

FIFTEENTH

SEMI-ANNUAL REPORT

OF THE

Board of Water Commissioners,

TO THE

COMMON COUNCIL

OF THE

CITY OF CHICAGO. //

JANUARY 1st, 1859.

CHICAGO:
WILLIAM H. RAND, PRINTER, No. 148 LAKE STREET.
1859.

Board of Water Commissioners.

GEO. W. DOLE,
NOAH STURTEVANT,
ORRINGTON LUNT.

Officers.

SUPERINTENDENT,
BENJ. F. WALKER.

TREASURER,
GEO. W. DOLE.

SECRETARY,
A. W. TINKHAM.

CLERKS,
JOSIAH H. BROSS,
W. R. LARRABEE.

COLLECTORS,
CHAS. R. VANDERCOOK,
A. HEARTT,
ANTON NIEMAN.

ENGINEERS AT PUMPING WORKS,
D. C. CREGIER, Chief,
C. G. FLEET, Assistant,
FR. TRAUTMAN, Assistant.

Commissioners' Report.

WATER COMMISSIONER'S OFFICE, }
Chicago, Ill., Feb. 21, 1859. }

To the Honorable the Mayor and Aldermen of the
City of Chicago, in Common Council assembled:

SIRS: The Board of Water Commissioners of the City of Chicago, report herewith their proceedings for the last year and the present condition of the Water Works, and submit their usual Financial Statements for the year ending December 31st, 1858.

GENERAL CONDITION OF THE WORKS.

The Water Works with unimportant exceptions, are throughout in good working order, and as a whole were never in so serviceable condition.

EXTENSIONS DURING 1858.

The additions to the Works during the year 1858 were large and important, including two new reservoirs, and an unusually large extension of the distribution pipe.

NORTH AND WEST RESERVOIRS.

Two new reservoirs have been erected, one for the North Division, at the corner of Sedgwick Street and Chicago Avenue, and one in the West Division at the corner of Monroe and Morgan Streets, each of sufficient capacity to hold about 500,000 gallons. These reservoirs lack little of completion, and are in use. Further expenditures of comparatively small amount will be required in grading and fencing the lots around them, but the buildings themselves are essentially finished.

In the accompanying report of the Superintendent these reservoirs are described in detail. The general feature of their construc-

tion we give in brief. Three circular and parallel walls of about three feet thickness rest on a heavy and deep foundation. These walls are about nine feet apart in the clear, and have a height above grade of about forty-two and one-half feet; the diameter of the outer line of all being sixty-two feet. The outer wall is of Athens stone, the two inner are of brick. On these walls rest wrought iron beams of about nine inches depth, spanning from wall to wall, radiating from the centre of the building, and being placed a greatest distance apart of about two feet. These beams support the tank, acting as the reservoir proper,—a boiler iron vessel of sixty feet diameter, and twenty-eight feet height, with a greatest thickness of five-sixteenths of an inch; suitably stiffened by upright braces placed at short intervals on the outside, and secured from spreading by a net work of tie-rods connected at the centre of the tank. Within the circle of the inner wall and entering the bottom of the tank at its centre, is the pipe connecting it with the main by which it is filled, and the pipe down which the water passes off from the tank into the distribution pipe for use.

A wooden casing of two-inch stuff encloses the tank, leaving a clear space of about one foot, and the whole is covered in by a circular wooden roof, sustained by wrought iron trusses resting on the tank.

The bottoms of the tank are about fifty-six feet above the lake, and the water has a greatest elevation in them of about eighty-four feet above the lake.

These tanks act as temporary reservoirs where a few hours supply may be retained while the engines are at rest; they equalize the head in different parts of the city; adapt the regular working of the engines, and the regularity of the supply to the irregular draught upon the works; and make possible the working of the engines at their most economical rate of speed.

With the three,—the South, West, and North Reservoirs in use, it is found necessary at the present rate of consumption to pump about $12\frac{1}{2}$ hours through the day.

