, from 134 east of east house line of Forty-eighth to Forty-ninth.....		12	692
Wyalusing avenue, from east house line of Forty-seventh to Forty-eighth street.....		6	387
Yocum street, from 5 feet east of west house line of Sixty-sixth street to Sixty-six-and-one-half street.....		6	201
Total.....			22,065

Supply Mains.

Twenty-inch supply main, from Belmont Reservoir to Sixty-third street and Haverford avenue.
 Fairmount Park (West), from north side of Belmont Reservoir to Elm avenue and Fifty-second street.
 Fifty-second street, from Elm avenue to Lansdowne avenue.

Street.	Location.	Size in inches.	Distance in feet.
<i>Supply Mains—Continued.</i>			
Lansdowne avenue, from Fifty-second street to Sixty-third street.			
Sixty-third street, from Lansdowne avenue to Haverford avenue		20	10,887
Haverford avenue, from east house line of Thirty-third street to Thirty-fifth street.....		20	849
Total			11,686
<i>Supply Main Connections.</i>			
Haverford street, 6 feet east of west curb line of Thirty-third street, between 20-inch and 6-inch mains on Haverford street.....		10	8
Haverford street, 15 feet east of west curb line of Thirty-fourth street, between 20-inch and 6-inch mains on Haverford street.....		10	7
Sixty-third street and Haverford, between 20-inch main on Sixty-third street and 12-inch main on Haverford.		12	21
Total			36
<i>Service Supply Connections.</i>			
Broad street, west side, 124 feet 6 inches south of south house line of Cherry street.....		4	12
Media street, south side, 1 foot west of west house line of Peach street.....		4	18
Media street, north side, 1 foot west of west house line of Peach street.....		4	18
Media street, south side, 9 feet east of east house line of Fifty-fourth street.....		4	18
Media street, north side, 9 feet east of east house line of Fifty-fourth street.....		4	18
Media street, south side, 8 feet east of east house line of Peach street.....		4	18
Media street, north side, 8 feet east of east house line of Peach street.....		4	18
Media street, south side, 9 feet west of west house line of Fifty-third street.....		4	18
Media street, north side, 9 feet west of west house line of Fifty-third street.....		4	18
Media street, south side, 8 feet east of east house line of Fifty-third street.....		4	18
Media street, north side, 8 feet east of east house line of Fifty-third street.....		4	18

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Pentridge street, south side, 4 feet west of west house line of Fiftieth street.....		4	12
Pentridge street, north side, 4 feet west of west house line of Fiftieth street.....		4	12
Pentridge street, south side, 6 feet east of east house line of Fifty-first street.....		4	12
Pentridge street, north side, 6 feet east of east house line of Fifty-first street.....		4	12
Spruce street, south side, 4 feet west of west house line of Twenty-fourth street.....		4	16
Spruce street, south side, 22 feet east of east house line of Twenty-fourth street.....		4	16
Total.....			272
Fire hydrant connections		6	2,264
<i>Fire Connections (Private).</i>			
Eighth street, east side, 279 feet south of south house line of Vine street, for Gaiety and Star Theatre.....		3	14
Market street, north side, 125 feet east of east house line of Twelfth street, for Reading Terminal.....		8	27
Penn street, east side, 112 feet south of south house line of Pine street for Pennsylvania Warehouse Company.....		4	18
Total.....			59
<i>Supply Connections (Private).</i>			
Arch street, south side, 65 feet west of west house line of Eighteenth street, for Women's Christian Association.....		6	11
Arch street, south side, 66 feet west of east house line of Eighteenth street, for Women's Christian Association.....		3	
Barker street north side, 109 feet east of east house line of Twentieth street, for Philadelphia Traction Company.....		4	10
Cherry street, south side, 69 feet east of east house line of Broad street, for Odd Fellows' Hall Association.....		4	14
Chestnut street, north side, 105 feet east of east house line of Eighth street, for Green's Hotel.....		4	11
Chestnut street, south side, 40 feet east of east house line of Twenty-second street, for Rittenhouse Apartment House		4	15
Eighteenth street, west side, south house line of Filbert street, for Pennsylvania Railroad Company.....		6	16

Street.	Location.	Size in inches.	Distance in feet.
<i>Supply Connections (Private)—Continued.</i>			
Ludlow street, north side, 198 feet west of west house line of Thirty-third street, for Philadelphia Traction Company.....		6	14
Market street, north side, 12 feet east of east house line of Fifteenth street, for Pennsylvania Railroad.....		4	12
Market street, south side, 109 feet west of west house line of Thirty-third street, for Philadelphia Traction Company.....		6	21
Sixteenth street, east side, 21 feet north of north house line of Filbert street, for Pennsylvania Railroad.....		4	25
Sixth street, west side, 162 feet south of south house line of Chestnut, for Public Ledger.....		3	
Twelfth street, west side, 79 feet north of north house line of Arch street, for Hotel Metropole.....		4	16
Twentieth street, west side, 137 feet north of north house line of Race street, for Pennsylvania Institute for the Blind.....		3	
Total.....			165

Pipe Relaid.

Acorn alley, from Spruce street, north.....	6	27
Arrison street, from centre of Fifteenth street, west.....	6	15
Barley street, from Tenth to Eleventh street.....	6	439
Benezet (or Cuthbert) street, from 2 feet six inches east of east house line of Eleventh street, west.....	6	28
Blight street, from centre of Lombard to centre of Pine street.....	6	334
Bond street (upper), from 2 feet east of east house line of Tenth street, west.....	6	20
Bond street (lower), from 19 feet east of west curb line of Tenth street, west.....	6	34
Bond street, from 2 feet 6 inches east of east house line of Eleventh street, west.....	6	28
Brier place, from Spruce street, north.....	6	6
Broad street, east side, from north house line of Arch to Race street.....	6	646
Broad street, east side, from Race street to 2 feet north of south house line of Vine street.....	6	662
Broad street, west side, from Filbert street to 1 foot 6 inches north of south curb line of Arch.....	8	352
Broad street, west side, from 2 feet south of north curb line of Arch street to Race street.....	8	661
Broad street, west side, from centre of Race street to north house line of Vine street.....	8	711
Bradford street, from 6 feet north of south curb line of Pine street, north.....	6	38
Bradford street, from south house line of Spruce north....	6	27

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipes Relaid—Continued.</i>			
Budd street, from centre of Twelfth street, west.....		6	27
Budd street, from 2 feet east of east house line of Thirteenth street, west.....		6	54
Budden's alley, from 3 feet east of east house line of Twelfth street, west.....		6	55
Budden's alley, from west house line of Thirteenth street to Juniper.....		6	265
Burton street, from centre of Fifteenth, west.....		6	29
Burton street, from 2 feet east of east house line of Sixteenth street, west.....		6	55
Carver street, from centre of Fifteenth street, west.....		6	27
Carver street, from 2 feet east of east house line of Sixteenth street, west.....		6	54
Cherry street, from 7 feet east of west curb line of Broad street, west.....		6	12
Clinton street, from Tenth street to Eleventh.....		6	454
Cross alley, from St. Mary street to Cullen street.....		6	84
Cullen street, from west house line of Seventh street, west		6	291
Cuthbert street, from 2 feet east of east house line of Thirteenth street, west.....		6	54
Cuthbert street, from 7 feet east of west curb line of Broad street, west.....		6	30
De Gray place, from 189 feet east of east house line of Seventeenth street, west.....		6	214
Delancey place, from Seventeenth street to Eighteenth street.....		6	439
Delancey place, from Nineteenth street to Twenty-second street.....		6	1,405
Dugan street, from south house line of Spruce street, north		6	30
Dorsey street, from 1 foot west of west house line of Thirteenth street, to 7 feet 6 inches east of east house line of Juniper.....		6	242
Duponceau street, from south house line of Spruce street, north.....		6	27
Eutaw street, from Cherry street to Race street.....		6	333
Fayette street, from 2 feet south of south house line of Arch street, north.....		6	36
Fortieth street, from centre of Woodland avenue, north,		12	41
Forty-first street, from centre of Woodland avenue, north,		6	39
Fothergill street, from centre of Lombard to centre of Pine street.....		6	332
Grace street, from Sixteenth street, west.....		6	21
Gulielma street, from 2 feet east of east house line of Fifteenth street, west.....		6	27
Hagner street, from centre of South to centre of Rodman,		6	188
Helmuth street, from centre of Sixteenth, west.....		6	27
Hunter street, from 2 feet 6 inches east of east house line of Eleventh street, west.....		6	192
Hurst street, from South to south house line of Lombard street.....		6	339

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Ivy street, from centre of Tenth street, to centre of Eleventh street.....		6	447
Irving street, from centre of Thirty-seventh street, west...		6	34
Keble street, from centre of Eighth street to 7 feet east of centre of Ninth street.....		6	440
Kemble street, from 2 feet east of east house line of Thirtieth street, west.....		6	27
Kelton street, from Cherry street to Race street.....		6	335
Kneass street, from 2 feet east of east house line of Fifteenth street, west.....		6	27
Landreth street, from centre of Twelfth, west.....		6	27
Latimer street, from centre of Fifteenth, west.....		6	27
Latimer street, from 3 feet east of east house line of Sixteenth street, west.....		6	56
Leiper street, from 6 feet east of east house line of Thirtieth, west.....		6	31
Ludlow street, from 1 foot east of east house line of Thirty-seventh street, west.....		6	63
Little Asylum street, from south house line of Spruce street, north.....		6	30
Lybrand street, from Race street to Vine street.....		6	690
Lyndall street, from 6 feet east of east house line of Thirtieth street, west.....		6	31
Mark's lane, from 2 feet east of east house line of Twelfth street, west.....		6	27
Marston street, from centre of Budden's alley, north.....		6	109
Minster street, from Sixth street to Eighth.....		6	888
Moravian street, from centre of Fifteenth, west.....		6	31
Ohio street, from centre of Quince to centre of Twelfth street.....		6	224
Perry street, from south house line of Winslow street, north.....		6	32
Ralston street, from centre of Ralston to Juniper.....		6	143
Quince street, from Spruce street, north.....		6	20
Raspberry street, from 4 feet south of north curb line of Locust to 3 feet north of south curb line of Walnut street.....		6	403
Richard street, from centre of Sixteenth, west.....		6	30
Rodman street, from 5 feet west of centre of Ninth street to Broad street.....		6	2,288
Rittenhouse street, from Twentieth street to Twenty-first street.....		6	544
Rundle street, from 2 feet east of east house line of Sixteenth street, west.....		6	27
Sansom street, from 2 feet east of east house line of Fifteenth street, west.....		6	54
Sansom street, from 4 feet east of east house line of Sixteenth street, west.....		6	55
Souder street, from Fothergill to Tenth street.....		6	230

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipes Relaid—Continued.</i>			
St. David street, from 292 feet north of north house line of Race to Vine street.....		6	364
St. Mary street, from 17 feet west of centre of Seventh to Eighth street.....		6	430
Spring street, from centre of Fifteenth, west.....		6	21
Spring street, from 4 feet east of east house line of Sixteenth street, west.....		6	57
Steadman street, from 2 feet west of west house line of Twelfth to east house line of Thirteenth street.....		6	394
Stockton street, from centre of Lombard to centre of Kemble street.....		6	208
Stone street, from centre of Fifteenth, west.....		6	27
Stone street, from 3 feet east of east house line of Sixteenth street, west.....		6	28
Summer street, from 2 feet east of east house line of Sixteenth street, west.....		6	28
Thirty-third street, from centre of Sansom, north.....		6	21
Thirty-third street, from west house line of Walnut street, north.....		6	56
Tin alley, from centre of Locust street, north.....		6	27
Tower street, from Twentieth to Twenty-first.....		6	545
Vine street, from 7 feet east of west curb line of Broad street, west.....		6	28
Vollum street, from centre of Steadman, north.....		6	12
Winslow street, from west house line of Thirteenth to east house line of Juniper.....		6	250
Winter street, from 2 feet east of east house line of Sixteenth street, west.....		6	30
Woodland avenue, from 7 feet east of east house line of Fortieth street to east house line of Forty-second street.....		12	1,231
Woodland avenue, from west house line of Forty-fifth street to 134 feet east of east house line of Forty-eighth street.....		12	1,361
Total			21,939
Fire hydrant connections relaid.....		6	904
Repairs, general.....		3	32
“ “		4	69
“ “		6	369
“ “		8	119
“ “		10	149
“ “		12	250
“ “		16	80
Total			1,058

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up.</i>			
Acorn alley, from Spruce street, north.....		3	27
Arrison street, from centre of Fifteenth, west.....		4	15
Barley street, from Tenth street to Eleventh		3	439
Benezet (or Cuthbert) street, from 2 feet 6 inches east of east house line of Eleventh, west.....		3	27
Blight street, from Lombard street to Pine street.....		3	337
Bond street (upper), from 3 feet east of east house line of Tenth street, west.....		3	20
Bond street (lower), from 19 feet east of west house line of Tenth street, west.....		3	34
Bond street, from 2 feet 6 inches east of east house line of Eleventh street, west.....		3	27
Broad street, east side, from north house line of Arch street to Race street.....		4	645
Broad street, east side, from centre of Race to 2 feet north of south house line of Vine.....		4	662
Broad street, west side, from Filbert street to 1 foot 6 inches north of south curb line of Arch street.....		4	352
Broad street, west side, from 2 feet south of north curb line of Arch street to Race.....		4	662
Broad street, west side, from Race street to north house line of Vine street.....		4	689
Bradford street, from south house line of Spruce street, north.....		3	27
Bradford street, from 6 feet north of south curb line of Pine street, north.....		3	38
Brier place, from Spruce street, north.....		3	6
Budd street, from 2 feet east of east house line of Thirteenth street, west		3	27
Budd street, from centre of Thirteenth, west.....		3	27
Budden's alley, from 3 feet east of east house line of Twelfth street, west.....		3	27
Budden's alley, from Twelfth street, west.....		3	28
Burton street, from centre of Fifteenth, west.....		3	29
Burton street, from 2 feet east of east house line of Sixteenth street, west.....		3	55
Carver street, from centre of Fifteenth, west.....		3	27
Carver street, from 2 feet east of east house line of Sixteenth street, west.....		3	54
Cherry street, from 7 feet east of west house line of Broad street, west.....		6	12
Clinton street, from Tenth street to Eleventh.....		3	454
Cross alley, from St. Mary street to Cullen.....		3	83
Cullen street, from west house line of Seventh street, west		3	291
Cuthbert street, from 2 feet east of east house line of Thirteenth street, west.....		3	54
Cuthbert street, from 7 feet east of west curb line of Broad street, west.....		3	30
Delaney place, from Twentieth street to Twenty-second street.....		4	993

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken up—Continued.</i>			
DeGray place, from 189 feet east of east house line of Seventeenth street, west.....		3	214
Delancy place, from Seventeenth street to Twentieth street		3	859
Dorsey street, from 1 foot west of west house line of Thirteenth to 7 feet 6 inches east of east house line of Juniper.....		3	242
Dugan street, from south house line of Spruce street, north		3	30
Duponcau street, from south house line of Spruce, north		4	27
Eutaw street, from Cherry street to Race street.....		6	333
Fayette street, from 2 feet south of south house line of Arch street, north.....		3	36
Fifty-eighth street, from north end of bridge, Philadelphia, Wilmington and Baltimore Railroad.....		6	33
Fifty-eighth street, from south end of bridge, Philadelphia, Wilmington and Baltimore Railroad.....		6	30
Fortieth street, from centre of Woodland avenue, north...		6	41
Fothergill street, from Lombard to Pine street.....		3	332
Grace street, from Sixteenth street, west.....		3	21
Gulielma street, from 2 feet east of east house line of Fifteenth street, west.....		3	27
Hagner street, from South to Rodman street.....		3	188
Helmuth street, from centre of Sixteenth, west.....		3	27
Hunter street, from 2 feet 6 inches east of east house line of Eleventh street, west.....		3	27
Hunter street, from centre of Eleventh, west.....		2	164
Hurst street, from South street to south house line of Lombard street.....		3	339
Irving street, from centre of Thirty-seventh, west.....		4	34
Ivy street, from Tenth street to Eleventh street....		3	447
Keble street, from Eighth street to 7 feet east of centre of Ninth street.....		3	440
Kelton street, from Cherry street to Race street.....		3	335
Kemble street, from 2 feet east of east house line of Thirteenth street, west.....		3	27
Kneass street, from 2 feet east of east house line of Fifteenth street, west.....		3	27
Landreth street, from centre of Twelfth, west.....		3	27
Latimer street, from centre of Fifteenth, west.....		3	27
Latimer street, from 3 feet east of east house line of Sixteenth street, west.....		3	56
Leiper street, from 6 feet east of east house line of Thirteenth street, west.....		3	6
Little Asylum street, from south house line of Spruce street, north.....		3	30
Ludlow street, from 1 foot east of east house line of Thirty-seventh street west.....		4	63
Lybrand street, from Race street to Vine street.....		3	690
Lyndall street, from 6 feet east of east house line of Thirteenth street west.....		3	31

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken up—Continued.</i>			
Mark's lane, from 2 feet east of east house line of Twelfth street, west.....		3	27
Marston street, from centre of Budden's alley, north.....		2	108
Minster street, from Sixth to Eighth streets.....		3	888
Moravian street, from centre of Fifteenth street, west... ..		3	31
Ohio street, from Quince street to Twelfth street.....		3	236
Perry street, from south house line of Winslow, north.....		3	32
Quince street, from Spruce street north.....		3	20
Ralston street, from Ralston street to east house line of Juniper street.....		3	143
Raspberry street, from 4 feet south of north curb line of Locust street to 3 feet north of south curb line of Walnut.....		3	403
Richard street, from centre of Sixteenth, west.....		3	30
Rodman street, from Ninth street to Broad street.....		3	2,288
Rittenhouse street, from Twentieth to Twenty-first streets.		3	543
Rundle street, from 2 feet east of east house line of Sixteenth street, west.....		3	27
Sansom street, from 2 feet east of east house line of Fifteenth street, west.....		4	54
Sansom street, from 4 feet east of east house line of Sixteenth street, west.....		4	55
Souder street, from Fothergill to Tenth street.....		3	230
St. David street, from 292 feet north of north house line of Race to Vine street.....		3	364
St. Mary street, from 17 feet west of centre of Seventh street to Eighth street.....		3	430
Spring street, from centre of Fifteenth street, west.....		3	21
Spring street, from 4 feet east of east house line of Fifteenth street, west.....		3	57
Steadman street, from 2 feet west of west house line of Twelfth street to 37 feet west of west house line of Dean street.....		3	245
Stockton street, from Lombard to Kemble street.....		3	207
Stone street, from centre of Fifteenth street, west.....		3	27
Stone street, from 3 feet east of centre of Sixteenth street, west.....		3	3
Summer street, from 2 feet east of east house line of Sixteenth, west.....		3	28
Tin alley, from centre of Locust street, north.....		3	27
Tower street, from Twentieth street to Twenty-first street.		4	545
Vine street, from 7 feet east of west curb line of Broad street, west.....		4	28
Vollum street, from centre of Steadman, north.....		3	12
Winslow street, from west house line of Thirteenth to east house line of Juniper.....		4	250
Winter street, from 2 feet east of east house line of Sixteenth street, west.....		3	30
Woodland avenue, from 270 feet west of west house line of Forty-fifth street to Forty-seventh street.....		6	686

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken up—Continued.</i>			
Woodland avenue, across bridge over Philadelphia and West Chester Railroad, between Forty-seventh street and Forty-eighth street.....		6	76
Total.....			19,555
Fire hydrant connections taken up.....		3	156
Fire hydrant connections taken up.....		4	1,055
Fire hydrant connections takeh up.....		6	116
Total			1,327
<i>Pipe Lowered.</i>			
Sixty-fifth street, from north house line of Race street, north		6	195
<i>Pipe Raised.</i>			
Aspen street, from 13 feet west of east curb line of Thirty-fifth street, west.....		6	180
Thirty-fifth street, from 108 feet south of south house line of Aspen street, north.....		6	138
Thirty-fifth street, from 108 feet south of south house line of Aspen street, north		16	138
Total.....			486
<i>Pipe Shifted,</i>			
Belmont avenue (or Forty-fourth street), from north curb line of Jefferson street, north		20	606
Fifty-eighth street, across bridge of Philadelphia, Wilmington and Baltimore Railroad.....		6	110
Fifty-eighth street, across bridge of Philadelphia, Wilmington and Baltimore Railroad.....		6	131
Sixteenth street, from 6 feet south of north curb line of Market street, north.....		6	200
Total.....			1,047

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Cut Off and Abandoned.</i>			
Benezet street, from 172 feet east of east house line of Eleventh street, west.....		3	10
Forty-first street, from centre of Woodland avenue north.		6	39
Leiper street, from 6 feet east of east house line of Thirteenth street, west.....		3	24
Stone street, from 2 feet east of east house line of Sixteenth street, west.....		3	25
Steadman street, from 37 feet west of west house line of Dean street to east house line of Thirteenth street....		3	149
Tenth street, west side, 38 feet north of north house line of Filbert street.....		4	14
Thirty-fifth street, from Aspen street to Mantua avenue..		16	72
Woodland avenue, from 7 feet east of east house line of Fortieth street to east house line of Forty-second street..		6	1,231
Woodland avenue, from west house line of Forty-fifth street, west.....		6	270
Woodland avenue, from west house line of Forty-seventh street, west.....		6	333
Total.....			2,167
Fire hydrant connections cut off and abandoned.....		3	221
Fire hydrant connections cut off and abandoned.....		4	493
Fire hydrant connections cut off and abandoned.....		6	188
Total.....			902

Recapitulation of Second District.

Purpose for which Used.	SIZE—INCHES.									Total in feet and pounds.
	2	3	4	6	8	10	12	16	20	
New pipe or feet added.	Service mains			20,813		560	692			22,065
	Supply mains.....								11,686	11,686
	Supply main connections.....						15	21		36
	Service supply connections.....			272						272
	Fire hydrant connections.....				2,264					2,264
	Fire connections (private).....		14	18		27				59
	Supply connections (private).....			103	62					165
Total.....	{ Feet.....		14	393	23,139	27	575	713	11,686	36,547
	{ Pounds.....		210	7,467	764,587	1,134	31,625	51,336	1,858,074	2,713,433
Pipe used but adding nothing to feet in the ground.	Pipe relaid.....			18,486	1,724		2,633			22,843
	Repairs, general.....		32	69	369	119	149	250	80	1,058
	Pipe taken up.....	272	13,158	6,129	1,323					20,882
	Pipe lowered.....				195					195
	Pipe raised.....				318				133	456
	Pipe shifted.....				441				606	1,047
	Total.....	{ Feet.....		272	13,190	6,188	21,182	1,843	149	2,833	46,481
	{ Pounds.....		2,720	197,850	117,572	697,356	77,406	8,195	207,576	1,429,009
Total handled.....	{ Feet.....		272	13,204	6,581	44,271	1,870	724	3,596	83,028
	{ Pounds.....		2,720	198,060	125,039	1,460,943	78,540	39,810	258,912	4,142,442
Pipe cut off and abandoned		429	407	2,061				72		2,960

THIRD DISTRICT.

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

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains.</i>			
Allegheny avenue, south side, from 23 feet east of centre of Germantown avenue, west.....		6	23
Allegheny avenue, north side, from 23 feet east of centre of Germantown avenue, west.....		6	23
Allegheny avenue, north side, from Fifth street to Reese..		6	156
Amber street, from centre of Orleans to Orleans.....		6	16
American street, from southwest house line of Tioga street, northeast.....		6	50
Ann street, from southeast house line of Melrose, northwest		6	25
Arcadia street, from Wheat Sheaf lane to Vici.....		6	389
Boudinot street, from south house line of Rush, north.....		6	30
"C" street, from south house line of Clearfield street, north		6	50
Cedar street, from Meadow to northeast house line of Margaretta.....		6	389
Cedar street, from Foulkrod to Fillmore.....		6	313
Clarion street, from dead end north house line of Ontario to 7 feet northwest of southeast house line of Kettlewell.....		6	410
Clearfield street, from dead end, northwest house line of "F" to northwest house line of "E" street.....		12	552
Clearfield street, from "D" street to west house line of Leamy.....		12	1,195
Clearfield street, from east house line of Ninth street to west house line of Tenth.....		16	496
Clearfield street, from 3 feet west of northeast house line of Germantown avenue, west.....		16	47
Clearfield street from 498 feet west of northeast house line of Germantown avenue, west to connect.....		12	20
Clifton (or Tilton) street, from centre of Ann street, northeast to dead end.....		6	184
Columbia avenue, from centre of Germantown avenue, west		6	33
Comly street, from southeast house line of Milnor to centre of Walker.....		12	4,177
Como street, from southwest house line of Palethorpe, west		6	15
Cottage street, from southwest house line of Comly, northeast.....		12	60
Court place, from centre of Beach, northwest.....		6	17
Culvert street, from centre of Fourth street, west.....		6	26
Cumberland street, from centre of Germantown avenue, west.....		6	39
Darien street, from centre of Indiana, north.....		6	25
Deal street, from Kensington avenue, northwest.....		6	13
Delaware avenue, from 36 feet southwest of southwest house line of Shackamazon, northeast.....		10	34

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Dittman street, from southwest house line of Comly, north-east.....		6	60
"E" street, from southwest house line of Clearfield, north-east.....		6	50
Edmund street, from centre of Comly, northeast.....		6	30
Eighth street, from centre of Indiana, north.....		6	25
Eisen place, from centre of Fourth street, west.....		6	26
Fairhill street, from 33 feet south of centre of Glenwood avenue, north.....		6	33
Fairhill street, from centre of Westmoreland, north to dead end.....		6	20
Fairmount avenue, from southeast house line of Beach, northwest.....		6	25
Fillmore street, from Cedar, northwest to dead end.....		6	20
Fillmore street, from northwest curb line of Horrocks to south east curb line of "P".....		6	1,040
Fox street, from southwest house line of Gurney street, northeast.....		6	25
Frankford street, from southeast house line of Melrose, northwest.....		6	50
Franklin street, from dead end north house line of Indiana to south curb line of Clearfield.....		6	514
Franklin street, from centre of Indiana, north.....		6	25
Franklin street, from Adams to dead end southwest house line of Ruan.....		6	712
Godfrey street, from centre of Fourth street, west.....		6	25
Girard avenue, northwest side, from Morton street to Norris.....		8	259
Green street, from dead end northwest house line of Kensington avenue to Penn.....		6	630
Gurney street, from 2 feet 3 inches southeast of southeast house line of Leamy, north.....		6	27
Gurney street, from dead end northwest house line of Leamy to dead end 168 feet 6½ inches southeast of southeast house line of Somerset.....		6	92
Gurney street, from dead end northwest house line of Somerset to northwest house line of Cambria.....		6	808
Gurney street, from Third street to east house line of Fourth street.....		8	292
Gurney street, from east house line of Fourth street, west to connect.....		6	13
Hagerman street, from southwest house line of Comly, northeast.....		6	60
Hart lane, from dead end southeast curb line of Kensington avenue, northwest to connect.....		6	35
Homestead street, from 423 feet southeast of southeast house line of Tacony, northwest.....		6	120
Howell street, from centre of Melrose, northwest.....		6	25
Huntingdon street, from east house line of Commerce to Tulip.....		8	1,214

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Hutchinson street, from dead end 12 feet north of north house line of Clearfield, north to connect.....		6	18
Irving street, from dead end northwest house line of Howell to dead end southeast house line of Thompson,		6	300
Jackson street, from southwest house line of Comly, northeast.....		6	60
James street, from southwest house line of Pratt, northeast to dead end.....		6	57
Janney street, from 390 feet southwest of southwest house line of Venango, northeast.....		6	420
Jasper street, from southwest house line of Ontario northeast		6	60
Kensington avenue, northwest side, from 249 feet southwest of southwest house line of Adams, northeast.....		6	269
Kensington avenue, southeast side, from 242 feet southwest of southwest house line of Adams, northeast.....	12	264	
Keystone street, from southwest house line of Comly, northeast.....	6	60	
Lambrecht street, from centre of Fifth street, west to connect dead end.....	6	30	
Large street, from dead end northeast house line of Foulkrod to northeast house line of Fillmore.....	6	219	
Latimer street, from 13 feet southwest of centre of Morton, northeast.....	6	13	
Lawrence street, from centre of Germantown avenue, west	6	29	
Leamy street, from south house line of Clearfield, north...	6	50	
Linda street, from east house line of Palethorpe street, west	6	15	
Loyal street, from southwest house line of York street northeast	6	25	
Malvern street, from centre of Ontario, northeast.....	6	30	
Margaretta street, from dead end northwest house line of Cherry street to centre of Cedar.....	12	727	
Milnor street, from southwest house line of Comly street, northeast.....	6	60	
Morton street, from Girard avenue to Moyer street.....	6	312	
Neff street, from Gaul to Chatham street.....	6	211	
Ninth street, from centre of Germantown avenue, north...	6	39	
Ninth street, from dead end north house line of Indiana to Clearfield.....	6	528	
Ontario street, from dead end northwest house line of Emerald to Kensington avenue.....	8	1,008	
Onyx street, from dead end, northeast house line of Jenks to centre of Kirkbride.....	6	261	
Orleans street, from northwest curb line of Trenton avenue to Amber.....	6	527	
Orleans street, northeast, from centre of Amber northwest to dead end.....	6	11	
Ormes street, from south house line of Clearfield, north..	6	50	
Orianna street, from dead end 8 feet south of centre of Gurney, north to connect.....	6	28	

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Otsego street, from southwest house line of Gurney street, northeast.....		6	26
Philip street, from Somerset street to dead end 6 feet north of south house line of Cambria.....		6	533
Percy street, from south house line of Clearfield, north....		6	27
Pratt street, from southeast house line of James to northwest house line of Thomas.....		6	433
Peters' alley, from centre of Charlotte, west.....		6	21
Peters' alley, from east house line of Fourth street, west....		6	25
Reese street, from Allegheny avenue to south house line of Wellington street.....		6	408
Rosehill street, from centre of Clearfield, north.....		6	25
Romain street, from southwest house line of Green, northeast.....		6	40
Rush street, from "D" to Boudinot street.....		6	279
Salmon street, from dead end 35 feet northeast of southwest house line of Lehigh avenue, northeast to connect.....		6	70
School street, from 13 feet east of centre of Lawrence street, west.....		6	13
Sedgley avenue, from south house line of Tioga, northeast.		6	77
Sedgley avenue, from centre of Germantown avenue, northeast.....		6	23
Stern street, from Frankford avenue to Emerald.....		6	311
Somerset street, from dead end, 61 feet northeast of centre of Gurney across bridge to Tusculum.....		6	188
Sparks street, from Buckius to Ash.....		6	536
Susquehanna avenue, from centre of Germantown avenue, west.....		6	30
Tenth street, from dead end 12 feet north of north house line of Clearfield, north to connect.....		6	18
Third street, from dead end southwest house line of Gurney, north to connect.....		6	27
Thomas street, from southwest house line of Pratt, northeast to dead end.....		6	50
Tioga street, from west house line of Carbon to Richmond,		10	2,374
Tioga street, from dead end, west house line of Philip to Third street.....		6	504
Tioga street, from Fifth street to northwest house line of Sedgley avenue.....		6	181
Tivoli street, from east house line of Palethorpe street, west.....		6	15
Torresdale avenue, from southwest house line of Comly, northeast.....		12	60
Tulip street, from centre of Venango, northeast.....		6	280
Tulip street, from southwest house line of Comly street, northeast.....		6	60
Vandyke street, from centre of Comly street, northeast....		6	18
Volkmar street, from dead end 430 feet 8 inches northeast of northeast house line of Hanover to Palmer....		6	179

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Walker street, from southwest house line of Comly, northeast.....		6	60
Weikle street, from 7 feet southwest of northeast house line of Clearfield to Allegheny avenue.....		6	781
Whelan street, from Wright to southeast house line of Glenwood.....		6	182
Willow street, from southwest house line of Margareta street, northeast.....		6	50
Windrim street, from dead end, northeast curb line of Clearfield to southwest curb line of Allegheny avenue		6	527
Wright street, from Ontario to Glenwood.....		6	838
Total			30,012
<i>Supply Mains.</i>			
Fourth street, east side, from 19 feet 6 inches south of north house line of Vine to 132 feet north of north house line of Green.....		20	2,254
Fourth street, west side, from 132 feet north of north house line of Green to 31 feet 5 inches north of south house line of Norris.....		20	6,926
Fourth street, west side, from 31 feet 5 inches north of south house line of Norris to 39 feet north of south house line of Susquehanna avenue.....		30	1,139
Kensington avenue, southeast side, from 44 feet southwest of northeast house line of Lehigh avenue to 40 feet southwest of northeast house line of Allegheny avenue		30	4,134
Lehigh avenue, from southeast house line of Richmond to 26 feet southeast of southeast house line of Cedar.....		30	2,154
Richmond street, from 31 feet 6 inches north of south house line of Lehigh avenue to 3 feet north of north house line of Allegheny.....		20	4,050
Susquehanna avenue, north side, from 37 feet east of west house line of American to Fourth.....		30	613
Total			21,270
<i>Pumping Mains.</i>			
<i>Forty-eight inch pumping main from Lardner's Point Pumping Station to Wentz Farm Reservoir.</i>			
Robbin's avenue, from Delaware avenue to northwest house line of Tulip street.....		48	2,003
Devereaux street, from Torresdale avenue to southeast house line of Mulberry street.....		48	2,873

Street.	Location.	Size in inches.	Distance in feet.
<i>Pumping Mains—Continued.</i>			
Devereaux street, from southeast house line of "Y" street, northwest.....		48	304
Devereaux street, from 244 feet 5 inches southeast of southeast house of "X" street to 13 feet northwest of southeast house line of "W".....		48	817
Devereaux street, from 10 feet 8 inches northwest of northwest house line of "W" street to southeast house line of "V" street.....		48	632
Devereaux street, from 80 feet northwest of northwest house line of "T" street to 34 feet northwest of southeast house line of "R" street.....		48	1,129
Devereaux street, from 15 feet 1 inch southeast of northwest house line of "R" street to northeast house line of Oxford pike.....		48	2,391
Devereaux street, from 27 feet southeast of southeast house line of "N" street to Old Second street.....		48	3,295
Old Second street, from Devereaux street southwest 361 feet 6 inches; thence northwest 30 feet; thence from a point on the northwest house line of Old Second street 340 feet 5 inches southwest of southwest house line of Devereaux street, northwest 435 feet to dead end; thence on the southeast side of Reservoir from a point 358 feet northwest of northwest house line of Old Second street and 340 feet 5 inches southwest of southwest house line of Devereaux street, southwest 632 feet to dead end.....		48	1,458
Total.....			<u>14,902</u>
<i>Service Main Connections.</i>			
Cedar and Huntingdon streets, between 8 inch main on southwest side and 6 inch main on northeast side of Huntingdon street.....		6	11
Gaul and Huntingdon streets, between 8 inch main on southwest side and 6 inch main on northeast side of Huntingdon street.....		6	11
Kensington avenue and Somerset street, between 6-inch main on southeast side, and 6-inch main on northwest side of Kensington avenue.....		6	26
Kensington avenue, 20 feet northeast of southwest house line of Cambria street, between 6-inch main on southeast side and 6-inch main on northwest side of Kensington avenue.....		6	28
Memphis and Huntingdon streets, between 8-inch main on southwest side and 6-inch main on northeast side of Huntingdon street.....		6	11
Total.....			<u>87</u>

Street.	Location.	Size in inches.	Distance in feet.
<i>Supply Main Connections.</i>			
Fourth and Vine streets, between 20-inch main on Fourth street and 10-inch main on Vine street.....		12	33
Fourth and Callowhill streets, between 20-inch main on Fourth street and 10-inch main on Callowhill street..		12	22
Fourth and Noble streets, between 20-inch main on Fourth street and 6-inch main on Noble street.....		10	12
Fourth and Buttonwood streets, between 20-inch main on Fourth street and 6-inch main on Buttonwood street..		10	13
Fourth and Green streets, between 20-inch main on Fourth street and 10-inch main on Green street.....		12	21
Fourth street and Fairmount avenue, between 20-inch main on Fourth street and 6-inch main on Fairmount avenue		10	19
Fourth and Brown streets, between 20-inch main on Fourth street and 6-inch main on Brown street		10	14
Fourth and Poplar streets, between 20-inch main on Fourth street and 16-inch main in Poplar street.....		16	31
Fourth and George streets, between 20-inch main on Fourth street and 6-inch main on George street.....		10	19
Fourth street and Girard avenue, south side, between 20-inch main on Fourth street and 10-inch main on south side of Girard avenue.....		12	18
Fourth and Thompson streets, between 20-inch main on Fourth street and 6-inch main on Thompson street...		10	17
Fourth and Master streets, between 20-inch main on Fourth street and 6-inch main on Master street.....		10	21
Fourth and Jefferson streets, between 20-inch main on Fourth street and 6-inch main on Jefferson street.....		10	16
Fourth street and Germantown avenue, between 20-inch main on Fourth street and 10-inch main on German town avenue		12	30
Fourth and Oxford streets, between 20-inch main on Fourth street and 6-inch main on Oxford street.....		10	18
Fourth street and Columbia avenue, between 20-inch main on Fourth street and 6-inch main on Columbia avenue.		10	19
Fourth street and Montgomery avenue, between 20-inch main on Fourth street and 6-inch main on Mont gomery avenue.....		10	15
Fourth and Berks streets, between 20-inch main on Fourth street and 6-inch main on Berks street.....		10	14
Fourth and Norris streets, between 30-inch main on Fourth street and 18-inch main on Norris street.....		20	11
Fourth and Diamond streets, between 30-inch main on Fourth street and 6-inch main on Diamond street....		10	16
Kensington avenue and Somerset street, between 30-inch main on southeast side of Kensington avenue and 6-inch main on Somerset street		8	16
Kensington avenue and Hart lane, between 30-inch main on southeast side of Kensington avenue and 6-inch main on Hart lane		10	20

Street.	Location.	Size in inches.	Distance in feet.
<i>Supply Main Connections—Continued.</i>			
Kensington avenue and Cambria street, between 30-inch main on southeast side of Kensington avenue and 6-inch main on Cambria street.....		10	18
Kensington avenue and Orleans street, between 30-inch main on southeast side of Kensington avenue and 6-inch main on Orleans street.....		8	17
Kensington avenue and Clearfield street, between 30-inch main on southeast side of Kensington avenue and 6-inch main on Clearfield street.....		10	17
Kensington avenue, 7 feet northeast of southwest house line of Clearfield street, between 30-inch main on southeast side and 6-inch main on northwest side of Kensington avenue.....		12	30
Kensington and Allegheny avenues, between 30-inch main on southeast side of Kensington avenue and 6-inch main on southwest side of Allegheny avenue.....		10	16
Kensington and Allegheny avenues, between 30-inch main on southeast side of Kensington avenue and 6-inch main on northeast side of Allegheny avenue.....		10	14
Lehigh avenue and Salmon street, between 30-inch main on Lehigh avenue and 6-inch main on Salmon street.....		10	14
Lehigh avenue and Edgemont street, between 30-inch main on Lehigh avenue and 6-inch main on Edgemont street.....		10	14
Lehigh avenue and Almond street, between 30-inch main on Lehigh avenue and 6-inch main on Almond street.....		10	14
Richmond street, 19 feet north of north house line of Lehigh avenue, between 20-inch and 6-inch mains on Richmond street.....		8	13
Richmond street, 2 feet north of north house line of Somerset street, between 20-inch and 6-inch mains on Richmond street.....		8	12
Richmond and William streets, between 20-inch main on Richmond street and 6-inch main on William street.....		8	14
Richmond and Ann streets, between 20-inch main on Richmond street and 6-inch main on Ann street.....		8	9
Richmond and Neff streets, between 20-inch main on Richmond street and 6-inch main on Neff street.....		8	13
Richmond and Elkhart streets, between 20-inch main on Richmond street and 6-inch main (not yet laid) on Elkhart street.....		8	16
Richmond and Clearfield streets, between 20-inch main on Richmond street and 6-inch main on Clearfield street.....		8	14
Richmond and Saxon streets, between 20-inch main on Richmond street and 6-inch main (not yet laid) on Saxon street.....		8	14
Richmond street and Allegheny avenue, south side, between 20-inch main on Richmond street and pipe (not yet laid) on south side of Allegheny avenue.....		8	10

Street.	Location.	Size in inches.	Distance in feet.
<i>Supply Main Connections—Continued</i>			
Richmond street and Allegheny avenue, north side, between 20-inch main on Richmond street and pipe (not yet laid) on north side of Allegheny avenue.....		8	10
Total.....			694
<i>Service Supply Connections.</i>			
Cedar street, southeast side, 24 feet southwest of southwest house line of Margareta.....		4	14
Cedar street, northwest side, 24 feet southwest of southwest house line of Margareta.....		4	15
Cedar street, southeast side, 24 feet northeast of northeast house line of Meadow.....		4	14
Cedar street, northwest side, 24 feet northeast of northeast house line of Meadow.....		4	15
Clearfield street, southwest side, 2 feet southeast of southeast house line of "E".....		4	14
Clearfield street, southwest side, 6 feet northwest of northwest house line of "F".....		4	14
Clifton (or Tilton) street, northwest side, 150 feet northeast of northeast house line of Ann street.....		4	8
Clifton (or Tilton) street, northwest side 63 feet northeast of northeast house line of Ann street.....		4	9
Foulkrod street, northeast side, 24 feet northwest of northwest house line of Leiper.....		4	15
Foulkrod street, southwest side, 24 feet northwest of northwest house line of Leiper.....		4	15
Foulkrod street, northeast side, 24 feet southeast of southeast house line of Oakland.....		4	15
Foulkrod street, southwest side, 24 feet southeast of southeast house line of Oakland.....		4	15
Foulkrod street, northeast side, 24 feet northwest of northwest house line of Oakland.....		4	15
Foulkrod street, southwest side, 24 feet northwest of northwest house line of Oakland.....		4	15
Foulkrod street, northeast side, 24 feet southeast of southeast house line of Horrocks.....		4	15
Foulkrod street, southwest side, 24 feet southeast of southeast line of Horrocks.....		4	15
Foulkrod street, northeast side, 24 feet northwest of northwest house line of Horrocks.....		4	15
Foulkrod street, southwest side, 24 feet northwest of northwest house line of Horrocks.....		4	15
Foulkrod street, northeast side, 24 feet southeast of southeast house line of Large.....		4	15
Foulkrod street, southwest side, 24 feet southeast of southeast house line of Large.....		4	15

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Foulkrod street, northeast side, 24 feet northwest of north-west house line of Large.....		4	15
Foulkrod street, southwest side, 24 feet northwest of north house line of Large.....		4	15
Foulkrod street, northeast side, 35 feet 8 inches northwest of northwest house line of Large.....		4	15
Foulkrod street, southwest side, 35 feet 8 inches northwest of northwest house line of Large.....		4	15
Gurney street, southwest side, 24 feet northwest of north-west house line of Fillmore.....		4	12
Gurney street, southwest side, 24 feet southeast of south-east house line of Somerset.....		4	12
Indiana avenue, north side, 24 feet west of west house line of Franklin street.....		4	15
Indiana avenue, south side, 24 feet west of west house line of Franklin street.....		4	15
Indiana avenue, north side, 24 feet east of east house line of Eighth street.....		4	15
Indiana avenue, south side, 24 feet east of east house line of Eighth street.....		4	15
Franklin street, east side, 24 feet north of north house line of Indiana avenue.....		4	15
Franklin street, west side, 24 feet north of north house line of Indiana avenue.....		4	15
Franklin street, east side, 24 feet south of south house line of Clearfield street.....		4	15
Franklin street, west side, 24 feet south of south house line of Clearfield street.....		4	15
Franklin street, southeast side, 24 feet southwest of south-west house line of Ruan.....		4	13
Franklin street, northwest side, 24 feet southwest of south-west house line of Ruan.....		4	13
Franklin street, southeast side, 24 feet northeast of north-east house line of Green.....		4	11
Franklin street, northwest side, 24 feet northeast of north-east house line of Green.....		4	12
Franklin street, southeast side, 24 feet southwest of south-west house line of Green.....		4	13
Franklin street, northwest side, 24 feet southwest of south-west house line of Green.....		4	13
Franklin street, southeast side, 24 feet northeast of north-east house line of Adams.....		4	13
Franklin street, northwest side, 24 feet northeast of north-east house line of Adams.....		4	13
Green street, northeast side, 24 feet northwest of northwest house line of Kensington avenue.....		4	12
Green street, southwest side, 24 feet northwest of north-west house line of Kensington avenue.....		4	12
Green street, northeast side, 24 feet southeast of south-east house line of Romain street.....		4	12

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Green street, southwest side, 24 feet southeast of southeast house line of Romain.....		4	12
Green street, northeast side, 24 feet northwest of northwest house line of Romain.....		4	12
Green street, southwest side, 24 feet northwest of northwest house line of Romain.....		4	12
Green street, northeast side, 24 feet southeast of southeast house line of Franklin.....		4	12
Green street, southwest side, 24 feet southeast of southeast house line of Franklin.....		4	12
Irving street, southwest side, 24 feet southeast of southeast house line of Thompson.....		4	11
Irving street, northeast side, 24 feet southeast of southeast house line of Thompson.....		4	12
Irving street, southwest side, 24 feet northwest of northwest house line of Howell.....		4	11
Irving street, northeast side, 24 feet northwest of northwest house line of Howell.....		4	12
Ontario street, southwest side, 24 feet northwest of northwest house line of Frankford avenue.....		4	19
Ontario street, northeast side, 159 feet 7 inches northwest of northwest house line of Frankford avenue.....		4	20
Ontario street, southwest side, 24 feet southeast of southeast house line of Clarion.....		4	19
Ontario street, northeast side, 24 feet southeast of southeast house line of Clarion.....		4	20
Ontario street, southwest side, 24 feet northwest of northwest house line of Emerald.....		4	19
Ontario street, southwest side, 24 feet northwest of northwest of northwest house line of Helen.....		4	20
Ontario street, northeast side, 24 feet northwest of northwest house line of Helen.....		4	19
Ontario street, northeast side, 24 feet southeast of southeast house line of Jasper.....		4	20
Ontario street, southwest side, 24 feet northwest of northwest house line of Jasper.....		4	18
Ontario street, northeast side, 24 feet northwest of northwest house line of Jasper.....		4	18
Ontario street, southwest side, 198 feet northwest of northwest house line of Jasper.....		4	18
Ontario street, northeast side, 198 feet northwest of northwest house line of Jasper.....		4	18
Onyx street, southeast side, 24 feet southwest of southwest house line of Kirkbride.....		4	9
Onyx street, northwest side, 24 feet southwest of southwest house line of Kirkbride.....		4	9
Onyx street, southeast side, 24 feet northeast of northeast house line of Jenks.....		4	9
Onyx street, northwest side, 24 feet northeast of northeast house line of Jenks.....		4	9

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Philip street, east side, 24 feet north of north house line of Somerset.....		4	9
Philip street, west side, 24 feet north of north house line of Somerset.....		4	9
Philip street, east side, 24 feet south of south house line of Cambria.....		4	9
Philip street, west side, 24 feet south of south house line of Cambria.....		4	9
Sparks street, southeast side, 24 feet southwest of southwest house line of Ash.....		4	9
Sparks street, northwest side, 24 feet southwest of southwest house line of Ash.....		4	9
Sparks street, southeast side, 24 feet northeast of northeast house line of Buckius.....		4	9
Sparks street, northwest side, 24 feet northeast of northeast house line of Buckius.....		4	9
Tioga street, south side, 24 feet west of west house line of Wright.....		4	15
Tioga street, south side, 24 feet east of east house line of American.....		4	15
Tioga street, south side, 24 feet west of west house line of American.....		4	15
William street, southeast side, 24 feet southwest of southwest house line of Church.....		4	11
William street, northwest side, 24 feet southwest of southwest house line of Church.....		4	12
William street, southeast side, 24 feet northeast of northeast house line of Herbert.....		4	11
William street, northwest side, 24 feet northeast of northeast house line of Herbert.....		4	12
Total			1,157
Fire hydrant connections.....		6	2,100
<i>Supply Connections—Private.</i>			
Beach street, southeast side, 63 feet northeast of northeast house line of Hanover, for Penn Treaty Park.....		4	21
Howard street, east side, 111 feet north of north house line of Harrison, for McKee's Mill.....		4	19
Susquehanna avenue, south side, 48 feet east of east house line of Bodine street, for Dungan, Hood & Company..		6	29
Total			69

Street.	Location.	Size in inches.	Distance in feet.
<i>Drains.</i>			
Devereaux street, northeast side, 27 feet northwest of southeast house line of "O" street from 48-inch pumping main.....		6	4
Devereaux street, southwest side, 14 feet southeast of southeast house line of Lawndale, from 48-inch pumping main.....		6	6
Fourth street, west side, 4 feet north of south house line of Culvert, from 20-inch main.....		6	6
Fourth street, east side, 8 feet north of north house line of Willow, from 20-inch main.....		6	10
Richmond street, east side, 365 feet north of Lehigh avenue, from 20-inch main.....		6	18
Total.....		44
<i>Pipe Relaid.</i>			
Allen street, from southwest house line of Shackamaxon, northeast.....		6	62
Allen street, from 45 feet 6 inches southwest of northeast house line of Marlborough northeast.....		6	46
Ash street, from Girard avenue, northwest.....		6	24
Beach street, from Poplar, northeast.....		10	31
Cadwalader street, from Girard avenue, northwest.....		6	28
Cedar street, from 1 foot 10 inches southwest of southwest house line of York street northeast.....		6	26
Charlotte street, from centre of George to 5 feet north of south house line of Girard avenue.....		6	703
Charlotte street, from north house line of Thompson to Master.....		6	417
Coral street, from Huntingdon to Lehigh avenue.....		6	747
Crease street, from Girard avenue, northwest.....		6	29
Culvert street, north side, from 4 feet 10 inches west of east house line of Charlotte, west.....		6	11
Culvert street, south side, from centre of Charlotte, west.....		6	9
Culvert street, from centre of Fourth, northeast.....		6	30
Curran place, from 2 feet east of east house line of Fourth, west.....		6	27
Delaware avenue, from northeast house line of Canal to southwest house line of Shackamaxon.....		10	1,848
Dreer street, from Amber to southeast house line of Coral..		6	376
Girard avenue, north side, from east house line of Fourth street, west.....		6	56
Girard avenue, northwest side, from Morton to 8 feet northeast of southwest house line of Leopard.....		8	3,922
Girard avenue, north side, from 35 feet 6 inches east of east house line of Palethorp to Sixth street.....		8	2,200
Hermitage street, from Green street to Fairmount avenue.		6	347

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Holman street, from 6 feet south of southwest house line of Dauphin, northeast.....		6	31
Huntingdon street, northeast side, from east house line of Commerce to Tulip.....		6	1,191
Lehigh avenue, southwest side, from centre of Edgemont to northwest house line of Newkirk.....		6	137
Leithgow street, from Girard avenue, north.....		6	27
Leopard street, from Girard avenue northwest.....		6	29
Lynd street, from centre of Fourth street, west.....		6	23
Margaretta street, from 4 feet east of east house line of Second street, west.....		6	29
Maria street, from centre of Fourth street, west.....		6	25
Moore street, from 19 feet 5 inches southeast of centre of Emerald, northwest.....		6	19
Palethorp street, from Girard avenue, north.....		6	21
Pegg street, from 5 feet east of east house line of New Market, west.....		6	58
Poplar street, from Delaware avenue to Front street.....		10	769
Savery street, from Girard avenue, northwest.....		6	24
Thompson street, from 2 feet southwest of southwest house line of York, northeast.....		6	27
Thompson street, from east house line of Fourth street, west.....		6	50
Trenton avenue, from southwest house line of Dauphin, northeast.....		6	60
Vienna street, from Girard avenue, northwest.....		6	24
Vienna street, from Memphis to Tulip.....		6	301
Wilson street, from 1 foot 9 inches southwest of southwest house line of York, northeast.....		6	26
Wood street, from 2 feet east of east house line of Fourth street, west.....		6	41
York street, south side, from southeast house line of Cedar, northwest.....		6	55
Total.....			13,906
Fire hydrant connections relaid.....		6	599
Repairs, general.....		6	1,192
Repairs, general.....		8	59
Repairs, general.....		10	315
Repairs, general.....		12	37
Repairs, general.....		16	20
Repairs, general.....		18	10
Repairs, general.....		36	19
Total.....			1,643

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken Up.</i>			
Allen street, from 45 feet 6 inches southwest of northeast house line of Marlborough, northeast.....		4	45
Allen street, from southwest house line of Shackamaxon, northeast.....		4	62
Ash street, from 23 feet southeast of northwest house line of Girard avenue, northwest.....		4	24
Beach street, from Poplar, north.....		6	31
Cadwalader street, from Girard avenue, northwest.....		4	28
Cedar street, from 1 foot 10 inches southwest of southwest house line of York, northeast.....		4	26
Charlotte street, from centre of George to 5 feet north of south house line of Girard avenue.....		4	703
Charlotte street, from north house line of Thompson to Master.....		4	417
Coral street, from Huntingdon street to Lehigh avenue....		4	682
Crease street, from Girard avenue, northwest.....		4	28
Culvert street, north side, from 4 feet 10 inches west of east house line of Charlotte, west.....		4	11
Culvert street, south side, from Charlotte, west.....		4	9
Culvert street, from centre of Fourth street, northeast.....		4	30
Curran place, from 2 feet east of east house line of Fourth street, west.....		3	27
Delaware avenue, from southwest house line of Laurel, northeast.....		6	25
Delaware avenue, from Laurel to 157 feet southwest of southwest house line of Shackamaxon.....		4	575
Delaware avenue, from 29 feet southwest of southwest house line of Shackamaxon, northeast.....		4	29
Dreer street, from Amber to southeast house line of Coral Girard avenue, northwest side, from southwest house line of Morton, northeast.....		4	376
Girard avenue, northwest side, from 215 feet northeast of northeast house line of Susquehanna avenue, northeast.....		4	15
Girard avenue, northwest side, from 32 feet southwest of southwest house line of Susquehanna avenue, northeast.....		4	70
Girard avenue, northwest side, from southwest house line of Vienna to 100 feet southwest of centre of Montgomery.....		4	82
Girard avenue, northwest side, from southwest house line of Palmer to northeast house line of Hanover.....		4	446
Girard avenue, northwest side from centre of Marlborough, southwest.....		4	578
Girard avenue, northwest side, from southwest house line of Frankford avenue to 8 feet northeast of southwest house line of Leopard.....		4	18
Girard avenue, northwest side, from southwest house line of Frankford avenue to 8 feet northeast of southwest house line of Leopard.....		4	239
Girard avenue, northwest side, from 35 feet 6 inches east of east house line of Palethorpe to southwest house line of Cadwalader.....		4	276

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken up—Continued</i>			
Girard avenue, northwest side, from 250 feet east of east house line of Third to Fourth.....		4	754
Girard avenue, northwest side, from east to west house line of Fourth.....		6	50
Girard avenue, northwest side, from west house line of Leithgow to Sixth street.....		4	811
Hermitage street, from centre to north house line of Green street.....		4	25
Hermitage street, from south house line to centre of Fairmount avenue.....		4	23
Holman street, from 6 feet southwest of southwest house line of Dauphin, northeast.....		4	31
Huntingdon street, across Aramingo canal.....		6	136
Huntingdon street, from east house line of Memphis to Tulip.....		6	1,191
Lehigh avenue, from centre of Edgemont to northwest house line of Newkirk.....		4	137
Leithgow street, from Girard avenue, north.....		4	27
Leopard street, from Girard avenue, northwest.....		4	29
Lynd street, from centre of Fourth, west.....		3	23
Margaretta street, from 4 feet east of east house line of Second street, west.....		3	29
Maria street, from centre of Fourth street, west.....		4	24
Moore street, from 19 feet 5 inches southeast of centre of Emerald, northwest.....		4	19
Old Second street pike, across Frankford branch of Philadelphia and Reading Railroad.....		30	207
Palethorpe street, from Girard avenue, north.....		4	21
Pegg street, from 2 feet east of east house line of New Market street, west.....		4	56
Poplar street, from west house line of Delaware avenue to centre of Canal street.....		4	426
Poplar street, from Canal street to Front street.....		6	261
Savery street, from Girard avenue, northwest.....		4	24
Thompson street, from 2 feet southwest of southwest house line of York street, northeast.....		4	26
Thompson street, from east house line of Fourth street, west.....		4	50
Trenton avenue, from southwest house line of Dauphin street, northeast.....		4	57
Vienna street, from Girard avenue, northwest.....		4	24
Vienna street, from Memphis to Tulip.....		4	301
Wilson street, from 1 foot 9 inches southwest of southwest house line of York, northeast.....		4	26
Wood street, from 2 feet east of east house line of Fourth street, west.....		4	41
York street, south side, from southeast house line of Cedar street, northwest.....		4	55
Total.....			9,736

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken up—Continued.</i>			
Fire hydrant connections taken up.....		4	636
“ “ “ “ “		6	71
Total			707
<i>Pipe lowered.</i>			
Front street, across bridge over Philadelphia and Reading Railroad.....		6	130
Janney street, from 29 feet southwest of centre of Venango, northeast.....		6	29
Old Second street pike, under road bed of Frankford Branch of Philadelphia and Reading Railroad.....		30	238
Washington avenue, from 44 feet northwest of northwest house line of State road, northwest across Pennsylvania Railroad bridge.....		12	400
Total			797
<i>Pipe raised.</i>			
Front street, on bridge over Reading Railroad.....		6	79
Susquehanna avenue, from 56 feet 6 inches east of east house line of Howard street, west.....		36	154
Venango street, from 65 feet southeast of southeast house line of Tulip street, northwest.....		6	591
Total			824
<i>Pipe cut off and abandoned.</i>			
Columbia avenue, from 18 feet east of west house line of Fourth street, west.....		6	20
Delaware avenue, from northeast house line of Canal to Laurel.....		4	1,064
Delaware avenue, from 169 feet southwest of southwest house line of Shackamaxon, northeast.....		4	130
Girard avenue, northwest side, from northeast house line of Ash, northeast		4	385
Girard avenue, northwest side, from northeast house line of Susquehanna avenue, northeast.....		4	215
Girard avenue, northwest side, from 32 feet 4 inches southwest of southwest house line of Susquehanna avenue, to west house line of Vienna.....		4	265
Girard avenue, northwest side, from southwest house line of Palmer, northeast.....		4	328

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe cut off and abandoned—Continued.</i>			
Girard avenue, northwest side, from southwest house line of Hanover, northeast.....		4	50
Girard avenue, northwest side, from Marlborough, northeast.....		4	390
Girard avenue, northwest side, from southwest house line of Marlborough to southwest house line of Frankford avenue		4	791
Girard avenue, northwest side, from west house line of Cadawalder, west.....		4	222
Girard avenue, northwest side, from west house line of Fourth street, west.....		4	142
Hermitage street, from north house line of Green to south house line of Fairmount avenue.....		4	345
Poplar street, from centre of Delaware avenue, west.....		4	32
Poplar street, from east house line of Beach, west.....		4	50
Total.....			4,429
Fire hydrant connections cut off and abandoned.....		4	720
Fire hydrant connections cut off and abandoned.....		6	86
Total			806

Recapitulation of Third District.

Purpose for which used.	Size—inches.											Total in feet and pounds.		
	3	4	6	8	10	12	16	18	20	30	36		48	
New pipe or feet added.	Service mains.....		17,283	2,773	2,408	7,065	543							30,012
	Supply mains.....									8,040				21,270
	Pumping mains.....								13,300					14,902
	Service main connections.....		87	168	340	184	31		11					14,902
	Supply main connections.....													87
	Service supply connections.....		1,157											694
	Fire hydrant supply connections.....		2,100											1,157
	Supply connections (private).....		40											2,100
	Drains.....		44											69
Total { Feet..... Pounds.....	1,197	19,493	2,931	2,748	7,209	574			13,241	8,040			14,902	70,235
	22,743	613,269	123,102	151,140	519,048	63,140			2,105,319	2,669,280			8,717,670	15,034,711
Pipe used, but adding nothing to feet in the ground.	Pipe relaid.....		5,785	6,122	2,648				10					14,805
	Repairs, general.....		1,192	57	315	37	20							1,043
	Pipe taken up.....	79	8,417	1,740						207				10,413
	Pipe lowered.....		159			400				238				797
Pipe raised.....			670							154			824	
Total { Feet..... Pounds.....	79	8,417	9,496	6,181	2,963	437	20		10	415	164		28,212	
	1,185	159,923	313,368	259,602	162,965	31,164	2,200	1,400		147,740	69,208		1,149,655	
Total handled { Feet..... Pounds.....	79	9,614	28,989	9,112	5,711	7,616	594	10	13,241	8,485	164		14,902	
	1,185	182,666	351,787	382,704	314,105	559,512	65,310	1,400	2,105,319	2,817,020	69,208		8,717,670	
Pipe cut off and abandoned.....			106											5,235

FOURTH DISTRICT.

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

Street.	Location.	Feet in inches.	Distance in feet.
<i>Service Mains.</i>			
Arizona street, from dead end west house line of Thirtieth street, west.....		6	160
Andrew street, from centre Wallace street, north.....		6	29
Arlington street, from Ringgold to Twenty-fifth street....		6	283
Arlington street, from 2 feet east of east house line of Thirty-and-three-quarter street, west.....		6	22
Beechwood street, from Dauphin to York streets.....		6	552
Berks street, from 1 foot 7 inches east of east house line of Mervine street, west.....		8	52
Berks street, from 3 feet east of east house line of Twelfth street to 1 foot 6 inches east of west house line of Thirteenth street.....		8	502
Berks street, from 1 foot 6 inches east of west house line of Thirteenth street to Broad street.....		6	563
Berks street, from west curb line of Thirtieth street to dead end east house line of Thirty-first street.....		8	413
Berks street, from dead end west house line of Thirty-first street to dead end east house line of Thirty-second street.....		8	400
Berks street, from dead end west house line of Thirty-second street to east house line of Thirty-third street.....		8	400
Boston avenue, from Twentieth street to east curb line of Twenty-first street.....		6	519
Bouvier street, from dead end south house line of Cumberland street to north house line of Huntington street.....		6	603
Caldwell street, from Thirteenth street, west.....		6	28
Camac street, from dead end 29 feet 6 inches south of northwest house line of Sedgely avenue to dead end south house line of Allegheny avenue.....		6	394
Cambridge street, from 9 feet 1 inch east of east house line of Sixteenth street, west.....		6	28
Carlton street, from centre of Thirteenth street, west.....		6	27
Carlton street, from east house line of Fifteenth street, west.....		6	50
Clay street, from centre of Eleventh street, west.....		6	25
Clay street, from 2 feet east of east house line of Twelfth street, west.....		6	55
Clarence street, from west curb line of Twenty-fifth street, west, to dead end.....		6	80
Clearfield street, from 17 feet east of west house line of Twenty-second street to west house line of Twenty-third street.....		6	467

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Clementine street, from centre of Thirteenth, west.....		6	26
Clementine street, from east house line of Park avenue, west		6	30
Cleveland avenue, from dead end south house line of Cumberland street, north.....		6	51
Cleveland avenue, from 3 feet 9 inches south of south house line of Huntington street, north.....		6	29
Colorado street, from dead end south curb line of Cumberland street to north house line of Huntington street		6	596
Cumberland street, from Seventeenth street to east house line of Twentieth street.....		6	1,318
Cumberland street, from east house line of Twenty-ninth street, west.....		6	70
Cumberland street, from 2 feet east of east house line of Thirtieth street, west.....		6	56
Cumberland street, from 1 foot 3 inches east of east house line of Thirty-and-one-half street, west.....		6	34
Diamond street, south side, from east house line of Twenty-five-and-one-half street to 28 feet west of east house line of Twenty-five-and-three-quarter street.....		6	161
Diamond street, north side, from dead end 2 feet east of west house line of Thirty-first street to west house line of Thirty-second street.....		6	452
Diamond street, north side, from east house line of Thirty-two-and-one-half street, west.....		6	40
Diamond street, south side, from 2 feet east of east house line of Thirty-third street, west.....		6	17
Diamond street, north side, from 1 foot east of east house line of Thirty-third street, west.....		6	19
Eleventh street, from Vine to Wood streets.....		10	279
Eighteenth street, from dead end 8 feet north of south house line of Cumberland street to 16 feet north of southeast house line of Glenwood avenue.....		6	901
Esher street, from 154 feet north of centre of Thompson street to Master street.....		6	321
Fifteenth street, from Vine to Callowhill streets.....		6	554
Fifteenth street, from dead end southeast house line of Glenwood avenue northwest.....		6	28
Firth street, from dead end west house line of Maple street to dead end east house line of Sixteenth street..		6	59
Garnet street, from 12 feet north of south house line of Cumberland street, north.....		6	14
Girard avenue, south side, from west house line of Fifteenth street to east house line of Sixteenth street.....		6	428
Girard avenue, north side, from 17 feet west of east house line of West College avenue to east house line of Thirty-first street.....		8	2,521

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Glenwood avenue, from south house line of Oxford street, northeast		8	84
Glenwood avenue, from 13 feet southwest of centre of Beechwood avenue, northeast.....		6	13
Glenwood avenue, from Fifteenth to Somerset street.....		6	156
Glenwood avenue, from 7 feet 6 inches south of north house line of Somerset street to north house line of Richfield street.....		6	157
Gratz street, from 3 feet 9 inches south of south house line of Huntingdon street, north.....		6	29
Gratz street, from York street to north house line of Cumberland street.....		6	579
Hamilton street, from centre of Thirteenth street to east house line of Broad street.....		6	555
Haines street, from Twelfth street, west.....		6	25
Hazel avenue, from Clearfield street to Allegheny avenue..		6	559
Herman street, from Thirty-second street to Thirty-two-and-one-half street		6	222
Huntingdon street, from dead end west house line of Seventeenth street to east house line of Nineteenth street.....		6	833
Indiana avenue, from dead end 6 feet east of west house line of Germantown avenue to dead end 2 feet 1 inch west of east house line of Eleventh street.....		6	349
Jefferson street, from centre of Twenty-ninth street, west..		6	29
Jefferson street, from 6 feet east of west house line of Twenty-ninth street to dead end 2 feet east of west house line of Thirtieth street.....		8	453
Jefferson street, from Thirty-first to Thirty-second streets..		10	452
Jefferson street, from centre of Sydenham street west, to connect.		6	27
Judson street, from Parrish to Poplar streets.....		6	455
Lambert street, from dead end 1 foot 2 inches north of south house line of Dauphin street, north, to connect..		6	7
Lehigh avenue, south side, from 15 feet 6 inches east of west house line of Fifteenth street to dead end east house line of Sixteenth street.....		6	411
Lehigh avenue, south side, from dead end west house line of Sixteenth street to dead end east house line of Bancroft street.....		6	115
Lehigh avenue, south side, from dead end west house line of Bancroft street to dead end 10 feet 6 inches east of east house line of Willington street.....		6	90
Lehigh avenue, south side, from dead end west house line of Willington street to 60 feet 3 inches west of east house line of Seventeenth street.....		6	181
Lehigh avenue, north side, from dead end 12 feet west of west house line of Hicks street to dead end east house line of Sixteenth street.....		9	235

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Lehigh avenue, north side, from dead end west house line of Sixteenth street to 60 feet west of east house line of Seventeenth street.....		6	451
Lemon street, from centre of Eleventh street, west.....		6	27
Lemon street, from east house line of Twelfth street, west.....		6	25
Lex street, from east house line of Sixteenth street, west.....		6	41
Lippincott street, from Thirteenth street, west.....		6	26
Lippincott street, from east house line Park avenue, west.....		6	30
Mt. Vernon street, from Twelfth to Broad street.....		12	1018
Myrtle street, from Twenty-second street to 25 feet west of east house line of Twenty-third street.....		6	292
Morse street, from east curb line of Thirty-second street, west.....		6	27
Montgomery avenue, from 21 feet 6 inches east of north-west house line of Sedgely avenue to dead end east house line of Thirty-first street.....		8	137
Natrona street, from south house line of Oxford street, north.....		6	70
Nineteenth street, from dead end 42 feet south of south house line of York street to north house line of Cumberland street.....		6	592
Norris street, from dead end east house line of Thirtieth street to dead end east house line of Thirty-first street.....		8	451
Norris street, from Twenty-fourth street to east curb line of Twenty-five-and-one-half street.....		6	606
Ogden street, from Twenty-second street to Twenty-third street.....		6	292
Opal street, from 12 feet north of south house line of Cumberland street, north.....		6	13
Oxford street, from dead end west house line Twenty-ninth street to Glenwood avenue.....		8	1003
Oxford street, from Thirty-second street to dead end east house line of Thirty-third street.....		6	432
Page street, from dead end east house line of Thirtieth street to Thirty-first street.....		6	476
Page street, from dead end 76 feet west of west house line of Thirty-first street to dead end east house line of Thirty-second street.....		6	324
Page street, from Twenty-five-and-one-half street to south east house line of Glenwood avenue.....		6	394
Park Terrace, from dead end east house line of Pennock street, west.....		6	21
Pearl street, from centre of Tenth street, west.....		6	21
Pearl street, from east house line of Eleventh street, west.....		6	53
Pearl street, from 2 feet east of east house line of Twelfth street, west.....		6	30
Pearl street, from east house line of Fifteenth street, west.....		6	50
Pearl street, from centre of Sixteenth street, west.....		6	24
Pennock street, from 74 feet south of south house line of Park Terrace, north to dead end.....		6	157

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Portland street, from 4 feet east of east house line of Eleventh street, west.....		6	35
Potts street, from 2 feet east of east house line of Twelfth street, west.....		6	31
Reno street, from centre of Sixteenth street, west.....		6	25
Richfield street, from Broad street to Glenwood avenue...		6	396
Ringgold street, from dead end 15 feet south of north house line of Arlington street to Norris street.....		6	161
Sargent street, from centre Twelfth street west to connect dead end.....		6	99
Sedgely avenue, from southwest house line Ridge avenue, northeast.....		8	23
Sedgely avenue, from Montgomery avenue to dead end 5 feet northeast of southwest house line of Ridge avenue.....		8	1477
Seventeenth street, from dead end 2 feet 7 inches north of south house line of Lehigh avenue, north.....		6	76
Somerset street, from west house line of Broad street to Glenwood avenue.....		6	474
Somerville street, from 12 feet east of west house line of Twenty-sixth street, west to dead end.....		6	81
Stiles street, from dead end 7 feet east of west house line of Broad street to dead end east house line of Carlisle street.....		6	167
Steiner street, from Wallace street, north.....		6	26
Susquehanna avenue, from dead end southwest house line of Ridge avenue to 18 feet west of east house line of Thirty-third street.....		6	536
Sydenham street, from 6-inch main 21 feet 6 inches south of north house line of Lehigh avenue, north to connect.....		6	9
Thirteenth street, from Danphin street to dead end 2 feet 9 inches north of south house line of York street.....		6	530
Thirtieth street, from 30 feet 2 inches south of centre of Sedgely avenue, north.....		12	81
Thirtieth street, from south house line of Jefferson street, north.....		12	52
Thirtieth street, from 1 foot 6 inches south of south house line of Oxford street, north.....		12	70
Thirtieth street, from dead end 2 feet 3 inches south of south house line of Norris street to dead end south house line of Fountaine street.....		12	358
Thirtieth street, from dead end north house line of Fountaine street to dead end 12 feet south of southwest house line of Ridge avenue.....		12	98
Thirtieth street, from York to 2 feet north of north house line of Cumberland street.....		12	578
Thirty and one-half street, from centre of Berks street, north.....		6	27

Street.	Locotion.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Thirty and one-half street, from York to Cumberland streets.....		6	550
Thirty and three-quarter street, from Berks to Norris street.....		6	550
Thirty-first street, from 1 foot south of south house line of Oxford street, north.....		8	36
Thirty-one and one-half street, from centre of Berks street, north to connect.....		6	13
Thirty-one and one-half street, from 12 feet north of south house line of Berks street to Norris street.....		6	539
Thirty-one and three-quarter street, from centre of Berks street, north to connect.....		6	27
Thirty-second street, from dead end 14 feet north of south house line of Jefferson street, north.....		10	11
Thirty-second street, from north curb line of Oxford street, north.....		6	15
Thirty-second street, east side, from north house line of Anna street to Montgomery avenue.....		6	136
Thirty-two and one-half street, from Herman street, north.....		6	13
Thirty-two and one-half street, from 15 feet 5 inches south of centre of Berks street, north.....		6	41
Thirty-two and one-half street, from 11 feet south of north house line of Diamond steet to Susquehanna avenue.....		6	550
Thirty-two and three-quarter street, from 15 feet south of centre of Berks street, north.....		6	41
Thirty-third street, east side from dead end north house line of Montgomery avenue to 2 feet north of south house line of Berks street.....		12	505
Thirty-third street, east side, dead end north house line of Berks street to dead end 1 foot north of south house line of Norris street.....		12	500
Thirty-third street, east side, from dead end north house line of Norris street to 1 foot 8 inches south of north house line of Susquehanna avenue.....		12	1139
Twenty-third street, from dead end 16 feet south of north house line of Parrish street to Poplar street.....		6	445
Twenty-third street, from south house line of Clearfield street, north.....		6	50
Twenty-fifth street, from Berks street to 370 feet north of north house line of Norris street.....		6	945
Twenty-five and one-half street, from Norris street to Diamond street.....		6	540
Twenty-five and three-quarter street, from Page street to Diamond street.....		6	300
Twenty-ninth street, from southeast house line of Sedgely avenue to dead end 20 feet south of south house line of Norris street.....		6	175
Twenty-ninth street, from York street to north house line of Cumberland street.....		6	575

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Vanpelt street, from dead end south house line of Dauphin street, north to connect.....		6	11
Warnock street, from Indiana avenue, north.....		6	23
Whitehall street, from centre of Thirteenth street, west...		6	27
Willow street, from 1 foot east of east house line of Eleventh street, west.....		6	26
Willow street, from 2 feet east of east house line of Twelfth street, west.....		6	27
Wishart street, from Thirteenth street to Park avenue...		6	258
Wood street, from east house line of Fifteenth street, west,		6	50
Woodstock street, from dead end south house line of Dauphin street, north to connect.....		6	10
Total.....			49,833
<i>Supply Mains.</i>			
Girard avenue, from 40 feet 6 inches east of east house line of Eleventh street to Broad street.....		30	1,566
Twenty-fourth street, from Spring Garden street to 3 feet 6 inches north of north house line of Green street.....		{ 48 36	{ 541 31
Total.....			2,138
<i>Pumping Mains.</i>			
<i>48 inch pumping mains (2 lines) from number 2 and number 3 engines, Spring Garden Station to East Park Reservoir:</i>			
East Park Drive from 152 feet 6 inches northwest of Forebay, northwest to old East Park Drive, thence north to south side of Reading Railroad, thence from 4 feet 4 inches north of Reading Railroad and Mifflin lane to north of East Park Drive at East Park Reservoir.....		48	4,259
Total.....			4,259
<i>Service Main Connections.</i>			
Mt. Vernon street, 37 feet 6 inches west of west house line of Thirteenth street, between 12 inch and 6 inch main on Mt. Vernon street.....		8	4

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Main Connections—Continued.</i>			
Ninth street and Columbia avenue, between 30 inch main on Ninth street and 6 inch main on north side Columbia avenue.....		10	8
Total.....			12
<i>Supply Main Connections.</i>			
Eighth and Poplar streets, between 10 inch main on Eighth street and 16 inch main on Poplar street.....		10	18
Eleventh and Poplar streets, between 10 inch main on Eleventh street, and 16 inch main on Poplar street...		12	13
Girard avenue and Eleventh street, between 30 inch main on Girard avenue, and 6 inch main on Eleventh street....		6	15
Girard avenue, 14 feet 6 inches east of east house line of Eleventh street, between 30 inch and 12 inch mains on Girard avenue.....		12	45
Girard avenue and Twelfth street, between 30 inch main on Girard avenue and 6 inch main on Twelfth street..		6	26
Girard avenue, 28 feet east of east house line of Twelfth street between 30 inch and 12 inch mains on Girard avenue		12	45
Girard avenue and Thirteenth street, between 30 inch main on Girard avenue and 6 inch main on Thirteenth street.....		6	19
Girard avenue, 13 feet east of east house line of Thirteenth street, between 30 inch and 12 inch main on Girard avenue.....		12	49
Pennsylvania avenue, south side, 35 feet west of west house line of Thirty-third street, between No. 10-36-inch pumping main and 18 and 20-inch mains on Pennsylvania avenue connecting with 36-inch supply main on Thompson street.....		30	49
Poplar and Tenth street, between 16-inch main on Poplar street and 6-inch main on Tenth street.....		8	20
Spring Garden Reservoir, southeast corner between 25-inch outlet (northeast) and 8-inch pipe to Girard College..		8	5
Total.....			304
<i>Pumping Main Connections.</i>			
Pennsylvania avenue, south side, intersection of Thirty-third street, connecting 18 and 20-inch mains with 30-inch pumping main connection to number 10-36-inch main.....		20	91

Street.	Location.	Size in inches.	Distance in feet.
<i>Pumping Main Connections—Continued.</i>			
Spring Garden Pumping station, in front of number 11 engine house, between number 12 and number 11 pumping mains.....		36	28
Total.....			119
<i>Meter Inspection Connections.</i>			
Buttonwood street, south side, west house line of Thirteenth street.....		6	33
Wallace street, north side, 3 feet east of east house line of Tenth street.....		4	15
Total.....			48
<i>Service Supply Connections.</i>			
Camac street, east side, 12 feet north of northwest house line of Sedgley avenue.....		4	13
Camac street, west side, 12 feet north of northwest house line of Sedgley avenue.....		4	15
Dauphin street, north side, 6 feet east of west house line of Thirteenth.....		4	15
Glenwood street, southeast side, 7 feet southwest of north house line of Oxford.....		4	35
Glenwood street, northwest side, 7 feet southwest of north house line of Oxford.....		4	29
Hamilton street, north side, 12 feet west of west house line of Thirteenth.....		4	8
Hamilton street, north side, 12 feet east of east house line of Broad.....		4	9
Hamilton street, south side, 12 feet west of west house line of Thirteenth.....		4	8
Hamilton street, south side, 12 feet east of east house line of Broad.....		4	8
Indiana street, north side, 12 feet west of southwest house line of Germantown avenue.....		4	15
Indiana street, north side, 12 feet east of east house line of Eleventh.....		4	15
Indiana street, south side, 12 feet west of southwest house line of Germantown avenue.....		4	13
Indiana street, south side, 12 feet east of east house line of Eleventh.....		4	13
Lehigh avenue, south side, 139 feet west of west house line of Fifteenth.....		4	17
Lehigh avenue, south side, 8 feet east of east house line of Sixteenth.....		4	18

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Lehigh avenue, north side, 7 feet east of east house line of Sixteenth.....		4	16
Lehigh avenue, north side, 3 feet west of east house line of Sydenham street.....		4	24
Lehigh avenue, north side, 2 feet west of west house line of Hicks.....		4	24
Oxford street, south side, from 8-inch main 3 feet east of east curb line of Twenty-ninth, south 19 feet, thence east 5 feet 9 inches.....		4	25
Oxford street, south side, from 8-inch main 6 feet west of west curb line of Twenty-ninth, south 23 feet 9 inches, thence west 1 foot 3 inches.....		4	25
Sedgley avenue, northwest side, 13 feet southwest of west house line of Camac.....		6	17
Sedgley avenue, northwest side, 13 feet northeast of east house line of Camac.....		6	18
Sedgley avenue, northwest side, 12 feet southwest of west house line of Twelfth.....		6	16
Sedgley avenue, northwest side, 12 feet northeast of east house line of Twelfth.....		6	16
Sedgley avenue, northwest side, 26 feet northeast of east house line of Twelfth, (at intersection of Clearfield)...		6	18
Sedgley avenue, southeast side, 26 feet northeast of east house line of Twelfth, (at intersection of Clearfield)...		6	17
Sedgley avenue, northwest side, 12 feet southwest of southwest house line of Germantown avenue.....		6	17
Sedgley avenue, southeast side, 12 feet southwest of southwest house line of Germantown avenue.....		6	19
Seventeenth street, east side, 6 feet 6 inches north of north house line of Huntingdon street.....		4	29
Seventeenth street, east side, 74 feet south of south house line of Lehigh avenue.....		4	23
Sydenham street, east side, 12 feet north of north house line of Master.....		6	15
Sydenham street, east side, 12 feet south of south house line of Jefferson.....		6	15
Sydenham street, east side, 12 feet north of north house line of Jefferson.....		6	15
Sydenham street, east side, 12 feet south of south house line of Oxford.....		6	15
Sydenham street, west side, 12 feet north of north house line of Master.....		6	15
Sydenham street, west side, 12 feet south of south house line of Jefferson.....		6	15
Sydenham street, west side, 12 feet north of north house line of Jefferson.....		6	15
Sydenham street, west side, 12 feet south of south house line of Oxford.....		6	15
Thirteenth street, east side, 12 feet north of north house line of Clearfield.....		4	15

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Thirtieth street, east side, 9 feet north of south house line of Oxford.....		4	14
Thirtieth street, east side, 9 feet south of north house line of Oxford.....		4	13
Thirtieth street, west side, 9 feet north of south house line of Oxford.....		4	13
Thirtieth street, west side, 9 feet south of north house line of Oxford.....		4	13
Thirty-first street, east side, 11 feet north of south house line of Oxford.....		4	20
Thirty-second street, east side, 5 feet north of north house line of Montgomery.....		4	13
Thirty-second street, east side, 5 feet south of south house line of Berks.....		4	13
Thirty-second street, east side, 5 feet north of north house line of Berks.....		4	13
Thirty-second street, east side, 3 feet south of south house line of Norris.....		4	14
Thirty-second street, west side, 5 feet north of north house line of Montgomery.....		4	13
Thirty-second street, west side, 5 feet south of south house line of Berks.....		4	13
Thirty-second street, west side, 5 feet north of north house line of Berks.....		4	13
Thirty-second street, west side, 3 feet south of south house of Norris.....		4	14
Thirty-second street, west side, 5 feet north of north house line of Norris.....		4	13
Twelfth street, east side, 12 feet north of north house line of Sedgely avenue.....		6	15
Twelfth street, west side, 12 feet north of north house line of Sedgely avenue.....		6	11
Twenty-ninth street, east side, 11 feet south of north house line of Oxford.....		4	26
Twenty-ninth street, west side, 11 feet south of north house line of Oxford.....		4	26
Twenty-ninth street, west side, 14 feet north of north house line of Sedgely avenue.....		6	21
Berks street, south side, 12 feet west of west house line of Thirtieth street.....		6	15
Berks street, north side, 12 feet west of west house line of Thirtieth street.....		6	15
Berks street, north side, 11 feet west of west house line of Thirty-and-one-half street.....		6	14
Berks street, north side, 12 feet east of east house line of Thirty-and-one-half street.....		6	14
Berks street, north side, 12 feet west of west house line of Thirty-and-three-quarters street.....		6	14
Berks street, north side, 12 feet east of east house line of Thirty-and-three-quarters street.....		6	14

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Berks street, south side, 12 feet west of west house line of Thirty-one-and-one half street.....		6	15
Berks street, north side, 12 feet west of west house line of Thirty-one-and-three quarters street.....		6	15
Berks street, south side, 12 feet east of east house line of Thirty-first street.....		6	15
Berks street, north side, 12 feet east of east house line of Thirty-first street.....		6	15
Berks street, north side, 12 feet east of east house line of Thirty-one-and-three-quarters street.....		6	15
Berks street, south side, 12 feet west of west house line of Thirty-first street.....		6	15
Berks street, north side, 12 feet west of west house line of Thirty-first street.....		6	15
Berks street, north side, 12 feet east of east house line of Thirty-one-and-one-half street.....		6	15
Berks street, south side, 12 feet east of east house line of Thirty-second street.....		6	15
Berks street, north side, 12 feet east of east house line of Thirty-second street.....		6	15
Berks street, south side, 12 feet west of west house line of Thirty-second street.....		6	15
Berks street, north side, 12 feet west of west house line of Thirty-second street.....		6	15
Berks street, north side, 12 feet east of east house line of Thirty-two-and-one-half street.....		6	15
Berks street, north side, 12 feet west of west house line of Thirty-two-and-one-half street.....		6	15
Berks street, north side, 12 feet east of east house line of Thirty-two-and-three-quarters street.....		6	15
Berks street, north side, 12 feet west of west house line of Thirty-two-and-three-quarters street.....		6	15
Berks street, south side, 12 feet east of east house line of Thirty-third street.....		6	16
Berks street, north side, 12 feet east of east house line of Thirty-third street.....		6	16
Sedgely avenue, southeast side, 12 feet northeast of north house line of Montgomery avenue.....		6	17
Sedgely avenue, northwest side, 15 feet northeast of north house line of Montgomery avenue.....		6	17
Sedgely avenue, southeast side, 6 feet 6 inches southwest of southwest house line of Ridge avenue.....		6	18
Sedgely avenue, northwest side, 6 feet 6 inches southwest of southwest house line of Ridge avenue.....		6	18
Sedgely avenue, 4 feet southwest of west house line of Twenty-ninth street.....		6	18
Sedgely avenue, 6 feet 6 inches northeast of east house line of Twenty-ninth street.....		6	18
Sedgely avenue, southeast side, 17 feet southwest of west house line of Twenty-ninth street.....		6	19

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Sedgely avenue, southeast side, 15 feet northwest of east house line of Twenty-ninth street.....		6	20
Sedgely avenue, southeast side, 12 feet southwest of west house line of Thirtieth street.....		6	17
Sedgely avenue, southeast side, 12 feet northeast of east house line of Thirtieth street.....		6	17
Sedgely avenue, southeast side, 12 feet southwest of west house line of Thirtieth street.....		6	18
Sedgely avenue, southeast side, 23 feet northeast of east house line of Thirtieth street.....		6	19
Somerset street, south side, 6 feet west of west house line of Broad street.....		6	21
Somerset street, south side, 347 feet 4 inches west of west house line of Broad street.....		6	21
Total			1,577
Fire Hydrant Connections.....		6	3,885
<i>Fire Connections Private.</i>			
Fifteenth street, west side, 71 feet 4 inches south of south house line of Hamilton street, for Mellvaine Bros.....		4	14
Fifteenth street, west side, 47 feet north of north house line of Pennsylvania avenue, for Harrington, & Co....		4	14
Jefferson street, south side, 81 feet west of west house line of Thirty-first street, for Poth's Brewery.....		6	16
Total			44
<i>Supply Connections Private.</i>			
Eleventh street, west side, 219 feet north of north house line of Dauphin, for Northern Ice Co.....		3	
Hamilton street, south side, 100 feet 6 inches west of west house line of Broad, for Burnham, Williams & Co....		4	15
Jefferson street, north side, 127 feet 6 inches west of west house line of Thirty-first street for Poth's Brewery...		3	
Mt Vernon street, north side, 8 feet 4 inches west of east house line of Kessler, for Phila. & Reading Terminal		4	3
North College avenue, north side, 113 feet 5 inches east of east house line of Twenty-second, for Women's Hospital		4	12
Spring Garden Reservoir, southeast corner between 25 inch outlet from Reservoir and 8-inch pipe to Girard College.....		8	42

Street.	Location.	Size in inches.	Distance in feet.
<i>Supply Connctions Private—Continued</i>			
Thompson street, north side, 119 feet west of west house line of Thirty-first, for Baltz Brewing Co.....		6	12
Twenty-second street, east side, 64 feet north of north house line of North College avenue, for Women's Hospital.....		4	3
Tenth street, east side, 11 feet south of south house line of Columbia avenue, for Cochran & Co.....		4	20
Mt. Vernon street, north side, 107 feet east of east house line of Thirteenth street, for Philadelphia Traction Co.....		8	8
North street, north side, 168 feet east of east house line of Fifteenth street, for Carver Silk Co.....		4	10
Total			125
<i>Drains.</i>			
Fairmount Park, from 147 feet west of west house line of Thirty-third street northeast to dead end extended from East Park Reservoir.....		12	159
Girard avenue, south side, 36 feet 3 inches east of east house line of Eleventh, from 30 in. main.....		6	23
Girard avenue, south side, east house line of Eighteenth, from 30-inch main.....		6	12
Girard avenue, intersection of Eighteenth street, from 12-inch main.....		6	14
Montgomery avenue, from 11 feet east of west house line of Thirty-third street to Stop House, East Park Reservoir.....		4	165
Pennock street, 25 feet north of northeast house line of Pennsylvania avenue, from 6-inch main.....		6	7
Poplar street, north side, 5 feet west of east house line of Twenty-fifth street, from 16-inch main.....		6	3
Twenty-fourth street, east side, 8 feet 10 in. north of north house line of Spring Garden, from 48-inch main.....		6	21
Twenty-fourth street, 15 feet 6 inches south of north house line of Poplar street, from 6-inch main.....		6	5
Total			409
<i>Pipe Relaid.</i>			
Atmore street, from centre of Thirteenth to east house line of Broad.....		6	561
Andrews street, from 4 feet south of south house line of Wallace street, north.....		6	29
Beckett street, from Sixteenth street, west.....		6	33

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Barton street, from south house line of Wallace street, north.....		6	28
Brandywine street, from Thirteenth street, west.....		6	27
Brandywine street, from 3 feet 1 inch east of east house line of Fifteenth street, west.....		6	56
Brandywine street, from 1 foot 2 inches east of east house line of Sixteenth street, west.....		6	53
Berks street, from east house line of Thirty-second street, west.....		8	50
Berks street, from east house line of Thirty-third street, west.....		} 10 8	13
			6
Cabot street, from Fifteenth street, west.....		6	23
Cabot street, from 4 feet 1 inch east of east house line of Sixteenth, west.....		6	57
Callowhill street, north side, from Sixth north to east house line of Marshall.....		6	190
Callowhill street, north side, from west house line of Marshall to Seventh street.....		6	200
Camac street, from Sedgely avenue, north.....		6	160
Cambridge street, from Sixteenth street, west.....		6	31
Carlton street, from Eleventh street, west.....		6	29
Carlton street, from 10 feet 3 inches east of east house line of Twelfth street, west.....		6	36
Carlton street, from 2 feet 6 inches east of east house line of Sixteenth street, west.....		6	55
Cass street, from Twelfth street, west.....		6	33
Cass street, from 2 feet east of east house line of Thirteenth, west.....		6	27
Chauncey street, from 3 feet south of south house line of Stiles, north.....		6	23
Chauncey street from Girard avenue, north.....		6	55
Citron street, from Eleventh street, west.....		6	31
Citron street, from 2 feet east of east house line to 25 feet west of centre of Twelfth street.....		6	52
Citron street, from 2 feet 8 inches east of east house line of Thirteenth street, west.....		6	28
Columbia avenue, south side, from 18 feet west of east house line of Ninth street, west.....		6	26
Dacota street, from 3 feet east of east house line of Tenth west.....		6	25
Davis street, from Thirteenth street, west.....		6	28
Depot street, from Eighth street, west.....		6	39
Division street, from Eleventh street, west.....		6	31
Division street, from 2 feet 9 inches east of east house line of Twelfth street, west.....		6	28
Eliza street, from Fifteenth street west.....		6	28
Eliza street, from 2 feet east of east house line of Sixteenth street, west.....		6	55

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipes Relaid—Continued.</i>			
Edwin street, from Ridge avenue, west.....		6	40
Ely's avenue, from Twelfth street, west.....		6	25
Geary street, from 5 feet 6 inches northeast of southeast house line of Ginnodo, northwest.....		6	31
Gilbert street, from 5 feet east of east house line of Tenth street, west.....		6	30
Girard avenue, north side, from west house line of Fifteenth street to east house line of Sixteenth street.....		6	429
Haines street, from 3 feet east of east house line of Thirteenth street, west.....		6	28
Hamilton street, from 6 feet west of west house line of Canton to northeast house line of Ridge avenue.....		6	678
Hamilton street, from west house line of Eleventh street to 25 feet west of east house line of Thirteenth street.....		6	868
Harmer street, from Eleventh street, west.....		6	25
Harmer street, from 2 feet east of east house line of Twelfth street, west.....		6	19
Heath street, from 20 feet east of west house line of Twelfth street, west.....		6	23
Heath street, from 5 feet 3 inches east of east house line of Thirteenth street, west.....		6	31
Irvine street, from 6 feet east of east house line of Thirteenth street, west.....		6	32
Larch street, from 3 feet 6 inches south of south house line of Wallace street, north.....		6	29
Lemon street, from Tenth street, west.....		6	29
Lemon street, from 1 foot 6 inches east of east house line of Eleventh street, west.....		6	27
Myrtle street, from Eleventh street, west.....		6	33
Myrtle street, from 2 feet 6 inches east of east house line of Twelfth street, west.....		6	24
Myrtle street, from 29 feet 7 inches east of west house line of Twelfth street, west.....		6	31
Myrtle street, from 6 feet east of east house line of Thirteenth street, west.....		6	31
Myrtle street, from centre of Thirteenth, west.....		6	31
Nectarine street, from 40 feet 9 inches east of west house line of Ninth to Tenth.....		6	488
Nectarine street, from east house line of Eleventh street west.....		6	28
Noble street, from Tenth street, west.....		6	22
Noble street, from 2 feet 9 inches east of east house line of Thirteenth, west.....		6	25
North street, from Fifteenth street, west.....		6	31
North street, from 1 foot 1 inch east of east house line of Sixteenth street, west.....		6	56
Ogden street, from east house line of Tenth, west.....		6	50
Ogden street, from 4 feet 9 inches east of east house line of Eleventh, west.....		6	30
Ogden street, from centre of Eleventh street, west.....		6	28

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Ogden street, from 1 foot east of east house line of Twelfth street, west.....		6	52
Ogden street, from 1 foot east of east house line of Thirteenth street, west.....		6	51
Ogden street, from 1 foot 7 inches east of east house line of Fifteenth street, west.....		6	54
Ogden street, from east house line of Sixteenth street, west.....		6	51
Olive street, from centre of Tenth street west.....		6	26
Olive street, from 1 foot 6 inches east of east house line of Eleventh street, west.....		6	24
Olive street, from centre of Eleventh street, west.....		6	27
Olive street, from 2 feet 6 inches east of east house line of Twelfth street, west.....		6	48
Olive street, from 1 foot 6 inches east of east house line of Thirteenth street, west.....		6	57
Olive street, from centre of Sixteenth street.....		6	29
Pearl street, from Twelfth street, west.....		6	24
Pearl street, from 1 foot west of east house line of Thirteenth street, west.....		6	51
Pearl street, from east house line of Sixteenth street, west.....		6	24
Perth street, from Parrish to Poplar street.....		6	446
Park avenue, from Jefferson to Oxford street.....		6	522
Park avenue, from Oxford to Columbia avenue.....		6	515
Potts street, from 21 feet east of west house line of Twelfth street, west.....		6	29
Potts street, from 5 feet 7 inches east of east house line of Thirteenth street, west.....		6	38
Seybert street, from Fifteenth street west.....		6	29
Seybert street, 3 feet 10 inches east of east house line of Sixteenth street, west.....		6	58
Seybert street, from northeast house line of Ridge avenue, west.....		6	43
Spring Garden Pumping Station, from No. 12 pumping main in front of No. 11 engine house, north.....		36	28
Seventeenth street, from Ridge avenue, north.....		6	35
Stiles street, from Eleventh street, west.....		6	27
Stiles street, from 1 foot east of east house line of Twelfth street, west.....		6	56
Stiles street, from 5 feet 6 inches east of east house line of Thirteenth street, west.....		6	36
Stiles street, from west house line of Carlisle to 14 feet 10 inches west of east house line of Nineteenth street.....		6	1,996
Sydenham street, from Master street to Oxford street.....		6	1,032
Tahasa street, from 4 feet east of east house line of Tenth street, west.....		6	29
Thirtieth street, from south house line of Fontaine, north.....		12	35
Vernon street, from 1 foot 6 inches east of east house line of Eleventh street, west.....		6	27
Vernon street, from centre of Tenth street, west.....		6	31

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Relaid—Continued.</i>			
Virginia street, from 4 inches east of east house line of Twenty-third street, west.....		6	29
Walters street, from Fifteenth street, west.....		6	27
Walters street, from 3 feet 4 inches east of east house line of Sixteenth street, west.....		6	56
Wayne street, from Mount Vernon street, north.....		6	27
Wayne street, from 3 feet 6 inches south of south house line of Wallace, north.....		6	31
Whitehall street, from Twelfth street, west.....		6	30
Whitehall street from 2 feet 6 inches east of east house line of Thirteenth street, west.....		6	22
Willow street, from 2 feet east of east house line of Tenth street, west.....		6	37
Willow street, from Twelfth street, west.....		6	27
Wistar street, from Tenth street to Twelfth street.....		6	893
Wood street, from Tenth street to 3 feet 6 inches east of west' house line of Eleventh street.....		6	460
Wood street, from Fifteenth street to Nineteenth street....		6	1,780
Total.....			14,382
<i>Fire hydrant connections relaid.....</i>			
Fire hydrant connections relaid.....		6	269
Repairs, general.....		4	13
Repairs, general.....		6	1,754
Repairs, general.....		8	9
Repairs, general.....		10	160
Repairs, general.....		12	81
Repairs, general.....		16	25
Repairs, general.....		20	23
Repairs, general.....		36	18
Repairs, general.....		48	38
Total.....			2,121
<i>Pipe taken up.</i>			
Andrews street, from 4 feet south of south house line of Wallace street, north.....		4	29
Atmore street, from 2 feet west of west house line of Thir- teenth street to east house line Broad.....		4	534
Atmore street, from centre of Thirteenth street, west.		4	26
Barton street from south house line of Wallace street, north.....		4	28
Becket street, from Sixteenth street, west.....		4	32
Berks street, from east house line of Thirty-second street, west		6	50

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken up—Continued.</i>			
Berks street, from east house line of Thirty-third street, west		6	19
Brandywine street, from Thirteenth street, west.....		4	26
Brandywine street, from 31 feet east of east house line of Fifteenth street, west.....		4	55
Brandywine street, from 1 foot 2 inches east of east house line of Sixteenth street, west.....		4	52
Cabot street, from 4 feet 1 inch east of east house line of Sixteenth street, west.....		4	56
Cabot street, from Fifteenth street, west.....		4	28
Camac street, from Selgely avenue, north.....		6	40
Cambridge street, from Sixteenth street, west.....		4	30
Carlton street, from east house line of Eleventh street, west.....		4	28
Carlton street, from 8 feet 6 inches east of east house line of Twelfth street, west.....		4	34
Carlton street, from 2 feet 6 inches east of east house line of Sixteenth street, west.....		4	54
Cass street, from 2 feet east of east house line of Thirteenth street, west.....		4	27
Chauncey street, from intersection of Girard avenue, north.....		4	55
Chauncey street, from 3 feet south of south house line of Stiles street, north.....		4	23
Citron street, from Eleventh street, west.....		4	29
Citron street, from 2 feet east of east house line of Twelfth street, west.....		4	22
Citron street, from 3 feet 6 inches east of centre of Twelfth street, west.....		4	28
Citron street, 2 feet 8 inches east of east house line of Thirteenth street, west.....		4	27
Dacota street, from 3 feet east of east house line of Tenth street, west.....		4	24
Davis street, from Thirteenth street, west.....		4	27
Depot street, from Eighth street, west.....		4	38
Division street, from Eleventh street, west.....		4	31
Division street, from 2 feet 9 inches east of east house line of Twelfth street, west.....		4	28
Edwin street, from Ridge avenue, west		4	37
Eliza street, from Fifteenth street, west.....		4	28
Eliza street, from 2 feet east of east house line of Sixteenth street, west.....		4	55
Flys avenue, from Twelfth street, west.....		3	25
Geary street, from 5 feet 6 inches southeast of southeast house line of Ginnodo, northwest.....		4	31
Gilbert street, from 5 feet east of east house line of Tenth street, west.....		4	30
Haines street, from 3 feet east of east house line of Thirteenth street, west.....		4	28
Hamilton street, from 6 feet west of west house line of Canton street to northeast house line of Ridge avenue.....		4	677

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken up—Continued.</i>			
Hamilton street, from west house line of Eleventh to centre Thirteenth street.....		4	866
Harner street, from Eleventh street, west.....		4	25
Harner street, from 2 feet east of east house line of Twelfth street, west.....		4	17
Heath street, from 20 feet east of east house line of Twelfth west.....		4	22
Heath street, from 5 feet 3 inches east of east house line of Thirteenth, west.....		4	30
Irvine street, from 6 feet 6 inches east of east house line of Thirteenth, west.....		4	31
Larch street, from south house line of Wallace street, north		4	29
Lemon street, from Tenth street, west.....		4	29
Lemon street, from 1 foot 6 inches east of east house line of Eleventh street, west.....		4	26
Myrtle street, from Eleventh street, west.....		4	32
Myrtle street, from 2 feet 6 inches east of east house line of Twelfth street, west.....		4	23
Myrtle street, from 29 feet 7 inches east of east house line of Twelfth street, west.....		4	31
Myrtle street, from 6 feet east of east house line of Thirteenth street, west.....		4	58
Nectarine street, from 40 feet 9 inches east of west house line of Ninth to Tenth streets.....		4	466
Nectarine street, from Tenth street, west.....		4	20
Nectarine street, from 2 feet 6 inches east of east house line of Eleventh street, west.....		4	27
Noble street, from Tenth street, west.....		4	22
Noble street, from 2 feet 9 inches east of east house line of Thirteenth street, west.....		4	36
		6	6
		2	13
North street, from Fifteenth street, west.....		4	30
North street, from 1 foot 1 inch east of east house line of Sixteenth street, west.....		4	54
Ogden street, from east house line of Tenth street, west.....		4	50
Ogden street, from 4 feet 9 inches east of east house line of Eleventh street, west.....		4	56
Ogden street, from 1 foot east of east house line of Twelfth street, west.....		4	51
Ogden street, from 1 foot east of east house line of Thirteenth street, west.....		4	51
Ogden street, from 1 foot 7 inches east of east house line of Fifteenth street, west.....		4	53
Ogden street, from east house line of Sixteenth street, west		4	50
Olive street, from Tenth street, west.....		4	24
Olive street, from 1 foot 6 inches east of east house line of Eleventh street, west.....		4	49
Olive street, from 2 feet 6 inches east of east house line of Twelfth street, west.....		4	23
Olive street, from 21 feet east of west house line of Twelfth street, west.....		4	23

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken up—Continued.</i>			
Olive street, from 1 foot 6 inches east of east house line of Thirteenth street, west.....		4	54
Olive street, from Sixteenth street, west.....		4	29
Park avenue, from Jefferson to Columbia avenue.....		4	1,035
Pearl street, from Twelfth street, west.....		3	23
Pearl street, from 1 foot west of east house line of Thirteenth street, west.....		4	51
Pearl street, from east house line of Sixteenth street, west.....		4	24
Perth street, from Parrish to Poplar.....		4	443
Potts street, from 21 feet east of west house line of Twelfth street, west.....		4	27
Potts street, from 5 feet 7 inches east of east house line of Thirteenth street, west.....		4	31
Seybert street, from Fifteenth street, west.....		4	28
Seybert street, from 3 feet 10 inches east of east house line of Sixteenth street, west.....		4	57
Seybert street, from northeast house line of Ridge avenue, west.....		4	41
Stiles street, from 5 feet 6 inches east of east house line of Thirteenth street, west.....		4	30
Stiles street, from Eleventh street, west.....		4	26
Stiles street, from 1 foot east of east house line of Twelfth street, west.....		4	55
Stiles street, from west house line of Carlisle to 3 feet east of east house line of Fifteenth street.....		4	193
Stiles street, from 3 feet east of east house line of Fifteenth street to 14 feet 10 inches west of east house line of Nineteenth street.....		4	1,797
Spring Garden Reservoir, southeast corner 16-inch outlet.....		16	15
Sydenham street, from Master to Oxford street.....		4	1,115
Tahasa street, from 4 feet east of east house line of Tenth street, west.....		4	29
Thirtieth street, from south house line of Fountain street, north.....		6	35
Vernon street, from Tenth street, west.....		4	30
Vernon street, from 1 foot 6 inches east of east house line of Eleventh street, west.....		4	26
Virginia street, from 4 feet east of east house line of Twenty-third street, west.....		4	28
Walters street, from Fifteenth street, west.....		4	27
Walters street, from 3 feet 4 inches east of east house line of Sixteenth street, west.....		4	56
Wayne street, from Mt. Vernon street, north.....		4	26
Wayne street, from 3 feet 6 inches south of south house line of Wallace street, north.....		4	30
Whitehall street, from Twelfth street, west.....		4	29
Whitehall street, from 2 feet 6 inches east of east house line of Thirteenth street, west.....		4	21
Willow street, from 2 feet east of east house line of Tenth street, west.....		4	32
Willow street, from Twelfth street, west.....		4	26

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Taken up—Continued.</i>			
Wistar street, from Tenth street to Twelfth street.....		4	892
Wood street, from Tenth street to 3 feet 6 inches east of west house line of Eleventh street.....		4	460
Wood street, from Fifteenth street to Nineteenth street....		4	1,775
Total.....			13,310
Fire hydrant connections taken up.....		4	351
Fire hydrant connections taken up.....		6	151
Total			502
<i>Pipe Lowered.</i>			
Ninth street, from 5 feet south of north house line of Columbia avenue, north.....		6	91
Ninth street, from 94 feet south of south house line of Columbia avenue, north.....		6	99
Ninth street, from 91 feet south of south house line of Columbia avenue, north.....		30	237
Total.....			427
<i>Pipe Shifted.</i>			
Ridge avenue, from north house line of Poplar street, northwest.....		16	156
Total.....			156
<i>Pipe Cut off and Abandoned.</i>			
Callowhill street, north side, from Sixth street to Seventh street.....		4	434
Camac street, from 10 feet north of northwest house line of Sedgley avenue, north.....		6	117
Girard avenue, north side, from west house line of Fifteenth street to east house line of Sixteenth street.....		4	429
Seventeenth street, from Ridge avenue, north.....		4	33
Total.....			1,013
Fire hydrant connections cut off and abandoned.....		4	946
Fire hydrant connections cut off and abandoned.....		6	505
Total.....			1,451

Recapitulation of Fourth District.