The cost of the two new reservoirs complete, without including what may be necessary for fencing and grading the lots, will be about ninety-two thousand dollars. They are substantial structures of a style of work suitable for their use, and of such agreeable

appearance as to be ornaments in their localities. Their cost was much below the original estimates. The low prices of labor and materials made the past year an unusually favorable one for all the extension executed by the Commissioners.

SIXTEEN INCH MAIN LAID.

A small amount of 16 inch main was added, connecting that already laid with the West Reservoir.

DISTRIBUTING PIPE LAID.

The amount of distributing pipes laid last year is much larger than usual,—larger than in any season since the Works have been in operation. The amounts laid of each size of pipe are as follows:

12 inch pipe,	466 feet.
10 " "	410 "
8 " "	7,769 "
6 " "	37,008 "
4 " "	27,130 "

Total amount laid in 1858 of distribution pipe, 72,783 feet, or a little more than $13\frac{3}{4}$ miles.

This amount is distributed in the several Divisions as follows:

In the South Division,	18,737 feet.
" " West "	29,974 "
" " North "	24,072 "
Total,	72,783 "

WHOLE AMOUNT OF PIPES LAID IN THE CITY.

The whole amount of main now laid is,	26,076 feet.
" " " " distribution pipe laid is,	356,206 "
Total of all sizes of pipes laid,	382,282 feet,
Or 72 miles and 2,122 feet.	

FIRE HYDRANTS.

Ninety-one Fire Hydrants were put in during the year, in addition to a number of new ones substituted in place of others out of repair. Six of these throw a four-inch stream, are connected with large pipes, and are specially designed for the use of Steam Fire Engines.

PUMPING WORKS.

The new Engine, first put in use in 1857, has been used in alternation with the old one, and has continued to give the satisfaction expressed in our last Annual Report. The two Engines together have been run 5,455 hours, or an average for the year 1858 of one Engine of nearly 15 hours each day.

The total number of gallons of water pumped during the year is stated by the Engineer at 1,091,865,000, an average daily amount of very nearly 3,000,000 gallons.

Both Engines are in excellent order;—the boiler of the old one will need some repairs.

INCOME AND EXPENSES OF THE WORKS DURING 1858.

The total income of the Works from

Water Rents and assessments was,	\$102,178 85
Profits of tapping the distributing pipe,	530 47

Total revenue for 1858,	\$102,709 32
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The expenses for 1858 were:

Expenses at the Pumping Works,	\$19,307 07
Repairs and miscellaneous operating expenses,	3,204 27
Office expenses, Clerks, Collectors, Rents, &c.,	6,572 69
Salaries Commissioners, Superintendent and Secretary,	6,288 89
Interest on Bonds,	59,357 17

Total expenses for 1858,	\$94,730 09
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Excess of income of 1858 over all expenses,	7,979 23
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OPERATING EXPENSES DURING 1858.

The expenses for operating and repairs for 1858, not including the interest, were,	\$35,372 92
The same expenses for 1857 were,	35,904 89
Showing a decrease in the operating expenses for the year 1858 of,	531 97

REVENUE AND EXPENSES FROM THE COMMENCEMENT OF OPERATING THE WORKS.

The revenue from the commencement of operating the Works to January 1st, 1859, amounts to, \$358,071 98

From the commencement of the Works to January 1st, 1859, the expense for interest and repairs, and costs of operating the Works, or the balance of accounts of interest and operating expenses is,	\$350,167 71
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Amount by which the total income exceeds the total cost January 1st, 1859,	\$7,904 27
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In the earlier years of the Works, before they were fairly in operation, the income was, as might be expected, less than the interest payment and the operating expenses, the deficiency amounting at the close of 1855 to \$15,632 03. This deficiency has now been fully met and a balance left of \$7,904 27.

UNPAID WATER TAXES.