Purpose for which used.	Size—Inches.												Total in feet and pounds.	
	2	3	4	6	8	10	12	16	20	30	36	48		
New pipe or feet added.	Service mains.....				27,735	7,957	742	4,300						40,833
	Supply mains.....									1,566	31		2,138	
	Pumping mains.....											541	4,259	
	Service main connections.....					4	8						12	
	Supply main connections.....				60	25	18	152			91	49	304	
	Pumping main connections.....											28	119	
	Meter inspection connections.....			15	33								48	
	Service supply connections.....			651	921								1,577	
	Fire hydrant connections.....				3,885								3,885	
	Fire connection (private).....			28	16								44	
	Supply connection (private).....			63	12	50							125	
	Drains.....			105	85			159					409	
	Total.....			927	32,747	8,056	768	4,710		91	1,615	59	4,800	53,753
	 { Feet.....				17,613	1,080,651	337,512	42,240	333,120		14,469	536,180	24,898	2,808,000	6,200,683
 { Pounds.....														
Pipe used, but adding nothing to feet in the ground.	Pipe relaid.....				14,519	56	13	85				28	14,651	
	Repairs, general.....				13	1,754	9	160	81	25		18	2,121	
	Pipe taken up.....	13	48	13,435	301				15				13,812	
	Pipe lowered.....				190								427	
	Pipe shifted.....								156		237		156	
	Total.....	13	48	13,448	16,764	65	173	116	196	23	237	46	38	31,167
 { Feet.....	130	720	255,512	553,212	2,730	9,515	8,352	21,560	3,657	78,684	19,412	22,230	975,714	
 { Pounds.....														
Total.....	13	48	14,375	49,511	8,101	941	4,826	196	114	1,852	105	4,838	84,920	
 { Feet.....	130	720	278,125	1,633,863	340,242	51,755	347,472	21,560	18,126	614,864	44,310	2,830,230	6,176,897	
 { Pounds.....														
Pipe cut off and abandoned.....			1,942	622									2,464	

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>			
Bolton avenue, from northeast curb line of Pechin street to dead end 177 feet northeast of centre of Mitchell street.....		6	696
Bowman street, from Thirty-third street to Thirty-three-and-one-third street.....		6	277
Dawson street, from Ridge avenue, northeast.....		6	32
Elizabeth street, from southeast house line Midvale avenue, northwest.....		6	25
Hermit street, from Ridge avenue, northeast.....		6	40
Hohenadle street, from southeast house line Midvale avenue, northwest.....		6	25
Lauriston street, from Ridge avenue, northeast.....		6	25
Main street, from dead end 114 feet northwest of Centre street to Washington.....		6	574
Midvale avenue, southeast side, from centre of Ridge avenue to 838 feet northeast of centre of Elizabeth.....		6	1,319
Midvale avenue, northwest side, from dead end 96 feet northeast of southwest house line of Elizabeth street to northeast house line of Cresson.....		6	546
Midvale avenue, northwest side, from dead end, 71 feet northeast of northeast house line of Ridge avenue, northeast.....		6	512
Righter street, from centre of Hemlock street, northwest..		6	171
Righter street, from southeast house line of Hermit street, northwest.....		6	25
Rochelle avenue, from dead end 49 feet northeast of northeast house line of Retta street, northeast.....		6	284
Thirty-three-and-one-third street, from centre of Bowman street, northwest.....		6	229
Total			4,780
<i>Supply Mains.</i>			
<i>Thirty (30) inch supply main from Upper Roxborough Reservoir to Wise's Mill road and Wissahickon drive.</i>			
Ann street, from number four (4) outlet, from Reservoir to Shawmont avenue			
Shawmont avenue, from Ann street to Wise's Mill road.			
Wise's Mill road, from Shawmont avenue to Wissahickon drive.....		30	8,019

Street.	Location.	Size in inches.	Distance in feet.
<i>Suppl Mains—Continued.</i>			
<i>Forty-eight (48) inch supply main from Upper Roxborough Reservoir to Shawmont avenue and Bean street.</i>			
Ann street, from opposite number three (3) outlet from Reservoir to southeast house line of Shawmont avenue	Shawmont avenue, from Ann to Bean street.....	48	2,002
Total			10,021
<i>Pumping Mains.</i>			
Thirty (30) and thirty-six inch pumping main from Williams lane (or Isabella avenue) to overflow on northeast bank of Upper Roxborough Reservoir; from a point 531 feet southwest of southwest side of Roxborough Reservoir and 102 feet northwest of northwest house line of Williams lane (or Isabella avenue); thence north across reservoir grounds to a point on Ann street, 214 feet 5 inches southeast of southeast curb line of Shawmont avenue; thence northwest on Ann street to Summit avenue; thence northeast on Summit avenue to a point 170 feet southwest of southwest curb line of East Lare street; thence north across grounds south corner of new reservoir, to a point on East Lare street 57 feet northwest of northwest curb line of Summit avenue; thence northwest on East Lare street 656 feet; thence southwest to overflow on northeast bank of Upper Roxborough..... Reservoir.....			
		30	154
		36	4,189
Shawmont Pumping Station, from number one engine northeast		30	70
<i>Forty-eight (48) inch pumping mains "two lines" from Queen Lane Pumping Station to Queen Lane Reservoir :</i>			
Bowman street, from 62 feet 6 inches northeast of southwest house line of Thirty-third street, northeast to overflow on Queen Lane Reservoir.....			
		48	158
Midvale avenue, from northeast house line of Ridge avenue, northeast.....			
		48	600
Total			5,171
<i>Service main connections.</i>			
Washington and Main streets, between 6 inch main on Washington street and 6 inch main on Main street....		6	13

Street.	Location.	Size in inches.	Distance in feet.
<i>Supply main connections.</i>			
Queen Lane Reservoir, number one (1) connection	225 feet northeast of overflow.....	48	137
Queen Lane Reservoir, number two (2) connection	475 feet northeast of overflow.....	48	90
Queen Lane Reservoir, number three (3) connection	725 feet northeast of overflow.....	48	90
Queen Lane Reservoir, number four (4) connection	975 feet northeast of overflow.....	48	137
Roxborough Reservoir, (upper) southwest bank.	192 feet southeast of southeast house line of Port Royal avenue (extended).....	36	13
Roxborough Reservoir (upper) southwest bank	336 feet southeast of southeast house line of Port Royal avenue (extended).....	36	13
Roxborough Reservoir, (upper) southwest side from forty-eight (48) inch main on Ann street to number one (1) outlet from reservoir	768 feet southeast of southeast house line, Port Royal avenue.....	36	231
Roxborough Reservoir, (upper) southwest side from forty-eight (48) inch main on Ann street to number two (2) outlet from reservoir	624 feet southeast of southeast house line, Port Royal avenue.....	36	231
Shawmont avenue and Bean street, between twenty (20) inch and forty-eight (48) inch main on Shawmont avenue and twenty (20) inch main on Bean street.....	{	20	40
		30	30
Shawmont avenue and Bean street, between thirty (30) inch and forty-eight (48) inch main on Shawmont avenue and thirty (30) inch main on Bean street.....		30	23
Total			1,035
<i>Pumping Main Connections.</i>			
Ann street, northwest corner of Shawmont avenue from thirty-six (36) inch pumping main on Ann street southwest.....		36	21
Roxborough Reservoir, west side, 610 feet west of west fence line of reservoir between twenty (20) and thirty (30) inch mains.....		20	90
Roxborough Reservoir, (upper) west side, 168 feet east of east house line of Ann street between thirty-six (36) inch pumping main on Summit avenue and thirty-six (36) inch connection to reservoir, 351 feet north of north house line of Summit avenue.....		30	360
Shawmont Pumping Station, 50 feet northeast of northeast front of engine house, between number one (1) and number three (3) pumping mains.....		30	27
Total			498

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections.</i>			
Main street, northeast side, 63 feet northwest of north-west house line of Green lane.....		4	14
Main street, northeast side, 252 feet northwest of north-west house line of Green lane.....		4	13
Main street, northeast side, intersection of Centre street...		4	16
Main street, northeast side, 194 feet northwest of north-west house line of Centre street.....		4	19
Total			62
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Fire hydrant connections.....		6	160
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<i>Fire Connections (Private).</i>			
Ridge avenue, northeast side, 440 feet northwest of north-west house line of Scott's lane, for John and James Dobson.....		6	33
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<i>Drains.</i>			
Queen Lane Reservoir (Northwest Section), from stop house in northeast bank of Reservoir, northeast.....		12	224
Queen Lane Reservoir (Southeast Section), from stop house in northeast bank, northeast 50 feet, thence southeast 524 feet.....		12	574
Roxborough Pumping Station (New Engine House), in basement.....		6	189
Roxborough Pumping Station (New Engine House), from basement, southwest.....		6	168
Shawmont avenue, southeast side, from Ann street southwest, from 48-inch main.....		6	100
Shawmont Pumping Station, northwest corner Engine House exhaust (extended)		12	37
Shawmont Pumping Station, from new engine.....		16	54
Wissahickon Drive, northeast side, 100 feet southeast of Wise's mill road, from thirty (30) inch main.....		6	19
Total.....			1,365
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<i>Pipe Relaid.</i>			
Cresson street, from 175 feet northwest of northwest house line of Dawson street, northwest.....		6	220
Krams avenue, from 326 feet southwest of southwest house line of Ridge avenue, northeast.....		6	101
Total.....			321

Street.	Location.	Feet in inches.	Distance in feet.
Fire hydrant connections relaid.....		6	10
Repairs, general.....		4	3
Repairs, general.....		6	62
Repairs, general.....		8	5
Repairs, general.....		10	41
Repairs, general.....		12	26
Total			137
<i>Pipe Taken Up.</i>			
Cresson street, from 175 feet northwest of Dawson street, northwest.....		6	100
Krams avenue, from 326 feet southwest of southwest house line of Ridge avenue, northeast.....		6	101
Main street, 252 feet northwest of Green lane..... (service supply connection).....		4	14
Shawmont avenue, intersection of Bean street.....		20	27
		30	20
Total.....			262
Fire hydrant connections taken up.....		4	14
<i>Pipe Lowered.</i>			
Fowler street, from 180 feet northwest of northwest house line of Jefferson street northwest.....		6	159
Fire hydrant connection.....		4	11
Grape street, from 40 feet southwest of southwest house line of Fowler street, northeast.....		6	80
Total.....			250
<i>Pipe Cut off and Abandoned.</i>			
Cresson street, from 275 feet northwest of northwest house line of Dawson street, northwest.....		6	120
Midvale avenue, from 71 feet northeast of Ridge avenue northeast.....		6	487
Total.....			607

Recapitulation of Fifth District.

Purpose for which used.	Size—Inches.										Total in feet and inches.	
	4	6	8	10	12	16	20	30	36	48		
New pipe or feet added.	Service mains.....		4,780								4,780	
	Supply mains.....							8,019		2,062	10,021	
	Pumping main.....							224	4,189	758	5,171	
	Service main connections.....		13								13	
	Supply main connections.....						40	53	488	154	1,035	
	Pumping main connections.....						90	387	21		498	
	Service supply connections.....	62									62	
	Fire hydrant connections.....		160								160	
	Fire connection (private).....		33								33	
	Drains.....		476			835	54				1,365	
Total	Feet.....	62	5,462			835	54	130	8,683	4,698	3,214	23,138
	Pounds.....	1,178	180,246			60,120	5,940	20,670	2,882,756	1,982,556	1,880,190	7,011,556
Pipe used but adding nothing to feet in the ground.	Pipe relaid.....		331									331
	Repairs general.....		62	5	41	26						137
	Pipe taken up.....	28	261									276
	Pipe lowered.....	11	249					27	20			250
	Total	Feet.....	42	833	5	41	26		27	20			994
Pounds.....		798	27,489	210	2,255	1,872		4,298	6,640			48,557
Total handled	Feet.....	104	6,295	5	41	861	54	167	8,703	4,698	3,214	24,132
	Pounds.....	1,976	207,735	214	2,255	61,992	5,940	24,963	2,889,396	1,982,556	1,880,190	7,057,213
Pipe cut off and abandoned.....		607										607

SIXTH DISTRICT.

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

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains.</i>			
Bellfield street, from southeast house line of Penn street, northwest.....		6	41
Berkley street, from southwest house line of Wayne street, northeast.....		6	80
Bexley street, from dead end 520 feet southwest of southwest house line of Morris to Laurens.....		6	15
Boyd street, from 20 feet southeast of northwest house line of Mill, northwest.....		6	23
Boyd street, from southeast house line of Locust avenue, northwest.....		6	25
Boyd street, from 191 feet northwest of northwest house line of Locust to deadend southeast house line of Woodbine.....		6	132
Borie street, from dead end west house line of Broad to Fifteenth.....		6	420
Boyer street, from 20 feet southeast of northwest house line of Mill to dead end southeast house line of Woodbine.....		6	898
Boyer street, from dead end northwest house line of Woodbine to dead end southeast house line of Cheltenham.....		6	324
Bristol street, from 13 feet southwest of centre of Clarissa to Germantown avenue.....		12	1,062
Butler street, southwest side, from 1 foot southwest of southwest house line of Germantown avenue, northeast.....		6	23
Carlisle street, from southwest house line of Westmoreland, north.....		6	50
Carlisle street, from southeast house line of Cayuga, northwest.....		6	25
Cedar lane, from 47 feet 6 inches southeast of northwest house line of Tulpehocken, northwest.....		6	48
Cheltenham street, from southwest house line of Germantown avenue, northeast.....		10	25
Cheltenham street, from Heiskell to Willow.....		6	32
Clinton street, from Broad to dead end southeast house line of Baker.....		6	117
Cliveden street, from dead end southwest house line of Nash street, northeast.....		6	50
Cresheim street, from Pelham road to Carpenter.....		6	424
Davis street, from southeast house line of Howard street, northwest ..		6	36
Duval street, from Germantown avenue, northeast.....		6	18
Eighteenth street, from south house line of Ontario, north.....		6	25
Ellett street, from 8 feet northeast of southwest house line of McCallum, northeast.....		6	42

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Emlen street, from southeast house line of Franklin, northwest.....		6	25
Erie avenue, south side, from Marshall to Seventh.....		12	237
Erie avenue, north side, from 19 feet southwest of northeast house line of Germantown avenue, northeast.....		6	8
Erie avenue, south side, from 19 feet southwest of northeast house line of Germantown avenue, northeast.....		12	8
Fifteenth street, from Cayuga, northwest.....		6	29
Franklin street, from southwest house line of Pelham road to Germantown avenue.....		6	2,370
Germantown avenue, northeast side, from south house line of Erie avenue to 347 feet northwest of northwest house line of Juniata.....		12	3,911
Germantown avenue, from Washington lane northwest to connect dead end.....		5	32
Germantown avenue, from northwest house line of Washington lane northwest.....		10	294
Green street, from Germantown avenue, northeast.....		6	32
Hancock street, from Hancock to Willow avenue.....		6	228
Heiskell street, from Hancock to Armat.....		6	531
Hunting Park avenue, from southwest house line of Germantown avenue, northeast.....		12	70
Jefferson street, from southeast house line of Franklin, northwest.....		6	25
Knorr street, from southwest house line of Germantown avenue, northeast.....		6	20
Laurens street, from Bexley to Chelton avenue.....		6	196
Leicester street, from 5 feet southwest of southwest house line of Hancock, northeast.....		6	22
Logan street, from 14 feet northeast of southwest house line of Wayne street, northeast.....		6	29
Logan street, from southwest house line of Germantown avenue, northeast.....		6	21
Logan street, from 19 feet southwest of northeast house line of Germantown avenue, northeast.....		6	19
Louden street, from 16 feet southwest of northeast house line of Germantown avenue, northeast.....		6	5
Luzerne street, from southwest house line of Germantown avenue, northeast.....		6	21
Luzerne street, from 20 feet southwest of northeast house line of Germantown avenue, northeast.....		6	20
McCallum street, from Carpenter to deadend southeast house line of Allen's lane.....		6	2,551
Market square, from Mill to School lane.....		6	239
Mather street, from south house line of Westmoreland north.....		6	50
Mill street, from Bloyd to northeast house line, Boyer.....		6	438
Mt. Airy, from 47 feet southwest of northeast house line, McClellan, northeast.....		6	38

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Mt. Pleasant, from southwest house line McCallum, northeast		6	25
Musgrove street, from southeast house line Upsal northwest		6	66
Nash street, from southeast house line of Clivedon, northwest.....		6	60
Nash street, from southeast house line of Upsal, northwest		6	66
Nice street, from 13 feet southeast of northwest house line McFerran to dead end southeast house line, Baker....		6	417
Nineteenth street, from Venango, north.....		6	25
Nineteenth street, from Germantown avenue, northeast....		6	20
Ontario street, from southwest house line Germantown avenue, northeast.....		6	61
Ontario street, from Uber to Twentieth.....		6	237
Otto street, from dead end northwest house line Spencer, northwest		6	400
Pacific street, from east house line Bouvier to Eighteenth		6	278
Pelham street, from northwest house line of Upsal to northeast house line of Cresheim.....		6	3,869
Penn street, from 300 southwest of southwest house line Morris, northeast.....		6	325
Phillelana street, from 102 feet northeast of northeast house line of Emlen, northeast.....		6	129
Phillelana street, from 14 feet northeast of southwest house line Germantown avenue, northeast.....		6	6
Pike street, from 20 feet southwest of northeast house line Germantown avenue, northeast.....		6	9
Pulaski street, from dead end 285 feet southeast of southeast house line Seventeenth street, northwest.....		6	343
Quincy street, from 13 feet southeast of centre of Franklin, northwest.....		6	38
Quincy street, from Westview to Carpenter.....		6	906
Reger street, northeast from 15 feet southwest of northeast house line Royal, northeast.....		6	16
Reger street, southwest from 3 feet southwest of southwest house line Royal, northeast.....		6	18
Rising Sun lane, northeast from 40 feet southwest of northeast house line Germantown avenue, northeast.....		6	40
Rising Sun lane, southwest from southwest house line Germantown avenue, northeast.....		6	20
Rosette street from 2 feet southwest of southwest house line Royal, northeast.....		6	17
Ross street, from 33 feet southeast of northwest house line Upsal, northwest.....		6	33
Rowan street, from southwest house line Germantown avenue, northeast.....		6	22
Royal street, from Seymour to Reger.....		6	313
School lane, from Germantown avenue, to northeast house line Market square.....		6	144
Sedgwick street, from McCallum, northeast.....		6	25

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Seventh street, from south house line of Erie avenue, north		6	23
Seventeenth street, from southwest house line Pulaski avenue, northeast.....		6	67
Seventeenth street, from southeast house line Cayuga, northwest.....		6	50
Seymour street, from southwest house line Wayne, northeast.....		6	33
Sixteenth street, from Cayuga, northwest.....		6	27
Straub street, from Germantown avenue, northeast.....		6	20
Tioga street, from 42 feet southwest of northeast house line Germantown avenue, northeast....		6	42
Twelfth street, from dead end north house line of Venango running north.....		6	400
Twentieth street, from south house line Venango, north.....		6	50
Twentieth street, from 17 feet southwest of northeast house line Germantown avenue, northeast.....		6	17
Twenty-fifth street, from southeast house line Willow Grove, northwest.....		6	60
Twenty-first street, from Venango, north.....		6	24
Twenty-sixth street, from southeast house line Willow Grove avenue, northwest.....		6	60
Tulpehocken street, from dead end northeast house line Musgrove to Chew.....		6	719
Uber street, from Ontario, north.....		6	25
Upsal street, from Nash to Chew.....		6	1,576
Venango street, from 9 feet west of northeast house line Germantown avenue, west.....		6	31
Venango street, from dead end west house line Carlisle to Smedley.....		6	878
Washington street, from southwest house line Germantown avenue, northeast.....		6	23
Wayne street, from southeast house line Bristol, northwest.....		6	50
Wayne street, from dead end 74 feet southeast of southeast house line Wyoming to Logan.....		6	638
Weaver street, from southwest house line Germantown avenue, northeast.....		6	20
Weiss street, from dead end northwest house line of Spencer, northwest.....		6	400
Westmoreland street, from 49 feet east of southwest house line of Germantown avenue, west.....		6	37
Westmoreland street, from dead end west house line of Broad to dead end east house line of Fifteenth.....		6	396
Westmoreland street, from dead end west house line of Fifteenth street to west house line of Smedley.....		6	676
Willow avenue, from dead end northwest house line of Woodbine to dead end southeast house line of Cheltenham.....		6	198
Willow Grove, from Germantown avenue to dead end northeast house line of Twenty-fourth street.....		6	1,571
Wingohocking, from Germantown avenue, northeast.....		6	17

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Mains—Continued.</i>			
Wyalusing avenue, from Germantown avenue, northeast...		6	43
Wyoming street, from 53 feet southwest of northeast house line of Wayne, northeast.....		6	33
Wyoming street, from 11 feet northeast of southwest house line of Germantown avenue, northeast.....		6	9
Total			31,543
<i>Supply Mains.</i>			
<i>Thirty (30) inch supply main from Wise's Mill road and Wissahickon drive to Chestnut Hill.</i>			
Wissahickon drive, from Wise's Mill road to 43 feet northwest of northwest side of Hartwell avenue bridge over Wissahickon creek, thence in an easterly direction across Wissahickon creek to a point on Hartwell avenue 95 feet northeast of northeast end of bridge, thence northeast on Hartwell avenue to northeast house line of Germantown avenue.....		30	8,687
<i>Service Main Connections.</i>			
Germantown avenue and Erie avenue, between 6 inch main and 12 inch main on Germantown avenue.....		6	21
Germantown avenue and Broad street, between 12 inch main on Germantown avenue and 12 inch main on Broad street		12	13
Germantown avenue and Butler street, between 12 inch main on Germantown avenue and 6 inch main on Butler street.....		6	11
Germantown avenue and McFerran street, between 12 inch main on Germantown avenue and 6 inch main on McFerran street.....		6	9
Germantown avenue and Baker street, between 12 inch main on Germantown avenue and 6 inch main on Baker street.....		6	10
Germantown avenue and Hunting Park avenue, between 6 inch main on southwest side of Germantown avenue and 12 inch main on Hunting Park avenue.....		6	13
Germantown avenue, northeast side, from 58 feet southeast of northwest house line of Hunting Park avenue, northwest.....		12	4
Germantown avenue, southwest side, from 56 feet southeast of northwest house line of Hunting Park avenue, northwest.....		12	3

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Germantown avenue and Howard street, between 12 inch main on northeast side of Germantown avenue and 6 inch main on Howard street.....		6	10
Germantown avenue and Dounton street, between 12 inch main on northeast side of Germantown avenue and 6 inch main on Dounton street.....		6	10
Germantown avenue and Juniata street, between 12 inch main on northeast side of Germantown avenue and 6 inch main on Juniata		6	10
Germantown avenue and Collom street, between 8 inch main on northeast side of Germantown avenue and 6 inch main on Collom street.....		6	13
Germantown avenue and Bringham street, between 8 inch main on northeast side of Germantown avenue and 6 inch main on Bringham street.....		6	16
Germantown avenue and Penn street, between 8 inch main on northeast side of Germantown avenue and 6 inch main on Penn street.....		6	19
Germantown avenue and Coulter street, between 8 inch main on northeast side of Germantown avenue and 6 inch main on Coulter.....		6	12
Total.....			174
<i>Supply Main Connections.</i>			
Germantown avenue and Duval street, southwest side, between 10-inch main on Germantown avenue and 6 inch main on Duval street.....		6	21
Germantown avenue and Johnson, southwest side, between 10-inch main on Germantown avenue, and 6-inch main on Johnson street.....		6	22
Germantown avenue and Upsal, southwest side, between 10-inch main on Germantown avenue and 6-inch main on Upsal street.....		10	16
Germantown avenue and Good, southwest side, between 10-inch main on Germantown avenue and 6-inch main on Good street.....		6	16
Germantown avenue and Franklin, southwest side, between 10-inch main on Germantown avenue and 6-inch main on Franklin street.....		6	13
Germantown avenue and Westview, southwest side, between 10-inch main on Germantown avenue and 6-inch main on Westview street.....		6	16
Millman street, from thirty (30) inch main centre of Hartwell avenue, northwest.....		6	6
Thirti-fifth street, from 6 feet southeast of centre of Hartwell avenue, northwest from thirty (30) inch main...		10	6

Street.	Location.	Size in inches.	Distance in feet.
<i>Supply Main Connections—Continued.</i>			
Thirty-first street, from 6 feet southeast of centre of Hartwell avenue, northwest from thirty (30) inch main.....		10	6
Thirty-fourth street, from 6 feet southeast of centre of Hartwell avenue, northwest from thirty (30) inch main.....		10	6
Thirty-second street, from 6 feet southeast of centre of Hartwell avenue, northwest from thirty (30) inch main.....		10	6
Thirty-seventh street, from 6 feet southeast of centre of Hartwell avenue, northwest from thirty (30) inch main.....		10	6
Thirth-sixth street, from 6 feet southeast of centre of Hartwell avenue, northwest from thirty (30) inch main.....		10	6
Thirty-third street, from 6 feet southeast of centre of Hartwell avenue, northwest from thirty (30) inch main.....		10	6
Twenty-eighth street, from 6 feet southeast of centre of Hartwell avenue, northwest from thirty (30) inch main.....		10	6
Twenty-ninth street, from 6 feet southeast of centre of Hartwell avenue, northwest from thirty (30) inch main.....		10	6
Twenty-seventh street, from 6 feet southeast of centre of Hartwell avenue, northwest from thirty (30) inch main.....		6	6
Twenty-seventh street, from thirty (30) inch main, centre of Hartwell avenue, northwest.....		6	6
Total			176
<i>Pumping Main Connections.</i>			
Germantown avenue and Hartwell avenue, between 20-inch main on southwest side, and 12-inch main on northeast side of Germantown avenue.....		12	21
<i>Bye-Pass Connections.</i>			
Mt. Pleasant and McCallum, between 6 inch main on Mt. Pleasant and 6-inch main on McCallum.....		6	27
Sedgwick and McCallum, between 6-inch main on Sedgwick and 6-inch main on McCallum.....		6	23
Thirtieth and Hartwell avenue, between 6-inch main on Thirtieth street and 30-inch main on Hartwell avenue		6	46
Total..			96

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections.</i>			
Apsley street, southeast side, 12 feet northeast of north-east house line of Pulaski.....		4	15
Apsley street, southeast side, 12 feet southwest of southwest house line of Wayne.....		4	15
Boyer street, southwest side, 13 feet northwest of northwest house line of Mill street.....		4	12
Boyer street, northeast side, 134 feet northwest of north-west house line of Mill street.....		4	17
Boyer street, southwest side, 113 feet southeast of southeast house line of Locust.....		4	17
Boyer street, northeast side, 13 feet southeast of southeast house line of Locust.....		4	17
Boyer street, northeast side, 13 feet northwest of northwest house line of Locust.....		4	17
Boyer street, southwest side, 13 feet northwest of northwest house line of Locust.....		4	17
Boyer street, northeast side, 13 feet southeast of southeast house line of Woodbine.....		4	17
Boyer street, southwest side, 13 feet southeast of southeast house line of Woodbine.....		4	17
Boyer street, southwest side, 13 feet northwest of northwest house line of Woodbine.....		4	17
Boyer street, southwest side, 13 feet southeast of southeast house line of Cheltenham avenue.....		4	17
Cayuga street, southeast side, 12 feet southwest of southwest house line of Broad.....		4	13
Cayuga street, southwest side, 12 feet southwest of southwest house line of Broad.....		4	20
Cayuga street, southeast side, 12 feet southwest of southwest house line of Carlisle.....		4	13
Cayuga street, southeast side, 12 feet northeast of northeast house line of Carlisle.....		4	13
Cayuga street, southeast side, 12 feet northeast of northeast house line of Fifteenth.....		4	13
Cayuga street, northwest side, 12 feet northeast of northeast house line of Fifteenth.....		4	20
Cayuga street, northwest side, 12 feet southwest of southwest house line of Fifteenth.....		4	18
Cayuga street, northwest side, 12 feet northeast of northeast house line of Sixteenth.....		4	18
Chew street, southwest side, 298 feet southeast of southeast house line of Mill.....		4	23
Chew street, southwest side, 12 feet southeast of southeast house line of Mill.....		4	23
Cliveden street, southeast side, 12 feet northeast of northeast house line of Morton.....		4	16
Cliveden street, southeast side, 12 feet southwest of southwest house line of Nash.....		4	16
Heiskell street, southwest side, 12 feet northwest of northwest house line of Hancock.....		4	9

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Heiskell street, northeast side, 15 feet northwest of north-west house line of Hancock.....		4	9
Heiskell street, northeast side, 102 feet southeast of south-east house line of Armat.....		4	9'
Heiskell street, southwest side, 35 feet southeast of south-east house line of Armat.....		4	9'
Manheim street, southeast side, 12 feet northeast of north-east house line of Pulaski.....		4	9'
Manheim street, southeast side, 50 feet northeast of north-east house line of Newhall.....		4	9'
Morris street, southwest side, 12 feet northwest of north-west house line of Hansberry.....		4	17
Morris street, northeast side, 12 feet northwest of north-west house line of Hansberry.....		4	17
Morris street, southwest side, 216 feet northwest of north-west house line of Hansberry.....		4	17
Morris street, northeast side, 216 feet northwest of north-west house line of Hansberry.....		4	17
Ontario street, south side, 12 feet west of west house line of Eighteenth.....		4	14
Ontario street, south side, 182 feet east of east house line of Nineteenth.....		4	14
Penn street, southeast side 153 feet northeast of north-east house line of Bellfield.....		4	11
Penn street, northwest side, 211 feet northeast of north-east house line of Bellfield.....		4	24
Penn street, northwest side 162 feet southwest of south-west house line of Ross.....		4	15
Penn street, southeast side, 12 feet southwest of south-west house line of Ross.....		4	17
Penn street, northwest side, 18 feet northeast of northeast house line of Ross.....		4	18
Penn street, southeast side, 18 feet northeast of northeast house line of Ross.....		4	18
Penn street, southeast side, 478 feet northeast of northeast house line of Ross.....		4	13
Penn street, southeast side, 690 feet northeast of northeast house line of Ross.....		4	24
Penn street, northwest side 552 feet southwest of south-west house line of Chew.....		4	23
Penn street, southeast side, 492 feet southwest of south west house line of Chew.....		4	11
Penn street, northwest side, 297 feet southwest of south-west house line of Chew.....		4	24
Penn street, southeast side, 259 feet southwest of south-west house line of Chew.....		4	11
Pulaski street, northeast side, 169 feet southeast of south-east house line of Hansberry street.....		4	20
Pulaski street, northeast side, 12 feet southeast of south-east house line of Hansberry street.....		4	20

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Tulpehocken street, northwest side, 20 feet northeast of northeast house line of Musgrove.....		4	12
Tulpehocken street, northeast side, 20 feet northeast of northeast house line of Musgrove.....		4	24
Tulpehocken street, northwest side, 18 feet southwest of southwest house line of Cedar lane.....		4	14
Tulpehocken street, southeast side, 18 feet southwest of southwest house line of Cedar lane.....		4	25
Tulpehocken street, northwest side, 17 feet northeast of northeast house line of Cedar lane.....		4	16
Tulpehocken street, southeast side, 17 feet northeast of northeast house line of Cedar lane.....		4	19
Tulpehocken street, northwest side, 24 feet southwest of southwest house line of Chew.....		4	16
Tulpehocken street, southeast side, 24 feet southwest of southwest house line of Chew.....		4	19
Upsal street, southeast side, 12 feet northeast of northeast house line of Nash.....		4	20
Upsal street, northwest side, 12 feet northeast of northeast house line of Nash.....		4	20
Upsal street, southeast side, 12 feet southwest of southwest house line of Ross.....		4	20
Upsal street, northwest side, 12 feet southwest of southwest house line of Ross.....		4	20
Upsal street, southeast side, 12 feet northeast of northeast house line of Ross.....		4	20
Upsal street, northwest side, 12 feet northeast of northeast house line of Ross.....		4	20
Upsal street, southeast side, 12 feet southwest of southwest house line of Musgrove.....		4	20
Upsal street, northwest side, 12 feet southwest of southwest house line of Musgrove.....		4	20
Upsal street, southeast side, 12 feet northeast of northeast house line of Musgrove.....		4	20
Upsal street, northwest side, 12 feet northeast of northeast house line of Musgrove.....		4	20
Upsal street, southeast side, 12 feet southwest of southwest house line of Chew.....		4	20
Upsal street, northwest side, 12 feet southwest of southwest house line of Chew.....		4	20
Westmoreland street, north side, 14 feet west of west house line of Broad.....		4	17
Westmoreland street, south side, 14 feet west of west house line of Broad.....		4	17
Westmoreland street, north side, 18 feet east of east house line of Carlisle.....		4	17
Westmoreland street, south side, 18 feet east of east house line of Carlisle.....		4	17
Westmoreland street, south side, 13 feet west of west house line of Carlisle.....		4	17

Street.	Location.	Size in inches.	Distance in feet.
<i>Service Supply Connections—Continued.</i>			
Westmoreland street, south side, 12 feet east of east house line of Fifteenth.....		4	17
Westmoreland street, south side, 12 feet west of west house line of Mather.....		4	17
Westmoreland street, south side, 12 feet east of east house line of Sixteenth.....		4	17
Wissahickon avenue, northeast side, 12 feet northwest of northwest house line of Cheltenham avenue.....		4	17
Wissahickon avenue, southwest side, 12 feet northwest of northwest house line of Cheltenham avenue.....		4	17
Wissahickon avenue, northeast side, 12 feet southeast of southeast house line of Stafford.....		4	17
Wissahickon avenue, southwest side, 15 feet southeast of southeast house line of Lehman.....		4	18
Wissahickon avenue, southwest side, 173 feet northwest of northwest house line of Lehman.....		4	25
Wissahickon avenue, southwest side, 43 feet southeast of southeast house line of Rittenhouse.....		4	25
Total			1,445
Fire hydrant connections.....		6	1,520
<i>Fire connections (Private.)</i>			
Bristol street, northwest side, 234 feet southwest of southwest house line of Germantown avenue, for Samuel Bradbury		6	21
High street, northwest side, 245 feet northeast of northeast house line of Heiskell, for Germantown Spinning Co. Inc.		6	23
Pulaski avenue, southwest side 221 feet northwest of northwest house line of Cayuga, for Philadelphia and Reading R. R. Co.....		4	20
Total			64
<i>Motor Connections (Private.)</i>			
Pulaski avenue, southwest side, 185 feet southeast of southeast house line of Manheim, for Calvary P. E. Church		6	1
Germantown avenue, northeast side, 136 feet northwest of northwest house line of Coulter, for St. Luke's Episcopal Church.....		4	20
Total			21

Street.	Location.	Size in inches.	Distance in feet.
<i>Drains.</i>			
Hartwell avenue, southeast side, 6 feet southwest of northeast house line of Twenty-eighth street, from 30 inch main		6	6
Hartwell avenue, northwest side, 155 feet southwest of southwest house line of Twenty-ninth street, from 30 inch main.....		6	6
Wissahickon creek, 72 feet northeast of northeast line of Wissahickon drive, from 30 inch main.....		6	6
Total			18
<i>Pipe Relaid.</i>			
Cheltenham avenue, from southwest house line of Germantown avenue, northeast.....		6	19
Germantown avenue, from Wister to Mill street.....		8	2,472
Germantown avenue, from 326 feet southeast of southeast house line of Duval to northwest house line of Westview		10	3,433
Manheim street, from 11 feet southwest of southwest house line of Germantown avenue, northeast.....		6	51
Mill street, from 18 feet southwest of northeast house line of Germantown avenue, northeast.....		6	23
Penn street, from southwest house line of Germantown avenue, northeast.....		6	24
Price street, from 49 feet southwest of northeast house line of Germantown avenue, northeast.....		6	49
Rittenhouse street, from 215 feet southwest of southwest house line of Marion to Green street.....		6	424
Royal street, from Reger to Manheim.....		6	293
Walnut lane, northeast from 43 feet southwest of northeast house line of Germantown avenue, northeast.....		6	43
Wayne avenue, from 24 feet southeast of southeast house line of Seymour to 7 feet northwest of northwest house line of Manheim.....		6	616
Wissahickon avenue, from 1467 feet southeast of southeast house line of Abbottsford, northwest (under roadbed of Pennsylvania railroad).....		6	659
Total			8,106
Fire-hydrant connections relaid.....		6	52
Repairs, general.....		3	17
Repairs, general.....		4	8
Repairs, general.....		6	562

Street.	Location.	Size in inches.	Distance in feet.
Repairs, general.....		8	25
Repairs, general.....		10	103
Repairs, general.....		12	30
Total.....			745
<i>Pipe Taken Up.</i>			
Cheltenham avenue, from southwest house line of Germantown avenue, northeast.....		3	19
Hancock street, from Mill street, northwest.....		6	175
Mill street, from 18 feet southwest of northeast house line of Germantown avenue, northeast.....		3	23
Price street, from 49 feet southwest of northeast house line of Germantown avenue, northeast.....		3	19
Walnut lane, northeast, from 43 feet southwest of northeast house line of Germantown avenue, northeast.....		3	43
Westview avenue, from Emlen to Quincy.....		6	614
Wissahickon avenue, from 1467 feet southeast of southeast house line of Abbotsford avenue, northwest.....		6	629
Total.....			1,522
Fire hydrant connections taken up.....		4	50
<i>Pipe Lowered.</i>			
Berkley street, from southwest house line of Wayne, northeast.....		6	80
Stafford street, from 526 feet southwest of southwest house line of Morris, northeast.....		6	121
Wayne, from 88 feet southeast of southeast house line of Berkley, northwest.....		6	326
Total.....			527
<i>Pipe Raised.</i>			
Wissahickon avenue, from southeast house line of Hansbury to southeast house line of Queen.....		12	568
<i>Pipe Shifted.</i>			
Garfield street, from 126 feet northeast of northeast house line of Germantown avenue, northeast.....		6	25

Street.	Location.	Size in inches.	Distance in feet.
<i>Pipe Cut Off and Abandoned.</i>			
Germantown avenue, from northwest house line of Wistar to southeast house line of Mill.....		4	2,472
Germantown avenue, from 326 feet southeast of southeast house line of Duval to 47 feet northwest of northwest house line of Westview.....		4	3,433
Manheim street, from 11 feet southwest of southwest house line of Germantown avenue, northeast.....		4	51
Penn street, from southwest house line of Penn, northeast		4	24
Rittenhouse street, from 215 feet southwest of southwest house line of Marion to Green.....		4	424
Royal street, from Reger to Manheim.		2	293
Wayne, from 24 feet southeast of southeast house line of Seymour to 7 feet northwest of northwest house line of Manheim.....		3	616
Total.....			7,313
Fire hydrant connections cut off and abandoned.....		{ 3 4 6	103 350 93

Recapitulation of Sixth District.

Purposes for which Used.	SIZE—INCHES.								Total in feet and pounds.	
	2	3	4	6	8	10	12	30		
New pipe or feet added.	Service mains.....				25,936		319	5,288	8,687	31,543
	Supply mains.....									8,687
	Service main connections.....				154			20		174
	Supply main connections.....				106			70		176
	Pumping main connections.....							21		21
	By-pass connections.....				96					96
	Service supply connections.....			1,445						1,445
	Fire hydrant connections.....				1,520					1,520
	Fire connections (private).....				44					64
	Motor connections (private).....				20					21
	Drains.....				18					18
Total.....	{ Feet.....			1,485	27,875		389	5,329	8,687	43,765
	{ Pounds.....			28,215	919,875		21,395	383,688	2,884,084	4,237,257
Pipe used but adding nothing to feet in the ground.	Pipe relaid.....				2,253	2,472	3,433			8,158
	Repairs, General.....		17	8	562	25	103	30		745
	Pipe taken up.....		104	50	1,418					1,572
	Pipe lowered.....				527					527
	Pipe raised.....							568		568
	Pipe shifted.....				25					25
	Total.....	{ Feet.....		121	58	4,785	2,497	3,536	598		11,595
{ Pounds.....			1,815	1,102	157,905	104,874	194,480	43,056		503,232
Total handled.....	{ Feet.....		121	1,543	32,660	2,497	3,925	5,927	8,687	55,360
	{ Pounds.....		1,815	29,317	1,977,780	104,874	215,875	426,741	2,884,084	4,740,489
Pipe cut off and abandoned.....	293	719	6,754	93						7,859

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Recapitulation of Work on the Water Pipes.

Purposes for which Used.	Size—Inches.													Total in feet and pounds.			
	2	2½	3	4	6	8	10	12	16	18	20	30	36		48		
New Pipe or feet added.	Service mains.....				129,242	11,263	4,029	17,925	548							173,002	
	Supply mains.....								54		26,597	26,312	31	2,543	55,537		
	Pumping mains.....											224	4,189	19,919	24,332		
	Service main connections.....					254	4	8	20						286		
	Supply main connections.....					166	183	495	327	31		51	102	488	454	2,297	
	Pumping main connections.....								21			181	387	49		638	
	By-pass connections.....						96									96	
	Meter inspection connections.....					15	33									48	
	Service supply connections.....				3,723	921										4,644	
	Fire hydrant connections.....					12,527										12,527	
	Fire connections (private).....			14	94	93	27									228	
	Supply connections (private).....				206	140	50									396	
	Motor connections (private).....				20	1										21	
Drains.....				165	646			994	54						1,859		
Total.....	{ Feet.....		14	4,223	144,119	11,527	4,532	19,287	682		26,829	27,025	4,757	27,916	265,911		
	{ Pounds.....		210	80,237	4,755,927	484,134	249,220	1,388,664	75,020		4,265,811	8,972,300	2,007,454	13,405,860	35,684,877		
Pipe used but adding nothing to feet in the ground.	Pipe relaid.....				76,902	10,374	6,094	2,668					28		96,066		
	Repairs general.....			49	127	6,571	245	815	443	146	10	52	10	28	8,534		
	Pipe taken up.....	477	295	20,277	55,734	5,845	18			15		27	227		82,415		
	Pipe lowered.....				11	1,10			400				475		2,196		
	Pipe raised.....					997			568					154	1,857		
	Pipe shifted.....					741		196				606			1,702		
Total.....	{ Feet.....		477	295	20,326	55,872	91,869	10,619	7,123	4,079	455	10	685	712	192,770		
	{ Pounds.....		4,770	3,540	304,890	1,161,568	3,031,677	446,998	391,765	293,688	50,050	1,400	108,915	236,384	88,620	6,045,495	
Total handled.....	{ Feet.....		477	295	20,340	60,095	235,988	22,146	11,655	23,366	1,137	10	27,514	27,787	4,967	458,681	
	{ Pounds.....		4,770	3,540	305,100	1,141,805	7,787,601	950,132	641,026	1,682,352	125,070	1,400	4,874,726	9,208,684	2,096,074	13,428,090	41,730,572
Pipe cut off and abandoned.....	293		1,716	14,789	3,882					72					20,762		

Recapitulation by Districts.

DISTRICTS.		Size—Inches.													Total.		
		2	2½	3	4	6	8	10	12	16	18	20	30	36	48	Feet.	Pounds.
New pipe or feet added.	First				159	35,403	533	52	491	54		1,631			38, 73	1,506,137	
	Second			14	393	23,189	27	575	713			11,636			36, 47	2,713,433	
	Third				1,197	19,493	2,931	2,748	7,209	574		13,241	8,040		14,902	70, 35	15,014,711
	Fourth				927	32,747	8,036	768	4,710			91	1,615	59	4,800	53, 53	5,200,683
	Fifth				62	5,462			835	54		130	5,683	4,698	3,214	23, 38	7,013,656
	Sixth				1,485	27,875		389	5,329				8,687			43, 65	4,237,257
	Total... { Feet..... Pounds.....			14	4,223	114,119	11,527	4,532	19,287	682		26,829	27,025	4,757	22,916	265, 11	35,684,877
			210	80,237	4,755,927	484,134	249,260	1,388,664	75,020		4,263,811	8,972,300	2,007,454	18,405,860			
Pipes laid but adding nothing to feet in the ground.	First	192	295	6,888	27,719	38,859	28	261	19	21		29	10		74, 21	1,944,928	
	Second	272		13,199	6,188	21,132	1,843	149	2,883	218		606			46, 31	1,429,009	
	Third			79	8,417	9,496	6,181	2,963	437	20	10		445	161	28, 12	1,149,055	
	Fourth	13		48	13,448	16,764	65	173	116	196		23	237	46	38	31, 67	975,714
	Fifth				42	833	5	41	26			27	20			43, 57	43,557
	Sixth			121	58	4,783	2,497	3,536	598							11, 95	503,232
	Total... { Feet..... Pounds.....	477	295	20,326	55,872	91,869	10,619	7,123	4,079	455	10	685	712	210	38	192, 70	6,045,495
	4,770	3,540	304,390	1,061,563	3,031,677	445,998	391,763	293,688	50,050	1,400	108,915	236,384	88,620	22,230			
Total handled... { Feet..... Pounds.....	477	295	20,340	60,055	235,988	22,146	11,655	23,366	1,137	10	27,514	27,737	4,967	22,954	458, 81	41,730,372	
	4,770	3,540	305,100	1,141,805	7,787,604	930,132	641,025	1,682,352	125,070	1,400	4,374,726	9,208,684	2,096,074	13,428,090			
Pipe cut off and abandoned...	293		1,716	14,789	3,882				72							20,752	

Recapitulation of work done in the Slum District; also on Streets occupied by Passenger Railways, to be operated by the Trolley System.

SLUM DISTRICT.

Character of work.	1st District.	2d District.	Total.	Grand total.
Service Mains.....	11,532	2,682	14,214	
Fire hydrant connections.....	498	181	679	
Pipe relaid.....	13,336	7,077	20,413	
Fire hydrant connections relaid.....	77		77	
Repairs, general.....	350	187	537	
Total feet of pipe used.....				35,920
New fire hydrants.....	79	34	113	
Fire hydrants renewed.....	10	2	12	
Total new fire hydrants.....				125
New stops.....	117	25	142	
Stops renewed.....	16	27	43	
Total new stops.....				185
Service attachments laid to the curb..	442	118	560	
Total new attachments.....				560

Recapitulation of work done in Slum District, etc.—Cont'd.

TROLLEY STREETS.

Character of work.	First District.	Second District.	Third District.	Fourth District.	Sixth District.	Total.	Grand Total.
Service mains.....	1,798	1,687	1,240	6,696	5,255	16,676	
Fire hydrant connections..		530			414	944	
Pipe relaid.....	6,512	1,922	3,390	5,167	6,113	23,104	
Repairs, general.....					175	175	
Pipe shifted.....		*200					
Total feet of pipe used.....							40,899
New fire hydrants.....	83	37	22	198	30	370	
Fire hydrants renewed.....		38	9		6	53	
Total new fire hydrants.....							423
New stops.....	166	99	45	212	64	586	
Stops renewed.....		58	13		11	82	
Total new stops.....							668

* Pipe shifted not included in above totals.

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.
Alaska street, north side, east house line of Seventh.....		4	6	9			1		
Albert street, 8 feet east of east house line of Thirteenth.....		2	6	8			1		
Alexander street, east side, 36 feet south of south house line of Clymer.....		3	6	8	6		1		
Alter street, north side, 320 feet west of west house line of Nineteenth.....		36	6	8			1		
Alter street, north side, east house line of Twenty-third.....		36	6	8	6		1		
Alter street, south side, 2 feet east of west house line of Twenty-fourth.....		36	6	8			1		
Ashbury street, west side, 86 feet south of south house line of South.....		4	6	5	6		1		
Auburn street, north side, 150 feet east of west house line of Ninth.....		2	6	7	6			1	
Bally street, on dead end of 6-inch pipe, 117 feet south of south house line of Leib.....		4	6	5			1		
Baker street, south side, 38 feet east of east house line of Eighth.....		4	6	8			1		
Barlow place, west side, on dead end of 6-inch pipe, 112 feet north of center of Baker.....		4	6	5			1		
Barron street, east side, 6 feet north of north house line of Bainbridge.....		4	6	5			1		
Beck street, north side, 4 feet east of east house line of Front.....		3	6	4	6		1		
ckwith street, west side, 6 feet south of south house line of Fitzwater.....		3	6	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.
Beckwith street, west side, 128 feet south of south house line of Bainbridge.....		4	6	6	6		1		
Brinton street, north side, 107 feet east of east house line of Eighth.....		2	6	7	6		1		
Brinton street, north side, west house line of Twelfth.....		4	6	8			1		
Broad street, east side, 1 foot south of south house line of Shunk.....		1	6	3				1	
Broad street, west side, 1 foot south of south house line of Shunk.....		26	6	3				1	
Broad street, east side, 2 feet south of south house line of Porter.....		1	6	3				1	
Broad street, west side, south house line of Porter.....		26	6	3				1	
Broad street, west side, 2 feet south of south house line of Ritner.....		26	6	3				1	
Broad street, east side, south house line of Ritner.....		1	6	3				1	
Broad street, west side, 2 feet south of south house line of Wolf.....		26	6	3				1	
Broad street, east side, south house line of Jackson.....		1	6	8	6			1	
Broad street, west side, south house line of Jackson.....		26	6	4				1	
Broad street, east side, 2 feet south of south house line of Snyder avenue.....		1	6	6	6			1	
Broad street, east side, 2 feet north of north house line of Passyunk avenue.....		26	6	5	6			1	
Broad street, east side, north house line of Moore.....		26	6	5	6		1		
Broad street, east side, 4 feet north of north house line of Morris.....		26	6	4	6		1		

New Fire Hydrants—First District—Continued.

Street.	Location.	Ward.	6-INCH CONNECTION.		STYLE.			
			Size of Main. Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Broad street, west side, 2 feet south of south house line of Tasker.....		26	6	9			1	
Broad street, east side, south house line of Tasker.....		26	6	5			1	
Broad street east side, 2 feet north of north house line of Dickinson.....		26	6	8			1	
Broad street, west side, north house line of Reed.....		26	6	5			1	
Broad street, east side, south house line of Wharton.....		26	6	5			1	
Broad street, east side, 3 feet north of north house line of Ellsworth.....		2	6	4			1	
Broad street, west side, 2 feet south of south house line of Washington avenue.....		26	6	6			1	
Broad street, west side, 2 feet south of south house line of Christian.....		30	6	7			1	
Broad street, west side, south house line of Catharine.....		30	6	6	6		1	
Camilla street, east side, 2 feet west of west house line of Eleventh.....		2	6	7	6		1	
Campbell street, east side, opposite centre of Clymer.....		3	6	4	6		1	
Carbon street, east side, 137 feet south of south house line of South street.....		4	6	4			1	
Castle avenue, north side, east house line of Broad.....		26	6	14			1	
Clarion street, east side, 128 feet south of south house line of Dickinson.....		26	6	8			1	
Clarion street, west side, 143 feet south of south house line of Wharton.....		26	6	8	6		1	
Clarion street, west side, 218 feet south of south house line of Federal.....		26	6	7			1	

New Fire Hydrants—First District—Continued.

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Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Clifton street, east side, north house line of Bradford.....		4	6	11	6		1		
Clymer street, south side on dead end of 6-inch pipe 93 feet west of west house line of Alexander.....		3	6	4	6		1		
Cobb street, west side, 68 feet north of north house line of Queen.....		3	6	7	6		1		
Cross street, north side, west house line of Ninth.....		1	4	10	6		1		
Darcy street, on dead end of 6-inch pipe 188 feet west of centre of Spafford.....		4	6	3	6		1		
Dean street, west side, on dead end of 6-inch pipe 230 feet north of west house line of Wharton.....		26	6	7	6		1		
Dickinson street, south side, west house line of Tenth.....		1	6	5					1
Dilmore street, east side, 2 feet south of south house line of Wolf.....		1	6	8	6		1		
Durfor street, south side, 118 feet east of east house line of Twelfth.....		1	6	8	6		1		
Eighth street, east side, south house line of McKean.....		1	6	14	6				1
Eighth street, west side, south house line of Millin.....		1	6	14	6				1
Eighth street, east side, south house line of Morris.....		1	6	15					1
Eighth street, east side, north house line of Reed.....		1	6	14	6				1
Eighth street, west side, 3 feet south of south house line of Eneu.....		2	6	14	6				1
Eighth street, west side, north house line of Federal.....		2	6	14	6				1
Eighth street, east side, north house line of Washington avenue.....		2	6	14	6				1

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New Fire Hydrants—First District—Continued.

Street.	Location.	Ward.	Size of Main.		6-INCH. CONNECTION.		STYLE.			
			Feet.	In.	Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Eighth street, east side, south house line of Carpenter.....		2	6	14	6					1
Eighth street, west side, south house line of Christian.....		2	6	14	6					1
Eighth street, west side, 12 feet south of south house line of Fitzwater.....		3	6	14	6					1
Eighth street, west side, 4 feet south of south house line of South street.....		4	6	14	6					1
Eleventh street, east side, 144 feet south of south house line of Millin.....		1	6	14	6			1		
Eleventh street, east side, 4 feet north of north house line of Millin.....		1	6	14	6					1
Eleventh street, east side, south house line of Tasker.....		1	6	14	6					1
Eleventh street, west side, 4 feet south of south house line of Ellsworth.....		26	6	8	6					1
Eleventh street, east side, north house line of Ellsworth.....		2	12	14						1
Eleventh street, west side, 4 feet south of south house line of Christian.....		2	6	10	6			1		
Eleventh street, east side, 74 feet north of north house line of Fitzwater.....		4	6	11	6			1		
Eleventh street, west side, 3 feet south of south house line of Bainbridge.....		4	10	24	6					1
Ellsworth street, north side, 5 feet west of west house line of Twenty-sixth.....		36	6	14	6			1		
Emelino street, south side, 220 feet west of west house line of Eighth.....		4	6	5				1		
Ericsson street, north side, on dead end of 6-inch pipe, 93 feet west of west house line of Ninth.....		2	6	9	6			1		
Eric street, east side, 98 feet north of north house line of Christian.....		3	6	11				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.
Erie street, west side, south house line of Fitzwater.....		3	6	11				1
Erie street, east side, 89 feet south of south house line of Bainbridge.....		4	6	11	6		1	
Evergreen street, north side, 167 feet west of west house line of Twentieth.....		30	6	8	6		1	
Evergreen street, north side, 109 feet west of west house line of Twenty-first.....		30	6	8			1	
Fallon street, west side, 10 feet south of south house line of Fitzwater.....		3	6	8			1	
Faulkner street, east side, 114 feet north of north house line of Carpenter.....		2	6	5			1	
Fernon street, south side, east house line of Eighteenth.....		26	6	8	6		1	
Fernon street, south side, west house line of Point Breeze avenue.....		36	6	9			1	
Fifteenth street, west side, northwest house line of Passyunk avenue.....		26	6	8			1	
Fifteenth street, east side, north house line of Moore.....		26	6	14	6			1
Fifteenth street, east side, south house line of Tasker.....		26	6	14	6			1
Fifteenth street, west side, 3 feet north of north house line of Federal.....		26	6	14	6			1
Fifteenth street, west side, north house line of Ellsworth.....		26	6	14	6			1
Fifteenth street, west side, south house line of Christian.....		30	6	14	6			1
Fifteenth street, west side, south house line of Fitzwater.....		30	6	14	6			1
Fifteenth street, west side, south house line of Bainbridge.....		30	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, east side, 4 feet south of south house line of South street.....		30	6	14	6			1	
Flora street, west side, north house line of Scott.....		1	6	8			1		
Florence street, east side, 3 feet south of south house line of Hall.....		2	6	7	6		1		
Fourth street, east side, south house line of Morris.....		1	6	14	6			1	
Fourth street east side, south house line of Tasker.....		1	6	14	6			1	
Fourth street, east side, south house line of Dickinson.....		1	6	14	6			1	
Fourth street, east side, south house line of Wharton.....		1	6	14	6			1	
Fourth street, west side, south house line of Federal.....		2	6	14	6			1	
Fourth street, east side, south house line of Carpenter.....		2	6	14				1	
Fretag street, west side, 40 feet north of north house line of Bainbridge.....		4	6	5	6		1		
Front street, east side, north house line of Milfin.....		1	6	17	6			1	
Fulton street, north side, 2 feet west of west house line of Twelfth.....		3	6	8	6		1		
Garrett street, north side, 191 feet west of west house line of Eighteenth.....		36	6	8	6		1		
Godey street, east side, 51 feet south of south house line of Catharine.....		3	6	4	6		1		
Gray's Ferry road, north side, west house line of Thirty-fourth.....		30	6	8				1	
Gray's Ferry road, north side, 2 feet east of east house line of Thirty-first.....		30	6	18				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.
Gray's Ferry road, north west side, 242 feet southwest of south house line of Carpenter.....		30	6	18				1
Griswold street, south side, 195 feet north of north house line of Fitzwater		4	6	4	6		1	
Grover street, west side, 153 feet north of north house line of Christian.....		3	6	4			1	
Guilford street, east side, 3 feet north of north house line of Bainbridge.....		4	6	13			1	
Harmony street, south side, 181 feet east of east house line of Fourth.....		2	6	5			1	
Hoffman street, north side, 2 feet east of east house line of Nineteenth.....		36	6	8			1	
Home or Twelfth street, east side, on dead end of 6-in. pipe 42 feet south of north curb line of Metcalf....		4	6	4			1	
Howard street, west side, 2 feet north of north house line of Jackson.....		1	6	8	6		1	
Jessup street, east side, 297 feet north of north house line of Fitzwater.....		4	6	6			1	
Juniper street, east side, 143 feet south of south house line of Dickinson.....		26	6	14	6		1	
Juniper street, east side, 132 feet south of south house line of Reed.....		26	6	14	6		1	
Juniper street, west side, 97 feet south of south house line of Wharton.....		26	6	14			1	
Kauffman street, south side, 144 feet east of east house line of Fourth.....		3	6	6	6		1	
La Grange street, east side, 2 feet south of south house line of Carpenter		2	6	6	6		1	
Lebanon street, west side, 48 feet south of south house line of Catharine.....		3	6	11			1	
Lebanon street, east side, 70 feet south of south house line of Fitzwater.....		3	6	11			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.
Lilly Ann street, west side, on dead end of 6-inch pipe, 133 feet south of south house line of Catharine.....		3	6				1		
Lilly Ann street, west side, 65 feet south of south house line of Fitzwater.....		3	6	3			1		
Lisle street, east side, 49 feet south of south house line of Bainbridge		4	6	5	6		1		
Lydia street, west side, on dead end of 6-inch pipe, 112 feet south of south house line of Carpenter.....		2	6				1		
McCrea street, north side, 2 feet east of east house line of Espey.....		3	6	3	6		1		
McIllery street, south side (east end), 64 feet south of south house line of Milton.....		2	6	3				1	
McKean street, north side, 2 feet west of west house line of Seventeenth.....		26	6	14	6			1	
McKean street, north side, 2 feet west of west house line of Eighteenth.....		36	6	11	6			1	
McKean street, north side, east house line of Nineteenth		36	8	14	6			1	
Manilla street, south side, east house line of Tenth.....		2	6	11	6		1		
May street, south side, 153 feet east of east house line of Eighth.....		3	6	11			1		
Mercy street, north side, east house line of Eleventh.....		1	6	8			1		
Metcalf street, south side, 38 feet east of east house line of Shirkers		4	6	4	6		1		
Mifflin street, south side, west house line of Eleventh.....		1	6	14	6		1		
Mifflin street, north side, east house line of Sixteenth.....		26	6	14	6			1	
Montana street, west side, 198 feet north of north house line of Wharton.....		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.
Montcalm street, west side, 30 feet south of south house line of Catharine.....		3	6	5			1		
Montcalm street, west side, 58 feet south of south house line of Fitzwater.....		3	6	5			1		
Montrose street, south side, 264 feet east of east house line of Fifteenth.....		30	6	8	6		1		
Montrose street, north side, 291 feet west of west house line of Sixteenth.....		30	6	10	6		1		
Montrose street, north side, 222 feet west of west house line of Eighteenth.....		30	6	10	6		1		
Montrose street, north side, 99 feet west of west house line of Twentieth.....		30	6	10	6		1		
Moore street, north side, west house line of Second.....		1	6	7	6		1		
Moore street, north side, west house line of Twelfth.....		1	6	15				1	
Moore street, south side 4 feet east of east house line of Ritchie.....		3	6	4	6		1		
Moore street, north side, east house line of Twentieth.....		36	6	14	6			1	
Moore street, north side, 2 feet east of east house line of Twenty-second.....		36	8	14	6			1	
Morris street, south side, east house line of Seventh.....		1	6	14	6			1	
Morris street, south side, 2 feet east of east house line of Tenth.....		1	6	14	6			1	
Mott street, north side, 3 feet east of east house line of La Grange.....		2	6	3	6		1		
Mountain street, north side, 174 feet east of east house line of Eighth.....		1	6	10	6		1		
Mountain street, south side, west house line of Ninth.....		1	4	10	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.
Mount Holly street, west side, 2 feet south of south house line of McKean.....		26	6	8	6		1		
Moyamensing avenue, west side, 2 feet north of north house line of Morris.....		1	6	2	6			1	
Native street, south side, 136 feet west of west house line of Fifth.....		2	6	3	6		1		
Nineteenth street, west side, 3 feet south of south house line of Millin.....		36	12	14	6			1	
Oakford street, north side, 2 feet east of east house line of Twenty-sixth.....		36	6	14	6			1	
Oliver (or Donnelly) street, south side, opposite center of Agnes.....		2	6	6	6		1		
Otsego street, west side, north house line of Dickinson.....		1	6	14	6		1		
Ovington street, east side, 38 feet north of north house line of Emeline.....		4	6	4			1		
Parker street, east side, 252 feet north of north house line of Washington avenue.....		2	6	12			1		
Paschall street, north side, west house line of Tenth.....		2	6	7			1		
Paschall street, north side, 77 feet west of west house line of Tenth.....		2	6	7			1		
Passyunk avenue, northwest side, 2 feet northeast of north house line of Wharton.....		26	6	15			1		
Pennington street, west side, 97 feet north of north house line of Carpenter.....		2	6	8	6		1		
Pierce street, south side, west house line of Passyunk avenue.....		26	4	10	6		1		
Pierce street, north side, east house line of Twentieth.....		36	6	10			1		
Placid place, on dead end of 6-inch pipe 194 feet 6 inches west of west house line of Second.....		1	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.
Pritchett street, north side, east house line of Juniper		26	6	7	.....	.....	1		
Redwood street, north side, 4 feet east of east house line of Fourth.....		2	6	10	6	.....	1		
Reed street, south side, east house line of Ninth.....		1	6	14	6	.....		1	
Reed street, north side, southeast house line of Passyunk avenue.....		1	6	15	.....	.....		1	
Reed street, north side, 2 feet east of east house line of Mole.....		26	6	14	6	.....	1		
Ritchie street, west side, 160 feet north of north house line of Catharine.....		3	6	3	6	.....	1		
Ritchie street, west side, 52 feet south of south house line of Rose.....		4	6	9	.....	.....	1		
Robbins avenue, north side, 85 feet east of east house line of Russell.....		4	6	6	.....	.....		1	
Ronaldson street, west side, 150 feet north of north house line of Bainbridge.....		4	6	4	.....	.....	1		
Rose street, north side, east house line of Juniper.....		2	6	5	.....	.....	1		
Rose street, south side, 6 feet east of east house line of Broad.....		2	6	5	.....	.....	1		
Say street, west side, 45 feet north of north house line of Bainbridge.....		4	6	5	6	.....	1		
School street, east side, 149 feet south of south house line of South.....		4	6	3	.....	.....	1		
Second street, west side, 17 feet north of north house line of Millju.....		1	6	14	6	.....	1		
Second street, east side, north house line of Tasker.....		1	6	4	6	.....		1	
Seventeenth street, west side, 2 feet south of south house line of Moore.....		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.
Sixteenth street, west side, 2 feet north of north house line of Passyunk avenue.....		26	6	15	6			1
Sixteenth street, west side, north house line of McKean.....		26	6	14	6			1
Sixteenth street, west side, south house line of Morris.....		26	6	14	6			1
Sixteenth street, east side, south house line of Tasker.....		26	6	14	6			1
Sixteenth street, west side, 3 feet south of south house line of Federal.....		26	6	15				1
Sixteenth street, west side, north house line of Ellsworth.....		26	6	14	6			1
Sixteenth street, west side, south house line of Carpenter.....		30	6	14	6			1
Sixteenth street, east side, south house line of Fitzwater.....		30	6	14	6			1
Snyder avenue, north side, 2 feet east of east house line of Sixth.....		1	6	9			1	
Snyder avenue, south side, 2 feet east of east house line of Seventh.....		1	6	9				1
Snyder avenue, south side, 2 feet east of east house line of Twelfth.....		1	6	9				1
South street, north side, 2 feet west of west house line of Tenth.....		7	16	14	6			1
Spafford street, west side, 79 feet south of south house line of Bainbridge.....		4	6	8	6		1	
Stewart street, west side, 2 feet south of south house line of Wolf.....		1	6	8	6			1
Stewart street, west side, 5 feet south of south house line of Catharine.....		8	6	5	6		1	
Stewart street, east side, 65 feet south of south house line of Fitzwater.....		8	6	5			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.
Suffolk street, north side, 150 feet east of east house line of Ninth.....		2	6	8				1	
Tasker street, north side, 65 feet west of west house line of Meadow.....		1	6	14	6			1	
Tasker street, north side, 2 feet west of west house line of Swansou.....		1	6	14	6			1	
Tasker street, north side, east house line of Seventh.....		1	6	14	6			1	
Temperance street, north side, 3 feet west of west house line of Robbins avenue.....		4	6	3				1	
Temple street, south side, 2 feet east of east house line of Thirteenth.....		2	6	8	6		1		
Temple street, south side, 2 feet east of east house line of La Grange.....		2	6	8	6		1		
Tenth street, east side, south house line of Millin.....		1	6	14	6			1	
Tenth street, west side, north house line of Millin.....		1	6	14	6			1	
Tenth street, east side, south house line of Tasker.....		1	6	14	6			1	
Tenth street, west side, 5 feet south of southeast curb line of Passyuuk avenue.....		1	6	15				1	
Tenth street, east side, south house line of Carpenter.....		2	6	14	6			1	
Tenth street, west side, south house line of Catharine.....		3	6	14	6			1	
Thirteenth street, west side, south house line of Snyder avenue.....		1	6	14	6			1	
Thirteenth street, east side, south house line of McKean.....		1	6	14	6			1	
Thirteenth street, east side, north house line of McKean.....		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.
Thirteenth street, west side, south house line of Reed.....		26	6	14	6			1
Thirteenth street, west side, south house line of Wharton.....		26	6	14	6			1
Thirteenth street, west side, south house line of Ellsworth.....		26	6	14	6			1
Thirteenth street, east side, north house line of Washington avenue.....		2	6	14	6			1
Thirteenth street, west side, south house line of Christian.....		2	6	19	6			1
Thirteenth street, east side, south house line of Catharine.....		3	6	8	6			1
Thirteenth street, east side, south house line of Bainbridge.....		4	6	8	6			1
Thirteenth street, east side, south house line of South.....		4	6	14	6			1
Titan street, north side, 198 feet east of east house line of Seventh.....		36	6	8	6		1	
Twelfth street, east side, south house line of McKean.....		1	6	9				1
Twelfth street, east side, 209 feet north of north house line of Morris.....		26	6	15			1	
Twelfth street, west side, south house line of Dickinson.....		26	6	14	6		1	
Twelfth street, east side, 2 feet north of north house line of Dickinson.....		26	6	14	6		1	
Twelfth street, west side, south house line of Ellsworth.....		26	6	14	6			1
Twelfth street, west side, south house line of Bainbridge.....		4	6	14	6			1
Twenty-eighth street, east side, north house line of Reed.....		36	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.
Twenty-fifth street, east side, north house line of Washington avenue.....		30	12	17	6			1	
Twenty-first street, east side, 2 feet north of north house line of Moore.....		36	6	14	6			1	
Twenty-sixth street, east side, 2 feet south of south house line of Washington avenue.....		36	6	14	6			1	
Twenty-third street, west side, 2 feet south of south house line of Tasker.....		36	6	13				1	
Twenty-third street, west side, 2 feet south of south house line of Dickinson.....		36	6	13				1	
Twenty-third street, west side, 2 feet north of north house line of Dickinson.....		36	6	11	6			1	
Twenty-third street, west side, 7 feet north of north house line of Reed.....		36	6	14	6			1	
Twenty-third street, west side, 2 feet south of south house line of Wharton.....		36	6	14	6			1	
Twenty-third street, east side, 2 feet south of south house line of Oakford.....		36	6	14	6			1	
Tyler street, south side, 175 feet west of west house line of Foulkrod.....		2	6	3	6			1	
Warfield street, east side, 8 feet south of south house line of Wharton.....		36	6	8	6			1	
Weccacoe street, east side, 69 feet south of south house line of Catharine.....		3	6	4				1	
Wharton street, north side, 2 feet east of east house line of Twenty-fourth.....		36	6	15					1
Wharton street, north side, 2 feet east of east house line of Twenty-fifth.....		36	6	13					1
Wharton street, north side, 2 feet east of east house line of Twenty-sixth.....		36	6	13					1
Whitney street, north side, 244 feet west of west house line of Passyunk avenue.....		2	6	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.
Wilder street, north side, west house line of Fifth.....		1	4	9	6		1		
Wilson street, on dead end of 6-inch pipe 48 feet west of west house line of Otsego.....		2	6				1		
Winton street, north side, 244 feet west of west house line of Fourth.....		1	6	9			1		
Winton street, south side, 149 feet east of east house line of Twelfth.....		1	6	8	6		1		
Woodbine street, east side, south house line of Federal.....		2	6	8	6		1		
Worth street, north side, east house line of Fifth.....		1	4	9	6		1		
Wyoming street, east side, 65 feet south of south house line of Bainbridge.....		30	4	8	6		1		
Yhost street, east side, 100 feet south of south house line of Catharine.....		3	6	4			1		
Totals.....				2,597	6		146	116	

NEW FIRE HYDRANTS.

SECOND DISTRICT.

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.			STYLE.		
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Alford street, on dead end of 6-inch pipe, 230 feet east of east house line of Sixth.....		5	6				1		
Ann street, west side, northwest house line of Adeline.....		27	6	12				1	
Aspen street, north side, east house line of Forty-ninth.....		34	6	17				1	
Baltimore avenue, north side, west house line of Fiftieth.....		27	6	24				1	
Barley street, north side, 85 feet east of east house line of Eleventh.....		7	6	6			1		
Barley street, north side, 91 feet west of west house line of Eleventh.....		7	6	6			1		
Belmont avenue, east side, south house line of Leidy.....		24	12	28	2			1	
Blight street, east side, 10 feet south of south house line of Pine.....		7	6	4	8		1		
Broad street, east side, 15 feet north of north house line of Race.....		10	6	11				1	
Broad street, west side, 15 feet north of north house line of Race.....		10	8	9				1	
Brown street, north side, 7 feet west of west house line of Fortieth.....		24	6	14				1	
Buddens street, south side, 108 feet west of west house line of Thirteenth.....		10	6	3	6		1		
Chestnut street, north side, 11 feet east of east house line of Hudson.....		6	10	7			1		
Chestnut street, north side, 3 feet east of east house line of Albion.....		9	16	9			1		

New Fire Hydrants—Second District—Continued.

Street.	Location.	Ward.	6-INCH CONNECTION			STYLE.		
			Size of Main. Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Chestnut street, north side, west house line of Eighteenth.....		9	16	13			1	
Chestnut street, north side, 13 feet west of west house line of Thirty-third.....		27	8	20			1	
Chestnut street, north side, south of east house line of Woodland avenue.....		27	8	22			1	
Chestnut street, south side, 2 feet west of west house line of Thirty-fourth.....		27	8	22		1		
Chestnut street, north side, east house line of Thirty-seventh.....		27	8	23			1	
Chestnut street, north side, 1 foot east of east house line of Thirty-eighth.....		27	8	22		1		
Chestnut street, south side, 1 foot east of east house line of Thirty-ninth.....		27	8	22		1		
Chestnut street, north side, 1 foot west of west house line of Forty-third.....		27	8	23		1		
Clinton street, north side, 114 feet east of east house line of Eleventh.....		7	6	14			1	
Coburn street, east side, 68 feet south of south house line of Gaskill.....		5	6	3		1		
Cullen street, on dead end of 6-inch pipe, 292 feet west of west house line of Seventh.....		7	6			1		
De Gray place, north side, 189 feet east of east house line of Seventeenth.....		9	6	4		1		
Delancey place, north side, 98 feet east of east house line of Eighteenth.....		7	6	11		1		
Delancey place, north side, 137 feet east of east house line of Twentieth.....		7	6	11		1		
Delancey place, north side, 87 feet west of west house line of Twenty-first.....		7	6	11		1		
Delaware avenue, west side, 8 feet north of north house line of Chestnut.....		6	6	4			1	

New Fire Hydrants—Second District—Continued.

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Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.		
				Feet.	In.	O. S.	No. 1.	No. 2.
Dock street, northeast side, 6 feet southeast of south house line of Walnut.....		5	6	6				1
Dorsey street, north side, 12 feet east of east house line of Juniper.....		7	6	7	5		1	
Dutton street, on dead end of 6-inch pipe, 99 feet east of east house line of Fifth.....		5	6				1	
Eaglesfield street, north side, 2 feet east of east house line of Forty-second.....		34	6	11			1	
Eighth street, west side, opposite centre of Miinster.....		7	10	11				1
Eighteenth street, east side, 3 feet north of north house line of Arch.....		10	12	14				1
Eighteenth street, west side, 2 feet north of north house line of Filbert.....		9	12	14				1
Eleventh street, east side, 227 feet south of south house line of Spruce.....		7	10	14				1
Fairmount avenue, north side, west house line of Markoe.....		34	6	18				1
Fairmount avenue, south side, 140 feet west of west house line of Forty-ninth.....		34	6	16	6		1	
Fifteenth street, west side, north house line of Sansom.....		8	6	14				1
Fifteenth street, west side, south house line of Walnut.....		8	6	14				1
Fifteenth street, west side, 2 feet south of south house line of Spruce.....		7	6	14				1
Fifteenth street, east side, 7 feet north of north house line of Pine.....		7	6	7				1
Fifteenth street, east side, south house line of Kneass.....		7	6	14				1
Fifteenth street, west side, 23 feet south of south house line of Cherry.....		11	6	8	8			1

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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.
Fifteenth street, west side, north house line of Spring.....		10	6	7	8			1	
Fiftiteth street, west side, opposite centre of Hoopes.....		34	6	18	6			1	
Fifty-eighth street, west side, 100 feet south of south house line of Thomas avenue.....		27	6	19					1
Fifty-fifth street, west side, north house line of Pennsgrove.....		34	6	18				1	
Fifty-fifth street, west side, 2 feet north of south house line of Parrish.....		34	6	14			1		
Fifty-five and one-half street, east side, 2 feet south of south house line of Hunter's lane.....		34	6	12			1		
Fifty-five and one-half street, west side, 2 feet north of north house line of Jefferson.....		34	6	12			1		
Fifty-sixth street, west side, 2 feet north of north house line of Hunter's lane.....		34	6	18				1	
Fisher's avenue or Fifty-sixth street, east side, 7 feet north of north house line of Melrose.....		34	6	19	6		1		
Fortieth street, west side, 8 feet north of north house line of Woodland avenue.....		27	12	18					1
Fortieth street, east side, north house line of Lancaster avenue.....		24	6	17			1		
Forty-third street, west side, 2 feet north of north house line of Chester avenue.....		27	6	18			1		
Forty-third street, east side, 2 feet south of south house line of Chestnut.....		27	6	18			1		
Forty-second street, east side, south house line of Westminster avenue.....		24	6	16				1	
Forty-sixth street, west side, 10 feet south of south house line of Lancaster avenue.....		34	6	18			1		
Pothergill street, east side, 98 feet south of south house line of Pine.....		7	6	6			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.
Fourth street, east side, 3 feet south of south house line of Pine.....		5	6	14			1		
Fourth street, west side, 6 feet north of north house line of Tenor place.....		5	6	14				1	
Front street, east side, 12 feet south of south house line of Pine.....		5	8	17				1	
Fox's court, on dead end of 6-inch pipe 104 feet north of north house line of South.....		7	6				1		
Gaskill street, south side, east house line of Barrow.....		5	6	4				1	
Gray's avenue, north side, west house line of Seventy-second.....		27	6	23				1	
Gray's avenue, south side, 2 feet east of east house line of Seventy-third.....		27	6	23				1	
Hagner street, east side, 4 feet south of south house line of Rodman.....		7	6	7	7		1		
Haverford street, south side, 1 foot east of east house line of Thirty-third.....		24	20	25	6			1	
Harmony court, on dead end of 6-inch pipe 90 feet west of west house line of Sixth.....		5	6				1		
Holly street, west side, south house line of Brown.....		24	6	14				1	
Hunter street, north side, 95 feet west of west house line of Eleventh.....		9	6	8			1		
Hurst street, east side, 58 feet south of south house line of Lombard.....		5	6	10	5		1		
Ivy street, north side, 178 feet west of west house line of Tenth.....		7	6	6			1		
Keble street, north side, 139 feet east of east house line of Ninth.....		7	6	8			1		
Kelton street, west side, 8 feet south of south house line of Race.....		10	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.	No. 3.
Lancaster avenue, south side, 18 feet southeast of southeast house line of Forty-fourth.....		24	6	26					1
Larkins street, west side, 105 feet south of south house line of Lombard.....		5	6	8				1	
Linmore street, south side, 198 feet west of west house line of Forty-sixth.....		27	6	8	8			1	
Locust street, north side, 2 feet west of west house line of Twenty-third.....		8	6	14					1
Locust street, north side, 1 foot east of east house line of Thirty-seventh.....		27	8	18					1
Lybrand street, east side, 304 feet south of south house line of Vine.....		10	6	8	3				1
Market street, south side, 6 feet 6 inches west of west house line of Sixteenth.....		9	6	7	6				1
Master street, south side, west house line of Fifty-fourth.....		34	6	18				1	
Minster street, south side, 186 feet east of east house line of Seventh.....		5	6	2	10				1
Minster street, north side, 114 feet east of east house line of Eighth.....		7	6	6	7			1	
Morrell street, north side, 4 feet east of east house line of Fifty-third.....		34	6	8	7			1	
Nineteenth street, east side, 2 feet north of north house line of Ann.....		8	6	9	8			1	
Oakford street, east side, 4 feet south of south house line of Gaskill.....		5	6	3				1	
Ohio street, north side, 4 feet west of west house line of Quince.....		7	6	6	6			1	
Oxford street, north side, 3 feet east of east house line of Fifty-sixth.....		34	6	14				1	
Parrish street, south side, east house line of Fiftieth.....		34	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.
Paschall avenue, south side, west house line of Seventy-second.....		27	6	14				1	
Paxon street, west side, 138 feet south of south house line of Lancaster avenue.....		34	6	8				1	
Pentridge street, south side, 2 feet east of east house line of Fifty-first.....		27	6	11	6		1		
Perry's court, on dead end of 6-inch pipe, 101 feet north of north house line of South.....		7	6				1		
Perry street, east side, 8 feet north of north house line of Winslow.....		10	6	7			1		
Pine street, south side, 176 feet east of east house line of Seventh.....		5	6	14				1	
Plume place, south side, on dead end of 6-inch pipe, 74 feet east of east house line of Carolina place.....		7	6				1		
Plume place, south side, 70 feet west of west house line of Carolina place.....		7	6	4			1		
Preston street, west side, 16 feet north of north house line of Lancaster avenue.....		24	6	13	6			1	
Ralston street, north side, on dead end of 6-inch pipe, 49 feet north of north house line of Ralston.....		7	6				1		
Raspberry street, west side, 12 feet south of south house line of Craig's place.....		8	6	6			1		
Relief street, south side, 188 feet east of east house line of Second.....		5	6	4				1	
Rittenhouse street, north side, 127 feet west of west house line of Twentieth.....		8	6	11			1		
Rockland street, north side, 5 feet west of west house line of Thirty-sixth.....		24	6	11				1	
Rodman street, north side, 63 feet west of west house line of Ninth.....		7	6	9			1		
Rodman street, north side, 60 feet west of west house line of Tenth.....		7	6	8	2		1		

New Fire Hydrants—Second District—Continued.

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. N.	No. 1.	No. 2.	No. 3.
Rodman street, north side, 86 feet west of west house line of Eleventh.....		7	6	9	9		1		
Rodman street, north side, 114 west of west house line of Twelfth.....		7	6	8			1		
Rodman street, north side, 77 feet east of east house line of Broad.....		7	6	8			1		
Sansom street, north side, 6 feet west of west house line of Nineteenth.....		8	6	11			1		
Second street, west side, west house line of Chestnut.....		6	10	4				1	
Second street, west side, 2 feet south of south house line of Walnut.....		5	12	13				1	
Sergeant street, north side, 2 feet east of east house line of Eleventh.....		10	6	11				1	
Seventeenth street, west side, north house line of Chestnut.....		9	16	13				1	
Seventeenth street, west side, south house line of Walnut.....		8	12	22				1	
Sixth street, east side, north house line of Buckley.....		5	6	6				1	
Sixteenth street, east side, south house line of Latimer.....		8	6	14				1	
Sixteenth street, east side, south house line of Spruce.....		7	6	14				1	
Sixteenth street, east side, south house line of Walnut.....		8	6	14				1	
Sixtieth street, east side, 2 feet north of north house line of Race.....		34	10	19				1	
Sixty-first street, west side, 2 feet south of south house line of Pine.....		27	6	19	6				
Sixty-first street, west side, 2 feet south of south house line of Lombard.....		27	6	19	6		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.
Sixty-two-and-a-half street, west side, 399 feet south of south house line of Vine.....		34	6	14			1		
Sixty-third street, east side, 5 feet 6 inches north of north house line of Lansdowne avenue.....		34	20	7	8			1	
Spruce street, north side, 80 feet west of west house line of Dugan.....		8	16	14				1	
Spruce street, north side, 5 feet east of east house line of Eighteenth.....		8	12	14				1	
Spruce street, north side, 138 feet east of east house line of Twentieth.....		8	12	14				1	
Spruce street, south side, 16 feet west of west house line of Twenty-second.....		7	6	14				1	
Spruce street, south side, east house line of Thirty-sixth.....		27	8	23				1	
Steadman street, north side, 1 foot east of east house line of Dean.....		8	6	6			1		
Stockton street, west side, 2 feet south of south house line of Komble.....		7	6	4	6		1		
Summer street, north side, west house line of Twenty-second.....		10	6				1		
St. David street, east side, 286 feet south of south house line of Vine.....		10	6	11				1	
St. Mary street, north side, 94 feet east of east house line of Eighth.....		7	6	6	9		1		
Tenor place, east side, 286 feet west of west house line of Fourth.....		5	6	6	1		1		
Tenth street, east side, south house line of Spruce.....		7	6	8			1		
Thirtieth street, west side, south house line of Chestnut.....		27	6	16				1	
Thirty-first street, west side, 3 feet south of south house line of Market.....		27	6	18	6		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.
Thirty-second street, east side, south house line of Walnut.....		27	8	9			1		
Thirty-third street, west side, north house line of Ludlow.....		27	6	15			1		
Thirty-third street, east side, 15 feet south of south house line of Woodland avenue.....		27	6	18				1	
Thirty-third street, west side, 2 feet north of north house line of Spruce.....		27	6	19			1		
Thirty-fourth street, east side, south house line of Spruce.....		27	6	18				1	
Thirty-fifth street, east side, south house line of Aspen.....		24	6	14			1		
Thirty-sixth street, east side, 1 foot south of south house line of Baring.....		24	6	18			1		
Thirty-sixth street, east side, south house line of Woodland avenue.....		27	6	18				1	
Thirty-seventh street, west side, north house line of Locust.....		27	6	14	6			1	
Thirty-eighth street, west side, 1 foot south of south house line of Hamilton.....		24	6	18				1	
Thirty-eighth street, east side, 2 feet north of north house line of Spring Garden.....		24	6	14				1	
Tower street, north side, 158 feet east of east house line of Twenty-first.....		10	6	8	6		1		
Twentieth street, west side, 21 feet north of north house line of Delancey place.....		7	6	14				1	
Twenty-first street, west side, south house line of Walnut.....		8	12	16	6			1	
Twenty-fourth street, west side, south house line of Spruce.....		7	6	14					1
Vine street, north side, opposite centre of Lybrand.....		14	12	12	9			1	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.
Viola street, north side, east house line of Belmont avenue.....		24	6	11					1
Viola street, north side, 306 feet west of west house line of Forty-second.....		24	6	11					1
Wallace street, south side, 6 feet west of west house line of Thirty-sixth.....		24	6	14					1
Walnut street, north side, 1 foot east of east house line of Thirty-third.....		27	6	23					1
Walnut street, north side, 249 feet east of east house line of Thirty-third.....		27	6	23				1	
Walnut street, south side, east house line of Thirty-fourth.....		27	6	23				1	
Westminster avenue, south side, west house line of Brooklyn.....		24	12	19	7			1	
Westminster avenue, south side, 5 feet west of west house line of Fiftieth.....		34	12	14				1	
Willow avenue, north side, 2 feet west of west house line of Fiftieth.....		27	6	23				1	
Woodland avenue, south side, 219 feet east of east curb line of Sixty-second.....		27	12	23	4				1
Woodland avenue, north side, west house line of Forty-first.....		27	12	21					1
Woodland avenue, south side, 104 feet west of west house line of Woodland terrace.....		27	12	21					1
Woodland avenue, north side, 14 feet west of west house line of Forty-fifth.....		27	12	23				1	
Woodland avenue, north side, 6 feet west of west house line of Forty-sixth.....		27	12	23				1	
Woodland avenue, south side, 2 feet east of east house line of Forty-seventh.....		27	12	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.
Woodland avenue, north side, 258 feet west of west house line of Forty-seventh.....		27	6	23	.....	.....	1		
Wyalusing avenue, north side, 2 feet west of west house line of Forty-seventh.....		34	6	18	.....	.....	1		
Yocum, north side, 2 feet east of east house line of Sixty-sixth-and-one-half.....		27	6	9	.....	.....	1		
Total.....				2,264	3	.....	88	85	3

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, southwest side, 120 feet southeast of southeast house line of Kensington avenue.....		31	6	14	6	.....	1		
Arcadia street, west side, north house line of Wheat Sheaf lane.....		25	6	8	4	.....	1		
Ash street, northeast side, opposite centre of Sparks.....		25	6	11	6	.....	1		
Beaver street, north side, east house line of Charlotta.....		16	6	25					1
Brown street, north side, west house line of Lawrence.....		12	6	15	6	.....	1		
Cambria street, south side east house line of Rosehill.....		33	6	13					1
Cambria street, south side, west house line of Fairhill.....		33	6	15					1
Canal street, south side, opposite centre of Charlotta.....		16	6	8	3	.....			1
Cedar street, southwest side, northeast house line of Meadow.....		23	6	14	6	.....	1		
Cedar street, northwest side, northeast house line of Foulkrod.....		23	6	14	2	.....			1
Cedar street, southeast side, southwest house line of Fillmore.....		23	6	15	5	.....			1
Charlotta street, west side, 103 feet 6 inches north of north house line of George.....		16	6	9	4	.....	1		
Clarion street, southwest side, southeast house line of Kettlewell.....		25	6	8	4	.....	1		
Clearfield street, southwest side, southeast house line of Cedar.....		25	6	17	9	.....			1
Clearfield street, northeast side, southeast house line of "E".....		33	12	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.
Clearfield street, south side, west house line of "D"		33	12	14					1
Clearfield street, south side, east house line of Boudinot.....		33	12	14					1
Clearfield street, south side, west house line of "C".....		33	12	14	6				1
Clearfield street, north side, east house line of Orme.....		33	12	14	8				1
Clearfield street, south side, east house line of Leamy.		33	13	14	6				1
Clearfield street, south side, east house line of Tenth		33	16	19					1
Collins street, southeast side, 226 feet southwest of southwest house line of Lehigh avenue.....		31	6	8	4		1		
Comly street, northeast side, northwest house line of Milnor.....		35	12	18	6		1		
Comly street, northeast side, 196 feet southeast of southeast house line of Keystone.....		35	12	18	6		1		
Comly street, southwest side, northwest house line of Tulip.....		35	12	18	6		1		
Comly street, northeast side, northwest house line of Hagerman.....		35	12	18	6		1		
Comly street, southwest side, northwest house line of Torredale.....		35	12	18	6		1		
Comly street, northeast side, northeast house line of Dittman.....		35	12	18	6		1		
Comly street, southwest side, northwest house line of Jackson.....		35	12	18	6		1		
Comly street, northeast side, northwest house line of Cottage		35	12	18	6		1		
Comly street, southwest side, southeast house line of Walker.....		35	12	18	6		1		

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Coral street, southeast side, northeast house line of Huntingdon.....		31	6	14	10	.....	1		
Dauphin street, southwest side, northwest house line of Belgrade.....		31	6	14	2	.....		1	
Dauphin street, northeast side, southeast house line of Frankford avenue.....		31	6	14	6	.....		1	
Dauphin street, southwest side, southeast house line of Holman.....		31	6	14	6	.....		1	
Delaware avenue, northwest side, southwest house line of Shackamaxon.....		18	10	15		.....	1		
Ella street, northwest house line of Coral.....		31	4	12		.....		1	
Fifth street, east side, south house line of Somerset.....		33	6	13		.....	1		
Fillmore street, southwest side, northwest house line of Horrocks.....		23	6	14	10	.....		1	
Fillmore street, northeast side, southeast house line of Large.....		23	6	14	8	.....		1	
Fillmore street, northeast side, southeast house line of Lindley.....		23	6	14	8	.....		1	
Fourth street, east side, 10 feet north of north house line of Vine.....		12	20	7	6	.....	1		
Fourth street, east side, 10 feet south of south house line of Callowhill.....		12	20	7	6	.....	1		
Fourth street, west side, north house line of Callowhill.....		12	6	15	3	.....	1		
Fourth street, west side, 11 feet north of north house line of Willow.....		12	6	15	6	.....	1		
Fourth street, east side, south house line of Buttonwood street.....		12	6	8	3	.....		1	
Fourth street, west side, south house line of Buttonwood.....		12	6	15	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.
Fourth street, west side, south house line of Fairmount avenue.....		12	6	15	6			1	
Fourth street, west side, opposite north house line of Maria.....		12	20	7				1	
Fourth street, west side, north house line of Brown.....		12	6	15	6		1		
Fourth street, west side, 288 feet north of north house line of Brown.....		12	20	8				1	
Fourth street, west side, south house line of Culvert.....		16	6	15	6			1	
Fourth street, west side, south house line of George.....		16	6	15	6		1		
Fourth street, east side, south house line of Thompson.....		17	6	16				1	
Fourth street, west side, north house line of Montgomery avenue.....		19	20	10	3			1	
Franklin street, northwest side, southwest house line of Green.....		23	6	11	5		1		
Franklin street, west side, south house line of Clearfield.....		33	6	14			1		
Front street, east side, 11 feet south of south house line of Canal.....		16	10	14	2		1		
Front street, west side, 178 feet north of north house line of Otter.....		16	6	10			1		
Gerker street, southeast side, southwest house line of Earl.....		18	4	9	7			1	
Germantown avenue, northeast side, 72 feet southeast of east house line of Fourth.....		17	10	18				1	
Germantown avenue, northeast side, 238 feet southeast of south house line of Diamond.....		19	6	18	6		1		
Germantown avenue, southwest side, 175 feet southeast of southwest house line of Eighth.....		19	6	18	6		1		

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Germantown avenue, southwest side, 4 feet 6 inches southeast of south house line of Oakdale.....		28	6	18	6	.....	1		
Germantown avenue, southwest side, 230 feet northwest of north house line of Somerset.....		28	12	8	6	.....	1		
Germantown avenue, southwest side, 19 feet 6 inches southeast of south house line of Como.....		28	12	8	6	.....	1		
Gillingham street, southwest side, southeast house line of Hedge street.....		23	6	15	.....	.....		1	
Girard avenue, northwest side, northeast house line of Ash.....		18	8	8	6	.....	1		
Girard avenue, northwest side, northeast house line of Montgomery avenue.....		18	8	7	6	.....	1		
Girard avenue, northwest side, northeast house line of Savery.....		18	8	7	.....	.....	1		
Girard avenue, northwest side, southwest house line of Marlborough.....		18	6	15	6	.....	1		
Girard avenue, northwest side, southwest house line of Shackamaxon.....		18	6	15	8	.....	1		
Girard avenue, northwest side, southwest house line of Frankford avenue.....		17	10	16	.....	.....	1		
Girard avenue, northwest side, northeast house line of Leopard.....		17	6	12	7	.....	1		
Girard avenue, north side, 7 feet west of west house line of Cadwalader.....		17	8	10	6	.....	1		
Girard avenue, north side, 9 feet west of southwest house line of Germantown avenue.....		17	8	10	6	.....	1		
Girard avenue, north side, 79 feet west of west house line of Third.....		17	8	10	6	.....	1		
Girard avenue, north side, 49 feet east of east house line of Fourth.....		17	8	10	6	.....	1		
Girard avenue, south side, east house line of Fifth.....		16	8	12	.....	.....	1		

New Fire Hydrants—Third^d District—Continued.

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Girard avenue, north side, east of east house line of Randolph.....		17	8	6	10	.....	1		
Girard avenue, north side, 88 feet east of east house line of Sixth.....		17	8	6	10	.....	1		
Green street, northeast side, northwest house line of Kensington avenue.....		23	6	11	4	.....	1		
Green street, northeast side, northwest house line of Romain.....		23	6	11	4	.....	1		
Hermitage street, west side, 15 feet south of south house line of Fairmount avenue.....		12	6	4		.....	1		
Hope street, east side, south house line of York.....		19	6	8	6	.....	1		
Huntingdon street, northeast side, northwest house line of Memphis.....		31	6	14		.....			1
Huntingdon street, northeast side, 5 feet 6 inches southeast of southeast house line of Collins.....		31	6	18	3	.....			1
Huntingdon street, southwest side, opposite southeast house line of Braddock.....		31	6	18		.....			1
Irving street, southwest side, southeast house line of Thompson.....		25	6	11	7	.....			1
Jackson street, southwest side, southeast house line of Sepviva.....		31	4	8	3	.....			1
Janney street, southeast side, 383 feet southwest of southwest house line of Venango.....		25	6	9	10	.....	1		
Janney street, southeast side, southwest house line of Venango.....		25	6	10	2	.....			1
Kensington avenue southeast side, 14 feet northeast of northeast end of bridge over Frankford creek.....		23	12	8	8	.....	1		
Lawrence street, west side, 3 feet south of north house line of Lehigh avenue.....		33	6	38		.....			1
Lehigh avenue, southwest side, southeast house line of Salmon.....		31	30	20	5	.....			1

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.		
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Lehigh avenue, southwest side, northwest house line of Walker.....		31	30	22				1
Lehigh avenue, south side, west house line of Marshall.....		19	6	10	9			1
Lucy street, southwest side, southeast house line of Belgrade.....		31	4	8	6			1
Margaretta street, northeast side, 106 feet southeast of southeast house line of Willow.....		23	12	13	10		1	
Margaretta street, northeast side, 204 feet northwest of northwest house line of Willow.....		23	12	14	6		1	
Marlborough street, northeast side, southeast house line of Wildey.....		18	6	12	10		1	
Marlborough street, southwest side, southeast house line of Thompson.....		18	6	15				1
Melrose street, northwest side, opposite centre of Ann.....		23	6	14	3			1
Melrose street, southeast side, southwest house line of Howell.....		23	6	13	6			1
Melrose street, northwest side, northeast house line of Frankford.....		23	6	15				1
Memphis street, northwest side, northeast house line of Montgomery avenue.....		18	6	14	10			1
Morton street, southwest side, southeast house line of Moyer.....		18	6	9			1	
Neff street, northeast side, southeast house line of Chatham.....		25	6	14			1	
New Market street, west side, 85 feet 6 inches south of south house line of Noble.....		11	6	15	2		1	
Ninth street, west side, south house line of Clearfield.....		33	6	14	8			1
Ontario street, southwest side, opposite centre of Malvern.....		25	8	18	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.	
Ontario street, northeast side, northwest house line of Jasper.....		33	8	18					1	
Ontario street, southwest side, 256 feet southeast of southeast house line of Kensington avenue.....		33	8	18				1		
Onyx street, southeast side, northeast house line of Jenks.....		25	6	9	7				1	
Orleans street, southwest side, 6 feet 6 inches northwest of northwest house line of Trenton avenue.....		25	6	8	9			1		
Penn street, northwest side, 152 feet southwest of southwest house line of Foulkrod.....		23	6	14	6			1		
Philip street, west side, 255 feet south of south house line of Cambria.....		33	6	8	6			1		
Pratt street, southwest side, southeast house line of Thomas.....		23	6	14	4			1		
Reese street, west side, north house line of Allegheny avenue.....		33	6	8	9			1		
Reese street, west side, south house line of Wellington, or Willard.....		33	6	8	9			1		
Richmond street, east side, 2 feet north of north house line of Lehigh avenue.....		25	20	5	6					1
Richmond street, southeast side, southwest house line of Ontario.....		25	6	18	6					1
Rush street, north side, east house line of Boudinot.....		33	6	8	6			1		
Sepviva street, southeast side, southwest house line of Norris.....		18	6	14	6					1
Shackamaxon street, northeast side, southeast house line of Allen.....		18	6	17	6			1		
Sixth street, west side, north house line of Berks.....		20	6	8				1		
Sparks street, northwest side, 104 feet 6 inches northeast of northeast house line of Buckius.....		25	6	9				1		

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Sterner street, northeast side, southwest house line of Emerald.....		25	6	8			1		
Susquehanna avenue, north side, east house line of Fourth.....		19	30	10				1	
Tacony street, southeast side, 454 feet southwest of southwest house line of Orthodox.....		23	6	14	6		1		
Taylor street, southwest side, southeast house line of Kensington avenue.....		31	4	10	11			1	
Thompson street, northwest side, southwest house line of Savery.....		18	6	14	4			1	
Tioga street, north side, west house line of Carbon.....		25	10	24	10			1	
Tioga street, north side, 253 feet west of west house line of Carbon.....		25	10	24	7		1		
Tioga street, north side, east house line of Casper.....		25	10	24	4			1	
Tioga street, north side, 210 feet west of west house line of Casper.....		25	10	26			1		
Tioga street, north side, opposite center of Myrtle.....		25	10	22	10		1		
Tioga street, north side, east house line of Brabant.....		25	10	22	9			1	
Tioga street, north side, west house line of Bath.....		25	10	14	8		1		
Tioga street, northeast side, 1 foot northwest of northwest house line of Lambert.....		25	12	14	6			1	
Tioga street, north side, west house line of Fifth.....		33	6	14				1	
Tulip street, southeast side, northeast house line of Venango.....		25	6	14	2			1	
Tulip street, northwest side, 249 feet northeast of northeast house line of Venango.....		25	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.
Venango street, northeast side, southeast house line of Bath.....		25	6	18	2			1
Venango street, northeast side, 231 feet northwest of northwest house line of Jasper.....		25		19	1		1	
Volkmar street, northwest side, southwest house line of Palmer street.....		18	6	8				1
Weikle street, southeast side, northeast house line of Clearfield street.....		25	6	8				1
Weikle street, northwest side, 270 feet southwest of southwest house line of Allegheny avenue.....		25	6	7	10		1	
Willington street, southwest side, 71 feet northwest of northwest house line of Mercer.....		25	6	11			1	
Whelan street, southwest side, northeast house line of American.....		33	6	11	6			1
Windrim street, southeast side, 73 feet 7 inches northeast of northeast house line of Clearfield.....		33	6	8			1	
Windrim street, southeast side, southwest house line of Allegheny avenue.....		33	6	8			1	
Wright street, east side, north house line of Ontario street.....		33	6	8			1	
Wright street, west side, south house line of Tioga street.....		33	6	8			1	
Total.....				2,099	6		87	67

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Allegheny avenue, south side, 69 feet west of west house line of P. & R. R.		28	6	2	6		1		
Andrews street, east side, 2 feet south of south house line of Wallace		14					1		
Arizona street, north side, 271 feet 6 inches west of west house line of Thirtieth		28	6	8	4				1
Bankson street, west side, south house line of Mellon		14	6	8	7				1
Beechwood street, east side, north house line of Dauphin		28	6	8	9		1		
Berks street, north side, east house line of Camac		32	8	15					1
Berks street, north side, 3 feet east of east house line of Thirteenth		32	8	14	8				1
Berks street, north side, 3 feet east of east house line of Broad		32	8	16	8				1
Boston avenue, north side, east house line of Twenty-first		28	6	9	7		1		
Bouvier street, east side, south house line of Huntingdon		28	6	8	1		1		
Brandywine street, north side, east house line of Fifteenth		15	6	11	3				1
Brandywine street, north side, east house line of Sixteenth		15	6	12	2				1
Buttonwood street, south side, east house line of Eleventh		14	6	14	5				1
Buttonwood street, south side, east house line of Twelfth		14	6	18					1
Cabot street, north side, east house line of Sixteenth		20	6	8	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.
Cass street, north side, east house line of Sixteenth.....		20	6	8	7		1		
Callowhill street, north side, east house line of Seventh.....		18	6	7	6			1	
Callowhill street, north side, 2 feet west of the west house line of Twenty-second.....		15	6	20	10			1	
Cambridge street, north side, 7 feet east of east house line of Sixteenth.....		29	6	11	5			1	
Citron street, north side, east house line of Twelfth.....		14	6	8	1			1	
Colorado street, west side, south house line of Huntingdon.....		28	6	17	5		1		
Corinthian avenue, west side, south house line of Parrish.....		15	6	21	3			1	
Corinthian avenue, west side, south house line of Poplar.....		15	6	21	10			1	
Cumberland street, north side, west house line of Nineteenth.....		28	6	14	6			1	
Dauphin street, south side, west house line of Tenth.....		28	6	15			1	1	
Davis street, north side, east house line of Thirteenth.....		20	6	8	3		1		
Diamond street, south side, east house line of Twenty-third.....		32	6	25			1		
Diamond street, south side, east house line of Twenty-fifth and three-quarter.....		32	6	3	6		1		
Diamond street, north side, east house line of Thirty-second.....		32	6	5	2		1		
Eighteenth street, east side, 3 feet south of south house line of Cumberland.....		28	6	12	8			1	
Eighth street, west side, south house line of Wallace.....		13	10	12	1			1	

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Eighth street, east side, 9 feet north of north house line of Wallace.....		13	10	14	3			1	
Eighth street, west side, south house line of Fairmount avenue.....		13	10	14	4			1	
Eighth street, west side, north house line of Brown.....		13	10	14	6			1	
Eighth street, east side, 419 feet south of south house line of Girard avenue		20	10	11	6			1	
Eighth street, west side, 235 feet south of south house line of Thompson.....		20	6	14	3			1	
Eighth street, west side, south house line of Master.....		20	6	15	10			1	
Eighth street, west side, south house line of Jefferson.....		20	6	14	4			1	
Eighth street, west side, south house line of Oxford.....		20	6	14	8			1	
Eighth street, east side, north house line of Columbia avenue.....		20	6	14	6			1	
Eighth street, west side, north house line of Montgomery avenue.....		20	6	15	3			1	
Eighth street, east side, south house line of Norris.....		20	6	14	11			1	
Eighth street, west side, south house line of Diamond.....		20	6	9				1	
Eighth street, west side, south house line of Dauphin.....		20	5	17	6			1	
Eighth street, east side, 15 feet south of south house line of Germantown avenue.....		20	6	13	2			1	
Eleventh street, west side, 65 feet south of south house line of Callowhill.....		14	10	14	1			1	
Eleventh street, west side, north house line of Division.....		14	10	14	2			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.
Eleventh street, west side, 4 feet south of south house line of Spring Garden.....		14	10	14	3			1
Eleventh street, west side, south house line of Green.....		14	10	15				1
Eleventh street, west side, south house line of Mt. Vernon.....		14	10	14	11			1
Eleventh street, west side, north house line of Lemon.....		14	10	14	3			1
Eleventh street, west side, north house line of Melon.....		14	10	14	7		1	
Eleventh street, west side, north house line of Brown.....		14	10	14	3		1	
Eleventh street, west side, south house line of Poplar.....		20	10	13	8		1	
Eleventh street, east side, south house line of Girard avenue.....		20	6	14	3			1
Eleventh street, west side, south house line of Master.....		20	6	13	6			1
Eleventh street, west side, south house line of Jefferson.....		20	6	15				1
Eleventh street, west side, 2 feet south of south house line of Columbia avenue.....		20	6	13	6		1	
Eleventh street, east side, north house line of Columbia avenue.....		20	6	14	6		1	
Eleventh street, west side, 2 feet south of south house line of Berks.....		20	6	14			1	
Eleventh street, west side, 213 feet north of north house line of Diamond.....		32	6	14	6		1	
Eleventh street, east side, north house line of Colona.....		28	6	14	6			1
Eleventh street, west side, south house line of York.....		28	6	16	6			1

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Eleventh street, west side, 2 feet south of south house line of Huntington.....		28	6	14			1		
Eleventh street, east side, north house line of Huntington.....		28	6	14			1		
Eleventh street, east side, north house line of Lehigh avenue.....		28	6	14			1		
Eleventh street, west side, north house line of Somerset.....		28	6	15			1		
Eliza street, south side, east house line of Sixteenth		29	6	8	3				1
Esther street, west side, 88 feet north of north house line of Thompson.....		29	6	14			1		
Fifteenth street, east side, south house line of Hamilton.....		15	6	14	3				1
Fifteenth street, west side, south house line of Buttonwood.....		15	6	14	8				1
Fifteenth street, west side, south house line of Mt. Vernon.....		15	6	14	6				1
Fifteenth street, east side, south house line of Ogden.....		15	6	14	1				1
Fifteenth street, east side, south house line of Poplar.....		15	6	14	10				1
Fifteenth street, west side, north house line of Girard avenue.....		29	6	13	6				1
Fifteenth street, west side, north house line of Stiles.....		29	6	14	1				1
Fifteenth street, east side, south house line of Master.....		29	6	14					1
Fifteenth street, west side, south house line of Jefferson.....		29	6	10	8				1
Fifteenth street, west side, north house line of Jefferson.....		29	6	10	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.
Fifteenth street, east side, north house line of Susquehanna avenue.....		28	6	14	4			1
Fifteenth street, east side, south house line of Cumberland.....		28	6	6				1
Fletcher street, south side, east house line of Twenty-sixth.....		28	6	15	9			1
Franklin street, east side, north house line of Girard avenue.....		20	6	23			1	
Ginnodo street, northwest side, 14 feet northeast of east house line of Nineteenth.....		29	6	14				1
Girard avenue, north side, east house line of Marshall.....		20	6	17	1		1	
Girard avenue, north side, west house line of Seventh.....		20	6	17	3		1	
Girard avenue, north side, east house line of Darien.....		20	6	12	6			1
Girard avenue, south side, east house line of Percy.....		20	6	9				1
Girard avenue, north side, east house line of Warnock.....		20	12	19			1	
Girard avenue, south side, east house line of Kurtz.....		20	6	10				1
Girard avenue, north side, 2 feet 8 inches west of west house line of Deacon.....		20	12	14			1	
Girard avenue, south side, east house line of Twelfth.....		20	30	21	8		1	
Girard avenue, south side, 180 feet 6 inches east of east house line of Seventeenth.....		29	30	18	4		1	
Girard avenue, south side, east house line of Twentieth.....		29	6	21	6		1	
Girard avenue, south side, east house line of Corinthian avenue.....		20	6	9			1	

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.		
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Girard avenue, south side, west house line of Twenty-seventh.....		29	10	10				1
Girard avenue, north side, west house line of Twenty-seventh.....		29	8	3			1	
Girard avenue, north side, east house line of Twenty-ninth		29	8	3	7		1	
Girard avenue, north side, west house line of Twenty-ninth.....		29	8	3			1	
Girard avenue, north side, west house line of Thirtieth.....		29	8	3			1	
Glenwood avenue, southeast side, north house line of Somerset.....		28	6	8				1
Gratz street, east side, 4 feet 6 inches south of south house line of Cumberland.....		28	6	8			1	
Haines street, north side, east house line of Thirteenth.....		20	6	9			1	
Hamilton street, south side, 33 feet east of east house line of Tenth.....		13	6	11	10			1
Hamilton street, north side, east house line of Twelfth.....		14	6	9	1			1
Hamilton street, north side, 138 feet 4 inches west of west house line of Twelfth.....		14	6	9	2		1	
Harmer street, north side, east house line of Twelfth.....		14	6	5			1	
Hazel avenue, east side, 75 feet 6 inches north of north house line of Clearfield		28	6	4	6		1	
Heath street, south side, east house line of Thirteenth.....		20	6	10	6			1
Hutchinson street, east side, north house line of Girard avenue.....		20	6	22				1
Jefferson street, south side, 12 feet 5 inches east of east house line of Ninth.....		20	6	14	3			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.
Jefferson street, south side, west house line of Twenty-ninth.....		29	8	13	8			1
Jefferson street, south side, 15 feet east of east house line of Thirty-second.....		29	10	14	9			1
Judson street, west side, 1 foot 6 inches north of north house line of Parrish.....		15	6	8	7			1
Lehigh avenue, south side, 2 feet 6 inches east of east house line of Sixteenth.....		28	6	9				1
Lehigh avenue, north side east house line of Sixteenth.....		23	6	9				1
Lehigh avenue, south side, east house line of Seventeenth.....		28	6	4	2		1	
Lex street, north side, east house line of Sixteenth.....		15	6	5	5			1
Marshall street, east side, 120 feet south of south house line of Columbia avenue.....		20	6	15			1	
Marshall street, west side, south house line of Berks.....		20	6	14			1	
Marshall street, west side, south house line of Norris.....		20	6	14			1	
Marshall street, west side, south house line of Diamond.....		20	6	14			1	
Marshall street, west side, south house line of Susquehanna avenue.....		20	6	14	6		1	
Marshall street, east side, 32 feet south of southwest house line of Germantown avenue.....		20	6	11	8			1
Melon street, north side, east house line of Twelfth.....		14	6	14	8			1
Melon street, south side, east house line of Twelfth.....		14	6	13	9		1	
Mervine street, west side, north house line of Sommerville.....		28	6	14			1	

Street	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Myrtle street, north side, east house line of Twelfth.....		14	6	3			1		
Myrtle street, south side, 2 feet east of east house line of Thirteenth.....		14	6	5			1		
Natrona street, west side, north house line of Oxford.....		29	6	8	9				1
Nectarine street, north side, 172 feet east of east of house line of Tenth.....		13	6	4	3		1		
Nineteenth street, west side, south house line of Wallace.....		15	6	19			1		
Ninth street, east side, 90 feet south of south house line of Columbia avenue.....		20	6	17	2				1
Ninth street, east side, 71 feet north of north house line of Columbia avenue.....		20	6	14					1
Norris street, south side, east house line of Eleventh.....		28	6	13	6		1		
Norris street, north side, 156 feet 6 inches east of east house line of Twenty-fifth.....		32	6	14	6				1
Norris street, north side, east house line of Thirty-first.....		32	8	13	6		1		
North street, north side, east house line of Fifteenth.....		15	6	11	8				1
North street, south side, east house line of Sixteenth.....		15	6	12	6				1
Ogden street, north side, east house line of Eleventh.....		14	6	11	2		1		
Ogden street, north side, east house line of Thirteenth.....		14	6	17			1		
Olive street, north side, east house line of Twelfth.....		14	6	11	6		1		
Olive street, north side, east house line of Thirteenth.....		14	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.
Olive street, north side, 8 feet east of east house line of Broad.....		14	6	10	10		1		
Oxford street, north side, east house line of Fifteenth.....		29	6	17	7			1	
Oxford street, south side, east house line of Thirtieth.....		29	8	21	9			1	
Oxford street, north side, 16 feet east of east house line of Thirty-first.....		29	8	25	1			1	
Page street, south side, east house line of Thirty-first.....		32	6	12			1		
Park avenue, west side, 3 feet south of south house line of Oxford.....		20	6	14	1			1	
Park avenue, east side, 127 feet south of south house line of Columbia avenue.....		20	6	14				1	
Pearl street, south side, east house line of Eleventh.....		14	6	4	2		1		
Pearl street, south side, east house line of Twelfth.....		14	6	5			1		
Pearl street, south side, 41 feet west of west house line of Newbold.....		15	4	7			1		
Pennock street, east side, south house line of Brown.....		15	6	10	10				1
Poplar street, south side, east house line of Tenth.....		13	6	14			1		
Poplar street, north side, east house line of Fifteenth.....		29	6	14	4				1
Poplar street, south side, east house line of Sixteenth.....		15	6	17	3				1
Potts street, south side, east house line of Thirteenth.....		14	6	5	7		1		
Richfield street, north side, 4 feet east of southeast house line of Glenwood avenue.....		28	6	8					1

Street.	Location.	Ward.	Size of Main.	CONNECTION.		STYLE.		
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Ridge avenue, west side, south house line of Buttionwood.....		14	6	20				1
Ridge avenue, southwest side, 20 feet southeast of east house line of Broad.....		14	6	16	4		1	
Ridge avenue, northeast side, 13 feet 6 inches southeast of east house line of Fifteenth.....		15	6	22	6			1
Ridge avenue, northeast side, 15 feet southeast of east house line of Sixteenth.....		15	6	23	6			1
Ridge avenue, northeast side, 19 feet southeast of south house line of Ogden.....		15	6	18	6			1
Ridge avenue, northeast side, 13 feet southeast of south house line of Stiles.....		29	6	6	3			1
Ridge avenue, northeast side, south house line of Jefferson.....		29	6	22				1
Ridge avenue, southwest side, east house line of Twenty-first.....		29	6	22	2			1
Ridge avenue, southwest side, north house line of Oxford.....		29	6	18				1
Ridge avenue, southwest side, 12 feet 10 inches southeast of east house line of Twenty-third.....		29	12	9	10			1
Ridge avenue, southwest side, 99 feet northwest of west house line of Twenty-third.....		29	12	7	9			1
Ridge avenue, southwest side, 128 feet northwest of west house line of Twenty-fourth.....		29	12	8	8			1
Ridge avenue, northeast side, 25 feet southeast of west house line of Twenty-sixth.....		29	12	28	3			1
Ridge avenue, southwest side, 37 feet northwest of west house line of Connecticut avenue.....		32	12	6	5			1
Ridge avenue, southwest side, 10 feet 6 inches northwest of west house line of Twenty-ninth.....		32	12	8	3			1
Ridge avenue, southwest side, 2 feet southeast of east house line of Thirty-second.....		32	12	8	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.
Ridge avenue, southwest side, south house line of Woodford.....		28	12	16	7	.....	1		
Sedgley avenue, northwest side, 6 feet northeast of west house line of Twenty-ninth.....		32	8	18	5	.....			1
Seventh street, east side, south house line of Dauphin.....		20	6	16	3	.....	1		
Seybert street, north side, east house line of Sixteenth.....		29	6	11	7	.....			1
Seybert street, south side, east house line of Ridge avenue.....		29	6	11	6	.....	1		
Sixteenth street, east side, south house line of Callowhill.....		15	6	11					1
Sixteenth street, west side, south house line of Hamilton.....		15	6	16	4	.....			1
Sixteenth street, west side, south house line of Spring Garden.....		15	6	15	10	.....			1
Sixteenth street, east side, south house line of Green.....		15	6	11	2	.....			1
Sixteenth street, east side, south house line of Wallace.....		15	20	16					1
Sixteenth street, east side, opposite centre of Becket.....		15	6	11					1
Sixteenth street, east side, south house line of Girard avenue.....		29	6	8	7	.....			1
Sixteenth street, west side, north house line of Girard avenue.....		29	6	14	5	.....			1
Sixteenth street, east side, south house line of Master.....		29	6	14	6	.....			1
Sixteenth street, east side, south house line of Jefferson.....		29	6	15	6	.....			1
Sixteenth street, east side, north house line of Jefferson.....		29	6	15					1

New Fire Hydrants—Fourth District—Continued.