The receipts of the Works would undoubtedly have been considerably larger, had the past year been one of ordinary prosperity. The scarcity of money embarrassed all collections, and the amount of taxes unpaid at the close of 1858 is quite large, amounting for all time previous to May 1st, 1859, to \$27,845 48.

NUMBER OF BUILDINGS SUPPLIED WITH WATER.

The number of buildings now supplied with water is 8231, an increase during the year of 1072 buildings.

These buildings are distributed in the different Divisions of the City as follows:

In the North Division,	2,130
" " South	3,839
" " West	2,262
Total,	8,231

MEANS FOR CONSTRUCTING THE WORKS, AND FOR THE PURCHASE
OF MATERIALS REMAINING ON HAND.

The means for constructing the Works, and for such materials for repairs and extensions, and such supplies for operating as are on hand, have been derived as follows:

Water Loan Bonds issued,	\$1,025,000 00
Excess of Income over Interest and	
Cost of operating,	7,904 27
	\$1,032,904 27

These means have been applied as follows:

Water Works, their total cost excepting North and West Reservoirs,	\$829,177 95
North Reservoir Building, cost December 31st, 1858,	42,299 50
West Reservoir Building, cost December 31st, 1858,	40,674 78
Water Pipes on hand,	13,577 13
Coal on hand,	4,488 00
Machinery, Tools, &c., on hand,	9,546 73
Office Furniture on hand,	157 00
Sewerage Commissioner, work done, water supplied in 1858,	247 76
George W. Quintard,	678 45
Discount on Bonds,	91,380 64
George W. Dole, Treasurer, balance in his hands,	676 33
Total,	\$1,032,904 27

The excess of income over expenses not needed for the current expenditure of the Works, is by law to be applied to the redemption of the bonds issued. It is evident, however, that it will always be necessary to have considerable excess on hand for coal, pipe, hydrants, and such supplies and materials as are necessary for repairs and operating. The excess now reported is not more than enough for such use.

Appended to this report are the reports of the Treasurer, Secretary and Superintendent, showing in detail all matters relating to

finances, receipts and expenditures, and to construction and operating,—all of which have been but briefly noticed in the report herewith submitted.

GEORGE W. DOLE,
ORRINGTON LUNT,
NOAH STURTEVANT,
Board of Water Commissioners.

STATE OF ILLINOIS, }
COOK COUNTY. } ss.
Town of South Chicago. }

I, JOHN FORSYTH, a Notary Public in and for the said Town of South Chicago, in the County and State aforesaid, do hereby certify that the above Statement was duly sworn to, before me, by the above named Commissioners, this twenty-fifth day of February, A. D. 1859.

JOHN FORSYTH, *Notary Public.*

Treasurer's Report.

BOARD OF WATER COMMISSIONERS

OF THE CITY OF CHICAGO,

1858. *In account with* GEO. W. DOLE, *Treasurer.* CREDIT.

July 1	By balance on hand, . . . \$		\$35,439 21
	Received of Secretary for Water		
9	Rents collected . . .	2,170 29	
"	" " Rent South Reservoir lot . . .	30 00	
15	" " water rents collected . . .	1,194 43	
17	" " from sale of water loan bonds . . .	17,178 12	
20	" " for water rents collected . . .	1,391 55	
22	" " from sale of water loan bonds . . .	8,610 26	
23	" " for water rents collected . . .	895 43	
"	" " permits to tap pipe issu'd . . .	200 00	
27	" " water rents collected . . .	890 08	
"	" " from sale of water loan bonds . . .	8,618 09	
30	" " for water rents collected . . .	863 70	
"	" " sales of old pipe . . .	300 00	42,341 95
Aug. 7	" " water rents collected . . .	1,545 66	
14	" " " " " " . . .	1,502 16	
"	" " permits to tap pipe issu'd . . .	183 75	
"	" " cash paid by N. W. Iron Co. . .	57 61	
23	" " water rents collected . . .	1,206 63	
27	" " " " " " . . .	373 52	
"	" " permits to tap pipe issu'd . . .	200 00	5,069 33
Sep. 4	" " water rents collected . . .	1,594 36	
"	" " shutting off and letting on water, &c. . .	99 50	
11	" " water rents collected . . .	880 04	
"	" " rents of South Reservoir lot . . .	60 00	
18	" " water rents collected . . .	387 83	
"	" " permits to tap pipe issu'd . . .	94 00	
22	" " from sale of water loan bonds . . .	3,479 75	
	Amount carried forward . . . \$	6,595 48	82,750 49