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Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Sixteenth street, east side, north house line of Oxford.....		29	6	14	10			1	
Sixteenth street, east side, south house line of Dauphin.....		28	5	15	4			1	
Stiles street, north side, 4 feet 6 inches east of east house line of Thirteenth.....		20	6	15			1		
Stiles street, north side, 3 feet east of east house line of Carlisle.....		29	6	11			1		
Stiles street, south side, 4 feet east of east house line of Fifteenth.....		29	6	12	11		1		
Stiles street, south side, east house line of Seventeenth.....		29	6	10	11			1	
Stiles street, south side, east house line of Eighteenth.....		29	6	11	7			1	
Stiles street, north side, 47 feet 10 inches east of east house line of Nineteenth.....		29	6	10	11		1		
Stillman street, west side, north house line of Jefferson.....		29	6	14	4		1		
Susquehanna avenue, north side, 54 feet east of southeast house line of Ridge avenue.....		28	6	17				1	
Susquehanna avenue, south side, 9 feet east of east house line of Thirty-third.....		32	6	18				1	
Tenth street, west side, south house line of Buttonwood.....		14	6	10				1	
Tenth street, west side, south house line of Green.....		14	6		6			1	
Tenth street, west side, south house line of Wallace.....		14	6	1			1		
Tenth street, east side, north house line of Wallace.....		13	6	11			1		
Tenth street, east side, 2 feet north of north house line of Fairmount avenue.....		13	6	14			1		

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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.
Tenth street, west side, north house line of Brown.....		14	6	14	2		1		
Tenth street, west side, south house line of Ogden.....		14	6	16			1		
Tenth street, east side, south house line of Girard avenue.....		20	12	17	6		1		
Tenth street, west side, north house line of Girard avenue.....		20	12	27			1		
Tenth street, west side, south house line of Jefferson.....		20	6	14			1		
Tenth street, east side, south house line of Oxford.....		20	6	14			1		
Tenth street, west side, 219 feet 6 inches south of south house line of Columbia avenue.....		20	6	12					1
Tenth street, east side, north house line of Columbia avenue.....		20	6	19	10				1
Tenth street, west side, north house line of Montgomery avenue.....		20	6	14	2		1		
Tenth street, east side, 200 feet north of north house line of Berks.....		20	6	14	6		1		
Tenth street, west side, south house line of Susquehanna avenue.....		20	6	14	6		1		
Tenth street, east side, north house line of Dauphin.....		28	6	14	6		1		
Tenth street, west side, south house line of Cumberland.....		28	6	15			1		
Tenth street, west side, southwest house line of Germantown avenue		28	6	12			1		
Thirteenth street, east side, south house line of Wood.....		14	6	14	6		1		
Thirteenth street, west side, north house line of Wood.....		14	6	15	10		1		

Street.	Location.	Ward.	Size of Main.	6-INCH. CONNECTION.		STYLE.			
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Thirteenth street, east side, south house line of Hamilton.....		14	6	13			1		
Thirteenth street, east side, south house line of Buttonwood.....		14	6	20	6		1		
Thirteenth street, east side, south house line of Green.....		14	6	11	3		1		
Thirteenth street, west side, 10 feet 8 inches north of north house line of Green.....		14	6	16	6		1		
Thirteenth street, west side, 3 feet south of south house line of Wallace.....		14	6	13	11		1		
Thirteenth street, west side, 3 feet 6 inches south of south house line of Melon.....		14	6	14	5		1		
Thirteenth street, west side, north house line of Brown.....		14	6	14	5				1
Thirteenth street, east side, 2 feet south of south house line of Poplar.....		14	6	10					1
Thirteenth street, west side, south house line of Heath.....		20	6	16	9				1
Thirteenth street, east side, 6 feet south of south house line of Girard avenue.....		20	6	14	6		1		
Thirteenth street, west side, 2 feet north of north house line of Stiles.....		20	6	14					1
Thirteenth street, east side, north house line of Columbia avenue.....		20	10	14	4				1
Thirteenth street, west side, south house line of Berks.....		32	6	14					1
Thirteenth street, west side, south house line of Norris.....		32	6	16	6				1
Thirteenth street, west side, south house line of York.....		28	6	8	8				1
Thirteenth street, west side, 212 feet 8 inches north of north house line of York.....		28	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.
Thirty and one-half street, west side, 216 feet north of north house line of York		28	6	8				1
Thirty and three-quarters street, east side, 4 feet south of south house line of Norris.....		32	6	9	8		1	
Thirty-first street, east side, 2 feet 6 inches, south of south house line of Jefferson		29	6	20	2			1
Thirty-one and one-half street, west side, south house line of Norris.....		32	6	8			1	
Thirty-second street, east side, north house line of Oxford.....		29	6	14	2			1
Thirty-second street, east side, north house line of Anna.....		29	6	5	6		1	
Thirty-second street, west side, south house line of Berks.....		32	6	14	6		1	
Thirty-second street, east side, north house line of Berks.....		32	6	13	9		1	
Thirty-second street, east side, 115 feet north of north house line of Ridge avenue.....		28	6	14				1
Thirty-third street, east side, north house line of Diamond.....		32	12	7				1
Twelfth street, west side, 13 feet south of south house line of Pearl.....		14	6	13	6			1
Twelfth street, east side, south house line of Division.....		14	6	14	6			1
Twelfth street, west side, south house line of Green.....		14	6	14	7		1	
Twelfth street, west side, south house line of Mount Vernon.....		14	6	14			1	
Twelfth street, east side, south house line of Lemon.....		14	6	19	8		1	
Twelfth street, west side, south house line of Wallace		14	6	14	1			1

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.		
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.
Twelfth street, east side, north house line of Brown.....		14	6	14				1
Twelfth street, west side, south house line of Poplar.....		14	6	20				1
Twelfth street, west side, 1 foot south of south house line of Health.....		20	6	14	8		1	
Twelfth street, east side, north house line of Girard avenue.....		20	6	28	6			1
Twelfth street, west side, south house line of Master.....		20	6	11	6		1	
Twelfth street, east side, 4 feet 6 inches north of north house line of Norris.....		32	6	14	4			1
Twelfth street, west side, 3 feet 6 inches north of north house line of Diamond.....		32	6	19	3		1	
Twentieth street, west side, 3 feet south of south house line of Wallace.....		15	16	14				1
Twenty-fifth street, west side, 2 feet 6 inches north of north house line of Norris.....		32	6	14			1	
Twenty-fourth street, west side, south house line of Callowhill.....		15	6	16				1
Twenty-fourth street, east side, south house line of Brown.....		15	6	16	2			1
Twenty-ninth street, west side, 200 feet north of north house line of York.....		28	6	23				1
Twenty-sixth street, west side, south house line of Brown.....		15	6	14	10			1
Twenty-sixth street, west side, south house line of Clarence.....		28	6	13	6			1
Twenty-third street, west side, 25 feet north of north house line of Parrish.....		15	6	14	4			1
Vernon street, south side, east house line of Eleventh.....		14	4	8	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.
Wallace street, south side, 74 feet east of east house line of Tenth.....		13	6	16	2		1		
Wallace street, north side, 228 feet 10 inches west of west house line of Eleventh.....		14	6	14			1		
Wallace street, north side, 99 feet east of east house line of Thirteenth.....		14	6	14			1		
Wallace street, south side, east house line of Fifteenth.....		15	6	14	4			1	
Wallace street, north side, 1 foot east of east house line of Sixteenth.....		15	6	14	10		1		
Wallace street, south side, east house line of Seventeenth.....		15	6	18	3		1		
Wallace street, south side, 2 feet east of east house line of Eighteenth.....		15	6	15	5		1		
Wallace street, south side, 58 feet 6 inches east of east house line of Nineteenth.....		15	6	14			1		
Wallace street, north side, west house line of Nineteenth.....		15	6	14				1	
Wallace street, north side, 156 feet 6 inches west of west house line of Twentieth.....		15	6	14			1		
Walter street, south side, east house line of Sixteenth.....		29	6	7	6			1	
Warnock street, west side, 4 feet 6 inches south of south house line of Berks.....		32	4	14	10		1		
Willow street, south side, 12 feet 8 inches east of east house line of Thirteenth.....		14	4	5	5		1		
Wister street, south side, 43 feet 6 inches east of east house line of Eleventh.....		14	6	10			1		
Wister street, south side, 181 feet 8 inches west of west house line of Eleventh.....		14	6	7	6		1		
Wood street, south side, east house line of Eleventh.....		14	6	11				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.	
Wood street, south side, east house line of Twelfth.....		14	6	16	.....	.....	1		
Wood street, north side, west house line of Fifteenth.....		15	6	10	.....	.....	1		
Wood street, south side, 76 feet 6 inches west of west house line of Sixteenth.....		15	6	11	.....	.....	1		
Woodstock street, east side, 81 feet 8 inches south of south house line of Diamond.....		3?	6	10	11	.....	1		
Total.....				3,885	2		126	165	

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.
Ann street, southwest side, 111 feet northwest of northwest house line of Shawmont avenue.....		21	48	13	.....	.....	1		
Ann street, northeast side, 164 feet northwest of northwest house line of Shawmont avenue.....		21	30	8	.....	.....	1		
Bolton avenue, southeast side, 15 feet southwest of southwest house line of Mitchell.....		21	6	14	6	.....	1		
Bolton avenue, northwest side, 9 feet northeast of northeast house line of Pechin.....		21	6	14	6	.....	1		
Cresson street, northeast side, 232 feet northwest of northwest house line of Dawson.....		21	6	14	6	.....		1	
Fairview street, southeast side, 13 feet southwest of southwest house line of Thirty-fifth.....		28	6	6	.....	.....	1		
Main street, southwest side, 240 feet northwest of northwest house line of Green lane.....		21	6	10	.....	.....	1		
Main street, southwest side, 344 feet southeast of southeast house line of Washington		21	6	7	.....	.....	1		
Midvale avenue, southeast side, 38 feet northeast of northeast house line of Ridge avenue.....		28	6	8	.....	.....	1		
Midvale avenue, southeast side, 8 feet southwest of southwest house line of Elizabeth.....		28	6	8	.....	.....	1		
Midvale avenue, southeast side, 91 feet southwest of southwest house line of Cresson.....		28	6	10	.....	.....	1		
Midvale avenue, northwest side, 424 feet northeast of northeast house line of Ridge avenue.....		28	6	8	.....	.....	1		
Midvale avenue, northwest side, 22 feet northeast of northeast house line of Hohenadle.....		28	6	4	6	.....	1		
Righter street, southwest side, 65 feet southeast of southeast house line of Lauriston.....		21	6	14	6	.....		1	
Wise's Mill Road, northeast side, 400 feet southwest of southwest house line of Wissahickon Drive.....		21	30	19	.....	.....	1		
Total				160	0	.....	13	2	

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.
Allen's lane, southeast side, 387 feet southwest of southwest house line of Germantown avenue.....		22	12	11			1		
Borie street, south side, east house line of Fifteenth.....		28	6	8			1		
Boyer street, northeast side, southeast house line of Locust avenue.....		22	6	16			1		
Boyer street, southwest side, northwest house line of Locust avenue.....		22	6	16			1		
Boyer street, northeast side, southeast house line of Cheltenham avenue.....		22	6	16			1		
Bristol street, northwest side, northeast house line of Clarissa.....		28	12	20			1		
Bristol street, southeast side, northeast house line of Wayne.....		28	12	7				1	
Bristol street, northwest side, southwest house line of Germantown avenue.....		28	12	21				1	
Cresheim street, northeast side, southeast house line of Carpenter.....		22	6	18			1		
Cliveden street, southeast side, southwest house line of Nash.....		22	6	14			1		
Dennie street, northwest side, southwest house line of Germantown avenue.....		28	6	16				1	
Franklin street, southeast side, southwest house line of Jefferson.....		22	6	15			1		
Franklin street, northwest side, southwest house line of Quincy.....		22	6	14				1	
Franklin street, southeast side, southwest house line of Germantown avenue.....		22	6	14				1	
Germantown avenue, northeast side, 175 feet north of north house line of Ontario.....		33	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.	No. 3.
Germantown avenue, northeast side	north house line of Venango.....	33	6	31				1
Germantown avenue, northeast side,	south house line of Erie avenue.....	33	12	8				1
Germantown avenue, northeast side,	northwest house line of Butler.....	33	12	8				1
Germantown avenue, northeast side,	northwest house line of Pike.....	33	12	9				1
Germantown avenue, southwest side,	northwest house line of Pike.....	23	6	12				1
Germantown avenue, northeast side,	northwest house line of Luzerne.....	33	12	11				1
Germantown avenue, southwest side,	southeast house line of Hunting Park avenue.....	28	6	13				1
Germantown avenue, northeast side,	56 feet northwest of northwest house line of Hunting Park avenue.....	33	12	8				1
Germantown avenue, northeast side,	southeast house line of Juniata.....	33	12	9				1
Germantown avenue, southwest side,	southeast house line of Roberts avenue.....	22	10	12				1
Germantown avenue, southwest side,	northwest house line of Apsley.....	22	6	8				1
Germantown avenue, northeast side,	northwest house line of Wyalusing avenue.....	22	6	30			1	
Germantown avenue, southwest side,	northwest house line of Wyoming.....	22	6	34				1
Germantown avenue, northeast side,	135 feet southeast of southeast house line of Logan.....	22	6	5			1	
Germantown avenue, northeast side,	northwest house line of Logan.....	22	6	7	6			1
Germantown avenue, northeast side,	northwest house line of Bringham.....	22	8	9	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.
Germantown avenue, northeast side, northwest house line of Penn.....		22	8	7			1		
Germantown avenue, northeast side, northwest house line of Coulter.....		22	8	7			1		
Germantown avenue, northeast side, northwest house line of Mill.....		22	6	6			1		
Germantown avenue, southwest side, northwest house line of Maplewood avenue		22	6	6				1	
Germantown avenue, northeast side, northwest house line of Haines.....		22	6	34				1	
Germantown avenue, northeast side, northwest house line of High.....		22	10	27				1	
Germantown avenue, southwest side, northwest house line of Tulpehocken.....		22	12	13				1	
Germantown avenue, northeast side, northwest house line of Washington lane.....		22	10	7				1	
Germantown avenue, southwest side, 9 feet southeast of southeast house line of Duval.....		22	10	7				1	
Germantown avenue, southwest side, 12 feet southeast of southeast house line of Johnson.....		22	10	9				1	
Germantown avenue, southwest side, southeast house line of Upsal.....		22	10	11				1	
Germantown avenue, southwest side, northwest house line of Upsal.....		22	10	9				1	
Germantown avenue, southwest side, northwest house line of Westview avenue.....		22	10	9				1	
Germantown avenue, southwest side, northwest house line of Franklin.....		22	10	9				1	
Hartwell avenue, southeast side, southwest house line of Thirty-fifth.....		22	30	16			1		
Hartwell avenue, southeast side, 228 feet northeast of abutment of bridge over the Wissahickon creek.....		22	30	8			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.
Hancock street, northwest side, southwest house line of Willow avenue.....		22	6	16			1		
Hancock street, northwest side, south west house line of Heiskill.....		22	6	16			1		
Hancock street, southwest side, 139 feet southeast of southeast house line of Armat.....		22	6	20			1		
Heiskill street, southwest side, southeast house line of Armat		22	6	9			1		
McCallum street, southwest side, southeast house line of Sedgwick.....		22	6	18			1		
McCallum street, northeast side, southeast house line of Ellet (N. E.).....		22	6	15			1		
McCallum street, northeast side, northwest house line of Mt. Pleasant avenue.....		22	6	16			1		
McCallum street, southwest side, 203 feet southeast of southeast house line of Allen's lane.....		22	6	29			1		
Manheim street, southeast side, northeast house line of Pulaski avenue.....		22	6	18				1	
Market square, east side, southeast house line of School lane.....		22	6	8			1		
Mill street, northwest side, northeast house line of Boyer.....		22	6	15			1		
Ontario street, east house line of Seventeenth.....		28	6	14			1		
Ontario street, south side, east house line of Eighteenth.....		28	6	14			1		
Otto street, southwest side, 400 feet northwest of northwest house line of Spencer avenue.....		22	6	13			1		
Pelham road, southwest side, northwest house line of Upsal street.....		22	6	18			1		
Polham road, northeast side, 417 feet northwest of northwest house line of Upsal street.....		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.
Pelham road, northeast side, southeast house line of Franklin street.....		22	6	18			1		
Pelham road, northwest side, southwest house line of Cresheim street.....		22	6	38			1		
Penn street, southeast side, on dead end of 6-inch pipe, 300 feet southwest of southwest h. l. of Morris....		22	6	16	6		1		
Penn street, northwest side, southwest house line of Morris.....		22	6	16	6		1		
Penn street, northwest side, 24 feet northeast of northeast house line of Bellfield.....		22	6	24					1
Pulaski avenue, southwest side, southwest house line of Seventeenth street.....		28	6	18			1		
Quincy street, southwest side, 163 feet southeast of southeast house line of Carpenter.....		22	6	14			1		
Rittenhouse street, northwest side, northeast house line of Wayne.....		22	6	14			1		
Rittenhouse street, southeast side, northeast house line of Knox.....		22	6	14			1		
Rittenhouse street, northwest side, northeast house line of Marion.....		22	6	14			1		
Royal street, southwest side, northwest house line of Seymour.....		22	6	11			1		
Royal street, northeast side, northwest house line of Reger.....		22	6	11			1		
Royal street, northeast side, southeast house line of Manheim.....		22	6	11			1		
Tulpehocken street, northwest side, southwest house line of Cedar lane.....		22	6	14			1		
Upsal street, northwest side, northeast house line of Ross.....		22	6	19					1
Upsal street, southeast side, northeast house line of Musgrove.....		22	6	19					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.	
Upsal street, north west side, 179 feet southwest of southwest house line of Chew.....		22	6	19				1		
Venango street, north side, west house line of Broad.....		28	6	15				1		
Venango street, south side, west house line of Fifteenth.....		28	6	14					1	
Venango street, north side, east house line of Sixteenth.....		28	6	14					1	
Venango street, north side, east house line of Seventeenth.....		28	6	12					1	
Venango street, south side, east house line of Eighteenth.....		28	6	15					1	
Venango street, north side, east house line of Nineteenth.....		28	6	15				1		
Venango street, south side, east house line of Twentieth.....		28	6	14				1		
Venango street, south side, east house line of Twenty-first.....		28	6	13				1		
Venango street, north side, east house line of Twenty-second.....		28	6	14					1	
Walnut Lane, southeast side, southwest house line of Germantown avenue.....		22	6	7				1		
Wayne street, northeast side, southeast house line of Berkley.....		22	6	34				1		
Wayne street, northeast side, northwest house line of Logan.....		22	6	18					1	
Wayne street, southwest side, southeast house line of Seymour.....		22	6	8	1				1	
Weiss street, southwest side, 400 feet northwest of northwest house line of Spencer.....		22	6	13				1		
Westmoreland street, east house line of Fifteenth.....		28	6	14					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.
Westmoreland street, south side, east house line of Sixteenth.....		28	6	14	.....	.....	1		
Willow avenue, northeast side, southeast house line of Chelton.....		22	6	16	.....	.....	1		
Willow Grove avenue, northwest side, northeast house line of Germantown.....		22	6	18	.....	.....	
Willow Grove avenue, northwest side, northeast house line of Twenty-sixth.....		22	6	18	.....	.....	1	1	
Willow Grove avenue, southeast side, northeast house line of Twenty-fifth.....		22	6	18	.....	.....	1		
Willow Grove avenue, southeast side, on dead end of 6-inch pipe, 486 feet northeast of northeast house line of Twenty-fifth street.....		22	6	18	.....	.....	1		
Wissahickon avenue, northeast side, 968 feet southeast of southeast house line of Abbottsford.....		22	6	16	.....	.....	1		
Total				1,520	.....	.....	60	41	1

FIRE HYDRANTS RENEWED.

FIRST DISTRICT.

Street.	Location.	SIZE OF MAIN.		6-INCH CON- NECTION.		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.	
Alter street, north side, 62 feet west of west house line of Seventeenth.....		26		6	9		1								1		
Alter street, north side, 237 feet west of west house line of Twentieth.....		36		6	8		1								1		
Alter street, south side, 196 feet west of west house line of Twenty-first.....		36	6		8	6	1										1
Auburn street, south side, 8 feet east of east house line of Tenth.....		2	6		7	6	1								1		
Broad street, east side, 107 feet south of south house line of Carpenter.....		2	6		6	6	1										1
Broad street, west side, 5 feet south of south house line of Carpenter.....		30	6		6	6	1										1
Clarion street, east side, 117 feet south of south house line of Reed.....		26	6		8		1								1		
Eighth street, west side, 7 feet north of north house line of Scott.....		1	6		14	6	1								1		
Eighth street, west side, 179 feet north of north house line of Christian.....		3	6		14	6	1								1		
Eighth street, east side, 37 feet south of south house line of Baker.....		4	10		14	6	1								1		
Eleventh street, east side, 20 feet south of south house line of Passyunk avenue.....		1	6		14	6	1								1		
Eleventh street, east side, 158 feet south of south house line of Fitzwater.....		3		6	11	6	1								1		
Eleventh street, east side, 7 feet south of south house line of Fitzwater.....		3		6	11	6	1								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.				
Reed street, north side, east house line of Chadwick.....		26	6		14	6	1													1
Salter street, north side, 106 feet east of east house line of Eighth.....		2		6	8	6	1												1	
Selfridge street, east side, 56 feet south of south house line of Bainbridge.....		30		6	7		1													1
Sixteenth street, west side, 87 feet south of south house line of Reed.....		26	6		15		1													1
Snyder avenue, north side, 82 feet west of west house line of Seventh.....		1	6		9		1												1	
Snyder avenue, north side, 75 feet east of east house line of Ninth.....		1	6		9		1												1	
Snyder avenue, south side, 75 feet east of east house line of Ninth.....		1	6		8		1												1	
Snyder avenue, south side, 100 feet west of west house line of Twelfth.....		1	6		10		1												1	
Snyder avenue, north side, 93 feet west of west house line of Twelfth.....		1	6		10		1												1	
Snyder avenue, south side, 133 feet west of west house line of Thirteenth.....		1	6		9	6	1													1
Suffolk street, south side, 15 feet east of east house line of Tenth.....		2	6		5		1												1	
Tenth street, east side, 88 feet south of south house line of Wharton.....		26	6		14	6	1													1
Third street, east side, 178 feet north of north house line of Washington ave...		2	6		14	6	1												1	
Twelfth street, west side, 130 feet north of north house line of Moore.....		1	6		14		1												1	
Twelfth street, west side, 48 feet north of north house line of Peter.....		2	6		14	6	1												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.				
Twenty-eighth street, west side, 7 feet north of north house line of Shunk.....		36	6		5			1												
Twenty-eighth street, west side, 9 feet south of south house line of Porter.....		36	8		5			1												
Wall street, south side, 191 feet west of west house line of Passyunk avenue...		3	6		7	6	6	1												
Waln street, east side, 239 feet south of south house line of Reed.....		1	6		10	6	6	1												1
Wharton street, south side, 2 feet east of east house line of Tenth.....		26	6		11	6	6	1												1
Total.....						682		61												44 19

FIRE HYDRANTS RENEWED.
SECOND 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.				
Aspen street, north side, 20 feet east of east house line of Thirty-sixth.....		24	6		14		1													
Aspen street, south side, 154 feet west of west house line of Forty-third.....		24	6		4		1								1					
Arch street, south side, southeast corner of Eighth.....		9	30																	1
Baltimore avenue, north side, 87 feet west of west house line of Thirty-ninth..		27	8		24		1													1
Belmont Pumping Station.....		34	6							1										1
Belmont Pumping Station, north side.....		24	6							1										1
Branch street, north side, 74 feet east of east house line of Fourth.....		6	6																	1
Cherry street, south side, opposite corner of Kelton.....		10	6		10		7	1												1
Cherry street, north side, 146 feet west of west house line of Fifth.....		6	6																	1
Cherry street, north side, 81 feet west of west house line of Twenty-second.....		10	6					1												1
Cherry street, north side, 81 feet west of west house line of Twenty-second.....		10	6		10		6	1												1
Cherry street, north side, 199 feet west of west house line of Twenty-third.....		10	4		11			1												1
Cherry street, north side, 225 feet west of west house line of Twenty-third.....		10	4					1												1
Chestnut street, south side, west house line of Fortleth.....		27	8		22			1												1

Fire Hydrants Renewed—Second District—Continued.

Street.	Location.	Ward.	SIZE OF 6-INCH MAIN 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.	
Chestnut street, north side, 210 feet east of east house line of Forty-first.....		27	8		22		1							1			
Chestnut street, north side, 285 feet east of east house line of Forty-third.....		27	8		23		1							1			
Cullen street, on d. e. of 6-inch pipe, 292 ft. west of west house line of Seventh		7	6					1						1			
Delancey place, south side, 130 feet west of west house line of Twentieth.....		7	6	4	11		1							1			
Delaware avenue, southwest corner of Spruce.....		5	6							1							1
Delaware avenue, northwest corner of Arch street.....		6	6							1							1
Delaware avenue, northwest corner of Arch street.....		6	6							1							1
Dock street, north side, west house line of Delaware avenue.....		5	6							1				1			
Eighteenth street, west side, 6 feet south of south house line of Race.....		10	12		14		1										1
Eighteenth street, west side, 157 feet north of north house line of Race.....		10	12		14		1										1
Eighteenth street, west side, 20 feet north of north house line of Summer.....		10	12		14		1										1
Elighth street, west side, 116 feet north of north house line of South.....		7	10		14		1							1			
Eleventh street, west side, 215 feet south of south house line of Vine.....		10	10		18	8	1										1
Elmwood avenue, north side, 70 feet east of east house line of Sixty-second.....		27	6							1							1
Elmwood avenue, south side, east house line of Sixty-fifth.....		27	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.				
Elmwood avenue, south side, east house line of Sixty-fifth.....		27	6							1							1			
Fairmount avenue, north side, west house line of Markoe.....		34	6							1										1
Fairmount avenue, south side, 173 ft. west of west house line of Forty-eighth..		34	6		18	6	1													1
Fifteenth street, west side, south house line of Barton.....		7	6		14		1													1
Fifteenth street, west side, 3 feet south of south house line of Summer.....		10	20		7	8	1													1
Fiftieth street, west side, north house line of Brown.....		34	6							1										1
Fifty-second street, east side, 6 feet south of south house line of Market.....		27	36							1										1
Fifty-second street, west side, 18 ft. south of south house line of Columbia ave..		34	6										1							1
Fifty-sixth street, west side, west house line of Hunter's lane.....		34	6							1										1
Filbert street, south side, west house line of Thirty-third.....		24	6							1										1
Forty-eighth street, west side, 55 feet south of south house line of Dohan.....		34	6		23	4	1													1
Forty-eighth-and-one-half street, east side, 2 feet south of south house line of Westminster avenue.....		34	6		14		1													1
Forty-second street, east side, 253 ft. south of south house line of Chester ave..		27	8		23	2	1													1
Fourth street, west side, 3 feet north of north house line of Gaskill.....		5	6		14		1													1

Fire Hydrants Renewed—Second District—Continued.

Street.	Location.	Ward.	SIZE OF MAIN.		STYLE.										
			6-INCH CONNECTION		TAKEN OUT.					PUT IN.					
			Old.	New.	Feet.	Inches.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.
Fourth street, east side, 3 feet north of north house line of Union.....		5	6	14		1							1		
Front street, west side, southwest corner of Gatzmer.....		5	6						1						1
Front street, west side, north house line of Elfreth.....		6	8					1							1
Gaskill street, south side, east house line of Barron.....		5	6					1							1
Gatzmer street, southwest corner of Front		5	6				1								1
Haverford avenue, north side, 10 feet west of west house line of Thirty-fourth..		24	6	20	8	1									1
Haverford avenue, north side, 129 feet west of west house line of Brooklyn....		24	6		23	1							1		
Haverford avenue, north side, 160 feet east of east house line of Forty-ninth..		34	6		23	1							1		
Keble street, north side, 139 feet east of east house line of Ninth.....		7	6				1						1		
Lancaster avenue, north side, west house line of Thirty-third.....		24	6					1							1
Lancaster avenue, northwest corner of Spring Garden.....		24	12					1							1
Lancaster avenue, north side, 10 feet east of east house line of Forty-ninth....		34	6		25	1							1		
Locust street, south side, 199 feet west of west house line of Fifteenth.....		8	6					1							1
Ludlow street, south side, 262 feet east of east house line of Thirty-second.....		27	6		14	1							1		
Ludlow street, south side, 2 feet east of east house line of Thirty-seventh.....		27	4		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.				
Market street, north side, 31 feet east of east house line of Ninth.....		9	6																	
Market street, north side, 80 feet west of west house line of Thirtieth.....		24	10							1										1
Market street, north side, 135 feet west of west house line of Thirtieth.....		24	12							1										1
Market street, north side, 60 feet east of east house line of Thirty-first.....		24	12					1								1				
Market street, north side, west house line of Fortieth.....		24	10							1										1
Middle alley, south side, 179 feet west of west house line of Sixth.....		5	6						1											1
Mount Vernon street, north side, 199 feet east of east house line of Forty-first..		24	4		11			1												1
North street, south side, east house line of Lloyd street.....		27	6							1										1
Ogden street, north side, east house line of Preston.....		24	6		15			1												1
Ogden street, north side, 1 foot west of west house line of Preston.....		24	6					1								1				
Ogden street, south side, 44 feet west of west house line of Holly.....		24	6		18			1												1
Ogden street, south side, 7 feet west of west house line of Forty-third.....		24	6		14			1												1
Orion street, west side, 174 feet north of north house line of Fairmount avenue..		24	6		2			1												1
Pine street, southeast corner of Front.....		5	6								1									1
Pine street, north side, east house line of Griscom.....		5	6		14			1												1

Fire Hydrants Renewed—Second District—Continued.

Street.	Location.	Ward.	SIZE OF		STYLE.															
			MAIN.	6-INCH CONNECTION	TAKEN OUT.					PUT IN.										
					Old.	New.	Feet.	Inches.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.		
Pine street, north side, 218 feet west of west house line of Fifth.....		5	6		13					1								1		
Race street, north side, west house line of Ninth.....		10	6																	1
Rodman street, north side, 77 feet east of east house line of Broad.....		7	6							1										1
Sansom street, north side, 6 feet west of west house line of Twenty-second.....		8	6								1									1
Seventy-first street, east side, 15 feet north of north house line of Saybrook....		27	6		21			1												1
Sixteenth street, west side, 4 feet south of south house line of Burton.....		7	6		14			1												1
Sixteenth street, east side, opposite center of Grace.....		10	6		20			1												1
Sixteenth street, west side, 132 feet south of south house line of Race.....		10	6							1										1
Sixteenth street, west side, 82 feet north of north house line of Summer.....		10	6		12			1												1
Sixtieth street, west side, 37 feet south of south house line of Hazel avenue....		27	8						1											1
Sixty-fifth street, east side, 7 feet north of north house line of Race.....		34	6					1												1
Spruce street, north side, 2 feet east of east house line of Acorn alley.....		8	12		14			1												1
Spruce street, south side, 209 feet west of west house line of Ninth.....		7	12		14			1												1
Spruce street, north side, east house line of Warnock.....		8	12		6	2		1												1
Spruce street, north side, 3 feet east of east house line of Quince.....		8	12		6	2		1												1

Fire Hydrants Renewed—Second District—Continued.

Street.	Location.	Ward.	SIZE OF MAIN.		6-INCH CONNECTION		STYLE.											
			O. S.	No. 1.	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.		
Spruce street, south side, east house line of Juniper.....		7	12							1								1
Spruce street, south side, east house line of Little Asylum avenue.....		7	16		14			1										1
Spruce street, south side, west house line of Bradford.....		7	16		14			1										1
Spruce street, north side, 2 feet west of west house line of Albion.....		8	12		14		6	1									1	
Spruce street, north side, 290 feet west of west house line of Thirty-fourth.....		27	8		23			1										1
Slate street, east side, 187 feet south of south house line of Powelton avenue....		24	6		14			1									1	
Thirtieth street, west side, south house line of Spruce.....		27	6							1								1
Thirty-eighth street, northeast corner of Spruce.....		27	6							1								1
Thirty-fourth street, east side, 82 ft. north of north house line of Woodland ave..		27	6							1								1
Thirty-seventh street, west side, 10 feet north of north house line of Ludlow..		27	6		15			1									1	
Thirty-third street, east side, 46 feet south of south house line of Chestnut.....		27	6							1								1
Thirty-third street, west side, 2 feet south of south house line of Brooklyn.....		24	6		14			1									1	
Twentieth street, east side, 44 feet south of south house line of Rittenhouse....		8	6		14			1										1
Twenty-first street, east side, 27 feet south of south house line of Winter.....		10	43										1					1
Twenty-third street, east side, 6 feet north of north house line of Cherry.....		10	4					1									1	

Fire Hydrants Renewed—Second District—Continued.

Street.	Location.	Ward.	STYL. 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.			
Union street, east side, 15 feet south of south house line of Wallace.....		24	6		4		1												
Vine street, north side, 30 feet west of west house line of St. John.....		11	10							1									
Vine street, north side, opposite centre of St. David street.....		15	6							1									1
Vine street, south side, 1 foot east of east house line of Fisher's avenue.....		31	6		25		1												1
Viola street, north side, 212 feet west of west house line of Forty-second.....		21	6				1												1
Wallace street, north side, 155 feet east of east house line of Thirty-sixth.....		21	6		4		1												1
Wallace street, south side, 43 feet west of west house line of Thirty-eighth.....		21	6		13		1												1
Wallace street, south side, 43 feet west of west house line of Thirty-eighth.....		24	6							1									1
Walnut street, south side, west house line of Ninth.....		8	12											1					1
Walnut street, south side, west house line of Raspberry.....		8	12		5		1												1
Walnut street, north side, 181 feet east of east house line of Twelfth.....		8	6		14		1												1
Walnut street, north side, 146 feet west of west house line of Thirteenth.....		8	12		14		1												1
Walnut street, south side, 200 feet west of west house line of Broad.....		8	12		14		1												1
Walnut street, south side, west house line of Twentieth.....		8	12								1								1
Walnut street, north side, 41 feet 6 in. east of east house line of Twenty-fourth.....		8	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.				
Walnut street, north side, 400 feet west of west house line of Fifty-second.....		27	8					1							1					
Water street, west side, 337 feet south of south house line of Arch.....		6	6						1							1				
Westminster avenue, north side, 5 feet east of east house line of Forty-sixth...		34	12		18			1								1				
Westminster avenue, north side, 150 feet west of west house line of Fifty-third...		34	12								1									1
Woodland avenue, north side, 52 feet east of east house line of Forty-second...		27	12		21			1												1
Woodland avenue, south side, 226 feet east of east house line of Forty-third...		27	8							1						1				
Wyalusing avenue, south side, 50 feet east of east house line of Fifty-fifth.....		34	6								1					1				
Totals.....					880	11	70	9	28	15			3	8	53	62				3

FIRE HYDRANTS RENEWED.

THIRD 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.	
Amber street, northwest side, 370 feet southwest of southwest house line of Lehigh avenue.....		31	6		15		1								1		
Beach street, northwest side, 143 feet northeast of northeast house line of Fairmount avenue.....		12	6		16		1								1		
Beach street, northwest side, 36 feet northeast of northeast house line of Innes		18	10		17	9	1										1
Beach street, northwest side, 250 feet northeast of northeast house line of Hanover.....		18	6		13	6	1										1
Belgrade street, southeast side, 212 feet northeast of northeast house line of Somerset.....		25	6		14	6	1								1		
Belgrade street, northwest side, 22 feet northeast of northeast house line of Neff.....		25	6		13		1								1		
Belgrade street, northwest side, 130 feet southwest of southwest house line of Clearfield.....		25	6		15		1								1		
Cambria street, south side, 36 feet 8 inches east of east house line of Recae.....		33	6		0	6	1								1		
Charlotta street, west side, 172 feet north of north house line of Peters.....		12	6		11	8	1								1		
Charlotta street, west side, 8 feet south of south house line of George.....		16	6		11	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.						
Chatham street, northwest side, 112 feet southwest of southwest house line of Williams.....		25	6		12	6	1															
Clearfield street, southwest side, 5 feet northwest of northwest house line of Mercer.....		25	6		19		1															1
Clearfield street, northeast side, 48 feet northwest of northwest house line of Janney.....		25	6							1												1
Coral street, southeast side, 192 feet southwest of southwest house line of Frankford avenue.....		31	4		15		1															1
"D" street, west side, south house line of Rush		33	6		15		1															1
Dauphin street, southwest side, northwest house line of Sepviva.....		31	6		14	6	1															1
Delaware avenue, northwest side, 14 feet southwest of southwest house line of Canal.....		11	4		6		1															1
Delaware avenue, northwest side, 390 feet southwest of southwest house line of Shackamaxon.....		18	10				1															1
Dunton street, west side, 207 feet south of south house line of Girard avenue...		16	4		11		1															1
Emerald street, southeast side, 25 feet southwest of southwest house line of Albert.....		31	6							1												1
Fairmount avenue, north side, 220 feet west of west house line of Fourth.....		12	6		17	6	1															1

Fire Hydrants Renewed—Third District—Continued.

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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.		
Girard avenue, northwest side, 127 feet northeast of northeast house line of Vienna.....		18	8		7		1										1	
Harrison street, northeast side, northwest house line of Willow.....		23	6		16		1											1
Hewson street, southeast side, northwest house line of Wildey.....		18	6						1									1
Hope street, west side, 66 feet south of south house line of Jasper.....		33	6		8	9	1											1
Howard street, west side, 11 feet south of south house line of O'Neil.....		16	6						1									1
Huntingdon street, northeast side, southeast house line of Memphis.....		31	6							1								1
Kensington avenue, southeast side, 1 foot 6 inches northeast of northeast house line of Monmouth.....		25	30		4	6	1											1
Lehigh avenue, southwest side, 14 feet northwest of northwest house line of Kensington avenue.....		19	6		12		1											1
Margaretta street, southwest side, northwest house line of Cedar.....		23	6		5	6					1							1
Marlborough street, northeast side, southeast house line of Allen.....		18	6		13	6	1											1
Martha street, east side, south house line of Pepper.....		31	6		10		1											1
Mulberry street, northwest side, 150 feet northeast of northeast house line of Oxford.....		23	6		15	6	1											1

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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.		
Paul street, northwest side, 256 ft. northeast of northeast house line of Tacony		23	6		10		1									1		
Penn street, southeast side, 140 feet southwest of southwest house line of Arrott		23	6		15		1											1
Penn street, northwest side, 150 feet northeast of northeast house line of Orthodox		23	6		15		1											1
Putnam street, north side, 24 feet west of west curb line of Hope		19	6		14		1											1
Richmond street, southeast side, 240 feet northeast of northeast house line of William		25	6		18		1											1
Sergeant street, northeast side, 139 feet southeast of southeast house line of Jasper		31	6		7		1											1
Sergeant street, northeast side, northwest house line of Talip		31	6						1									1
Tackawana street, southeast side, 16 feet northeast of northeast house line of Plumb		23	6		15		1											1
Third street, east side, 203 feet north of north house line of Berks		19	6		14		1											1
Third street, southwest corner of Susquehanna avenue		19	6							1								1
York street, southwest side, southeast house line of Cedar		31			8	11	1											1
Totals					599	5	46		6	3						34	21	

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.		
Andrews street, east side, 2 feet south of south house line of Wallace.....		14	6		4		1								1			
Berks street, north side, 5 feet 6 inches east of east house line of Park avenue....		32	6							1								1
Broad street, west side, 26 feet 3 inches north of north house line of Parrish....		15	12								1							1
Carlton street, south side, west house line of Fifteenth.....		15		6	8	6	1											1
Columbia avenue, south side, 16 feet 6 inches east of east house line of Seventeenth.....		29	6		18	8	1											1
Corinthian avenue, east side, 3 feet south of south house line of Brown.....		15	6		21	6	1											1
Eighth street, west side, 8 feet 6 inches south of south house line of Depot.....		13	10		15		1											1
Eleventh street, east side, 67 feet south of south house line of Brown.....		14	10		14	5	1								1			
Eleventh street, east side, 161 feet south of south house line of Diamond.....		32	6		14	6	1								1			
Fifteenth street, east side, south house line of Girard avenue.....		29	6		14	6	1											1
Fifteenth street, west side, 225 feet 6 inches north of north house line of Euclid avenue.....		32	6		3	3	1											1
Girard avenue, north side, 89 feet east of east house line of Sixteenth.....		29	4		16		1								1			
Green street, north side, 98 feet 6 inches east of east house line of Ninth.....		13	6		14	9	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.
Marshall street, east side, 80 feet north of north house line of Columbia avenue.....		20	6		15		1							1		
Master street, north side, east house line of Fifteenth.....		29	6		13	8	1									1
Mervine street, east side, 12 feet south of south house line of Berks.....		20	6		4	1	1									1
Mount Vernon street, north side, 12 feet west of west house line of Linden.....		13	6		14	6	1									1
Pearl street, north side, west house line of Fifteenth.....		15	6		4		1							1		
Rhodes street, south side, 178 feet 6 inches east of east house line of Nineteenth.....		15	4		5		1							1		
Ridge avenue, southwest side, 67 feet southeast of southeast house line of avenue North College.....		29	6		9	7	1									1
Ridge av., southwest side, 231 feet northwest of west house line of Thirty-second.....		28	12		10	6	1							1		
Ridge av., southwest side, 1 foot southeast of west house line of Thirty-second.....		28	12		21	3	1							1		
Thirteenth street, east side, south house line of Olive.....		14	6		12		1							1		
Thirty-first street, east side, 7 feet 6 inches north of north house line of Master.....		29	6						1					1		
Twelfth street, east side, 15 feet south of south house line of Berks.....		32	6							1						1
Wallace street, west side, 8 feet west of west house line of Twenty-third.....		15	6		14		1									1
Totals.....					268	8	22			2	2			12	14	

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.	
Baldwin street, northwest side, 237 feet southwest of southwest house line of Wood		21	6				1								1		
Clearfield street, southeast side, 235 feet southwest of southwest house line of Nicetown lane.....		28	6						1						1		
Connarroe street, southeast side, 279 feet southwest of southwest house line of Ridge avenue		21	6				1									1	
Green lane, northwest side, 2 feet northeast of northeast house line of Hamilton		21	6						1						1		
Levering street, northwest side, 12 feet southwest of southwest house line of Wood		21	6						1						1		
Lyceum avenue, southeast side, 14 feet northeast of northeast house line of Manayunk avenue.....		21	6				1								1		
Main street, southwest side, 3,022 feet 6 inches southeast of southeast house line of Shur's lane.....		21	10						1						1		
Main street, southwest side, 2,482 feet 6 inches southeast of southeast house line of Shur's lane.....		21	10						1						1		
Main street, southwest side, 1,481 feet 6 inches southeast of southeast house line of Shur's lane.....		21	10						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.			
Main street, northeast side, 896 feet southeast of southeast house line of Shur's lane.....		21	6							1							1		
Main street, southwest side, 84 feet northwest of northwest house line of Robinson.....		21	10							1							1		
Main street, northeast side, 96 feet southeast of southeast house line of Cotton.....		21	6							1							1		
Manayunk avenue, northeast side, 18 feet northwest of northwest house line of Roxborough avenue.....		21	10							1							1		
Mulberry street, northwest side, 6 feet southwest of southwest house line of Wood.....		21	6							1							1		
Ridge avenue, northeast side, 111 feet northwest of northwest house line of Clearfield.....		28	6		5		1										1		
Ridge avenue, northeast side, 9 feet northwest of northwest house line of Scott's lane.....		28	6							1							1		
Ridge avenue, northeast side, 516 feet northwest of northwest house line of Scott's lane.....		28	6								1						1		
Ridge avenue, northeast side, 316 feet southeast of southeast house line of Queen lane.....		28	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.	
Ridge avenue, northeast side, 21 feet northwest of northwest house line of Queen lane.....		28	6				1						1				
Ridge avenue, southwest side, 192 feet northwest of northwest house line of Perry road.....		28	12						1						1		
Ridge avenue, southwest side, 312 feet southeast of southeast house line of Rodman.....		28	12				1								1		
Ridge avenue, northeast side, 77 feet northwest of northwest house line of Sumac.....		21	6						1						1		
Ridge avenue, northeast side, 128 feet southeast of southeast house line of Dawson.....		21	6						1						1		
Ridge avenue, northeast side, 110 feet northwest of northwest house line of Rittenhouse.....		21	6						1						1		
Ridge avenue, northeast side, 2,504 feet northwest of northwest house line of Port Royal avenue.....		21	10				1							1			
Seville street, northwest side, 203 feet southwest of southwest house line of Terrace.....		21	6				1								1		
Terrace street, northeast side, 2 feet southeast of southeast house line of Hermit.....		21	6				1								1		

Fire Hydrants Renewed—Fifth District—Continued.

Street.	Location.	Ward.	SIZE of		STYLE.														
			MAIN.	6-INCH CONNECTION	TAKEN OUT.					PUT IN.									
					Old.	New.	Feet.	Inches.	O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	O. S.	No. 1.	No. 2.	No. 3.	
Terrace street, northeast side, 8 feet northwest of northwest house line of Cotton.....		21	6					1									1		
Thirty-fourth street, northwest corner of Cumberland.....		28	6							1							1		
Washington street, southwest side, 50 feet northwest of northwest house line of Hermitage.....		21						1									1		
Total.....					5			11		18	1				2		27	1	

FIRE HYDRANTS RENEWED.

SIXTH DISTRICT.

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.		STYLE.								
				Feet.	In.	TAKEN OUT.			PUT IN.					
						O. S.	No. 1.	No. 2.	No. 3.	O. S.	No. 1.	No. 2.	No. 3.	
Allen's lane, northwest side, 23 feet southwest of southwest house line of Creshelm street.....		22	10				1					1		
Archer street, northeast side, southeast house line of Hunting Park avenue.....		23							1					1
Brunner street, southeast side, northeast house line of Clarissa st.....		28	6						1					1
Butler street, south side, 39 feet west of west house line of Twelfth street.....		33	6	16		1						1		
Cayuga street, southeast side, southwest house line of Seventeenth street.....		33	6	16		1								1
Cayuga street, northwest side, northeast house line of Eighteenth street.....		33	6						1					1
Centre street, northwest side, 119 feet 9 inches southwest of southwest house line of Wilson street.....		22	6						1					1
Chelton street, southeast side, 3 feet 6 inches southwest of southwest house line of Morris street.....		22	6						1					1
Coulter street, northwest side, northeast house line of Pulaski avenue.....		22	6						1					1
Dennie street, northwest side, southwest house line of Wayne street.....		28	6						1					1
Germantown avenue, southwest side, southeast house line of Bristol street.....		28	6	14		1								1
Germantown avenue, southwest side, 211 feet 8 inches northwest of northwest house line of Berkley street.....		22	6			1								1

Fire Hydrants Renewed—Sixth District—Continued.

Street.	Location.	Ward.	Size of Main.	6-INCH. CONNECTION.		STYLE.						
				Feet.	In.	TAKEN OUT.				PUT IN.		
						O. S.	No. 1.	No. 2.	No. 3.	O. S.	No. 1.	No. 2.	No. 3.
Germantown avenue, southwest side, 74 feet southeast of southeast house line of Logan street.....		22	6			1						1
Germantown avenue, northeast side, northwest house line of Wister street.....		22	4	6		1					1	
Germantown avenue, northeast side, 5 feet northwest of southeast house line of Herman street.....		22	10					1				1
Germantown avenue, southwest side, 266 feet 6 inches northwest of northwest house line of McPherson street.....		22	10			1					1	
Morris street, southeast side, southeast house line of Lehman street.....		22	6				1					1
Mt. Pleasant street, northwest side, 111 feet southwest of southwest house line of Jefferson street.....		22	6				1					1
Mt. Pleasant street, southeast side, northeast house line of Germantown avenue.....		22	6				1					1
Mt. Pleasant street, southeast side, southwest house line of Sprague street.....		22	6				1					1
Newhall street, southwest side, northwest house line of Manheim street.....		22	6				1					1
Norwood street, southwest side, 946 feet northwest of northwest house line of Chestnut street.....		22	6			1					1	
Nicotown lane, southeast side, southwest house line of Cottage avenue.....		28	6			1					1	
Pulaski street, northeast side, 296 feet 6 inches southeast of southeast house line of Hansbury street.....		22	6				1				1	
Pulaski av., northeast side, 218 feet northwest of northwest house line of Hansbury st...		22	6				1					1

Fire Hydrants Renewed—Sixth District—Continued.

Street.	Location.	Ward.	Size of Main.	6-INCH CONNECTION.								STYLE.			
				6-INCH CONNECTION.		TAKEN OUT.				PUT IN.					
				Feet.	In.	O. S.	No. 1.	No. 2.	No. 3.	O. S.	No. 1.	No. 2.	No. 3.		
Pulaski street, southwest side, northwest house line of Cheltenham avenue.....		22	12					1						1	
Pulaski street, southwest side, 3 feet southeast of southeast house line of Rittenhouse street.....		22	12					1						1	
Reading pike, northeast side, southeast house line of Sunset avenue (N.E.).....		22	6					1						1	
Reading pike, northeast side, southeast house line of Sunset avenue (N.E.).....		22	6					1						1	
Reading pike, northeast side, southeast house line of Sunset avenue (N.E.).....		22	6					1						1	
Rockland street, southeast side, southwest house line of Eleventh street.....		22	6					1						1	
Ross street, northeast side, northwest house line of Penn street.....		22	6					1						1	
Thirtieth street, northeast side, 46 feet southeast of southeast house line of Rex avenue.....		22	6			1						1			
Tioga street, north side, west house line of Sixteenth street.....		28	6					1						1	
Total.....				52		9	2	22	1		8		26		

Recapitulation of Fire Hydrants Set, Renewed, and Removed.

DISTRICTS.		STYLE.					Totals.
		Old.	No. 1. 1 Way.	No. 2. 2 Way.	No. 3. 3 Way.	No. 4. 3 Way.	
Set.	First.....		146	116			262
	Second.....		86	85	3		176
	Third.....		87	67			154
	Fourth.....		126	165			291
	Fifth.....		13	2			15
	Sixth.....		60	41	1		102
	Total.....		520	476	4		1,000
Renewed.	First.....		44	19			63
	Second.....	8	52	62	3		125
	Third.....		34	21			55
	Fourth.....		12	14			26
	Fifth.....	2	27	1			30
	Sixth.....		8	26			34
	Total.....	10	177	143	3		333
Total new hydrants.....							1,333
Removed.	First.....	91	5	9	45		150
	Second.....	69	2	11	12	1	95
	Third.....	68		2	13		83
	Fourth.....	124	4	13	56		197
	Fifth.....	2					2
	Sixth.....	33			3		36
	Total.....	387	11	35	129	1	563
Total added during 1893.....							437

Fire Hydrants by Purveyors' Districts.

DISTRICTS.	STYLE.						Total.
	O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	
First.....	352	447	670	145	.....	.....	1,614
Second.....	703	347	755	158	.....	21	1,984
Third.....	771	388	782	170	2	.....	2,113
Fourth.....	340	312	879	152	1	4	1,688
Fifth.....	206	76	110	11	.....	.....	403
Sixth.....	318	301	362	101	.....	.....	1,082
Total.....	2,690	1,871	3,558	737	3	25	8,884

Fire Hydrants by Wards.

Wards.	STYLE.						Total.
	O. S.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	
First.....	133	105	153	32			423
Second.....	45	59	87	21			212
Third.....	25	47	40	9			121
Fourth.....	16	49	32	15			112
Fifth.....	56	38	52	25		3	174
Sixth.....	25	18	52	30		3	128
Seventh.....	52	41	87	12		1	193
Eighth.....	42	36	104	11		1	194
Ninth.....	34	30	66	19		3	152
Tenth.....	23	36	71	11		6	147
Eleventh.....	36	15	33	2		1	87
Twelfth.....	31	18	31	8			88
Thirteenth.....	45	20	55	15			135
Fourteenth.....	4	49	83				136
Fifteenth.....	67	55	167	49	1	2	341
Sixteenth.....	27	21	40	7	1		96
Seventeenth.....	42	30	29	5			106
Eighteenth.....	85	35	62	17			199
Nineteenth.....	134	43	121	31			329
Twentieth.....	76	51	124	3			254
Twenty-first.....	185	50	102	9			346
Twenty-second.....	264	250	252	76			842
Twenty-third.....	130	40	92	17			279
Twenty-fourth.....	194	45	125	17		1	382
Twenty-fifth.....	146	76	146	13			381
Twenty-sixth.....	87	113	200	48			448
Twenty-seventh.....	174	68	146	18		1	407
Twenty-eighth.....	91	113	288	56			548
Twenty-ninth.....	76	51	162	37		1	327
Thirtieth.....	37	53	111	17			218
Thirty-first.....	61	40	72	25			198
Thirty-second.....	41	31	81	22		1	176
Thirty-third.....	90	77	186	52	1		406
Thirty-fourth.....	116	39	81	8		1	245
Thirty-fifth.....		9	9				18
Thirty-sixth.....		20	15				35
Thirty-seventh.....			1				1
Totals.....	2,690	1,871	3,558	737	3	25	8,884

Statement of the number of Fire Hydrants by Districts and Wards during 1893 and total previous thereto.

	FIRST DISTRICT.							SECOND DISTRICT.							THIRD DISTRICT.							FOURTH DISTRICT.					FIFTH DISTRICT.		SIXTH DIST.			Total.																		
	Wards.							Total.	Wards.							Total.	Wards.					Total.	Wds.		Total.	Wards.			Total.																					
	1	2	3	4	7	26	30		36	5	6	7	8	9	10		14	24	27	34	11		12	16		17	18	19		20	23		25	28	31	33	35	13	14	15	20	28	29	32	21	28	22	28	33	
Prior to 1893.....								1,473										1,936													2,042							1,590			390				1,016	8,447				
During 1893.....	57	41	29	35	1	51	19	29	262	18	3	37	15	7	13	1	18	43	21	176	1	12	7	12	16	6	1	19	31	3	12	25	9	154	11	62	41	58	40	50	29	291	9	6	15	73	21	8	102	1,000
Total.....								1,735										2,112													2,196							1,881			405				1,118	9,447				
Taken up in 1893.....								150										95												83							197			2				36	563					
Total in City.....								1,585										2,017												2,113							1,684			403				1,082	8,884					

Number of attachments for Fire purposes previously reported.....	413
First District.....	2
Second District.....	3
Third District.....	0
Made during 1893.....	
Fourth District.....	3
Fifth District.....	1
Sixth District.....	3
	425

*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.						Total.	Reamed for Larger Attachments.	Redriven.	Discontinued.	REPAIRS.			Totals.	DRAWN.				
	1/8-inch.	5/16-inch.	3/4-inch.	1-inch.	1 1/8-inch.	2-inch.					Not Drawn.	Drawn and Redriven.	Discontinued and Abandoned.		Duplicate.	Leak.	Total.	Drawn and Redriven.	
January	47	2	1	2	2	54	1	12	3	1	4	25	46	1	20	21	1		
February	98		2			100	3	22	1		1	28	55	4	35	39	5		
March	392	19	10	12	1	5	439	9	29	45		16	41	140	48	3	37	88	
April	749	23	12	14	3		799	15	42	25	2	9	25	118	8	2	23	33	3
May	1,081	39	43	35	7	5	1,210	44	35	38	18	6	33	174	17	3	33	53	155
June	1,559	40	39	45	9	5	1,697	32	41	38	25	8	15	159	10	11	61	82	98
July	1,594	28	18	19	9	4	1,672	24	45	16	3	5	31	124	10	8	47	65	577
August	1,430	32	17	29	5	5	1,518	34	36	50	3		30	153	6	3	45	54	174
September	1,151	43	11	8	3	5	1,221	19	74	12	1		24	180	13	1	46	60	207
October	1,233	45	14	10	3	6	1,311	9	46	36	2	16	31	140	13		47	60	145
November	1,101	68	12	20	3	5	1,209	21	22	46	8		36	133	28	4	54	86	189
December	577	74	2	4	1	4	662	4	21	27		9	9	70	10	4	33	47	28
Total	11,010	413	181	198	44	46	11,892	215	425	337	63	74	328	1,442	168	30	481	688	1,582

*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.						Total.	Reamed for large attachments.	Redriven.	Discontinued.	Transfer.	REPAIRS.		Totals.	DRAWN.				Drawn and Redriven.
	1/4-inch.	3/8-inch.	1/2-inch.	1-inch.	1 1/2-inch.	2-inch.						Not drawn.	Drawn and re-driven.		Discontinued and Abandoned.	Delinquent.	Leak.	Total.	
First	2,227	49	50	45	2	2	2,375	.....	88	46	7	.....	70	211	20	14	102	136	4
Second	2,027	173	36	42	15	16	2,309	96	83	163	27	.....	92	461	30	2	83	115	812
Third.....	2,432	35	44	62	10	12	2,595	.....	78	106	4	42	44	274	104	9	131	244	312
Fourth.....	2,713	121	35	26	13	8	2,916	119	152	21	17	7	83	399	6	3	161	170	256
Fifth.....	258	1	1	5	1	4	270	.....	5	1	5	20	23	54	.....	.....	4	4	38
Sixth.....	1,353	34	15	18	3	4	1,427	.....	19	.....	3	5	16	43	8	11	.....	19	160
Totals	11,010	418	181	198	44	46	11,892	215	425	337	63	74	328	1,442	168	39	481	688	1,582

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*Service Attachments Laid to the Curb (on Streets to be Paved
or Repaved) by the Bureau of Water.*

DISTRICTS.	SIZE.			TOTAL.
	$\frac{1}{2}$ inch.	$\frac{5}{8}$ inch.	1 inch.	
First.....	1,088	137	.....	1,225
Second.....	482	.....	2	484
Third.....	280	.....	1	281
Fourth.....	79	.....	.....	79
Fifth.....	48	.....	.....	48
Sixth.....	602	.....	.....	602
Totals.....	2,579	137	3	2,719

Account of New Stops and Check Valves for 1893.

DISTRICTS.	BUREAU OF WATER.		VINET.				Check Valves.	Total.
	2-Way.	Butterfly.	2-Way.	3-Way.	4-Way.	5-Way.		
First	484							484
Second	317							317
Third	319			26				345
Fourth	382	7	1	75	27	1		448
Fifth	35	10						45
Sixth	198	2					* 2	200
Total	1,685	19	1	101	27	1	2	1,836

Repairs to Mains, Stops, and Fire Hydrants; also Stops and Fire Hydrants Removed during 1893.

DISTRICTS.	Repairs to Mains.	STOPS.			FIRE HYDRANTS.		
		Repaired.	Renewed.	Removed.	Repaired.	Renewed.	Removed.
First	76	203	263	17	396	63	150
Second	97	174	131	13	126	125	95
Third	223	552	66	3	507	55	83
Fourth	197	309	22	66	1,264	26	197
Fifth	32	45	4		42	30	2
Sixth	84	7	23	2	58	34	36
Total	709	1,290	509	101	2,393	333	563

**Location of Check Valves.*

Street.	Location.	Ward.	Size.
Hartwell avenue.	228 feet northeast of northeast abutment of Hartwell Avenue Bridge, over Wissahickon creek....	22	30 In.
Hartwell avenue.....	Southwest house line of Thirty-fifth street.....	22	30 In.

Number of Valves raised in the several Districts during the year 1893. Also, in each year since 1873.

DISTRICT.	6-inch Barton.	8-inch Barton.	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				3
Second.....			1	5	2	5			1					14
Third.....					6	9					20			19
Fourth.....						2								2
Total for 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		3	23	68		7	1	1				114
" 1889.....	15		2	4	75	23		4	1	1		1		124
" 1888.....	16			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	96
" 1878.....				27	22	100		3	1		1	1		165
" 1877.....				12	6	50		1			1			70
" 1876.....				3	17	49		3			1			78
" 1875.....				17	55	120	4	12	2	4	1	2		217
" 1874.....				13	32	111	6	6	3	3				174
Total for 20 years....	60	6	5	192	435	1,360	15	107	28	23	11	20	4	2,268

Number of Complaints and Examinations during 1892 and 1893.

Months.	Hydrants.		Service Pipes.		Wash Paves.		Spigots.		Water Closets.		Horse Troughs.		No. Leaks.		Total.	
	1892	1893	1892	1893	1892	1893	1892	1893	1892	1893	1892	1893	1892	1893	1892	1893
January.....	178	426	83	267	6	53	4	6	2	6	1	3	22	26	296	785
February.....	198	197	88	137	9	22	2	2	1	10	1	2	38	31	337	400
March.....	144	160	78	142	4	9	.....	3	4	14	.....	1	37	29	262	351
April.....	88	101	71	88	1	4	1	2	.....	6	.....	.....	24	11	185	206
May.....	86	122	49	89	6	4	1	.....	4	5	.....	1	27	18	173	208
June.....	86	140	76	110	5	5	1	.....	4	12	.....	2	26	24	198	292
July.....	91	99	79	123	1	2	.....	.....	3	7	.....	1	24	13	198	245
August.....	68	88	56	78	2	5	3	4	.....	7	1	2	18	16	148	197
September.....	143	127	68	86	4	1	5	2	3	3	.....	.....	27	22	250	239
October.....	180	222	76	114	4	.....	6	13	6	33	1	1	28	14	301	295
November.....	129	126	72	107	2	1	5	3	9	5	.....	.....	24	20	241	249
December.....	222	73	138	62	6	.....	4	6	7	4	1	.....	27	10	405	155
Total.....	1,613	1,881	929	1,398	50	106	32	41	43	112	5	13	322	234	2,994	3,022

Excavation of pipe ditches for Pumping and Supply Mains—Work done by Contract.

Size of Main.	Location.	Contractor.	Linear feet of ditch.	CUBIC YARDS OF EXCAVATION.		Cost.
				Earth.	Rock.	
20 inch	Georges Hill Reservoir to Sixty-third and Haverford.....	Charles T. Moore..	10,837	3,905.8		\$3,796 01
20 inch	Haverford avenue, from Thirty-third to Thirty-fifth streets.....	Michael O'Rourke..	849	557.		779 80
20 inch	Fourth street, from Vine to Norris street.....	Michael O'Rourke..	9,180	8,819.		11,066 60
30 inch	Fourth street, from Norris to Susquehanna avenue.....	Michael O'Rourke..	1,139	1,245.4		1,743 86
30 inch	Susquehanna avenue, from American to Fourth street.....	George W. Ruch....	613	675.4		844 25
30 inch	Kensington avenue, from Lehigh avenue to Allegheny avenue.....	George W. Ruch....	4,134	3,688.5		4,979 47
20 inch	Richmond street, from Lehigh avenue to Allegheny avenue.....	Charles T. Moore..	4,050	2,681.7		4,424 81
48 inch	Twenty-fourth street, from Spring Garden to Green street.....	Charles T. Moore..	541	1,074.4		1,450 44
30 inch	Upper Roxborough Reservoir to Chestnut Hill.....	M. M. McHugh & Bro	16,706	5,334.1	7,452.4	7,668 07
36 inch	Roxborough Reservoir to Upper Roxborough Reservoir.....	John R. Leewright.	4,343	5,801.5	3,108.9	4,316 77
48 inch	Upper Roxborough Reservoir to Shawmont avenue and Bean street.....	John R. Leewright.	2,002			
48 inch	*Lardners Point Pumping Station to Wentz Farm Reservoir	Charles T. Moore..				
48 inch	(*Two lines) Spring Garden Pumping Station to East Park Reservoir....	Charles T. Moore..				
Totals.....			54,394	33,672.3	10,556.3	\$41,069 78

* Not yet completed.

Tabular Statement of Work Connected with the Distribution for the years 1880 to 1893 inclusive.

Years	PIPE.										Additional stops.	Additional Fire hydrants.		Meters in use.	SERVICE ATTACHMENTS.							
	Extensions.		Repairs and Relays.		Total pipe handled.		Total amount in use.		Total amount handled.			Fire hydrants in use.	Meters in use.		½ in.	⅝ in.	¾ in.	1 in.	1½ in.	2 in.	Total	
	Feet.	Pounds.	Feet.	Pounds.	Feet.	Pounds.	Feet.	Pounds.	Feet.	Pounds.												
1880...	23,065	844,946	9,557	262,826	32,642	1,107,772	3,927,623	192,816,906	4,164,768	200,136,708	138	70	5,353	34	2,687	118	49	89	.....	.....	2,913
1891...	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	5,306,165	7,740	484,092	64,600	5,880,257	4,081,180	202,202,322	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..	84,451	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	23,122,288	4,503,644	242,879,083	4,953,117	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	263	7,892	317	124	148	2	54	8,532	
1888...	133,552	6,356,379	45,943	1,486,631	179,495	7,843,010	4,759,986	264,015,514	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	67,836	2,410,677	205,007	11,680,988	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	17,222,599	5,066,333	290,450,100	5,729,229	315,736,613	840	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	130	152	13	33	8,178	
1892...	158,783	9,713,951	104,996	5,352,355	263,779	15,066,316	5,444,047	320,484,047	6,276,430	354,174,687	1,025	342	8,447	789	8,093	289	198	218	41	61	8,900	
1893...	265,911	35,684,877	192,770	6,045,495	458,681	11,730,372	5,709,958	356,168,924	6,735,111	395,945,009	1,834	437	8,884	1,115	11,010	413	181	198	44	46	11,892	

New Meters set.

Ward.	Occupation.	Location.	Date when set.	Name of Meter.	Size.								Gallons Consumed.	Remarks.	
					1/8-inch.	3/8-inch.	1-inch.	1 1/2-inch.	2-inch.	3-inch.	4-inch.	6-inch.			Total.
1	Baugh, Son & Co.....	S. E. cor. Morris and Meadow sts	May 30.....	Crown			1						1	1,215,300	
1	Schonhelster, J.	432-26 Peirce street.....	May 6.....	Crown			1						1	130,897	Charged by meter.
2	Knickerbocker Ice Co....	{ East side of Ninth st. 89 ft. 6 } { in. south of Washington av. }	Sept. 8.....	Crown					1				1	3,457,860	Charged by meter.
2	Mitchell & Pierson.....	Passyunk ave., S. of Carpenter.	Nov. 12.....	Gem						1			1	1,458,425	
2	Penn Chemical Works ...	1332 Washington avenue.....	Aug. 21.....	Crown			1		1				2	276,952	
2	Southern Electric Lt. Co.	1340 Washington avenue.....	Nov. 16.....	Gem						1			1	2,772,975	Charged by meter.
2	Tomson, G. & Co.....	953 Otsego st. & 938 Swanson st.	Oct. 18.....	Gem					1				1	348,525	
4	— Brady.....	{ 720 Passyunk ave., N.W. cor. } { Fitzwater street..... }	June 21.....	Crown			1						1	1,821,367	
4	Harrison, Frazier & Co..	{ Swanson street, east side, S. } { E. cor. Bainbridge street.... }	Feb. 8.....	Gem					1				1	6,928,275	Charged by meter.
5	Borshadsky, N	436-38 Lombard street.....	May 23.....	Crown					1				1	579,803	Charged by meter.
5	Considine, D.....	{ 274 South Second street, N. } { W. cor. Spruce street..... }	Aug. 6.....	Crown		1							1	317,325	
5	McBride, J.....	{ 310 Spruce street, S. E. cor. } { Fourth street	Nov. 20.....	Crown		1	1						2	244,320	
5	McVey, J.....	529 South Front street.....	Dec. 7.....	Crown			2						2	43,290	
5	Naphey, G. C	314-20 Spruce street.....	Dec. 26.....	Gem						1			1	No water used.	
5	Stern, J.....	509-11 South Fifth street	Aug. 7.....	Crown			1						1	394,650	

New Meters Set—Continued.

Ward.	Occupant.	Location.	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.
6	Callaghan, T.....	121 Coombs alley.....	Oct. 30.....	Crown				1				1	230,242	
6	Clark, J.....	443 Arch st., N. E. corner 5th..	Nov. 17.....	Crown		1						1	28,815	
6	May, H.....	216 Vine street.....	June 21.....	Crown					1			1	866,322	
6	Morley.....	164 N. 2d st., S. W. corner Race..	Nov. 7.....	Crown			1					1	214,995	
6	Wilbur, H. O., & Sons.....	{ 235-41 N. 3d st., and west side } { Bread st., 58 ft. south of New. }	Feb. 12.....	Gen							1	1	976,650	Charged by meter.
7	Hines, E.....	1318 Spruce street.....	Aug. 9.....	Crown			1					1	166,725	
7	Kinley, J. L.....	1428 South street.....	Dec. 15.....	Crown		1						1	7,162	
7	Seavill, T. V.....	1745 South st., N. E. corner 18th.	Dec. 15.....	Crown			1					1	43,965	
7	Snellenburg.....	524 South Twelfth street.....	Dec. 15.....	Crown		1	1					2	91,297	
8	Adams, M.....	104 South Thirteenth street.....	Aug. 6.....	Crown				1				1	487,620	
8	Allen, G.....	1210 Chestnut street.....	Aug. 14.....	Crown			1	1				2	384,015	
8	Arnold, E.....	222 S. 11th st., S. W. cor. Locust..	Aug. 28.....	Crown		1						1	346,147	
8	Antelo, A. J.....	1401-03 Walnut, N. W. cor. Broad	Oct. 1.....	Crown				1				1	1,268,370	
8	Aldine Hotel.....	{ 1908-20 Chestnut street, and } { 1921 Sansom..... }	Nov. 17.....	Crown		1						1	16,688	Charged by meter.
8	Boyce & Bro.....	S. W. corner 13th and Walnut sts	Aug. 8.....	Crown		1						1	114,990	

New Meters Set—Continued.

Ward.	Occupant.	Location.	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.
8	Bohler	902 Walnut street.....	Aug. 23.....	Crown			1					1	65,505	
8	Brolasky.....	117-19 S. Eighth street.....	Aug. 31.....	Crown		1	1					2	217,245	
8	Brown, T.....	1201 Spruce st., S. W. cor. 12th..	Sept. 7.....	Crown		1						1	30,780	
8	Bureau of Water.....	S. W. cor. Juniper and Walnut.	Sept. 2.....	Deacon								1	1	
8	Bringhurst, J.....	{ 932 Chestnut, S. E. cor. 10th and 101-5 S. 10th street..... }	Sept. 9.....	Crown		3						3	303,097	
8	Baird, J.....	911 Walnut street.....	Sept. 11.....	Crown			2					2	121,260	
8	Bache, W. W.....	286-40 S. Ninth street.....	Sept. 18.....	Crown		2	1					3	945,330	
8	Blight, A.....	101 S. Thirteenth street.....	Sept. 21.....	Crown			1					1	144,082	
8	B. & O. R. R. Co.....	{ S. W. cor. 24th & Chestnut & W. S. 24th S. of Chestnut.. }	Sept. 29.....	Gem						1	1	2	5,702,250	
8	Bureau of Water.....	S. E. cor. 9th and Walnut sts....	Oct. 26.....	Deacon								1	1	
8	College of Physicians.....	219-23 S. 18th, N. E. cor. Locust	Aug. 8.....	Crown		1						1	90,005	
8	Campbell.....	1313 Wynkoop street.....	Aug. 8.....	Crown		1						1	12,965	
8	Clark, J. C.....	E. S. Broad, S. of Locust st.....	Aug. 17.....	Crown } Gem ... }				1			1	2	925,235	On fire attachment.
8	Cresson, W. R.....	250 S. Juniper street	Aug. 18.....	Crown		1						1	16,185	
8	Campbell	200 S. 12th, S. W. cor. Lyndall.	Sept. 4.....	Crown		1						1	8,635	

New Meters Set—Continued.

Ward.	Occupant.	Location.	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.
8	Carter, C.....	807 Sansom street.....	Sept. 12.....	Crown ..	1								1	71,797	
8	Campbell.....	214 South Eighth street.....	Sept. 20.....	Crown ..				1					1	171,930	
8	Crump.....	1500-06 Chestnut, S. W. c. 15th..	Sept. 22.....	Crown ..		2			1				3	5,508,847	
8	Crump.....	1500-06 Chestnut, S. W. c. 15th..	Oct. 2.....	Gem ..							1		1		
8	Dignon, J.....	1337-39 Wynkoop street.....	Aug. 16.....	Crown ..		1							1	23,935	
8	Empire Theatre.....	S. E. cor. Broad and Locust sts..	Aug. 17.....	Crown ..				1					1	3,723,300	On fire attachment.
8	Empire Theatre.....	S. E. cor. Broad and Locust sts..	Aug. 17.....	Gem ..							1		1		
8	Elliott, M. A.....	124 S. 15th st., S. W. cor. Sansom	Sept. 21.....	Crown ..		1							1	164,422	
8	Flaherty.....	243 S. 11th st., S. E. cor. Locust..	Aug. 15.....	Crown ..			1						1	894,305	
8	Fox, J. M. & H.....	1339-41 Sprucest., N. E. c. Broad	Aug. 22.....	Gem ..					1				1	1,382,825	
8	Fidelity Trust Co.....	914 Walnut, S. W. c. Raspberry..	Aug. 25.....	Crown ..		1	1		1				3	665,040	
8	Fawn, C.....	711 Walnut street.....	Aug. 28.....	Crown ..		1							1	321,210	
8	Friedenberg.....	909 Sansom street.....	Sept. 4.....	Crown ..			1						1	184,822	
8	Fisher Estate.....	919-21 and rear Walnut street..	Sept. 6.....	Crown ..		1			1				2	843,010	
8	Grover, W. D.....	1108 Sansom strpet.....	Aug. 6.....	Crown ..		1							1	498,087	

New Meters Set—Continued.

Ward.	Occupant.	Location.	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.
8	Green, J. M.	122 South Thirteenth street.....	Aug. 11.....	Crown	1								1	133,687	
8	Gilmore, W. J.	803-13 Walnut street.....	Sept. 16.....	Crown			1		1				2	558,300	
8	Gibbons, M.	201 S. 13th st., S. E. c. Lyndall.	Sept. 27.....	Crown	1								1	54,562	
8	Historical Society.....	S.W. cor. Thirteenth & Locust..	Aug. 8.....	Crown		3							3	490,515	
8	Hornickle.....	114 S. 13th st., S.W. cor. Sansom	Aug. 15.....	Crown	1								1	486,915	
8	Hess, D. M.	904 Walnut street.....	Aug. 23.....	Crown ...	1		1						2	47,640	
8	Hodge, H. S.	901-03 Walnut st., N.W. c. Ninth	Aug. 31.....	Crown ...				1					1	254,565	
8	Herkness, A.	S. E. c. Ninth and Sansom sts....	Sept. 7.....	Crown	1								1	28,887	
8	Hall, E. N.	905 Walnut street.....	Sept. 8.....	Crown	1	1							2	38,422	
8	Hart, J. C.	123-25 South Tenth street.....	Sept. 13.....	Crown			1	1					2	262,125	
8	Hammett, B.	2320 Chestnut st., S. E. c. 24th...	Sept. 28.....	Crown	1								1	434,692	
8	Hallahan.....	224 S. Tenth st., N.W. c. Locust	Oct. 2.....	Crown	1								1	53,445	
8	Jones, C. B.	115 South Eleventh street.....	Aug. 7.....	Crown			1						1	188,400	
8	Junker, J.	1233 Locust street.....	Oct. 3.....	Crown	5								5	714,015	
8	Junker, J.	Rear 204 Dean street.....	Sept. 12.....	Crown ...	1	1							2	1,147,567	

New Meters Set—Continued.

Ward.	Occupant.	Location.	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.
8	Jefferson College.....	120-30 South Tenth street.....	Sept. 18.....	Crown				2	1				3	7,806,772	
8	Lang, W.....	229 South Broad street	Aug. 6.....	Crown		1							1	581,644	
8	Lauber, W.....	1301-03 Walnut st., N.W. c. 13th	Aug. 21.....	Crown				1	1				2	2,151,262	
8	Lengert, G.....	239-45 South Twelfth street.....	Aug. 29.....	Crown				1					1	370,447	
8	Lea, H. C.....	710 Sansom street.....	Sept. 1.....	Crown					1				1	23,885	
8	Lea, H. C.....	900 Chestnut st., S.W. cor. 9th..	Sept. 9.....	Crown		1		1					2	301,207	
8	Lippincott, J. B.....	914 Sansom street	Sept. 1	Crown		1							1	271,185	
8	Lippincott, J. B.....	915-17 Walnut street	Sept. 17.....	Crown					2				2	2,822,527	
8	Logue, P.....	245 S. 23d st., S. E. cor. F st....	Sept. 28.....	Crown		1							1	96,367	
8	Morris, R. G.....	106-08 South Eleventh street.....	Aug. 6.....	Crown			2						2	810,357	
8	McGillan.....	1310-14 Drury street.....	Aug. 15.....	Crown			2						2	231,997	
8	Mills, Thomas.....	206 South Eleventh street.....	Aug. 28.....	Crown				1					1	314,272	
8	McClellan.....	132-32½ S. 10th st., r. Medical..	Sept. 17.....	Crown					1				1	700,010	
8	Maroney Estate.....	123-25 S. 15th st., S.E. c. Sansom..	Sept. 21.....	Crown		2	1						3	325,635	
8	McGran, J.....	259 S. 21st st., N.E. c. Rittenh'se	Sept. 22.....	Crown				1					1	403,155	

New Meters set—Continued.

Ward.	Occupant.	Location.	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.
8	Musical Fund Hall.....	{ 804-10 Locust st., S. E. cor. Du-	Nov. 17.....	Gem.....						1			1	31,650	
8	Patterson, J.....	231 South Broad st	Aug. 6.....	Crown.....				1					1	451,072	
8	Philada. Library.....	N.W. cor. Juniper & Locust sts.	Aug. 16.....	Crown.....		1	1						2	525,308	
8	Pepper.....	926 Walnut street.....	Sept. 14.....	Crown.....				1					1	28,732	
8	Peabody Hotel.....	246-50 South Ninth street.....	Oct. 1.....	Crown.....			2						2	201,840	
8	Queril, P.....	1201 Locust st., N.W. cor. 12th...	Sept. 19.....	Crown.....		1							1	320,295	
8	Rhoc tes.....	225 South Broad street.....	Aug. 14.....	Crown.....			1						1	173,182	
8	Rittinhouse Club.....	907 Walnut street.....	Sept. 1.....	Crown.....		1							1	87,262	
8	Rath, T.....	801 Walnut st., N.W. cor. 8th	Sept. 1.....	Crown.....		1							1	100,147	
8	Rath, T.....	140 South Eighth street.....	Sept. 4.....	Crown.....			1						1	1,012,275	
8	Robinson, E. H.....	909 Walnut street.....	Sept. 7.....	Crown.....		1	1						2	349,980	
8	Ridgway.....	1000-02 Chestnut st., S.W. c. 10th.	Sept. 9.....	Crown.....		1	1	1					3	915,987	
8	Racquet Club.....	923 Walnut street.....	Sept. 14.....	Crown.....					1				1	166,590	
8	Rudolph, Chas.....	212-14 South Ninth street.....	Sept. 18.....	Crown.....		1	1						2	1,784,250	
8	Roehm, J.....	{ 1028-30 Sansom street, S. W. cor. Juvenal.....	Nov. 20	Crown.....			1						1	173,527	

New Meters Set—Continued.

Ward.	Occupant.	Location.	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.
8	Sargent, C. B.....	112 S. Twelfth st.....	Aug. 10.....	Crown.....		1							1	399,554	
8	Shippen Estate.....	928 Chestnut st.....	Aug. 23.....	Crown		1							1	49,200	
8	Shippen Estate.....	832 Walnut st., S. E. cor. 9th....	Sept. 19.....	Crown.....		2	1						3	133,807	
8	Spitzer, J.....	224 S. Eleventh st.....	Aug. 29.....	Crown.....			1						1	7,545	
8	Snellenburg, N.....	913 Walnut st.....	Sept. 6.....	Crown.....		1							1	9,645	
8	School, W. C.....	131 S. Tenth st.....	Sept. 11.....	Crown.....			1						1	22,777	
8	School, W. C.....	133 S. Tenth st.....	Sept. 11.....	Crown.....		1							1	83,640	
8	Sandran.....	249 S. Eleventh st.....	Sept. 19.....	Crown.....			1						1	340,125	
8	Sweeney, R.....	264 S. Twentieth st.....	Sept. 22.....	Crown.....		1							1	70,162	
8	Sharp.....	2118-30 Chestnut st.....	Sept. 25.....	Crown.....			3						3	1,195,155	
8	Sharp.....	2118-30 Chestnut st.....	Oct. 31.....	Gem						1			1		
8	Stratford Hotel.....	S. W. Broad and Walnut st.....	Sept. 26.....	Crown.....		3							3	5,101,995	
8	Stratford Hotel.....	S. W. Broad and Walnut st.....	Oct. 1.....	Gem						1			1		
8	Smith, E.....	120 S. 23d st., N. W. c. Sansom st.	Sept. 26.....	Crown		1	1						2	564,427	
8	Sweeney, C.....	131 S. 17th st., N. E. Moravian st	Sept. 27.....	Crown.....		1							1	170,685	

New Meters Set—Continued.

Ward.	Occupant.	Location.	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.
8	Toy, B. F.....	105 South Eleventh street	Aug. 11.....	Crown.....	1								1	167,892	
8	Theum, C.....	1010-14 Sansom street.....	Sept. 11.....	Crown.....	2								2	238,890	
8	Triebner, J. W.....	729 Sansom street.....	Oct. 19.....	Crown.....	2	1							3	435,660	
8	University Club.....	1316 Walnut street	Aug. 12.....	Crown			1						1	769,537	
8	Union Pass. R. W. Co.....	812-30 Sansom stre. t.....	Sept. 17.....	Crown.....				1					1	3,828,015	
8	Ulman, John.....	235 S. 9th st., S. E. cor. Locust..	Sept. 19.....	Crown.....			1						1	385,477	
8	Van Bell, H.....	107 South Tenth street.....	Sept. 9.....	Crown.....			1						1	274,695	
8	Ware, E. R.....	213 South Broad street.....	Aug. 9.....	Crown.....	1								1	400,927	
8	White, S. S.....	1130-32 Chestnut st., S. E. 12th.	Aug. 11.....	Crown.....	2			1					3	1,383,517	
8	Wilcox, J. M.....	1106 Chestnut street.....	Aug. 16.....	Crown.....	2								2	366,652	
8	Weidenheimer.....	112 South Eighth street.....	Sept. 6.....	Crown.....			2						2	174,945	
8	Wharton.....	814 Chestnut street.....	Sept. 12.....	Crown.....			1						1	49,605	
8	Wells, Hon. Calvin.....	700-02 Chestnut st., S. W. 7th...	Sept. 13.....	Crown.....	1	1	1						3	197,444	Charged by meter.
8	Wade, J. A.....	122 S. 9th st., S. W. c. Sansom...	Sept. 30.....	Crown.....	2	1							3	110,355	
8	McCullough.....	212 S. 8th st., N. W. cor. Locust..	Sept. 20.....	Crown.....	1								1	448,785	

New Meters Set—Continued.

25
Ward.

Ward.	Occupant.	Location.	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.
8	Zeise, S.....	820-22 Walnut, S.W.cDuponce'u	Sept. 7.....	Crown.....			1	1					2	889,182	
9	Elverson, J.....	1109 Market street.....	Feb. 12.....	Crown.....		1			1				2	116,055	Charged by meter.
9	Green, Thomas.....	727-33 Chestnut street.....	April 20.....	Gem.....							1		1	5,456,550	
9	Keogh, M.....	2231 Market st., S. E. c. 23d st....	Nov. 3.....	Crown.....		1							1	126,947	
9	Lardner, Perot Estate....	2101-17 Market st., N. W. c. 21st	Aug. 3.....	Crown.....					1				1	3,828,135	Charged by meter.
10	Hafner, T. J.....	237-47 N. Eighth street.....	Feb. 17.....	Gem.....						1			1	378,975	Charged by meter.
10	Sashc, J. F.....	732 Vine st., S. E. c. Eighth st....	Nov. 2.....	Crown.....		1			1				2	1,023,465	
10	Sharp, J.....	1201-05 Arch st., N. W. c. 12th....	Nov. 23.....	Gem.....							1		1	4,800	
11	Cuniff, John K.....	701 N. 3d st., N. E. c. Fairmount	Dec. 27.....	Crown.....		1	1						2	No water used.	
11	Fischer, J.....	612 Now Market street.....	Dec. 13.....	Crown.....			1						1	16,897	
11	McCall, E., Estate.....	634 N. 2d st., S. W. c. Fairmount	Dec. 19.....	Crown.....				1					1	21,892	
11	Weighley, W. W.....	712-20 N. Delaware avenue.....	Aug. 8.....	Crown.....					1				1	15,382	
12	Helbling, J.....	459 York avenue.....	Dec. 20.....	Crown.....		2							2	27,960	
12	Roehm, John.....	848 Charlotte st., & 847-51 N. 4th	July 27.....	Gem.....						1			1	238,275	Charged by meter.
12	Rosenfelt, S.....	617 N. Fourth street.....	Dec. 21.....	Crown.....			1						1	40,680	

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New Meters Set—Continued.

Ward.	Occupant.	Location.	Date when set.	Name of Meter.	SIZE.								Gallons Consumed.	Remarks.	
					1/2-inch.	3/4-inch.	1-inch.	1 1/2-inch.	2-inch.	3-inch.	4-inch.	6-inch.			Total.
12	Wahl, J. H.....	827 N. Fifth st.....	Dec. 22.....	Crown.....			1						1	41,272	
	Bureau of Water.....	N. E. cor. 10th and Wallace sts.	Oct. 27.....	Deacon.....							1		1		
13	Hensell & Colladay.....	N. E. cor. Vine & Franklin sts.	May 4.....	Crown.....				1					1	2,99,425	Charged by meter.
13	P. & R. Terminal Co.....	E.S. Kessler, or Linden op. Mt V'n	Jan. 4.....	Gem.....							1		1	21,284,250	Charged by meter.
14	Ashback, John.....	1201 Vine st., N. W. cor. 12th st.	Oct. 7.....	Crown.....			1						1	265,290	
14	Breidenbach, C.....	440 N. 11th, N.W. cor. Hamilton	Oct. 15.....	Crown.....			1						1	269,107	
14	Bureau of Water.....	S. W. cor. 13th & Buttonwood sts	Nov. 13.....	Deacon.....								1	1		
14	Caledonian Club.....	1239 Sp. Garden, N. E. cor. 13th	Aug. 18.....	Crown.....					1				1	870,745	
14	Carpenter, S.....	874 N. 10th, S. W. cor. Poplar st	Oct. 6.....	Crown.....	1	1							2	428,850	
14	Clark, J. C.....	1100 Fairmount, S. W. cor. 11th	Oct. 16.....	Crown.....	1								1	20,812	
14	Emerick, W.....	338 N. Tenth st.....	Oct. 6.....	Crown.....	1								1	177,915	
14	Evans estate.....	1126 Sp. Garden, S.W. cor. Ridge	Oct. 10.....	Crown.....	1								1	No water used.	
14	Garvey, J.....	1801 Fairmount, N. W. cor. 13th	Oct. 9.....	Crown.....	1								1	66,075	
14	Herring, W. II.....	715-17 N. Broad st.....	Aug. 24.....	Crown.....					1				1	9,217	
14	Haines, Jones, Cadbury } Co.....	{ 1184-40 Ridge ave., 605 N. 12th st., and 1109 Buttonwood st.	Oct. 10.....	Crown.....	1								1	91,367	Charged by meter.

New Meters Set—Continued.

Ward.	Occupant.	Location.	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.
14	Lauer, Adam.....	509 N. 10th st. S.W. c. Nectarine	Dec. 5.....	Crown.....		1							1	33,585	
14	Loran, F.....	801 N. 13th st., N. E. c. Brown..	Oct 10.....	Crown.....		1							1	45,502	
14	McDaid, Wm.....	1001 Ft. av. N. W. cor. 10th.....	Oct. 6.....	Crown.....		1							1	33,352	
14	McNulty, P.....	1001 Buttonw'd st. N.W. c. 10th	Oct. 9.....	Crown.....		1		1					2	103,215	
14	Monroe, L.....	1120 Ridge av. N.W. c. Butt'nw'd	Oct. 10.....	Crown.....				1					1	232,995	
14	Merz, P. J.....	1130 Fairmount avenue.....	Oct. 12.....	Crown.....				1					1	315,285	
14	Nauman, Henry.....	507 N. 11th st. N.E. c. Nectarine	Oct. 4.....	Crown.....		1							1	160,415	
14	Ninesteel, Mrs.....	1105-09 Ridge avenue.....	Oct. 11.....	Crown.....				1					1	281,362	
14	Hughes, B.....	715 N. 11th st. N.W. cor. Olive..	Oct. 11.....	Crown.....		1							1	62,265	
14	Philad'a Traction Co.....	N. E. 13th & Mt. Vernon sts.....	Nov. 15.....	Gem.....								2	2	1,866,450	Charged by meter.
14	Rhiel, J. II.....	1356 Ridge avenue.....	Oct. 12.....	Crown.....				1					1	144,315	
14	Ritter II.....	1301-07 Ridge av. N. E. c. 13th..	Oct. 12.....	Crown.....				1					1	525,757	
14	Schauffhausen, J.....	501 N. 12th st. N.E. c. Butt'nw'd	Oct. 10.....	Crown.....		2	1						3	371,445	
14	Stephen C.....	1322 Callowhill st.....	Oct. 7.....	Crown.....				1					1	421,630	
14	Schmidt C.....	676 N. 12th st. S. W. cor. Potts..	Oct. 9.....	Crown.....		1							1	70,552	

New Meters Set—Continued.

Ward,	Occupant.	Location.	Date when Set.	Name of Meter.	SIZE.								Gallons Consumed.	Remarks.
					1/2-inch.	3/4-inch.	1-inch.	1 1/2-inch.	2-inch.	3-inch.	4-inch.	6-inch.			Total.
14	Stern, M.....	712 N. 13th st., S. W. cor. Olive.	Oct. 12.....	Crown.....			1					1	438,97	
14	Small, P.....	1247 Buttonwood st., N. E. c. 13th	Dec. 6.....	Crown.....		1		1				2	32,182	
14	Truckers, Chas.....	712 N. 10th.....	Oct. 6.....	Crown.....		1						1	21,35	
15	Barr, D., Estate.....	2660-64 Callowhill st.....	Nov. 26.....	Crown.....		1						1	35,745	
15	Betz, J. F.....	2319 Fairm't av. & r. N. E. c. 24th	Dec. 1.....	Crown.....		2						2	63,082	
15	Betz, J. F.....	323-25 N. 17th st., S. E. c. Wood.	Dec. 5.....	Crown.....		1						1	19,125	
15	Bergdoll, L., Brewing Co.	829 N. 29th st., N. E. c. Parrish, N. W. 28th & Parrish, & 28th, W. S., 126 ft. N. of Parrish.....	Dec. 1.....	Gem.....						1		1	No water used.	Charged by meter.
15	Bergdoll, L., Brewing Co.	829 N. 29th st., N. E. c. Parrish, N. W. c. 28th & Parrish, & 28th, W. S., 125 ft. N. of Parrish.....	Dec. 16.....	Crown.....				1				1	No water used.	Charged by meter.
15	Brady, F.....	305 N. 21 st., N. E. cor. Pearl.....	Dec. 2.....	Crown.....		2						2	68,512	
15	Caven, James.....	N. S. North st., 88 ft. E. of 15th	Oct. 18.....	Gem.....					1			1	94,500	
15	Carroll, J.....	1816 Callowhill st., S. E. c. 19th.	Nov. 26.....	Crown.....			1					1	311,887	
15	Collins, J.....	1847 Callowhill st., N. E. c. 19th.	Nov. 27.....	Crown.....		1						1	54,855	
15	Calverly, W.....	1551 Ridge ave.....	Nov. 30.....	Crown.....		1						1	38,895	
15	Cleaver, D. C.....	701 N. 24th st., N. W. c. Virginia.	Dec. 2.....	Crown.....			1					1	36,585	
15	Duy, J.....	2501 Callowhill st., S. E. c. 19th.	Nov. 26.....	Crown.....		1	1					2	87,360	

New Meters Set—Continued.

Ward.	Occupant.	Location.	Date when Set.	Name of Meter.	SIZE.							Gallons Consumed.	
					½-inch.	¾-inch.	1-inch.	1½-inch.	2-inch.	3-inch.	4-inch.		6-inch.	Total.
15	Dever, D.....	N. S. Hamilton st., from N. W. c. Penna. av. to N. E. c. 22d...	November 29	Crown.....			1					1	71,827
15	Dickensheetz, M. A.....	1919 Fairmount ave.....	December 4	Crown.....	1							1	12,592
15	Flaherty, M. F.....	328 N. 17th st., N. W. c. Wood...	November 28	Crown.....	1							1	22,375
15	Fell, T.....	1402-06 Ridge ave.....	November 30	Crown.....			2					2	117,595
15	Levis, A. B.....	400 N. 21st, N. W. c. Callowhill.	November 28	Crown.....	1							1	190,627
15	Lossman, E.....	871 N. 29th st., S. E. c. Poplar...	December 4	Crown.....	1							1	50,595
15	McHugh, J.....	2327 & r. Sp. Garden N. E. 24th	November 27	Crown.....			1					1	128,100
15	McStravog, L.....	2344-16 Callowhill, S. E. c. 24th.	November 27	Crown.....			1					1	51,825
15	McCusker, J.....	2118 Callowhill st.....	November 28	Crown.....	1							1	21,600
15	McGlinchey, S.....	1420 Parr'sh, S. W. c. Carlisle...	November 30	Crown.....			2					2	252,915
15	Meehan, P.....	1927-29 Hamilton st.....	December 1	Crown.....			2					2	260,377
15	Mullen, P.....	325 N. 16th st., S. E. c. Wood...	October 20	Crown.....	1	1						2	166,887
15	Minnick, T.....	1700 Fairmount, S. W. c. 17th...	December 5	Crown.....			1					1	56,512
15	O'Donnell, M.....	300 N. Broad, N. W. c. Vine.....	November 9	Crown.....			1					1	612,480
15	Owens, J.....	1700 Callowhill st., S. W. 17th...	December 4	Crown.....	1							1	33,937

New Meters Set—Continued.

Ward.	Occupant.	Location.	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.
15	Patton, R. H.....	747 N. 25th st., S. E. cor. Hare..	Dec. 2.....	Crown		1							1	12,052	
15	Small, W. B.....	1501 Brown st., N. W. c. 15th.....	Dec. 2.....	Crown			1						1	143,700	
15	Teckenburg, L.....	1447-19 Ridge av., S. E. c. Brown	Nov. 29.....	Crown		2							2	5,671	
16	Jewish Church.....	926-928 New Market st.....	Aug. 4.....	Crown			1						1	129,472	
16	McNeely Estate.....	354 W. Girard ave., S. E. c. 4th.....	Nov. 18.....	Crown		1	1						2	241,665	
16	Ruhl, J. A.....	165 Laurel st., N. W. c. Canal...	Dec. 22.....	Crown		1							1	5,955	
16	Schimmel, J. O. Co.....	948-50 Beach st.....	April 4.....	Gem								1	1	191,025	Charged by Meter on Fire Attachment.
16	Schumann, L. & Sons.....	{ 1027 and 1026-28 Canal st. & } { 1018 St. John st..... }	May 11.....	Crown				1					1	1,209,300	
16	Warthman, A. H. & Co.....	35 & 37 Poplar st. N. W. c. Glenat	Dec. 23.....	Crown			1						1	29,895	Charged by meter.
17	Long, James.....	S. W. c. Oxford & Palethorpe...	April 10.....	Crown				1					1	347,528	Charged by meter.
18	Hughes & Patterson.....	E. S. Beach, 75 ft. S. W. of Vienna	July 28.....	Crown			1	1					2	355,582	Charged by meter.
19	Cox, A. Stove Works.....	2301 American, N. E. c. Dauphin	July 26.....	Crown		1							1	50,216	Charged by meter.
19	Dungan, Hood & Co.....	S. W. c. Susq. ave. & American.	July 23.....	Gem									1	10,623,825	
19	Ehringer, E.....	436-38 Dauphin, S. E. c. Orknoy.	June 23.....	Crown ...	1			1					2	285,075	
19	Collins Mfg. Co.....	N. W. c. Oxford & American st.	Nov. 29.....	Gem						1			1	No water used.	

New Meters Set—Continued.

Ward.	Occupant.	Location.	Date when set.	Name of Meter.	SIZE.								Gallons Consumed.	Remarks.	
					1/2-inch.	3/4-inch.	1-inch.	1 1/2-inch.	2-inch.	3-inch.	4 inch.	6-inch.			Total.
19	Feile, F.....	{ 2204-06 Fairhill st. & 2205-07 N. 6th street..... }	May 10, 1893.	Crown					1				1	609,375	Charged by meter.
19	La Roche Electric Works	N.W. c. American & Diamond.	July 23.....	Gem						1	1		2	1,893,600	
19	Murphy, M.....	S.E. c. 3d & Cumberland sts....	April 14.....	Crown			1						1	723,562	
19	Wilson, Andrew.....	312-18 Columbia avenue.....	Nov. 13.....	Crown				1					1	124,815	
20	Meehling Bros.....	{ 936-46 Darien st. and 937-53 North Ninth street..... }	Nov. 21.....	Gem						1			1	168,165	
20	Meehling Bros.....	{ 936-46 Darien st. and 937-53 North Ninth street..... }	Dec. 14.....	Crown			1						1		
20	Nutt, J.....	N.W. c. Eighth & Diamond sts	August 3.....	Crown			1						1	117,417	
21	Bureau of Water.....	Ridge avenue.....	Nov. 25.....	Gem								2	2	118,627	
21	Lyons, P.....	4147-49 Main street.....	Dec. 14.....	Crown			1						1	No water used.	
21	McVeigh, J.....	4411 Main street.....	Dec. 5.....	Crown		1							1	No water used.	
21	Wilson, A.....	N.E. c. Church & Hamilton sts	Dec. 5.....	Crown		1							1	158,215	
22	Wrigley Mfg Co.....	{ S. W. side Green st., 448 ft 8 in. N. W. of Roberts ave. }	August 1.....	Crown				1					1	No water used.	
23	Ford, W. & B.....	N. E. c. Mill & Orchard sts.....	Dec. 30.....	Crown			1						1	No water used.	
25	Goldschmid T. J.....	{ Rear of 344 and all of 346 Frankford ave..... }	April 21.....	Crown					1				1	829,738	Charged by meter.
25	Grovedale Packing Co.....	{ S. side Somerset, 60 ft. W. of Trenton avenue..... }	Aug. 14.....	Crown					1				1	732,172	Charged by meter.

New Meters Set—Continued.

Ward.	Occupant.	Location.	Date when Set.	Name of Meter.	SIZE.								Gallons Consumed.	Remarks.
					1/2-inch.	3/4-inch.	1-inch.	1 1/2-inch.	2-inch.	3-inch.	4-inch.	6-inch.			Total.
25	P. & R. R. Co.....	N. E. c. Lehigh and Trenton av	April 9.....	Gem							1	1	174,375	{ Charged by meter. { On fire attachment.
26	Kearney, M.....	1739 S. Eighteenth street.....	Nov. 9.....	Crown		1						1	85,897	
26	Miller, J. & Co.....	S. E. cor. Sixteenth and Reed...	June 7.....	Gem						1		1	1,226,950	Charged by meter.
27	Clegg, D.....	3044 Ludlow street.....	Aug. 3.....	Crown	1							1	4,507	
27	Colyer, G. B.	S. E. cor. Chestnut and 31st sts.	Mar. 25.....	Gem				1				1	63,975	
27	Philada. Traction Co.....	3318-28 Market, 100 ft. w. of 33d	Sept. 5.....	Gem								2	No water used.	
28	Bradbury, S.....	N. s. Bristol, 248 ft. e. of Wayne	April 13.....	Gem							1	1	51,825	{ Charged by meter. { On fire attachment.
28	Diamond Electric Lt. Co.	S. W. cor. 17th and Clearfield...	April 11.....	Crown				1				1	5,064,915	Charged by meter.
28	Graham, J.....	3320 Uber street.....	April 15.....	Nash.....		1						1	17,902	Charged by meter.
28	Northern Ice Mfg. Co.....	W. s. 11th, 145 ft. n. of Dauphin	April 13.....	Gem							1	1	2,723,850	Charged by meter.
28	McKeown, P.....	1251 Huntingdon, n. e. cor. 13th	Dec. 9.....	Crown			1					1	41,265	
28	Peoples Pass. R. W. Co...	{ Dauphin, s. w. cor. 8th and } { n. w. cor. 8th and Susq. av }	Aug. 3.....	Crown				1				1	433,200	Charged by meter.
28	Relchlieu	N. e. cor. Clearfield and 22d sts.	Oct. 20.....	Crown			1					1	291,192	
28	Singerly, Wm. M.....	{ 2300-6 and r. N. 8th, n. w. } { cor. Dauphin..... }	Dec. 24.....	Gem						1		1	135,075	
29	Baltz, J. & P. Brg. Co.....	Thompson, 120 ft. w. of 31st st.	Oct. 17.....	Gem								1	1,060,425	Charged by meter.

New Meters Set—Continued.