ACCOUNT CONTINUED.

1858.	Amount brought forward . . . \$	6,595 48	82,850 49
Sep. 25	Received of Secretary for water rents collected . . .	624 77	
30	" " for water rents collected . . .	346 67	
"	" " permits to tap pipe issu'd . . .	100 00	7,666 92
Oct. 7	" " water rents collected . . .	717 64	
"	" " permits to tap pipe issu'd . . .	100 00	
13	" " water rents collected . . .	756 21	
20	" " from sale of water loan bonds . . .	21,882 91	
21	" " for water rents collected . . .	504 82	
"	" " permits to tap pipe issu'd . . .	100 00	
30	" " water rents collected . . .	504 60	
"	" " shutting off and letting on water, &c. . .	100 00	
"	" " earth sold west reservoir . . .	13 50	
"	" " pipe sold . . .	1 00	
"	" " damage to R. T. Wood & Co's pipe . . .	2 00	
"	" " from sale of water loan bonds . . .	1,758 16	26,440 84
Nov. 4	" " for water rents collected . . .	1,990 00	
"	" " permits to tap pipe issu'd . . .	100 00	
8	" " water rents collected . . .	2,076 13	
10	" " " " " " . . .	1,437 26	
12	" " " " " " . . .	1,271 50	
13	" " " " " " . . .	1,055 50	
16	" " " " " " . . .	1,405 50	
18	" " " " " " . . .	2,035 58	
"	" " permits to tap pipe issu'd . . .	97 50	
20	" " water rents collected . . .	1,291 75	
23	" " " " " " . . .	960 84	
27	" " " " " " . . .	2,329 32	16,050 88
Dec. 1	" " " " " " . . .	8,764 84	
2	" " " " " " . . .	1,711 50	
"	" " permits to tap pipe issu'd . . .	100 00	
6	" " water rents collected . . .	2,556 98	
"	" " from sale of water loan bond . . .	860 00	
8	" " for water rents collected . . .	1,048 76	
	Amount carried forward . . .	15,042 08	133,009 13

ACCOUNT CONTINUED.

1858.	Amount brought forward	\$	15,042 08	133,009 13
11	Received of Secretary for water rents collected		1,682 02	
16	" " " " " "		1,290 95	
20	" " for water rents collected		1,366 68	
24	" " " " " "		1,773 20	
30	" " " " " "		1,003 53	
31	" " " " " "		977 33	
"	" " " " " "		1,306 24	
"	" " " permits to tap pipe iss'd		97 53	
"	" " " shutting off and letting on water		28 14	
"	" " " 4,980 lbs old zinc sold at 2 $\frac{3}{4}$ cents		136 95	
"	" " " Sums on pay rolls not called for		24 65	
"	" " " Interest on deposits		687 90	
				25,417 20
1858	CONTRA DE.			158,426 33
Dec 31	To amounts paid on the warrants No's 1-409 inclusive of A. W. Tinkham, Secretary,	1,577	50 00	
"	" balance on hand cr. in new ac.	676	33	
				158,426 33
1859	CONTRA CR.			
Jan. 1	By balance on hand deposited with C. M. & F. Insurance Co.			676 33

GEO. W. DOLE, Treasurer.

Secretary's Report.