Wards.	Occupant.	Location.	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.			
29	Dobbins, R. J.....	{ N.W. cor. Broad st. and Col- umbia av., or 1714 N. Broad.. }	March 3.....	Gem					1					1	665,025	Charged by meter.
29	Girard College	Ridge and North College aves..	June 29.....	Crown ...	1									1		
29	Poth, F. A. Brg. Co.....	N.W. cor. 31st and Jefferson sts.	May 5.....	Gem							1	1	2	No water used.	Charged by meter.	
29	Schmitt, C	{ 2948 Girard ave., S. E. cor. } { Thirtieth street..... }	Dec. 7	Crown		1								1	11,400	
30	Merchant & Co.....	2019-27 Washington avenue	April 14.....	Crown				1						1	2,566,612	Charged by meter.
33	Devlin, Thomas	{ N.W. cor. Lehigh avenue and } { American street..... }	May 14.....	Gem						1				1	1,052,625	
33	Gunn, Charles B.....	N.W. cor. 11th and Venangosts.	June 21.....	Crown					1					1	2,125,657	Charged by meter.
33	Ind. Order of Red Men...	{ 3801 Germantown avenue, } { N. E. cor. Butler street..... }	Dec. 9.....	Crown			1							1	37,635	
34	Knickerbocker Ice Co.....	N.W. cor. Girard & Merion avs.	Dec. 7.....	Crown		1								1	No water used.	
		Total.....			5	141	96	33	34	14	16	13	352	176,652,403		
		Total not charged by meters.....												111,809,078		
		Total charged by meters.....												64,843,325		

NOTE: One ½-inch and one 1-inch Crown Meters discontinued.

Miscellaneous Work.

MONTHS.	EXAMINATIONS.				MISCELLANEOUS.						STATEMENTS.	STYLE.	METERS.											
	Attachments.	Short supply.	Leaks.	Meters.	Total.	New boxes.	Boxes repaired.	New inlets set.	Fish-traps.	Service pipes repaired.			Total.	Repaired.		Used in service.		Purchased.						
												Crown.	Com.	Nash.	Total.	Crown.	Nash.	Total.	Crown.	Com.	Peacon.	Nash.	Total.	
January.....	15	1	181	197	2	1	12	1	16	2,151	1/2 inch ..	1			1	1		1	10				10	
February.....	23	3	157	183	1		3	11	15	2,667	3/4 inch...	1	5	20				175				1	176	
March.....	9	4	235	248	1	2	7	6	23	5,307	1 inch.....	11	1	18		1	1	150					150	
April.....	5	5	239	249	10		9	30	7	2,080	1 1/2 inch..	18	3	21	1	2	3	15					45	
May.....	23	5	206	231	9		11	19	139	2,173	2 inch.....	26	24	50			1	45					45	
June.....	573	1	67	643	7		7	9	390	413	3 inch.....	19	11		21	1			1	20			21	
July.....	811	1	11	826	2	1	2	4	681	311	4 inch.....	11	42		53				1	20	2		23	
August.....	187		98	585	15		15	69	321	1,835	6 inch.....	1	2		3					5	3		8	
September.....	192		141	333	26	1	26	86	235	371														
October.....	303		116	418	21		21	49	231	325														
November.....	275		75	350	16		17	12	226	391														
December.....	137		77	214	16		16	18	99	170														
Totals.....	2,827	30	20	1,613	4,190	126	5	131	385	2,327	2,977	21,680	96	79	12	187	3	3	6	427	45	5	1	478

DISTRIBUTION EXPENSES.

During the year 1893,

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.	Highway Bureau.	Totals.
Lead	\$4,986 37	\$5,899 27	\$25,118 40	\$18,693 19	\$9,070 14	\$5,639 03					\$69,406 40
Gasket.....	159 34	75 88	306 69	303 18	88 26	152 14				199 96	1,285 45
Coke	65 70	63 00	216 15	234 40	57 80	88 20				21 90	747 15
Wood.....	42 00					34 13					76 13
Pipes.....					561 00		\$500,263 09			14,275 27	515,099 36
Breeches pipes and ¼ turns							10,696 10				10,696 10
Small specials.....							16,049 35			2,477 66	18,527 01
Large specials.....							25,948 52				25,948 52
Frames and covers.....	1,160 05	986 70	391 88	453 76	130 62	457 17		\$766 23			4,346 41
Viney stops.....				4,987 00							4,987 00
Excavation by contract.....							73,549 97				73,549 97
Hauling, trans. and hotel.....	17 10	10 90	418 17	8 00			20,066 27	271 11	\$121 00		20,912 55
Supplies, tools, small stores, etc.....	1,196 63	1,220 14	1,556 26	2,380 25	1,814 33	869 16	733 47	1,104 76	210 69	20 56	11,106 30
Plumbing and plumber' supplies.....	8 40	75 00	2 35				4 00	8,484 60		5,936 07	14,967 43
Meters, etc.....								26,774 54			26,774 54
Repairs to buildings, etc.....			41 70								41 70
Brick, stone, lime and cement.....	21 90	15 30	1,416 24	859 49	163 15	102 00	193 10	9 20			2,780 38
Lumber.....	376 45	222 09	4,300 90	1,710 20	954 82	457 35		355 51		177 04	8,554 36
Hay, feed, etc.....	951 10	730 20	888 84	908 52	79 40	71 68					3,629 74
Stable supplies.....	579 92	424 98	472 17	403 40	389 84	405 27					2,675 58
Stable repairs.....	295 97	59 48	163 63	262 80		50					782 38
Stable medicines.....	4 00	20 90	39 00	43 00							106 90
Stable shoeing.....	104 00	99 00	95 50	88 50	4 38	10 00					401 38
Shop work.....	25,834 55	15,577 13	14,863 76	19,988 08	6,014 74	8,383 52	597 63	1,806 57			92,565 98
Supplies, stationery.....	150 33	153 25	125 81	127 72	27 09	104 10	970 92	232 03	1,247 17		3,143 42
Hire of scows.....				2,428 55							2,428 55
Wages { Per diem.....	24,157 18	25,861 38	48,484 04	50,454 02	27,761 66	23,094 36	5,673 60	12,089 34	2,861 36		220,736 94
Wages { Salary	4,377 06	5,576 76	6,234 16	7,476 65	1,700 00	3,794 00					29,169 63
Total cost of labor and material on ac- count of distribution.....	\$64,788 10	\$57,076 36	\$105,135 65	\$111,821 71	\$48,817 23	\$43,666 61	\$655,199 03	\$51,393 89	\$4,440 22	\$23,108 46	\$1,165,447 26
Buildings and grounds.....			187 25	994 59	2,013 36						3,195 20
Changing pumps.....				824 19							824 19
Removing submerged main.....				2,642 89							2,642 89
Cleaning Spring Garden Reservoir.....				5,865 60							5,865 60
Slum work.....	*2,477 23	*1,089 74					*1,791 75				5,358 72
Trolley work.....	4,077 63	3,250 06	1,793 54	4,847 91		5,529 86	183 85				19,682 85
Girard College.....				*76 25							76 25
Reading Terminal.....				*228 75							228 75
Bureau of Highways.....			*95 25								95 25
Builders.....				*88 75							88 75
Total labor and materials.....	\$71,342 96	\$61,416 16	\$107,211 69	\$127,390 64	\$50,830 59	\$49,196 47	\$657,174 63	\$51,393 89	\$4,440 22	\$23,108 46	\$1,203,505 71
NOTE.—Girard Estate { Pipes.....											1,415 21
NOTE.—Girard Estate { Specials.....											109 09
Grand total.....											\$1,205,030 01

* Amount of wages paid by other bureaus and private parties.

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New Attachments put in and delivered to Districts from January 1 to December 31, 1893.

DISTRICTS.	Put in.	Delivered.	Total.	Number of feet put in.	Number of feet delivered.	Total.	$\frac{1}{2}$ -in. Lead Pipe, in feet.	$\frac{3}{8}$ -in. Lead Pipe, in feet.	$\frac{3}{4}$ -in. Lead Pipe, in feet.	1-in. Lead Pipe, in feet.	$1\frac{1}{4}$ -in. Lead Pipe, in feet.	Total, in feet.	Total, in pounds.
First	196	699	895	3,415	9,169	12,584	650	11,174	465	295		12,584	31,810
Second	57	312	369	796	5,271	6,067	298	5,756		13		6,067	15,038
Third		310	310		4,748	4,748	270	4,468			10	4,748	11,760
Fourth		108	108		1,621	1,621	99	1,431	81			1,621	4,046
Fifth	42	6	48	566	78	644		614				644	1,610
Sixth		599	599		9,523	9,523	28	11,343				11,371	23,791
Totals	295	2,064	2,359	4,777	30,410	35,187	1,345	31,821	551	308	10	37,065	88,058

Slum Districts.

DISTRICTS.	Put in.	Number of feet put in.	$\frac{1}{2}$ -inch Lead Pipe.	$\frac{3}{8}$ -inch Lead Pipe.	Number of Pounds.
First	167	3,591	11,213	2,438	8,311
Second	115	1,116	7	1,109	1,787
Total	482	4,677	1,130	3,547	11,128

APPENDIX E.

REPORT

ON THE

Operations of the Construction and Repair Shop

DURING 1893.

TWELFTH AND REED STREETS.

Philadelphia, January, 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, 1893.

Respectfully,

JAMES H. DEAN,
Superintendent of Shop.

MERCHANDISE.		Dr.
To stock per inventory of January 1, 1893.....		\$18,121 47
Steel		731 84
Paints, brushes, etc.....		75 03
Oils and tallow.....		223 71
Machinery		2,261 69
Brass fittings.....		56 10
Brass castings.....		7,760 09
Iron castings.....		25,586 66
Wrought iron.....		1,946 15
Wrought iron pipe.....		4 55
Bolts and nuts.....		1,813 09
Packing.....		90 72
Lead coating.....		336 44
Gum goods.....		585 80
Plug valves.....		2,254 00
Coal.....		1,232 66
Coke.....		42 55
Hardware		557 16
Lumber.....		4,921 30
Chandlery.....		220 64
Miscellaneous.....		378 36
Wages		34,844 18
		\$104,044 19

MERCHANDISE.		Cr.
First District.....	\$25,834 55	
Second District.....	15,577 13	
Third District.....	14,863 76	
Fourth District.....	19,988 08	
Fifth District.....	6,014 74	
Sixth District.....	8,383 52	
		\$90,661 78

FAIRMOUNT PUMPING STATION.

Machinery.....	\$153 84	
Buildings and grounds.....	1 50	
		155 34

CHESTNUT HILL PUMPING STATION.

Machinery.....	\$7 29	7 29
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BELMONT PUMPING STATION.

Machinery.....	\$425 38	
Boilers.....	80 11	
		\$514 49

SPRING GARDEN PUMPING STATION.

Machinery.....	\$468 50	
Boilers.....	428 34	
Buildings and grounds.....	150 02	
	<hr/>	\$1,046 86

ROXBOROUGH PUMPING STATION.

Machinery.....	\$335 04	
Boilers	155 04	
Buildings and grounds.....	680 58	
	<hr/>	\$1,170 66

FRANKFORD PUMPING STATION.

Machinery.....	\$992 65	
Boilers.....	20 32	
Buildings and grounds.....	23 02	
	<hr/>	\$1,035 99

MOUNT AIRY PUMPING STATION.

Machinery.....	\$49 26	
	<hr/>	\$49 26
Public Buildings (City Hall, &c.).....		125 11
Old metals.....		733 00
Ferrules		79 95
Main office.....		30 20
Meter Department.....		1,306 57
Fixed patterns.....		611 75
Machinery.....		522 90
Construction and repair shop.....		812 31
General buildings and grounds... ..		261 64
Holmesburg Water Co.....		84 00
Distribution.....		517 68
Hauling		209 25

Total. Cr.....	\$99,936 03
Inventory, January 1, 1894.....	18,903 04

\$118,839 07

Total. Dr.....

104,044 19

Balance. Profits.....

\$14,794 88

Articles Delivered to Purveyors' Districts, etc., 1893.

DISTRICT.	FIRE HYDRANTS.		KEYS.			CHISELS.							PLUGS.			Reducing Caps.	Pressure Caps.	Lead Pots.	Gland Bolts.	S. Hooks.	Clevises.	Pairs Hook Bolts.	Glands.	Gum Joints for Fire Hydrants.	Crows.
	No. 1.	No. 2.	Stop.	Hydrant.	Plug Monkey.	Flat.	Hand Da. Point.	Handled Da. Point.	Pipe Cutters.	Cape.	Hand Gouges.	Handled Gouges.	Wood.	Iron.	Brass.										
First	189	74	5	5	99	150	48	12	36				465	28	123	1	3	84		2	54	30			
Second.....	153	55	26		132	144			12		12	338	102	51				180	48	2	12				
Third.....	133	30										385	85	40	3	23					6	12	6		
Fourth	152	81	5				12	24	15			434	12	69		23				18	42	12	6		
Fifth.....	38		12		84	6	12	36	7			15	12	24				24	24		8	12			
Sixth	41					12			24	36	24	368		30		3						36			
Works		21							12	24															
Total.....	706	261	48	5	315	312	72	72	94	48	24	36	2,005	230	340	4	52	288	72	22	122	102	12		

Articles Delivered to Purveyors' Districts, etc.

DISTRICTS.	FISH TRAPS.																								
	Stub End Straps.	Mandrills.	Hammers.	Eye Bolts.	Tail Clamps.	Reamers.	Wrenches.	Wedges.	Plug Risers.	Iron Furnac s.	Gasket Irons.	Sets Caulking Tools.	Glands.	Fire Hydrant Reducer.	Set Screws for Drill Machines.	Gum Joint Kings.	Caulking Hammers.	1 1/2-inch.	2-inch.	3-inch.	4-inch.	5-inch.	1-inch Drills.	Bursting Wedges.	
First.....	3	8				5	23		1	2	16	17	54	1		30									12
Second.....			17				13		12	2	18	18	12		4		6								48
Third.....		1		50			7			4		2	6	3	6	12	12								
Fourth.....					12	1	10			2		3	42		48	49									
Fifth.....							8			1	7	12	8		6	12	6								6
Sixth.....							4			2	6	16				36	3								36
Works and Meter Department.....	12																	185	142	19	19	6	3	102	
Totals.....	12	4	25	50	12	6	65		13	13	47	63	122	4	64	139	27								

Articles Delivered to Purveyors' Districts, etc.

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DISTRICTS.	STOP COCKS.											STOP SCREWS.														
	4-inch.	6-inch.	8-inch.	10-inch.	12-inch.	16-inch.	20-inch Wedge.	20-inch Rotary.	30-inch Wedge.	30-inch Rotary.	36-inch Wedge.	36-inch Rotary.	48-inch Wedge.	48-inch Rotary.	4-inch.	6-inch.	8-inch.	10-inch.	12-inch.	16-inch.	20-inch.	30-inch.	36-inch.	48-inch.	30-inch Check Valves.	
First	15	714	6	15	6	2	1			2				5	16		1		2	1						
Second.....	10	383	29	37	34	4	3							6	7											
Third.....	4	210	39	42	29	4	7								6											
Fourth.....	12	253	7	24	28	2	2			2					6				1							
Fifth.....	1	29		1	1					4 Extra 2	1			3	1	1	1	1	1	1	1	2		1		
Sixth	4	155	13	16	10									1								1			2	
Works																										
Total.....	46	1,744	114	135	108	12	13		6	3	2		4	12	35	1	2	1	4	2	3		1		2	

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INVENTORY, JANUARY 1, 1893.

4 No. 1 fire hydrants, at \$28 00.....	\$112 00	
2 10-inch stop valves, at \$31 00.....	\$ 62 00	\$112 00
3 16-inch stop valves, at 60 00.....	180 00	
2 20-inch stop valves, at 95 00.....	190 00	
		432 00
Finished parts of fire hydrants.....	\$405 90	
Finished parts of stop valves.....	1,875 05	
Finished parts of rotary valves.....	2,305 00	
		4,085 95
2 Unfinished 48-inch rotary stop valves.....	\$1,200 00	
1 Unfinished 30-inch check valve.....	230 00	
3 Unfinished bell cranks at \$15	45 00	
1 Unfinished steel pump rod.....	30 00	
1 Air pump barrel.....	15 00	
10 Air pump rod straps at \$9 50.....	95 00	
8 Air pump rod straps at 10 50.....	84 00	
		1,699 00
3 10-inch old style stop screws, at \$4 50.....	\$13 50	
24 12-inch old style stop screws, at 5 00.....	120 00	
3 16-inch old style stop screws, at 6 50.....	19 50	
3 20-inch old style stop screws, at 8 50.....	25 50	
3 30-inch old style stop screws, at 10 50.....	31 50	
		210 00
17 Viney stop screws, at \$2 00	34 00	
6 Birkenbine stop screws, at 2 50.....	15 00	
6 Barton stop screws, at 4 00.....	24 00	
10 Barton stop bonnets, at 8 00.....	80 00	
		153 00
27 4-inch new style stop screws, at \$1 50.....	\$40 50	
37 6-inch new style stop screws, at 2 25.....	83 25	
18 8-inch new style stop screws, at 3 25.....	58 50	
37 12-inch new style stop screws, at 5 00.....	185 00	
4 16-inch new styl · stop screws, at 6 50.....	26 00	
11 20-inch new style stop screws, at 8 25.....	90 75	
1 30-inch new style stop screws, at 10 25.....	10 25	
5 36-inch new style stop screws, at 12 00.....	60 00	
2 48-inch new style stop screws, at 15 00.....	30 00	
		584 25
3 4-inch socket screws, at \$1 50.....	\$4 50	
14 6-inch socket screws, at 1 75.....	24 25	
13 8-inch socket screws, at 2 00.....	26 00	
8 10-inch socket screws, at 2 25.....	18 00	
6 12-inch socket screws, at 2 50.....	15 00	
		87 75

8	4-inch spindles, at \$1 50.....	\$12 00	
20	6-inch spindles, at 1 75.....	35 00	
10	8-inch spindles, at 2 00.....	20 00	
20	10-inch spindles, at 2 25.....	45 00	
7	12-inch spindles, at 2 50.....	17 50	
			<hr/>
			\$129 50
6	6-inch iron bands, at \$2 00.....	\$12 00	
12	8-inch iron bands, at 4 00.....	48 00	
7	10-inch iron bands, at 5 00.....	35 00	
12	12-inch iron bands, at 6 00.....	72 00	
8	16-inch iron bands, at 7 50.....	60 00	
5	30-inch iron bands, at 15 00.....	75 00	
10	36-inch iron bands, at 17 00.....	170 00	
5	48-inch iron bands, at 20 00.....	100 00	
			<hr/>
			572 00
4	gear wheels for winch, at \$3.50.....	\$14 00	
24	fire hoe heads, at \$1.50.....	36 00	
1	24-inch furnace, complete, at \$17.....	17 00	
4	20-inch furnaces, complete, at \$15.....	60 00	
5	large lead pots, at \$4.....	20 00	
6	medium lead pots, at \$2.50.....	15 00	
4	small lead pots, at \$1.35.....	5 40	
			<hr/>
			167 40
285	wooden plugs, at 50 cents.....	\$142 50	
84	wooden stop boxes, at \$2.50.....	210 00	
75	cast iron plugs, at \$1.....	75 00	
518	brass plugs, at 25 cents.....	129 50	
5	sets brass boxes, at \$4.50.....	22 50	
229	brass frost valves, at 35 cents.....	80 15	
50	iron plug risers, at \$2.50.....	125 00	
			<hr/>
			784 65
10	pairs c. i. monkey legs, at \$1.50.....	\$15 00	
15	pairs w. i. monkey legs, at \$3 50.....	52 50	
13	cross heads and nuts, at \$1.50.....	19 50	
147	4-inch fire hydrant valves, at \$2.50.....	367 50	
72	6-inch fire hydrant valves, at \$4.....	288 00	
12	pressure caps, at \$2.....	24 00	
14	1½-inch fish traps, at \$2.....	28 00	
5	2-inch fish traps at \$2.50.....	12 50	
			<hr/>
			807 00
24	drill press mandrills, at 75 cents.....	\$18 00	
22	taper reamers, at \$3.50.....	77 00	
8	plug wrenches, at 50 cents.....	4 00	
9	handled gouges, at 60 cents.....	5 40	
27	hand gouges, at 50 cents.....	13 50	
35	flat chisels, at 35 cents.....	12 25	

14 cape chisels, at 35 cents.....	\$4 90	
8 casket irons, at 60 cents.....	4 80	
28 drills at 35 cents.....	9 80	
4 dozen clevises, at 75 cents.....	3 00	
3 dozen plug monkey keys, at 25 cents.....	75	
2 five pound hammers, at \$1.....	2 00	
25 two pound hammers, at \$12.50.....	12 50	
		\$167 90
2,273 pounds iron forgings, at 10 cents.....	\$227 30	
47,960 pounds wrought iron, at 2 cents.....	959 20	
10,479 pounds machinery steel, at 3 cents.....	314 37	
1,558 pounds spring steel, at 3 cents.....	46 74	
4,640 pounds cast steel, at 8 cents.....	371 20	
500 pounds tool steel, at 15 cents.....	75 00	
80 pounds self hardening steel, at 48 cents.....	38 40	
		2,032 21
466 pounds steel castings, at 8 cents.....	\$37 28	
336 pounds Ajax metal, at 22 cents.....	73 92	
3,435 pounds expansion metal, at 15½ cents.....	532 42	
69 pounds Babbit metal, at 16 cents.....	11 04	
23,895 pounds lead, at 4 $\frac{1}{10}$ $\frac{8}{10}$ cents.....	1,070 50	
		1,725 16
47,305 pounds stop valve casting, at 1 $\frac{7}{8}$ cents.....	\$886 96	
61,511 pounds fire hydrant castings, at 2 $\frac{1}{8}$ cents.....	1,332 73	
45,529 pounds rotary stop castings, at 2 $\frac{1}{2}$ cents.....	1,138 22	
6,520 pounds machinery casting, at 1 $\frac{9}{10}$ $\frac{2}{10}$ cents.....	125 18	
		3,483 09
Hardware.....	\$141 56	
Bolts and nuts.....	517 72	
Oils and tallow.....	101 20	
Paints, oils, brushes, etc.....	37 50	
Chandlery.....	22 75	
Gum goods.....	450 00	
Lumber.....	399 45	
		\$1,670 18
		\$18,903 04

ARTICLES MANUFACTURED DURING 1893.

710 No. 1 fire hydrants, at \$28.00.....	\$19,880 00
214 No. 2 fire hydrants, at \$35.00.....	7,490 00
46 4-inch stop valves, at \$13.00.....	598 00
1,744 6-inch stop valves, at \$15.00.....	26,160 00
97 8-inch stop valves, at \$24.00.....	2,328 00
127 10-inch stop valves, at \$31.00.....	3,937 00
90 12-inch stop valves, at \$37.00.....	2,430 00

11 16-inch stop valves, at \$60.00.....	\$660 00
13 20-inch stop valves, at \$95.00.....	1,235 00
4 30-inch stop valves, at \$190.00.....	760 00
2 36-inch stop valves, at \$300.00.....	600 00
2 30-inch flanged stops (special), at \$325.00.....	650 00
2 30-inch check valves, at \$290.00.....	580 00
4 48-inch rotary stop valves, at \$665.00.....	2,660 00
3 30-inch rotary stop valves, at \$385.00.....	1,155 00
3,079 stop boxes, at \$2.50.....	7,697 50
1,151 stop box risers at 35 cents	402 85
1,754 wooden plugs, at 50 cents.....	877 00
740 brass plugs, at 50 cents.....	370 00
230 iron plugs, at 50 cents.....	115 00
21 stop keys, at \$5.25.....	126 00
5 hydrant keys, at \$2.25.....	11 25
312 flat chisels, at 35 cents.....	109 20
72 hand diamond points, at 35 cents	25 20
27 handled diamond points, at 90 cents.....	24 30
94 pipe cutters, at 60 cents.....	56 40
48 cape chisels, at 35 cents.....	16 80
24 hand gouges, at 35 cents.....	8 40
36 handled gouges, at 50 cents.....	18 00
4 reducing caps, at \$2.25	9 00
52 lead pots, at \$2.50.....	130 00
12 stub end straps, at \$9.50	114 00
4 mandrils, at \$1.25.....	5 00
6 reamers, at \$3.50	21 00
50 eye bolts, at 75 cents	37 50
12 tail pieces, at 75 cents.....	9 00
65 wrenches, at 50 cents.....	32 50
3 sets caulking tools, at \$2.50.....	7 50
47 gasket irons, at 60 cents.....	28 20
4 fire hydrant reducers, at \$1.00.....	4 00
3 1-inch drills, at 75 cents.....	2 25
102 bursting wedges, at 35 cents.....	35 70
185 1½-inch fish traps, at \$2.00.....	370 00
142 2-inch fish traps, at \$2.50.....	355 00
19 3-inch fish traps, at \$3.00.....	57 00
19 4-inch fish traps, at \$6.00.....	114 00
6 6-inch fish traps, at \$13.50.....	81 00
292 fire hoes, at \$1.50.....	438 00
3 24-inch furnaces, complete, at \$17.00.....	51 00
12 20-inch furnaces, complete, at \$15.00.....	180 00
12 crows, at \$12.00	144 00
12 4-inch stop screws, at \$2 25.....	9 00

35 6-inch stop screws, at \$2.50	\$87 50
1 8-inch stop screw, at \$3.25	3 25
1 10-inch stop screw, \$4.50	4 50
1 12-inch stop screw, \$5.00	5 00
4 16-inch stop screws, \$6.50	26 00
2 20-inch stop screws, at \$8.25	16 50
3 30-inch stop screws, at \$10.25	30 75
1 48-inch stop screw, at \$15.00	15 00
38 4-inch socket screws, at \$1.50	57 00
56 6-inch socket screws, at \$1.75	98 00
6 8-inch socket screws, \$2.00	12 00
18 4-inch iron bands, at \$2.25	40 50
381 6-inch iron bands, at \$4.00	1,524 00
29 8-inch iron bands, at \$5.00	145 00
24 10-inch iron bands, at \$5.00	120 00
30 12-inch iron bands, at \$6.00	180 00
2 16-inch iron bands, at \$7.50	15 00
11 30-inch iron bands, at \$15.00	165 00
1 48-inch iron band, at \$20.00	20 00
32 wrought iron monkey legs, at \$3.25	104 00
30 cross heads, at 75 cents	22 50
243 cross head nuts, at 75 cents	182 25
64 spindles, at \$1.75	112 00
6 Barton bonnets and screws, at \$8.00	48 60
	<hr/>
	\$86,019 30

APPENDIX F.

REPORT OF JOHN E. CODMAN
IN CHARGE OF HYDROGRAPHIC WORK.

BUREAU OF WATER.

Philadelphia, January, 1894.

MR. JOHN L. OGDEN,
Chief of Bureau.

SIR:—The following report on hydrographic work and data collected during the year 1893, in connection with the investigation 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 eleven years' continuous records of data relating to the precipitations.

Streamflow observations by the automatic steam gauges on the Perkiomen, Neshaminy and Tohickon streams have also been continued, completing ten years' continuous records.

The rainfall over the eastern counties of the State of Pennsylvania for the year beginning October 1, 1892, and ending September 30, 1893, was about two and one-quarter inches less than the previous year, and three inches less than the preceding ten years' average. The

least monthly rainfall occurred in October, 1892, when less than one-half inch fell during the month, being by the United States Weather Bureau observations, more than two and one-half inches less than the mean monthly fall for the past twenty years.

The following month of November the rainfall was nearly seven inches, or more than two and one-half inches above the mean for the past twenty years. Nearly all of this rain was absorbed by the ground ; about two inches being found flowing in the streams.

In December the rainfall was one and three-quarter inches, being one inch less than the mean for twenty years. January was about one inch less than the mean, nearly all of which was in the form of snow, and remained on the ground all the month and part of February. The rainfall for March was below the average, but the melting snow of the preceding months increased the flow of the streams to nearly a maximum quantity, and the apparent percentage of flow in comparison with the rainfall to nearly one hundred and seventy-five per cent.

The amount of rainfall during the months of February, April, May, June, and August, was above the average ; the remaining months of the year were slightly below the average.

The slight increase in the amount and the different distribution of the rainfall throughout the year, which was almost the reverse of the preceding year, is shown in an increased flow of the streams compared with the previous year.

The minimum flow since 1885 was reached during July, when for a few days the Tohickon flow was reduced to about four cubic feet per second ; the Neshaminy to about eleven cubic feet per second ; the Perkiomen to about twenty cubic feet per second. The August rain

was nearly all taken up by the ground, only about one inch out of nearly seven and one-half inches being found flowing in the streams. The flour mill on the Tohickon was running but a few hours each day during the last week in July and the first three weeks in August. On the Perkiomen the mill was running a portion of each day during the summer.

The total precipitation registered by the automatic gauge at Thirty-second and Spruce streets for the year ending December 31, 1893, was 36.95 inches. The total amount registered by the ground gauge was 44.56 inches.

Observations begun in 1891, with the five gauges at different elevations have been continued. The results are similar to those previously obtained. They show conclusively that a reasonable elevation above the ground makes no perceptible difference in the total amount of precipitation collected.

Tabulated results are given in Table 5. These are incomplete for those months in which snow fell, the snow being measured on the ground and reduced to rain in a gauge specially made for the purpose.

The automatic gauge in this city recorded twenty rainstorms in which the rate exceeded one quarter of an inch per hour, and one hundred and two days in which one hundredth of an inch or more of rain fell. The greatest amount of rain recorded in a single storm was on September 16, when 2.77 inches fell in seventeen hours and ten minutes, of which 1.28 inches fell in seventy minutes. The greatest amount for a short period of time was on June 22, when one inch of rain fell in twenty minutes, or at the rate of three inches per hour.

The amount of rain recorded at stations outside of the city varied from four to twenty-five per cent. more than was recorded by the gauges in use by either the Water or United States Weather Bureau. The greatest amount

recorded at any station outside of the city was 52.63 inches at Quakertown.

The automatic gauge at the forks of the Neshaminy recorded twenty-two storms in which the rate exceeded one-quarter of an inch per hour. The greatest amount of rain recorded in a single storm was on August 24, when 2.74 inches of rain fell in ten hours and twenty-five minutes. The greatest amount for a short period of time was during a storm on June 22, when .70 of an inch fell in twenty minutes, or at the rate of two and one-tenth inches per hour.

The automatic gauge at Spring Mount, Philadelphia & Reading Railroad, recorded twenty-two storms in which the rate exceeded one-quarter of an inch per hour. The greatest amount recorded in a single storm was on May 3 and 4, when 2.25 inches fell in twenty-four hours. The greatest amount for a short period of time was during a thunder-storm on June 6, when 1.53 inches of rain fell in two hours and thirty minutes—1.20 inches of which fell in twelve minutes, or at the rate of six inches per hour. This is the greatest amount ever recorded in the same time by any of the automatic gauges since they were put in operation.

During the two storms of August 20 and 24 very high winds and heavy rains prevailed over a section of the Eastern States.

The Doylestown records show 2.98 inches on the 20th inst., and 3.28 inches on the 24th. Smith's Corner, 3.23 inches on the 20th. Ottsville, 3.12 on the 20th, and 2.10 inches on the 24th. Point Pleasant, 3.36 on the 20th. Forks of the Neshaminy, 3.26 on the 24th. These storms following so closely caused a rapid rise in all the streams and a largely increased flow for several weeks afterward.

The various tables of data collected during the year

relating to rainfall and streamflow are continued as in former years.

Table 1 shows the monthly and total precipitation for 1893 compared with the United States Weather Bureau, and the average comparison for the past eleven years at twenty-one different stations in Eastern Pennsylvania.

Tables 2, 3 and 4 are compiled from the records of the automatic gauge, and show the number, amount and intensity of all rainstorms during the year that exceeded one-quarter of an inch per hour.

Table 5 shows the amount of rain collected each month at different elevations above the surface of the ground, the number of observations, and the general direction of the wind during the time rain was falling. Months in which snow fell are not included, as the gauges will not correctly record the snow.

The average daily flow of the Perkiomen for the past ten years was 182,638,369 gallons, the year ending September 30.

The daily flow for 1893 was 159,110,647 gallons, being over sixteen million gallons per day more than the flow for 1892. The rainfall on the watershed was 4.23 inches less than the past ten years' average, and 2.17 inches more than that for 1892. The average per cent. of rainfall flowing in the stream for the past ten years was 51.6, equivalent to 25.2 inches of rainfall. The number of inches flowing during 1893 was 21.9.

The average daily flow of the Neshaminy for the past ten years was 157,763,380 gallons. The daily flow for 1893 was 151,230,668 gallons, being over thirty millions of gallons more than the flow of 1892. The rainfall on the watershed was 3.55 inches less than the past ten years' average, and 3.01 inches more than that of 1892. The average per cent. of rainfall flowing in the stream for the past ten years was 48.7, equivalent to an annual

flow of 23.8 inches. The number of inches flowing during 1893 was 22.6.

The average daily flow of the Tohickon for the past ten years was 137,640,536 gallons. The daily flow for 1893 was 137,650,078 gallons, being over twenty-seven millions of gallons more than the flow of 1892. The rainfall on the watershed was 2.6 inches less than the past ten years' average, and 5.24 inches more than that of 1892. The average percentage of rainfall flowing in the stream for the past ten years was 59.6, equivalent to an annual flow of 30.5 inches. The number of inches flowing during 1893 was 28.2.

The records kept at Fairmount of the amount of water flowing over the flash-boards of Fairmount dam during 1893 showed a total of 53 feet, being 18.5 feet less than the record for 1892. The rainfall on the Schuylkill Valley for 1893 was 44.90 inches, being 4.5 inches more than the average for 1892. The computed flow from these records give 315,900,043,280 gallons as the total flow for the year ending December 31, 1893, being about thirty per cent. or 12.6 inches of the rainfall. This result is about ten per cent. below the flow of the stream by other methods of computation. The average daily flow of the Schuylkill for 1893 from this computation would be 865,480,000: or if the ten per cent. be added for the deficiency the daily flow would be 961,700,000 gallons.

There were but three days in September, two in August and October, one in June, and none in July, when water flowed over the flash-boards. There were eighty-seven days during the year in which the water flowed over the flash-boards. The greatest monthly flow occurred in March and the least in June and July. The greatest daily flow of the year occurred on February 11th.

The following named persons have been engaged as observers and rodmen during the entire year :

John G. Hillsman, 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. Signal Service.

T. F. Townsend, U. S. Signal Service.

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 1893 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 2.

Rain Storms exceeding in rate 0.25 inches per hour as by the Automatic Rain Gauge at Philadelphia for the year 1893.

Date of Observation, 1893.	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.
January 1st, S. E. rain storm.....	1.13	13—50	.10	.18	.75
April 7th, N. E. rain storm.....	.57	11—30	.20	.40	.30
April 14th & 15th, N. E. rain storm	1.32	34—50	.68	.25	1.63
May 23d, showers.....	.33	2—15	.30	.28	.64
June 22d, S. E. rain storm.....	.79	2—45	.75	.40	1.13
June 23d, S. E. rain storm.....	1.32	3—00	1.00	.20	3.00
July 18th, showers.....	.21	50	.15	.8	1.13
July 17th, showers.....	.74	50	.64	.28	1.40
July 26th, showers.....	.50	20	.45	.20	1.35
August 24th, N. E. rain storm.....	2.62	11—10	.10	.8	.75
Sept. 14th to 16th, S. E. rain storm..	2.77	17—40	1.28	.70	1.09
September 16th, S. E. rain storm....	2.77	17—40	.20	.8	1.50
September 25th, S. E. rain storm....	.93	2—10	.60	.20	1.80
October 7th, S. E. rain storm.....	.42	8—50	.15	.12	.75
October 14th, N. E. rain storm.....	.78	9—35	.12	.15	.48
October 23d, N. E. rain storm.....	1.23	25—55	.22	.12	1.10
November 4th, N. E. rain storm.....	.92	25—25	.10	.15	.40
November 9th, N. E. rain storm....	.65	12—05	.15	.16	.15
December 3d, N. E. rain storm.....	.77	8—10	.15	.30	.30
December 16th, N. E. rain storm...	1.05	7—20	.40	.15	1.00

TABLE 3.

Rain Storms exceeding in rate 0.25 inches per hour, as recorded by the Automatic Rain Gauge at Forks of Neshaminy for the year 1893.

Date of Observation, 1893.	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.
January 1st, S. E. rain storm	1.54	13—25	.15	12	.75
January 29th, N. E. rain storm .....	.25	1—10	.21	16	.26
April 14th & 15th, N. E. rain storm.	1.03	10—00	.25	20	.75
April 14th & 15th, N. E. rain storm.	.40	16—20	.33	15	1.32
May 4th, N. E. rain storm .....	.85	34—10	.25	60	.25
May 16th, N. E. rain storm .....	.80	7—10	.20	12	1.00
May 23d, S. E. rain storm .....	.45	2—15	.40	40	.60
June 6th, S. E. rain storm .....	.46	1—05	.40	15	1.60
June 22d, S. E. rain storm	1.37	6—35	.70	20	2.10
July 3d, shower .....	.22	—55	.22	30	.44
July 29th, S. E. rain storm .....	.45	4—10	.22	20	.66
August 17th, shower .....	.35	—50	.27	15	1.08
August 24th, N. E. rain storm	2.74	10—25	.50	30	1.00
August 29th, S. E. rain storm	1.00	5—20	.35	12	1.75
September 7th, shower .....	.38	—50	.26	12	1.30
Sept. 14th to 16th, S. E. rain storm.	1.84	14—40	.30	28	.65
September 25th, S. E. rain storm ..	.44	4—25	.44	12	1.20
October 14th, N. E. rain storm .....	.70	8—30	.30	40	.45
November 4th, N. E. rain storm	1.47	22—30	.30	60	.30
November 28th, N. E. rain storm ..	.78	6—45	.25	60	.25
December 3d, N. E. rain storm .....	.95	20—20	.15	12	.48
December 16th, N. E. rain storm ..	.67	7—50	.12	15	.18

TABLE 4.

Rain Storms exceeding in rate 0.25 inches per hour, as Recorded by the Automatic Rain Gauge at Frederick for the year 1893.

Date of Observation, 1893.	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
March 9th, S. E. rain storm.....	1.05	26—00	.15	20	.45
April 14th, N. E. rain storm.....	1.41	33—00	.70	48	.88
May 1st, N. E. rain storm.....	.66	5—35	.40	8	3.00
May 3d and 4th, N. E. rain storm..	2.25	24—00	.35	10	2.10
June 6th, S. E. rain storm.....	1.53	2—30	1.20	12	6.00
June 9th, S. W. rain storm.....	.46	4—10	.25	12	1.25
June 22d, S. E. rain storm.....	1.55	4—30	1.50	20	4.50
June 26th, N. E. rain storm.....	.80	7—40	.25	20	.75
July 8th, S. E. rain storm.....	.45	1—35	.40	15	1.60
July 13th, shower.....	.20	0—15	.15	15	1.00
July 16th, shower.....	.45	2—05	.40	46	1.00
August 20th, N. E. rain storm.....	1.85	14—40	.90	20	2.70
August 24th, N. E. rain storm.....	1.81	9—45	.25	60	.25
August 29th, S. W. rain storm.....	.85	7—30	.45	28	1.08
September 7th, shower.....	.54	1—20	.40	15	1.60
September 14th to 16th, S. E. rain storm.....	1.98	34—15	.60	24	1.50
October 14th, N. E. rain storm.....	1.27	9—30	.47	40	.70
October 27th, S. E. rain storm.....	.61	15—20	.25	60	.25
November 4th, N. E. rain storm...	2.40	26—10	.35	60	.35
November 28th, N. E. rain storm..	1.10	4—40	.40	30	.80
December 3d, N. E. rain storm.....	1.18	17—55	.15	20	.45
December 16, N. E. rain storm.....	.71	7—50	.15	10	.9

TABLE 5.

Table Showing Observations on Rainfall at Different Elevations Above the Surface of the Ground.

Month.	ELEVATION 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.....	3.04						10					2.72	
February.....	6.05						11	9	1	1		4.75	
March.....	2.71	2.34	2.42	2.42	2.18	2.25	7	6			1	2.22	
April.....	5.39	4.91	5.01	5.50	5.07	4.49	13	12	1			4.30	
May.....	3.15	3.08	3.00	3.22	3.01	2.71	9	4		2	2	2.55	
June.....	3.37	3.12	3.33	3.26	2.82	3.02	8	1	1	3	3	3.12	
July.....	2.32	2.22	2.39	2.30	2.10	2.10	9			4	5	2.15	
August.....	4.06	3.94	4.12	4.29	4.02	4.04	8	2	1	1	4	2.72	
September.....	4.19	3.93	4.00	4.18	4.15	3.98	8	2	2	3	1	3.85	
October.....	3.29	3.36	2.98	3.23	3.15	3.16	5	2	3			2.71	
November.....	3.67	3.46	3.16	3.67	3.61	3.29	7	4	1	2		2.90	
December.....	3.43	2.80	2.73	2.76	2.57	2.69	11	4	4	2	1	2.99	
Totals.....	44.56											36.95	

Gauge at five feet on south side of mast.
Gauge at ten feet on west side of mast.

Gauge at fifteen feet on north side of mast.
Gauge at twenty-five feet on east side of mast.
Gauge at fifty feet on southeast side of mast.

TABLE 6.

Comparative Statistics of Watershed.

WATERSHEDS.	Area in miles.	STATISTICS OF WATERSHED 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, 10 years...	152.	25	71	2	2	79	85	108	81	40	25	18	33	28	25	47	61	51.6	
Neshaminy, below Forks, 10 years.....	139.3	6	92	¼	2	90	96	106	72	31	15	13	20	18	19	40	76	48.7	
Tohickon, 10 years.....	102.2	24	72	2	2	105	115	124	82	34	21	18	25	29	24	53	72	59.6	
Average.....																			
Perkiomen, at Frederick.....						93	111	191	114	49	39	40	62	50	49	78	75		
						61	49	65	41	29	13	8	15	15	9	25	32		
Neshaminy, below Forks.....						103	138	177	122	36	23	44	71	41	50	74	100		
						64	70	62	43	18	5	2	6	3	2	14	47		
Tohickon.....						138	191	190	148	49	53	52	81	66	51	90	97		
						75	64	90	42	17	9	2	7	2	2	18	49		

TABLE No. 7—Average Annual Yield of Sundry Streams October 1, 1892, to October 1, 1893.

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, ten years.....	152.	48,816	25,205	51.60	66,676,697,751	182,638,369	1.8592	0.0380
Neshaminy below Forks, ten years.....	139.3	45,822	23,776	18.70	57,540,888,690	157,736,350	1.7521	0.0359
Tohickon, ten years.....	102.2	51,175	30,503	59.69	51,140,281,920	137,610,536	2.0849	0.0407
Sudbury, Mass., eight years.....	75.2	45,786	22,697	49.40	29,506,600,000	80,840,000	1.6110	0.0351
Croton, New York, eighteen years.....	338.0	15,970	22,750	49.70	135,400,000,000	371,600,000	1.6800	0.0365

TABLE No. 8—Observed Minimum Stream Flow and Minimum Flow October 1, 1892, to October 1, 1893.

Stream.	PREVIOUSLY OBSERVED MINIMUM FLOW.	Date.	MINIMUM FLOW, 1893.	Date.
	Cubic feet per 24 hours.		Cubic feet per 24 hours.	
Perkiomen at Frederick.....	653,184	Sept. 5, 1885.....	1,131,840	Aug. 18, 1893.
Neshaminy, below Forks.....	108,864	Sept. 28, 1885.....	414,720	Aug. 14, 1893.
Tohickon.....	17,280	July 23, 1885.....	224,640	Aug. 17, 1893.

TABLE No. 9—Observed Minimum Stream Flow and Maximum Flow October 1, 1892, to October 1, 1893.

Stream.	PREVIOUSLY OBSERVED MAXIMUM FLOW.	Date.	MAXIMUM FLOW, 1893.	Date.
	Cubic feet per 24 hours.		Cubic feet per 24 hours.	
Perkiomen at Frederick.....	458,352,000	Sept. 18, 1888.....	306,311,200	March 10.
Neshaminy, below Forks.....	498,268,800	Feb. 11, 1886.....	245,578,240	Feb. 10.
Tohickon.....	479,174,400	Sept. 18, 1886.....	224,406,720	Feb. 10.

TABLE II.—PRECIPITATION AND STREAM FLOW ON SUNDRY WATERSHEDS.

DATE.	PERKIOMEN, AT FREDERICK.						NESHAMNY, BELOW FORKS.						TOHICKON.						
	AREA OF WATERSHED, 152 SQUARE MILES.						AREA OF WATERSHED, 139.3 SQUARE MILES.						AREA OF WATERSHED, 102.2 SQUARE MILES.						
	Rainfall in inches.	Percentage flowing off.	Inches collectible.	Monthly yield of stream.	Average daily yield of stream.	Average yield in cubic feet per second per square mile.	Rainfall in inches.	Percentage flowing off.	Inches collectible.	Monthly yield of stream.	Average daily yield of stream.	Average yield in cubic feet per second per square mile.	Rainfall in inches.	Percentage flowing off.	Inches collectible.	Monthly yield of stream.	Average daily yield of stream.	Average yield in cubic feet per second per square mile.	
			Cubic feet.	Cubic feet.					Cubic feet.	Cubic feet.					Cubic feet.	Cubic feet.			
1892																			
October	0.475	43	0.204	73,085,760	2,357,600	0.180	0.403	10	0.040	13,452,480	433,951	0.0360	0.640	14	0.090	22,524,480	726,600	0.082	
November.....	6.640	32	2.125	745,701,120	24,856,704	1.893	7.143	25	1.786	569,220,480	18,974,016	1.5770	7.098	45	3.194	756,639,360	25,221,312	2.856	
December	1.875	65	1.219	433,800,000	13,993,550	1.023	1.633	68	1.151	372,634,560	12,020,470	1.000	1.575	106	1.670	397,085,760	12,809,217	1.451	
1893																			
January.....	2.380	61	1.452	514,123,200	16,584,600	1.262	3.126	64	2.001	648,103,680	20,906,570	1.737	2.957	75	2.218	528,586,560	17,051,180	1.931	
February.....	5.530	73	4.037	1,427,181,120	50,970,760	3.881	5.680	86	4.885	1,598,944,320	57,105,160	4.745	5.880	113	6.644	1,585,483,200	56,624,400	6.412	
March.....	2.900	170	4.930	1,738,592,640	56,083,633	4.270	2.663	175	4.660	1,512,578,880	48,789,660	4.054	2.465	184	4.536	1,076,846,400	34,737,000	3.934	
April	4.105	56	2.299	820,670,400	27,355,680	2.088	4.970	58	2.883	939,945,600	31,330,520	2.603	4.957	65	3.222	759,525,120	25,317,837	2.867	
May.....	5.360	61	3.269	1,147,063,680	37,002,054	2.796	4.030	73	2.942	960,076,800	30,970,220	2.574	4.985	76	3.788	892,783,480	28,800,000	3.261	
June.....	3.750	15	0.562	195,488,640	6,516,288	0.496	3.196	14	0.447	144,564,480	4,818,816	0.400	4.050	11	0.446	103,723,200	3,457,446	0.391	
July.....	2.000	15	0.300	104,924,160	3,384,650	0.251	1.597	8	0.128	42,768,000	1,379,610	0.115	2.100	5	0.105	25,315,200	816,620	0.092	
August.....	6.450	15	0.968	344,338,560	11,107,695	0.846	7.413	15	1.112	354,663,360	11,440,753	0.950	8.675	18	1.562	371,260,800	11,976,155	1.365	
September.....	3.145	19	0.598	218,099,520	7,269,984	0.553	3.360	17	0.571	185,595,840	6,186,528	0.514	3.202	26	0.833	196,637,760	6,554,592	0.742	
Totals.....	44.610	49	21.859	7,763,068,800	21,270,000	1.619	45.274	50	22.637	7,342,548,480	20,116,600	1.671	48.584	58	28.179	6,716,416,520	18,401,140	2.084	

TABLE 10.

Yield on Sundry Streams for the year 1893.

MONTHS.	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	514,123,200	16,584,600	124,061,493	648,103,680	20,903,570	156,300,003	528,586,560	17,051,180	127,551,676
February.....	1,427,181,120	50,970,670	381,288,763	1,598,914,320	57,105,160	427,176,261	1,585,483,200	56,624,400	424,579,926
March	1,738,592,610	56,083,633	420,534,709	1,512,578,880	48,789,660	364,971,979	1,076,846,400	34,737,000	259,851,171
April	820,670,400	27,355,680	204,634,684	939,945,600	31,330,520	234,368,572	759,525,120	25,317,837	189,390,561
May.....	1,147,063,680	37,002,054	276,709,585	960,076,800	30,971,220	231,671,332	892,788,480	28,800,000	215,438,948
June.....	195,488,040	6,516,288	48,745,218	144,564,480	4,818,816	36,047,245	103,723,200	3,457,443	25,863,491
July.....	104,924,160	3,384,650	25,318,938	42,768,000	1,379,610	10,320,199	25,315,200	816,630	6,168,742
August	344,338,560	11,107,695	83,691,628	354,663,760	11,440,753	85,582,775	371,260,800	11,976,155	89,588,800
September.....	218,099,520	7,269,984	54,383,258	185,595,840	6,186,528	46,278,493	196,637,760	6,554,592	49,634,753
October	305,458,560	9,853,502	73,709,314	188,300,160	6,074,200	45,438,170	145,687,680	4,699,000	35,150,359
November.....	648,725,760	21,624,192	161,759,957	825,038,720	27,834,624	218,217,444	623,111,040	21,070,368	157,617,296
December.....	616,176,960	20,844,448	155,927,073	846,089,760	27,293,200	201,153,135	736,240,320	23,719,690	176,660,007
Total.....	8,080,843,200	22,139,350	167,601,964	8,251,669,120	22,616,000	169,179,426	6,045,205,760	16,561,660	123,881,217

APPENDIX G.

REPORT OF JOHN E. CODMAN, CHIEF DRAUGHTSMAN.

BUREAU OF WATER.

Philadelphia, January, 1894.

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

SIR:—The following report of work under my charge in the Draughting Room for the year 1893, is respectfully submitted:

One hundred and sixty-eight drawings relating to buildings, engines, reservoirs and grounds have been made and recorded. These comprise general drawings and details, as follows:

Seventy-three drawings, including specifications, showing alteration to engine house and new boiler house at Spring Garden Station, new engine house and boiler house at Frankford Station, new engine and boiler houses at the Auxiliary Pumping Stations, Belmont and Roxborough, and new engine and boiler house for the Queen Lane Station. Fifty-six drawings, including specifications, showing details of construction and setting of twenty-six marine steel boilers to carry one hundred and thirty (130) and one hundred and sixty (160) pounds of

steam pressure. Two drawings of steel standpipes eleven (11) feet in diameter and one hundred and fifty (150) feet high. Eleven drawings of reservoir construction, special pipe castings, and twenty-six miscellaneous drawings of repairs to pumps, details of engines, etc.

One draughtsman was employed almost continuously on drawings showing water pipe on street plans.

About fifteen hundred blue prints were printed. From the data furnished by the inspectors, calculations of the horse power of two hundred and twenty-five engines and boilers were made.

By your direction the Chief Draughtsman supervised the construction of the six marine boilers built by the Southwark Foundry and Machine Company: the six marine boilers built by the Harlan & Hollingsworth Company, Wilmington, Delaware; and the eight marine flue boilers built by the Edge Moor Iron Company, Wilmington, Delaware.

The steel plates of twelve of the boilers were rolled by the Carnegie Steel Company, at the Homestead Works, Pittsburgh. The plates for fourteen were rolled by Park Brothers & Company, at the works, Thirtieth and Penn avenue, Pittsburgh.

At the suggestion of the contractors it was agreed that the Chief Draughtsman should inspect and test at the rolling mills in Pittsburgh the steel plates used in the construction of these boilers. Over two hundred steel plates were inspected, for surface defects, on the tables as the plates came from the rolls. Two coupons were cut from each steel plate, one of which was sent to the machine shop to be finished as per drawing. Each plate and coupon was stamped with the number of the steel ingot from which it was rolled, the number of the plate and the position thereof in the boiler. 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.

All of the above mentioned steel plates were rolled from open hearth soft steel ingots. The results obtained from the tests of the coupons are given in the accompanying table. The column marked relative resilience is computed from the per cent. of elongation and the ultimate strength, showing a relative value of the material.

The daily pumpage chart for the report of the Chief of Bureau and the daily steam flow charts for the Hydrographic Report have been prepared as in former years.

Respectfully,

JOHN E. CODMAN,
Chief Draughtsman.

TESTS OF STEEL BOILER PLATES.

*Made by John E. Codman, Chief Draughtsman, Bureau of Water, Department of Public Works, at Park Bros. Steel Co.,
Lima, 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.				
A 1	Outer Shell, Front.	1.071	37900	46310	50890	51630	2.06	25.75	.403	61.69	13200	
A 2	" " "	1.058	36550	47750	51410	52430	2.14	26.75	.391	62.80	14100	
A 3	" " "	1.091	38000	43630	50510	51970	2.20	27.50	.442	58.75	14300	
A 4	" " "	1.088	34370	43560	50550	52850	2.20	27.50	.415	61.61	14500	
A 5	" " "	.781	32520	36620	45830	52470	2.28	28.50	.317	59.41	15000	
A 6	" " "	1.059	37490	49580	54100	55150	2.18	27.25	.393	62.37	15000	
A 7	" " "	1.081	40880	44950	51250	53470	2.06	25.75	.458	56.45	13800	
A 8	" " "	1.099	35480	45940	51410	53140	2.36	29.50	.425	61.00	15300	
A 9	" " "	1.079	34200	41420	48190	51630	2.26	28.25	.412	61.23	14900	
A 10	" " "	1.077	35190	44100	49950	51440	2.26	28.25	.430	61.35	14700	
A 11	" " "	1.082	35120	45290	.....	58230	2.12	26.50	.387	63.81	15400	
A 12	" " "	1.079	36330	44580	50230	52270	2.14	26.75	.449	58.39	14000	
B 1	Inner Shell, Middle.	1.069	36200	43030	49370	52750	2.40	30.00	.439	58.93	15800	

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.				
B 2	Inner Shell, Middle.	1.113	30550	43120	49780	53270	2.12	26.50	.466	57.60	14200	
B 3	" " "	1.052	36120	47720	52280	54660	2.34	29.25	.472	55.13	16000	
B 4	" " "	1.125	33920	42660	50310	52170	2.22	29.00	.490	56.04	15200	
B 5	" " "	1.124	31050	44400	39880	51510	2.36	29.50	.446	59.67	15200	
B 6	" " "	1.128	32270	42200	50450	52310	2.30	28.75	.5680	49.64	15100	
B 7	" " "	1.133	30800	40130	51100	51540	2.46	30.75	.4260	61.84	15900	
B 8	" " "	1.120	30750	41870	50000	52490	2.30	28.75	.470	58.08	15100	
B 9	" " "	1.121	31360	44600	49600	52530	2.30	28.75	.460	58.29	15100	
B 10	" " "	1.101	31790	44410	48770	52670	2.40	30.00	.454	58.19	15800	
B 11	" " "	1.123	30180	41320	47990	51830	2.34	29.25	.454	58.34	15300	
B 12	" " "	1.137	32540	44760	51270	51630	2.30	28.75	.417	62.31	14700	
C 1	Outer Shell, Back.	1.112	38130	46420	52150	54230	2.30	28.75	.499	54.87	15800	
C 2	" " "	1.126	30680	37060	49020	51330	2.24	28.00	.429	61.23	14300	
C 3	" " "	1.127	30970	41170	49690	52090	2.22	27.75	.506	55.00	14500	
C 4	" " "	1.105	34890	40720	48870	54750	2.30	29.75	.484	56.13	15200	

Tests of Steel Boiler Plate—Continued.

Marks.	Location in Boiler.	Area.	ELONGATION.						Area of Reduced Section.	Per centage 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.				
C 5	Outer Shell, Back.	1.114	30700	41650	48560	53850	2.21	28.00	.538	47.51	15100	
C 6	" " "	1.113	30000	41950	50310	52910	2.20	27.50	.527	52.20	14600	
C 7	" " "	1.116	37540	45160	52060	54300	2.16	27.00	.520	50.17	14700	
C 8	" " "	1.038	34680	39110	52790	55700	2.20	27.50	.442	56.89	15300	
C 9	" " "	1.127	29310	41350	48800	51730	2.24	28.00	.397	64.77	14500	
C 10	" " "	1.057	37370	47490	53930	55060	2.20	27.50	.497	52.98	15100	
C 11	" " "	1.124	31400	43780	50170	53290	2.20	27.50	.454	59.61	14700	
C 12	" " "	1.143	37880	49080	51970	52490	2.32	29.00	.423	62.99	15200	
D 1	Front Head, Upper Shell.	.7730	33540	46440	51130	55750	2.06	25.75	.355	54.09	14400	
D 2	" " " "	.7796	33350	47200	50790	54900	2.04	25.50	.361	53.67	14000	
D 3	" " " "	.7909	36790	46780	53860	56370	2.20	27.00	.352	55.54	15300	
D 4	" " " "	.7660	37710	49280	52630	55790	2.08	26.00	.356	54.50	14500	
D 5	" " " "	.7688	33910	47930	51730	54470	2.26	28.25	.330	56.26	15400	
D 6	" " " "	.7660	33030	44910	49610	52530	2.20	27.50	.296	61.47	14400	
E 2	Front Head, Lower Shell.	.7501	34130	43600	51860	54920	2.12	26.50	.252	53.10	14500	

Tests of Steel Boiler Plate—Continued.

Marks.	Location in Boiler.	Area.	ELONGATION.						Area of Reduced Section.	Per Centage of Reduction of Area.	Relative Resilience.	Remarks.
			Elastic Limit.	.50-Inch Strain in lbs. per sq. inch.	1.0 -Inch Strain in lbs. per sq. inch.	1.50-Inch Strain in lbs. per sq. inch.	Total Elongation.	Per cent. of Elongation.				
E 3	Front Head, Lower Shell.	.7582	34690	36930	52730	56710	2.10	26.25	.355	52.15	14900	
E 6	" " " "	.7595	36860	50800	55300	58790	2.24	28.00	.348	54.17	16300	
E 8	" " " "	.7631	33940	41420	50450	55030	2.18	27.25	.320	58.06	15000	
E 9	" " " "	.7477	34770	45470	51760	54300	2.14	26.75	.335	55.43	14300	
E 12	" " " "	.7371	34750	45720	54270	56570	2.08	26.00	.339	54.06	14700	
F 1	Back Head, Upper Shell.	.7835	33650	47420	53410	55310	2.22	27.75	.292	62.83	15100	
F 2	" " " "	.7761	33500	44970	51030	53320	2.22	27.75	.325	56.81	14600	
F 3	" " " "	.7873	31630	48770	54610	55150	2.16	27.00	.310	60.63	14900	
F 4	" " " "	.7896	34190	45970	52190	54710	2.30	28.75	.332	59.27	15500	
F 5	" " " "	.7920	35740	41120	53170	56050	2.14	26.75	.279	52.17	14700	
F 6	" " " "	.7813	35840	49910	55030	58370	2.16	27.00	.365	53.25	15800	
G 1	Back Tube 111	.7499	36140	43470	49340	52540	2.24	28.00	.285	62.01	14700	
G 2	" " " "	.7575	36330	44320	51900	54330	2.20	27.50	.308	59.00	15500	
G 3	" " " "	.7887	32850	43700	50970	53560	2.08	26.00	.271	53.27	13900	
G 4	" " " "	.7605	37310	42340	53300	54430	2.16	27.00	.333	54.07	15000	

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.				
G 5	Back Tube Sheet.	.7789	33250	43820	48970	55410	2.18	27.25	.363	53.19	15100	
G 6	" " "	.7631	36560	44690	52950	537 0	2.10	26.25	.346	54.71	14100	
H 1	Backhead Connection.	.7889	35190	41140	49670	54410	2.46	30.75	.320	56.71	16600	
H 2	" "	.7631	36550	47110	52950	57870	2.12	26.75	.340	57.43	15500	
H 3	" "	.7666	34830	48140	53750	55570	2.12	26 50	.315	58.91	14700	
H 4	" "	.7440	34670	43410	49320	53630	2.12	26.50	.337	54.71	14200	
H 5	" "	.7478	35580	48940	54430	57100	2.16	27.00	.374	50.01	15400	
H 6	" "	.7623	36630	46430	53180	54950	2.24	28.00	.311	55.37	15400	
I 1	Back Connection.	.7502	37340	45300	58640	59180	2.02	25.25	.336	55.23	15000	
I 2	" "	.7307	38190	52010	58070	58710	1.80	22.50	.341	52.10	13200	Defective coupon.
I 2	" "	.7607	34580	49950	52350	58900	2.24	28.00	.333	56.27	16500	Second coupon.
I 3	" "	.7469	36150	46320	56110	56370	2.22	27.75	.308	58.73	15400	
I 4	" "	.7321	39480	46570	54630	59150	2.30	28.75	.318	56.61	17100	
I 5	" "	.7457	30570	45050	56850	59130	2.28	28.50	.343	54.03	16900	
I 6	" "	.7739	36180	46520	54270	56350	2.12	26.50	.240	56.05	15000	

Tests of Steel Boiler Plate—Continued.

Marks.	Location in Boiler.	Area.	ELONGATION.					Area of Reduced Section.	Per centage 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.
K 1	Butt Straps.	.8977	35640			54139	2.24	28.00	.359	50.31	48 pieces.
K 2	" "	.776	34410			51510	2.30	28.75	.363	58.61	
K 3	" "	.8907	36940			55690	2.12	26.50	.402	58.70	
K 4	" "	.9079	36350			53530	2.18	27.25	.386	67.39	
K 5	" "	.9197	37830			53930	2.10	26.25	.376	58.90	
K 6	" "	.8857	37310			54580	2.14	26.75	.362	58.99	
K 7	" "	.8891	35700			52430	2.20	27.50	.358	59.23	
K 8	" "	.8874	37850			53850	2.18	27.25	.377	57.51	
K 9	" "	.8667	36920			57690	2.04	25.50	.382	55.95	
L 1	Steam Drum, Outer Shell.	.6792	41670	43280	50050	53590	2.28	28.60	.228	66.41	15300
L 2	" " " "	.6804	35280	47040	54830	57910	2.20	27.50	.261	61.59	15900
L 3	" " " "	.6663	37830	47430	56590	59830	2.04	25.50	.282	57.71	15300
L 4	Steam Drum Outer Shell.	.6665	35860	46810	55060	58350	2.10	26.25	.247	53.07	15400
L 5	" " " "	.6693	36600	49210	56980	59170	2.16	27.00	.277	58.65	16000
L 6	" " " "	.6671	35830	41520	52780	67412	2.22	27.75	.259	61.25	16000

Tests of Steel Boiler Plate—Continued.

Marks.	Location in Boiler.	Area.	ELONGATION.						Area of Reduced Section.	Per centage 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.				
M 1	Steam Drum Inner Shell.	.6739	35020	47920	54150	56090	2.20	27.50	.257	61.81	15100	
M 2	" " " "	.6699	34480	44240	51800	54490	2.18	27.25	.265	60.43	14900	
M 3	" " " "	.6705	34600	47420	55030	58310	2.24	28.00	.256	61.77	16300	
N 1	Steam Drum Heads.	.6561	34420	44770	51770	55890	2.28	28.50	.256	60.96	15900	
N 2	" " "	.6671	36580	47220	51270	56810	2.24	28.00	.262	60.71	16300	
N 3	" " "	.6685	35420	44460	52150	55310	2.22	27.75	.264	60.21	15400	
N 4	" " "	.6787	35670	46620	53870	55600	2.20	27.50	.262	61.17	15300	
N 5	" " "	.6711	35460	46790	55130	58410	2.16	27.00	.275	59.09	15800	
N 6	" " "	.6577	33750	45310	52750	55490	2.20	27.50	.257	60.87	15300	

NOTE.—Boilers 11 feet 9 inches diameter, $1\frac{3}{8}$ inches shells. Built by Harlan & Hollingsworth Co., Wilmington, Del.

TESTS OF STEEL BOILER PLATES

Made by John E. Colman, Chief Draughtsman Bureau of Water, Department of Public Works, at Park Bros. Steel Company, Limited, Pittsburg, Pa.

Marks.	Location in Boiler.	Area.	ELONGATION.					Per cent. of Elongation in 8 inches.	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 Elonga- tion.					
A 1	Outer Shell, Front.	.7467	34690	48350	53430	54910	2.18	27.25	.320	57.15	15000	
A 2	" " "	.7597	33800	45150	50010	54070	2.24	28.00	.385	58.29	15200	
A 3	" " "	.7491	33240	47050	50730	53330	2.20	27.50	.314	58.02	14700	
A 4	" " "	.7417	33920	45770	50900	53530	2.28	28.50	.301	59.70	15300	
A 5	" " "	.7589	31880	44750	49810	51570	2.28	28.50	.291	61.30	14700	
A 6	" " "	.7455	31930	42190	495 0	52850	2.40	30.00	.300	59.71	15700	
A 7	" " "	.7425	38170	44980	50630	55060	2.46	30.75	.292	60.69	16400	
A 8	" " "	.7420	38560	48390	50670	53230	2.28	28.50	.309	59.58	15200	
A 9	Outer Shell, Middle.	.7649	33850	47070	52170	54390	2.16	27.00	.296	61.41	14700	
A 10	" " "	.7649	32990	46940	52300	53870	2.24	28.00	.303	60.45	15100	
A 11	" " "	.7631	33940	47960	52810	54120	2.40	30.00	.292	61.80	16200	
A 12	" " "	.7588	38740	46180	51390	52110	2.30	28.75	.378	63.31	15000	
A 13	" " "	.7637	34570	46750	52250	53690	2.18	27.25	.293	61.67	14700	

Tests of Steel Boiler Plate—Continued.

Marks.	Location in Boiler.	Area.	ELONGATION.						Area of Reduced Section.	Per Centage 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.				
A 14	Outer Shell Middle.	.7661	33410	46470	52080	54030	2.24	28.00	.265	65.37	15100	
A 15	" " "	.7595	34500	46090	49900	53320	2.34	29.25	.268	64.74	15700	
A 16	" " "	.7681	33590	47910	52070	53720	2.22	27.75	.286	62.79	14900	
A 17	Outer Shell Back.	.7906	34660	46800	50590	52490	2.10	26.25	.324	57.69	14800	
A 18	" " "	.7171	35370	46350	53850	54590	2.08	26.00	.282	53.23	14200	
A 19	" " "	.8023	35270	44870	51730	52470	2.14	26.75	.360	55.13	14100	
A 20	" " "	.7675	34440	38470	52910	54590	2.12	26.25	.333	56.63	14400	
A 21	" " "	.8177	34730	46320	52340	53690	2.18	27.25	.360	55.97	14700	
A 22	" " "	.8051	34780	45830	49680	52650	2.18	27.25	.249	56.66	14400	
A 23	" " "	.8070	34450	46350	51800	53280	2.16	27.00	.365	54.85	14400	
A 24	" " "	.8013	35440	46070	51540	53910	2.12	26.50	.351	56.19	14300	
B 1	Inner Shell Front.	.7056	35430	48470	53010	54840	2.40	30.00	.260	63.26	14900	
B 2	" " "	.6913	35290	45850	52510	53520	2.32	29.00	.273	60.49	15500	
B 3	" " "	.6911	34150	45420	51220	53290	2.24	28.00	.254	63.23	14900	
B 4	" " "	.6976	34250	45830	50730	53040	2.32	29.00	.267	61.71	15400	

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.				
L 5	Inner Shell Front.	.7283	32410	45580	50800	52170	2.16	27.00	.328	54.97	14100	40 pieces.
B 6	" " "	.7319	32790	44680	50410	51790	2.36	29.50	.331	54.82	15300	
B 7	" " "	.7650	35150	44450	51610	52950	2.10	26.25	.316	58.71	14000	
B 8	" " "	.7448	32090	45250	51830	54110	2.30	28.75	.308	58.50	15600	
B 9	Inner Shell, Back.	.7285	31440	45150	50110	51760	2.24	28.00	.303	58.47	14500	
L 10	" " "	.7491	33910	43650	49790	51130	2.32	29.00	.291	61.19	14800	
B 11	" " "	.7614	35330	44790	49780	52270	2.32	29.00	.294	61.33	15200	
B 12	" " "	.7457	33390	46000	50690	53230	2.40	30.00	.266	64.24	15900	
B 13	" " "	.7475	33440	47900	52030	52970	2.18	27.25	.301	59.77	14500	
B 14	" " "	.7457	33250	47740	50420	53650	2.20	27.50	.324	56.55	14800	
B 15	" " "	.7523	33760	46390	52910	53570	2.32	29.00	.288	61.69	15600	
B 16	" " "	.7615	35450	46350	49900	52000	2.24	28.00	.307	59.65	14600	
C 1	Butt Straps.	.7462	33370	47840	51860	54830	2.14	26.75	.296	60.39	14700	
C 2	" "	.7510	34090	47800	53130	54860	2.20	27.50	.283	62.23	15100	
D 1	" "	.6238	36910	46370	51820	53910	2.30	28.75	.235	63.85	15500	

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.
D 2	Butt Straps.	.7607	34180	44430	51130	53900	2.38	29.75	.286	62.33	16100
E 1	Spandrel Sheets.	.6663	37520	45620	51330	54630	2.36	29.25	.250	62.48	16000
E 2	" "	.6699	37170	44780	52100	55080	2.16	27.00	.243	63.69	14900
F 1	Tube Sheets.	.5992	36870	47060	51730	55070	2.40	30.00	.219	63.81	16500
F 2	" "	.6061	36960	46690	52130	56100	2.24	28.00	.268	61.47	15700
F 3	" "	.6046	37870	46310	51370	54410	2.40	30.00	.215	64.34	16200
F 4	" "	.7055	32890	43800	49470	53010	2.32	29.00	.344	55.41	15400
G 1	Side Combustion Chamber.	.5719	34640	50530	53320	55430	2.08	26.00	.230	59.83	14400
G 2	" " "	.5651	34190	47780	51670	53410	2.06	25.75	.251	55.63	13800
G 3	" " "	.5532	34350	47360	54130	54230	2.12	26.25	.327	59.01	14300
G 4	" " "	.5591	34150	46320	50790	53470	2.28	28.50	.210	62.43	15300
H 1	Steam Drum Heads.	.4850	34850	49280	51340	53610	2.10	26.25	.178	63.26	14100
I 1	Steam Drum Shell.	.5252	36180	47410	51790	54160	2.20	27.50	.198	62.31	15000
I 2	" " "	.5230	35570	45700	52010	54490	2.14	26.75	.224	57.99	14600
I 3	" " "	.5321	35140	45100	49160	52430	2.22	27.75	.212	60.15	14600

8 pieces.

Tests of St el 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.				
I 4	" " "	.5249	36010	46290	51440	53730	2.24	28.00	.208	60.41	15000	
J 1	Re-enforce Manhole.	.8671	34480	46110	50970	52360	2.40	30.10	.312	54.81	15600	
J 2	" "	.8779	35200	48530	52280	55020	2.06	25.75	.405	53.87	14200	
M 1	Front Head.	.5574	33910	45930	50210	52390	2.08	26.00	.227	59.31	13600	
M 2	" "	.5679	34780	46800	50920	53530	2.10	26.25	.241	56.81	14100	
M 3	" "	.5791	34540	44900	49560	51810	2.14	26.75	.235	59.56	13900	
M 4	" "	.5573	35500	48210	53070	54710	2.16	27.00	.237	57.51	14800	
M 5	" "	.5661	34270	48220	51230	53340	2.04	25.50	.243	57.07	13600	
M 6	" "	.5643	33490	45010	49260	52990	2.16	27.00	.231	59.03	14300	
M 7	Front Head.	.5619	37200	48940	51610	52410	2.14	26.75	.255	54.60	14100	
M 8	" "	.5655	36780	46510	50750	52700	2.06	25.75	.231	59.11	13600	
M 9	Back Head.	.5911	36980	44330	49570	52440	2.20	27.50	.253	57.13	14400	
M 10	" "	.5817	34040	42460	49680	51060	2.12	26.50	.256	55.93	13600	
M 11	" "	.5919	34800	44770	48820	51870	2.14	26.75	.248	58.15	13900	
M 12	" "	.5820	36300	46440	50170	53370	2.06	25.75	.264	53.07	13800	

Tests of Steam 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.				
M 13	Back Head.	.5831	32580	44930	49220	51960	2.16	27.00	.260	55.34	14000	
M 14	“ “	.5593	34510	45040	49700	53270	2.20	27.60	.231	58.69	14700	
M 15	“ “	.5890	34470	44990	49910	51670	2.10	26.25	.263	55.16	13600	
M 16	“ “	.5647	34350	45860	50290	52590	2.12	26.50	.253	55.21	13900	

NOTE.—Boilers 8 feet 6 inches diameter, $\frac{5}{8}$ inch shells. Built by Edge Moor Iron Company, Wilmington, Del., 1893.

TESTS OF STEEL BOILER PLATES.

Made by John E. Colman, Chief Draughtsman, Bureau of Water, Department of Public Works, at Carnegie Steel Company, Limited, Homestead, Pennsylvania.

Marks.	Location in Boiler.	Area.	ELONGATION.					Per cent. of Elongation in 8 inches.	Area of Reduced Section.	Per Centage of Reduction of Area.	Relative Resilience.	Remarks.
			Elastic Limit.	.50-inch Strain in lbs. square inch.	1.00-inch Strain in lbs. per sq. Inch.	1.50-inch Strain in lbs. per sq. inch.	Total Elongation.					
400 A	Front End Shell.	.9180	29410	42700	49020	55660	2.10	26.75	.3630	60.5	14889	
400 B	“ “ “	.8740	29410	43470	48970	55660	2.08	26.00	.3776	56.8	14456	
400 C	“ “ “	.9672	29150	42080	49730	55830	2.04	25.50	.4464	53.9	14236	
400 D	“ “ “	.9292	29380	42290	49290	56060	2.30	28.75	.4340	53.3	16117	
400 E	“ “ “	.8918	29150	37680	50240	57180	1.75	21.87	.4544	49.1	.....	Broke in grip.
400 E	“ “ “	.6660	28530	40240	49530	57500	2.08	26.00	.3224	51.5	14950	2d coupon.
400 F	“ “ “	.9270	29560	42500	48750	55600	1.60	20.00	.6432	30.6	.....	Broke in grip.
400 F	“ “ “	.8900	29420	40680	49280	57830	2.32	29.00	.3120	56.5	16770	2d coupon.
400 G	“ “ “	.9476	29450	42320	48860	55930	1.75	21.87	.4200	55.7	.....	Broke in grip.
400 G	“ “ “	.7084	29650	41500	49410	58300	2.00	25.00	.2900	58.4	14575	2d coupon.
400 H	“ “ “	.9016	29730	43030	49470	56900	1.84	23.00	.4221	53.2	.....	Broke in grip.
400 H	“ “ “	.7254	29780	40190	48940	57620	2.28	28.50	.2784	61.6	16421	2d coupon.
400 I	“ “ “	.7778	29450	40250	48600	56960	2.08	26.00	.2954	61.9	14809	

Tests of Steel Boiler Plate—Continued.

Marks.	Location in Boiler.	Area.	ELONGATION.					Total Elongation.	Per cent. of Elongation in 8 Inches.	Area of Reduced Section.	Per cent- age of Reduction of Area.	Relative Resilience.	Remarks.
			Elastic Limit.	.50-inch Strain in Pounds per Sq. Inch.	1.00-inch Strain in Pounds per Sq. Inch.	1.50-inch Strain in Pounds per Sq. Inch.							
400 J	Front End Shell.	.7812	29190	41990	49930	55940	1.80	22.5	.2961	62.10	.....	Broke in grip.
400 J	" " "	.6840	29240	40640	49990	58330	2.04	25.5	.3090	56.00	14874	2d coupon.	
400 K	" " "	.9150	29630	46560	49100	56080	1.78	22.25	.3990	57.8	.....	Broke in grip.
400 K	" " "	.7238	29430	40340	44410	56640	2.16	27.00	.2726	62.3	15292	2d coupon.	
400 L	" " "	.8736	29420	43040	49100	56540	2.00	25.00	.4032	53.2	14135		
401 A	Back " "	.9672	28952	42390	49330	56400	1.50	18.75	.....	.....	.....	Broke in Grip.
" "	" " "	.7084	29640	40930	49420	57600	2.00	25.00	.3111	56.0	14400	2d Coupon.	
401 B	" " "	.6975	29110	40740	49900	58070	1.88	23.50	.3520	49.2	.....	Broke in Grip.
" "	" " "	.6825	29150	48800	54000	58320	2.04	25.50	.2726	60.1	14871	2d Coupon.	
401 C	" " "	.6840	29240	40940	49900	58340	2.04	25.50	.3264	52.3	14876		
401 D	" " "	.7650	29280	40520	49410	54640	2.36	29.50	.2808	63.4	16118		
401 E	" " "	.7644	29160	40170	49320	56910	2.08	26.00	.3360	56.1	14796		
401 F	" " "	.6962	29310	40800	49420	55300	2.12	26.50	.2688	60.4	14654		
401 G	" " "	.6946	29080	41460	50240	55720	2.04	25.50	.2385	65.7	14208		
401 H	" " "	.6871	29250	40460	49490	58240	2.04	25.50	.2842	58.6	14851		

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 I	Back End Shell.	.6825	29310	40590	49530	56700	1.78	22.25	.2376	65.2		Broke in Grip. 2d Coupon.
" "	" " "	.6825	29310	41020	49600	58900	2.04	25.50	.3339	51.1	15019	
401 J	" " "	.7998	28880	41260	48760	57260	2.16	27.00	.2968	68.2	15460	
401 K	" " "	.7905	29090	40480	49080	56920	2.28	28.50	.3021	61.7	16222	
401 L	" " "	.7690	29269	41220	49110	57220	2.04	25.50	.3190	58.5	14591	
402 A	Middle Shell.	.6279	29320	39820	48420	53510	2.16	27.00	.2400	61.8	14447	
402 B	" "	.7820	29420	40660	48970	54480	1.94	24.50	.2964	62.10	13347	
402 C	" "	.7820	29540	40790	49490	55120	2.00	25.00	.3906	50.1	18780	
402 D	" "	.7735	29620	40340	49130	53270	2.40	30.00	.2640	65.9	15981	
402 E	" "	.7735	29350	41870	49610	54040	2.00	25.00	.2700	65.1	13510	
402 F	" "	.7735	29220	41760	49900	57920	2.30	28.75	.3135	59.4	16652	
402 G	" "	.7859	29270	41350	49490	57260	2.16	27.00	.2816	63.6	15460	
402 H	" "	.7812	29320	41090	49420	56840	2.00	25.00	.3068	60.1	14210	
402 I	" "	.7642	29050	40700	49200	56790	2.04	25.50	.2805	63.3	14481	
402 J	" "	.6992	29180	41080	49210	57210	2.04	25.50	.2726	61.0	14538	

Tests 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 Pounds per Sq. Inch.	1.00-inch Strain in Pounds per Sq. Inch.	1.50-inch Strain in Pounds per Sq. Inch.	Total Elonga- tion.	Per cent. of Elonga- tion in 8 Inches.				
402 K	Middle Shell.	.7820	29420	41430	49490	57290	2.04	25.50	.3480	53.5	14608	
402 L	“ “	.6210	29470	40260	49920	56840	2.04	25.50	.2408	61.2	14494	
403 A to 403 L	Reinforce Plate for Manhole in Shell. }	.9688	28700	44380	49750	53780	2.64	33.00	.3390	65.0	17747	
404 A	Top Piece, Front Head.	.5049	29170	42460	49610	55950	2.04	25.50	.1645	67.14	14267	
404 B	“ “ “ “	.7493	29360	40040	48710	54450	2.70	33.75	.2573	65.70	18376	
404 C	“ “ “ “	.7980	28830	42350	49380	55760	2.90	36.25	.2816	64.70	20213	
404 D	“ “ “ “	.9548	29320	44820	49740	55190	2.68	33.50	.3300	65.50	18488	
404 E	Top Piece, Front Head.	.7424	29630	39870	48220	55230	2.34	29.25	.2464	66.80	10154	
404 F	“ “ “ “	.6900	28990	41740	49270	56660	2.40	30.00	.2356	65.90	16998	
405 A	Bottom Piece, Front Head.	.8400	29760	42500	49760	56060	2.50	31.25	.3552	57.70	17518	
405 B	“ “ “ “	.8711	29510	43280	49130	55450	2.70	33.75	.3366	61.30	18714	
405 C	“ “ “ “	.8844	29400	41700	49980	57100	2.80	35.00	.2945	66.70	19985	
405 D	“ “ “ “	.8378	29360	41770	49420	57290	2.20	27.50	.3848	54.10	15754	
405 E	“ “ “ “	.7076	29400	42410	49190	56680	2.64	33.00	.2475	65.00	18704	

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 Pounds per Sq. Inch.	1.00-inch Strain in Pounds per Sq. Inch.	1.50-inch Strain in Pounds per Sq. Inch.	Total Elonga- tion.	Per cent. of Elonga- tion in 8 Inches.				
405 F	Bottom Piece, Front Head.	.8699	29430	43220	49430	57240	2.04	25.50	.4182	51.90	14596	
406 A	Top Piece, Back Head.	.9440	29450	43430	47670	55400	2.10	26.25	.3424	63.70	14542	
406 B	" " " "	.8968	28990	44600	50180	55900	2.70	33.75	.3333	62.80	18866	
406 C	" " " "	.8437	29100	42350	49780	56420	2.90	36.25	.2102	63.20	20452	
406 D	" " " "	.9120	29490	42540	48250	54060	2.80	35.00	.3200	64.90	18921	
406 E	" " " "	.9500	29370	43150	48420	54420	2.48	31.00	.3392	64.30	16870	
406 F	" " " "	.7625	29510	41960	49830	56660	2.70	33.75	.2656	65.20	19122	
407 A	Bottom Piece, Back Head.	.8711	29510	43280	49130	55450	2.70	33.75	.3366	61.30	18714	
407 B&C	" " " "	.9381	28990	40640	42280	55320	2.24	28.00	.3630	61.30	15489	
407 D&E	" " " "	.8580	28790	45450	51860	56380	2.40	30.00	.3135	63.5	17064	
407 F	Bottom Piece, Back Head.	.8607	29280	44380	49490	56810	2.64	33.00	.3852	55.80	18747	
408	Butt Straps (24 Ps.)	.9024	30140	44100	50640	56070	2.60	32.50	.3424	62.10	18222	
409	" " "	.9269	29130	45310	51786	57180	2.24	28.00	.4625	50.10	16010	
410	" " (12 Ps.)	.9024	30140	44100	50640	56070	2.60	32.50	.3425	62.10	18222	
411	" " "	.9688	28700	44380	49760	53780	2.64	33.00	.3390	65.00	17747	

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 Pounds per sq. inch.	1.00-inch Strain in Pounds per sq. inch.	1.50-inch Strain in Pounds per sq. inch.	Total Elongation.	Per cent. of Elongation in 8 inches.				
415 A-C	Front Head Drums.	.7248	28980	40570	49120	56840	2.46	30.75	.2727	62.40	17478	
416 A-C	Back Head Drums.											
417 A	Shell of Drum.	.8674	29510	41500	49510	54180	2.70	33.75	.3100	64.20	18285	
417 B	" " "	.8585	29120	40720	48920	53840	2.84	35.50	.3172	63.10	18935	
417 C&D&E	" " "	.8496	29190	40020	48216	53910	2.70	33.75	.3302	61.10	18194	
417 F	" " "	.8514	29600	42280	49100	52980	2.70	33.75	.2900	65.90	17880	
418 A&B	" " "	.8674	29280	41270	49230	53720	2.56	32.00	.3075	64.50	17190	
418 C	" " "	.8476	29500	41290	49200	52800	2.68	33.50	.3000	64.60	17688	
419 A-B-C	{ Reinforce Plate For Manhole. }	.8208	29490	41420	49710	58480	2.40	30.00	.3885	52.70	17544	
420 A&B	{ Crown Sheet, Combustion Chamber. }	.9088	29380	42360	48310	54360	2.64	33.00	.3528	61.20	17938	
420 C	" " "	.9362	29370	42720	48700	55630	2.25	28.12	.4480	52.20	15643	
420 D&E	" " "	.7890	29150	40940	49430	55760	2.04	25.50	.3610	54.30	14218	
420 F	{ Crown Sheet Combustion Chamber. }	.9271	29340	42060	48320	55980	2.30	28.75	.3296	64.40	16094	
421 A to D	{ Side Shell Combustion Chamber. }	.7680	29430	41280	50400	56900	2.16	27.00	.2805	63.50	15363	

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 Pounds per sq. inch.	1.00-inch Strain in Pounds per sq. inch.	1.50-inch Strain in Pounds per sq. inch.	Total Elongation.	Per cent. of Elongation in 8 inches.				
421	E to H	1.0790	28820	43370	49580	52640	2.20	33.75	.3502	67.50	17766	
421	I to L											.3700	28970	43680	49650	56320	2.16	27.00	.3168	63.60	15206
422	A-B	.9450	29120	44230	49300	55340	2.50	31.25	.3500	62.9	17293	
422	C-D											do do	.9827	29100	43700	50880	55260	2.20	27.50	.3498	64.4	15196
422	E-F	do do	.9280	29090	43740	49350	55490	2.46	30.75	.3663	60.5	17063
423	A	.9360	29590	47010	52890	56700	2.64	33.00	.3131	66.5	19845	
423	B											do do	.7320	29510	41670	49450	56700	2.80	35.00	.2480	66.10	18839
423	C	do do	.8555	29160	45000	50260	56810	2.66	33.25	.3333	61.00	18839
423	D	do do	.7431	29050	41290	50300	55280	2.30	28.75	.2739	63.20	15893
423	E	do do	.7421	29630	39870	48220	55230	2.34	29.25	.2465	66.80	16154
423	F	do do	.7740	29460	41980	49480	56720	2.56	32.00	.2805	63.80	18150

GENERAL SUMMARY OF METER OPERATIONS FOR THE YEAR 1893.

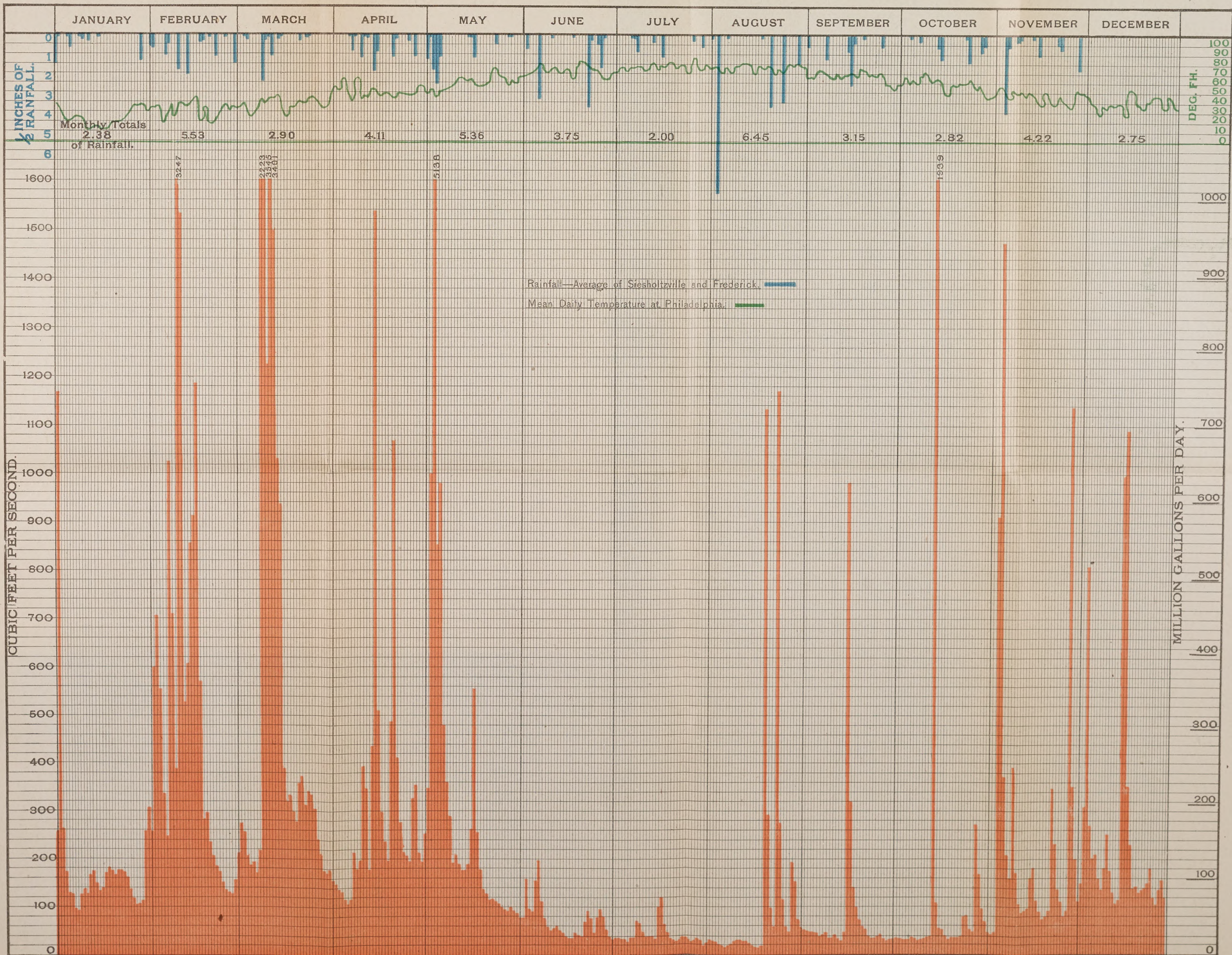
SIZE OF METER.	In Use January 1, 1893.							Set During 1893.					RENEWED.					DISCONTINUED.					In Use December 31, 1893.							Stock on Hand December 31, 1893.										
													Taken Out.				Put In.				Taken Out.																			
	Crown.	Gem.	Nash.	Deacon.	Worthington.	Union.	Total.	Crown.	Gem.	Nash.	Deacon.	Total.	Crown.	Gem.	Nash.	Total.	Crown.	Gem.	Nash.	Deacon.	Total.	Crown.	Gem.	Nash.	Dean.	Total.	Crown.	Gem.	Nash.	Deacon.	Worthington.	Union.	Total.	Crown.	Gem.	Nash.	Deacon.	Total.	Totals.	
1/2 inch.....	24		8				32	5				5	5	3	8	5		3		8	1				1	28		8						36	9		5		14	50
3/4 inch.....	53		24				77	140		1		141	12	6	18	10		13		23	3		3		6	188		29					217	60		5		65	282	
1 inch.....	90		31		1		122	96				96	25	8	33	23		1		24	4				4	179		24		1			205	94		8		102	307	
1 1/2 inch.....	62		26		2	1	91	33				33	7	7	14	11		6		17	3		1		4	97		24		2	1		123	31		4		35	158	
2 inch.....	99	82					181	28	6			34	24	16	40	21	17			38	2	1			3	122	88						210	46	10			56	266	
3 inch.....	48	53					101		14			14	3	12	15		18			18	2	1			3	43	72						115	13	15			28	143	
4 inch.....	41	127					168		15		1	16	3	15	18		18			18	1	1			2	37	144		1				182	8	21		1	30	212	
6 inch.....	4	11		1			16		10		3	13		3	3		2		1	3		1		1	2	4	19		4			27	1				1	28		
Total.....	421	273	89	1	3	1	788	302	45	1	4	352	79	46	24	149	70	55	23	1	149	16	4	4	1	25	698	323	85	5	3	1	1,115	262	46	22	1	331	1,446	

NOTE.—One 2-inch Crown meter removed temporarily in 1892, reset this year.
One 1-inch Crown meter removed temporarily.

STREAM FLOW

1893

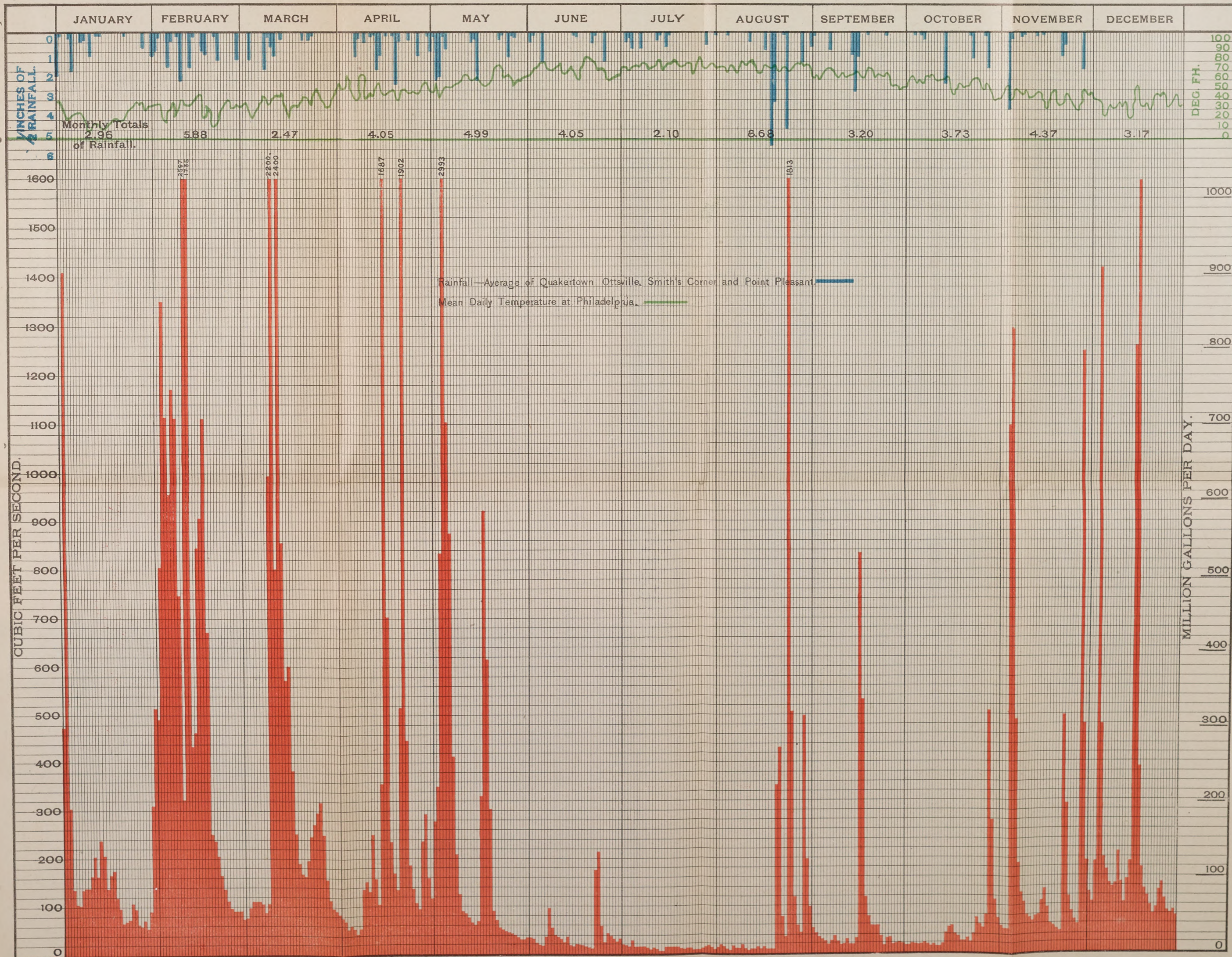
PERKIOMEN CREEK AT FREDERICK.



STREAM FLOW

1893

TOHICKON CREEK.



STREAM FLOW

1893

NESHAMINY CREEK BELOW FORKS.

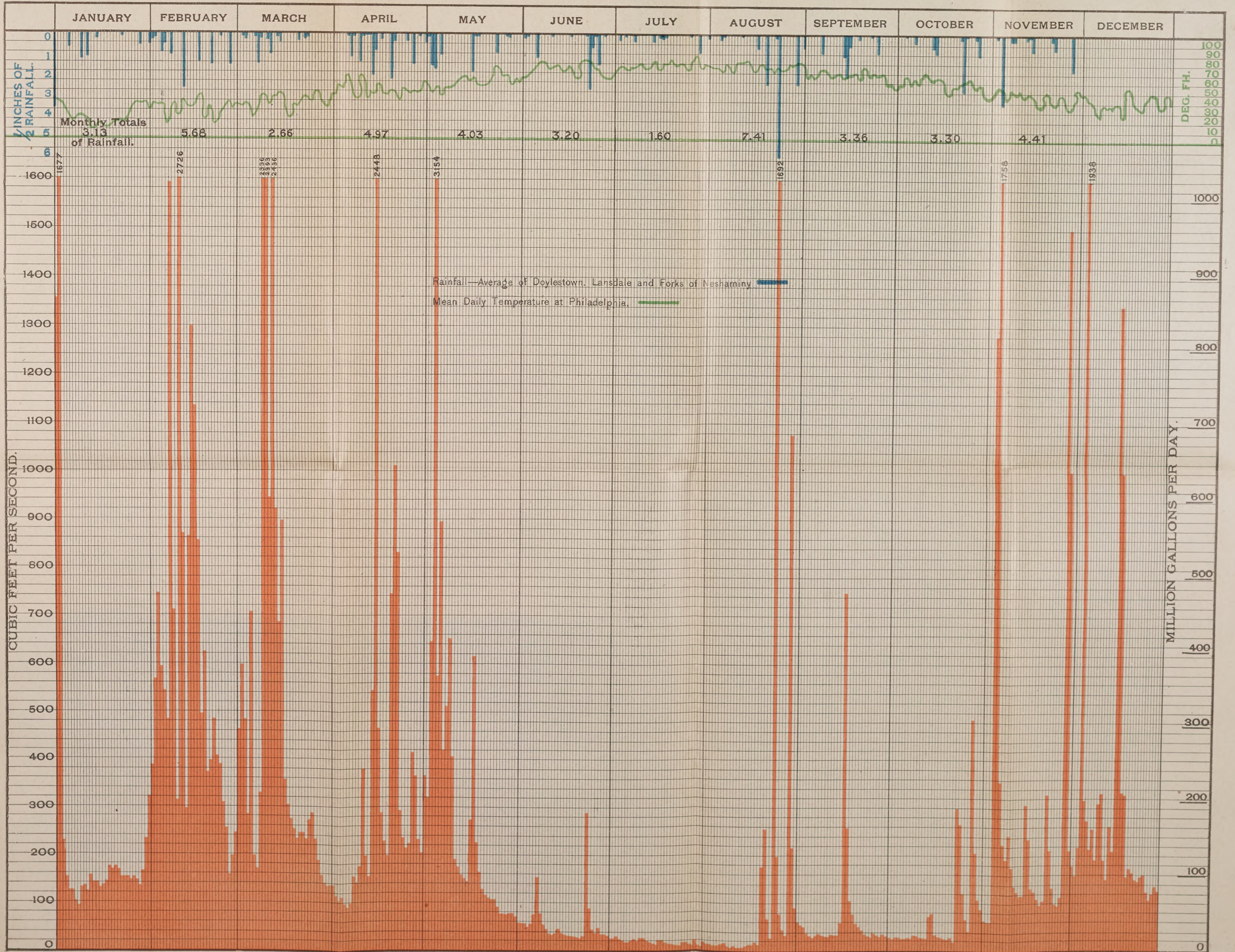


TABLE I.
MONTHLY PRECIPITATION ON SUNDRY WATER SHEDS,
 Compared with U. S. Signal Service Observations, at Philadelphia, 1893.
 ELEVATIONS ARE IN FEET ABOVE SEA LEVEL.

Elevation.....	PHILADELPHIA SERIES.									SCHUYLKILL SERIES.						PERKIOMEN SERIES.				DELAWARE SERIES.						TOHICKON SERIES.						NESHAMINY SERIES.												
	U. S. WEATHER BUREAU.		WATER BUREAU, AUTOMATIC.		WATER BUREAU, GROUND GAUGE.		PENNSYLVANIA HOSPITAL.		GERMANTOWN.		LEBANON.		READING.		POTTSTOWNS.		BROWERS.		HAMBURG.		SEISHOITZVILLE.		FREDERICK.		EASTON.		MOORESTOWN.		WEST CHESTER.		OTTISVILLE.		QUAKERTOWN.		SMITH'S CORNER.		POINT PLEASANT.		LANSDALE.		FORKS OF NESHAMINY.		DOYLESTOWN.	
	207	66	49		25		368		480		207		150		86		365		870		300		340		65		455		390		536		480		119		350		143		405			
1893.	Precipitation in inches.	Precipitation in inches.	Difference.	Precipitation in inches.	Difference.	Precipitation in inches.	Difference.	Precipitation in inches.	Difference.	Precipitation in inches.	Difference.	Precipitation in inches.	Difference.	Precipitation in inches.	Difference.	Precipitation in inches.	Difference.	Precipitation in inches.	Difference.	Precipitation in inches.	Difference.	Precipitation in inches.	Difference.	Precipitation in inches.	Difference.	Precipitation in inches.	Difference.	Precipitation in inches.	Difference.	Precipitation in inches.	Difference.	Precipitation in inches.	Difference.	Precipitation in inches.	Difference.	Precipitation in inches.	Difference.	Precipitation in inches.	Difference.	Precipitation in inches.	Difference.			
January.....	2.58	2.72	+0.14	3.04	+0.46	2.91	+0.33	4.27	+1.69	2.10	-0.48	2.14	-0.44	3.21	+0.63	2.38	-0.20	2.85	+0.27	2.42	-0.16	2.34	-0.24	3.56	+0.98	2.88	+0.30	2.77	+0.19	2.70	+0.12	3.65	+1.07	2.98	+0.40	2.50	-0.08	2.63	+0.05	3.46	+0.88	3.29	+0.71	
February.....	4.84	4.75	-0.09	6.05	+1.21	4.75	-0.09	5.84	+1.00	5.57	+0.73	5.49	+0.65	6.20	+1.36	5.34	+0.50	6.35	+1.51	5.84	+1.00	5.22	+0.38	5.70	+0.86	6.30	+1.46	6.13	+1.29	4.90	+0.06	6.93	+2.09	5.63	+0.79	6.06	+1.22	5.71	+0.87	5.36	+0.52	5.97	+1.13	
March.....	2.57	2.22	-0.35	2.71	+0.14	3.52	+0.95	2.81	+0.24	2.63	+0.06	2.70	+0.13	2.82	+0.25	2.72	+0.15	3.97	+1.40	3.16	+0.59	2.64	+0.07	3.02	+0.45	2.68	+0.11	2.40	-0.17	2.67	+0.10	3.11	+0.54	2.24	-0.33	1.84	-0.73	3.59	+1.02	2.16	-0.41	2.24	-0.33	
April.....	4.47	4.30	-0.17	5.39	+0.92	5.01	+0.54	5.04	+0.57	3.67	-0.80	3.20	-1.27	6.20	+1.73	4.84	+0.37	4.59	+0.12	4.20	-0.27	4.01	-0.46	3.86	-0.61	5.93	+1.46	5.51	+1.04	4.80	+0.33	5.15	+0.68	5.08	+0.61	4.80	+0.33	4.59	+0.12	5.66	+1.19	4.66	+0.19	
May.....	2.92	2.55	-0.37	3.15	-0.23	3.37	+0.45	3.75	+0.83	8.05	+5.13	4.44	+1.52	4.80	+1.88	4.08	+1.16	6.82	+3.90	6.21	+3.29	4.51	+1.59	4.82	+1.90	3.26	+0.34	4.18	+1.26	4.85	+1.93	5.41	+3.49	4.64	+1.72	5.04	+2.12	3.59	+0.67	4.22	+1.30	4.28	+1.36	
June.....	3.07	3.12	+0.05	3.37	+0.30	2.96	-0.11	4.69	+1.62	2.21	-0.86	2.40	-0.67	3.64	+0.57	2.22	-0.85	1.63	-1.44	2.22	-0.85	5.28	+2.21	1.66	-1.41	3.99	+0.92	2.59	-0.48	3.92	+0.85	2.21	-0.86	5.08	+2.01	4.99	+1.92	3.21	+0.14	3.40	+0.33	2.98	-0.09	
July.....	2.04	2.15	+0.11	2.32	+0.28	1.87	-0.17	2.52	+0.48	2.67	+0.63	2.91	+0.87	1.99	-0.05	2.35	+0.31	3.34	+1.30	2.32	+0.28	1.68	-0.36	3.51	+1.47	4.35	+2.31	2.60	+0.56	1.83	-0.21	2.25	+0.21	2.00	-0.04	2.32	+0.28	1.91	-0.13	1.56	-0.48	1.32	-0.72	
August.....	2.43	2.72	+0.29	4.06	+1.63	4.00	+1.57	5.18	+2.75	5.30	+2.87	3.25	+0.82	4.52	+2.07	3.96	+1.53	5.74	+3.31	6.44	+4.01	4.46	+2.03	5.29	+2.86	4.79	+2.36	3.65	+1.22	7.46	+5.03	8.90	+5.47	8.63	+6.20	9.71	+7.28	5.32	+2.89	6.93	+4.50	9.99	+7.56	
September.....	3.76	3.85	+0.09	4.19	+0.43	4.11	+0.35	4.28	+0.52	3.79	+0.03	3.83	+0.07	3.69	-0.07	3.41	-0.35	5.32	+1.56	3.19	-0.57	3.10	-0.66	2.92	-0.84	3.72	-0.04	2.58	-1.18	3.04	-0.72	3.67	-0.09	3.09	-0.67	3.01	-0.75	3.52	-0.24	3.51	-0.25	3.05	-0.71	
October.....	3.32	2.71	-0.61	3.18	-0.14	3.69	+0.37	3.15	-0.17	3.95	+0.63	3.18	-0.14	3.13	-0.19	3.42	+0.10	3.57	+0.25	3.19	-0.13	2.45	-0.87	2.62	-0.70	6.16	+2.84	3.35	+0.03	3.08	-0.24	3.42	+0.10	4.22	+1.00	4.08	+0.76	3.71	+0.39	3.26	-0.06	2.94	-0.38	
November.....	2.51	2.87	+0.36	3.67	+1.16	2.57	+0.06	4.19	+1.68	3.42	+0.91	3.39	+0.88	4.70	+2.19	4.81	+2.30	3.54	+1.03	3.95	+1.44	4.48	+1.97	3.19	+0.68	3.60	+1.09	3.45	+0.94	4.19	+1.68	4.44	+1.93	4.47	+1.96	4.40	+1.89	4.67	+2.16	4.06	+1.55	4.50	+1.99	
December.....	3.13	2.99	-0.14	3.43	+0.30	3.39	+0.26	3.42	+0.29	2.35	-0.78	1.99	-1.14	2.81	-0.32	3.13	0.00	3.07	-0.06	2.51	-0.62	2.99	-0.14	2.59	-0.54	3.52	+0.39	3.16	+0.03	2.51	-0.62	3.49	+0.36	3.39	+0.26	3.30	+0.17	3.05	-0.08	2.97	-0.16	2.33	-0.80	
Total.....	37.64	36.95	-0.69	44.56	+6.92	42.15	+4.51	49.14	+11.50	45.71	+8.07	38.92	+1.28	47.71	+10.07	42.66	+5.02	50.79	+13.15	45.65	+8.01	43.16	+5.52	42.74	+5.10	51.18	+13.54	42.37	+4.73	45.95	+8.31	52.63	+14.99	51.55	+13.91	52.05	+14.41	45.50	+7.86	46.55	+8.91	47.55	+9.91	
Percentage.....	100	98	118	112	130	121	103	127	108	135	121	114	136	112	122	139	137	138	120	123	125	
.....ches.....	39.14	40.19	43.52	45.49	48.70	46.60	43.98	49.46	43.08	43.33	50.88	47.34	46.19	54.38	50.85	50.60	51.71	51.80	47.07	48.31	49.30	
.....ntages.....	100	102	111	116	124	118	112	126	110	111	130	121	117	138	130	142	132	132	120	123	126	

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