WATER COMMISSIONERS' OFFICE, }
CHICAGO, ILL., JANUARY 1, 1859. }

Board of Water Commissioners of the City of Chicago:

SIRS:—I have the honor, as Secretary, to submit herewith my report for the year 1858, of matters placed by you under my immediate supervision.

The income for the year 1858 is as follows:

From Water rents and assessments, .	\$102,178 85
Profits of tapping distributing pipes, .	530 47
Total revenue for 1858,	\$102,709 32

The expenses for the year 1858 are as follows:

For interest on the bonds issued and all interest,	\$59,357 17
Expenses at the pumping works,	19,307 07
Repairs and miscellaneous operating expenses,	3,204 27
Office expenses, clerks, collectors, office rent, &c.,	6,572 69
Salaries of Commissioners, Superintendent and Secretary,	6,288 89
Total expenses for the year 1858,	\$94,730 09
Amount by which the income of 1858 exceeds the interest and operating expenses,	\$7,979 23

It should be observed that the item "interest on the bonds issued," &c., is \$4,201 40 greater than the actual interest payment for the year. This is in accordance with a plan adopted in the earlier years of the works, to gradually meet the discount at which the bonds were sold, by charging over to interest account a certain proportionate amount year by year. For several years this was

omitted. The aggregate charge for the omitted term and for 1858 is \$4,201 40, the sum named above.

Comparing the income with the sum of the operating expenses and the interest actually paid, as has been the method heretofore, the excess for 1858 was \$12,180 63. The excess of 1857, reckoned in the same way was \$11,837 94.

The collections during 1858 were made with greater difficulty than is usual, and the amount of water rents and of assessments unpaid at the close of 1858, I find to be greater than at the end of 1857. A considerable part of this increase is made up from uncollected assessments levied on the new pipe laid, most of which was put down late in the year.

For all unpaid assessments and water rents of a date earlier than May 1, 1858, warrants have been issued and placed in the hands of the special constable qualified for that purpose, for collection.

The amounts of uncollected warrants are:

For the North Division,	\$640 45	
" South " 	1,975 32	
" West, " 	1,178 83	
Total amount of uncollected warrants, .		\$3,794 60

The unpaid water rents and assessments for the year commencing May 1, 1858, and ending May 1, 1859, are in amount as follows:

North Division—		
Water rents,	\$2,838 75	
Assessments,	2,012 25	
Total, North Division,		\$4,851 00
West Division—		
Water rents,	\$5,403 18	
Assessments,	3,253 16	
Total, West Division,		\$8,656 34
South Division—		
Water rents,	\$8,512 54	
Assessments,	2,031 00	
Total, South Division,		\$10,543 54

Total of water rents and assessments for the year commencing May 1, 1858, and ending May 1, 1859, remaining unpaid January 1, 1859,	\$24,050 88
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Total amount of warrants, water rents and assessments unpaid January 1, 1859,	\$27,845 48
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The revenue from the commencement of operating the works to January 1, 1859, amounts to	\$358,071 98
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From the commencement of the works to January 1, 1859, the expense, for interest and repairs, and costs of operating the works, or the balance of accounts for interest and operating expenses, is,	350,167 71
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Amount by which the total income exceeds the total costs Jan. 1, 1859,	\$7,904 27
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The deficiency of the total revenue to meet the total costs, amounting at the close of 1855 to \$15,632 03, from that time was gradually reduced, amounting at the close of 1857 to only \$74 96. This deficiency has been wholly made up, and we have now a balance of revenue above all costs of interest, repairs, and operating from the commencement of the works, of \$7,904 27.

The revenue of last year was of course affected by the depression of business. This not only embarrassed the collection of the rents, but very seriously diminished the receipts from the large manufacturing establishments and large consumers generally. The amount of the collections for 1858 is not so large as I had estimated. The loss is accounted for as stated above, and principally from the large amount of taxes uncollected at the close of the year.

During the year 1858 the number of taps inserted in the distribution pipes was,	789
The number inserted previously,	4,524

Total number January 1, 1859,	5,313
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The number of buildings into which water was introduced during the year 1858, is as follows:

In the North Division,	329
“ South “	279
“ West “	464

Total during the year,	1,072
Buildings supplied previously,	7,159

Total number of buildings January 1, 1859, into which water has been introduced, 8,231

These buildings are thus distributed in the different Divisions of the city:

In the North Division,	2,130
“ South “	3,839
“ West “	2,262
Total,	8,231

On March 31, according to an advertised notice to that effect, bids were received and opened for the different kinds of work of the North and West Reservoirs. A large number of proposals were received, the lowest of which for the masonry were declared to be the bids of Messrs. Carter & Miller for the North Reservoir, and of Messrs. Mortimer & Loberg for the West Reservoir. The Board, however, had at that time failed to effect a sale of their bonds as had been anticipated, and they were not able to avail themselves of any of the propositions. At a subsequent day propositions were invited from a number of the lowest bidders for the masonry and the iron work, the parties by agreement to be paid in water loan bonds. Under these terms of payment, the lowest bids were of

Carter & Miller, for the masonry of the North Reservoir, \$20,000
Mortimer & Loberg, “ “ West “ 18,957
C. Reisse & Co., for the iron works of the two reservoirs, 38,050
all payable in Water Loan Bonds at their seven per cent. par value. These bids were accepted on the 29th of April, and contracts entered into with the respective parties at the prices and terms named. By a later agreement, however, the Commissioners were

made the negotiators for the sale of these bonds, and equivalent payments were made in cash instead of bonds.

The bids received March 31st, for the carpentry and painting of the reservoirs, were all considered too high, and contracts at much lower prices were made later in the season. The carpentry of the two reservoirs, excepting the floor timbers, being awarded to Messrs. Boyington & McWilliams, for the sum of two thousand seven hundred and fifty dollars for each reservoir, and the painting and glazing to Peter Neff, at a price amounting inclusive of some extra work, to nearly one hundred and fifty dollars each, a small amount of the painting having been previously done.

The masonry of the two reservoirs has been finished, accepted, and paid for.

The iron work is unfinished. If complete and accepted, the amount of \$4,917 56, would be due Messrs. C. Reisse & Co.

The carpentry and painting are also in progress. On these two contracts, were they finished, there would be due respectively \$2,865—and \$250.

On the 9th of June bids were received and opened for the delivery of the cast iron pipes required for 1858. Bids were received from Chicago, Cleveland, Youngstown, Ohio, from Buffalo, West Troy, New York and Philadelphia. Of all the bids received, that of Messrs. R. D. Wood & Co., of Philadelphia, was declared to be the lowest, viz: \$39 67 per ton, delivered in Chicago, inclusive of the necessary branches and other irregular castings, and payable two-thirds in water loan bonds at their seven per cent. par value, and one-third in cash. Their contract has been filled; 1,141 ⁹⁹/₂₀₀ tons have been delivered, tested, and paid for, and their account settled in full.

The contracts for digging the trenches for laying pipes were let to sundry parties at prices from 9 ³/₄ to 11 ¹/₂ cents per yard for the excavation and backfilling; for the removing and replacing street planking, at the rate of ten cents per lineal foot of trench; and for the taking up and replacing macadamizing material, at the rate of six cents per lineal foot. All these contracts have been executed, and the accounts of the contractors paid in full.

Of the coal purchased, most of it was delivered by Messrs. Price, Morris & Co., of this city, at the engine house, under con-

tract, at the price of four dollars and twenty-five cents per ton, for Chippewa coal. The amount stipulated for has been delivered and paid for.

There is no known outstanding floating debt at this time.

The organization of the office is nearly as it was at the commencement of the year. In the office Mr. J. H. Bross and Mr. W. R. Larrabee, are employed as clerks. The collectors on salary are Messrs. C. R. Vandercook, A. Heartt, and Anton Nieman. Mr. John Elmer is employed collecting on a commission.

Appended to this report and making part of it, are four financial statements, numbered 1, 2, 3 and 4.

No. 1 is a statement of the balances of the various accounts as taken from the ledger this day, and shows in brief the means by which the works have been constructed and operated, and to what general accounts these means have been applied.

No. 2 shows the receipts and expenditures from July 1st, to Dec. 31st, 1858.

No. 3 exhibits the same facts as the foregoing for the whole year.

No. 4 shows in detail the application of all monies expended during 1858.

Very respectfully,

Your obedient servant,

A. W. TINKHAM,

Secretary.

STATEMENT NO. 1,

OF THE AFFAIRS OF THE CHICAGO CITY HYDRAULIC COMPANY, DEC. 31st, 1858.

Water Works, their total cost, excepting the North and West Reservoir buildings, . . .	\$829,177 95	DR.
North Reservoir building—cost Dec. 31st, 1858, . . .	42,299 50	
West Reservoir building, . . .	40,674 78	
Operating expenses in full to Dec. 31st, 1858, . . .	150,957 20	
Interest on Bonds—Coupon payments to July 1st, 1858, inclusive, and all other interest to Dec. 31st, 1858, . . .	168,505 51	
Duncan, Sherman & Co., for Coupons of January 1st, 1859, and unpaid Coupons of previous date, . . .	30,705 00	
Discount on Bonds, . . .	91,380 64	
Water pipes—for water pipes on hand, . . .	13,577 13	
Coal—for coal on hand, . . .	4,488 00	
Stock—for machinery, tools, &c., on hand, . . .	9,546 73	
Office furniture—for amount on hand, . . .	157 00	
Sewerage Commissioners—for labor and materials and water supplied in 1858, . . .	247 76	
George W. Quintard, . . .	678 45	
George W. Dole, Treasurer, for balance in his hands, . . .	676 33	
	<hr/>	\$1,383,071 98
Bond account, water loan bonds issued to Dec. 31st, '58, inclusive, . . .	\$1,025,000 00	CR.
Income account, for all water rents, assessments and profits tapping pipe received, . . .	358,071 98	
	<hr/>	\$1,383,071 98

STATEMENT NO. 2,

RECEIPTS AND EXPENDITURES FROM JULY 1st, TO DEC. 31st, 1858, INCLUSIVE.

R E C E I P T S.

Water rents and assessments,	\$57,685 80
Receipts for tapping the distributing pipes,	1,372 78
Receipts for shutting off and letting on water, &c.,	227 64
Water loan bonds sold and paid on contracts,	97,500 75
Rent of South Reservoir lot,	90 00
Earth sold from West Reservoir lot,	13 50
Sales of old pipe,	301 00
Sales of old zinc,	136 95
Sums on pay rolls not called for and returned to the Treasurer,	24 65
Interest on deposits received,	687 90
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	\$158,040 97
Add balance in hands of Treasurer, July 1st, 1858,	35,439 21
	<hr/>
	\$193,480 18

EXPENDITURES.

Extension of main and distributing pipes, and additions at the pumping works,	\$55,964 24
North Reservoir building,	37,632 39
West Reservoir building,	36,233 83
Payments for service cocks, tappers' services and expenses, including cocks on hand,	1,466 77
Payments for operating expenses,	12,501 56
Interest—Coupon payment of January 1st, 1859, exchange on do. and commission for payment July interest,	30,939 93
Water pipes on hand,	13,577 13
Coal on hand,	4,488 00
	<hr/>
	\$192,803 85
Add balance in Treasurer's hand, Jan. 1st, 1859,	676 33
	<hr/>
	\$193,480 18

STATEMENT NO. 3,

RECEIPTS AND EXPENDITURES FROM JAN. 1st, 1858, TO DEC. 31st, 1858, INCLUSIVE.

R E C E I P T S.

Water rents and assessments,	\$102,126 94
Tapping the distributing pipes,	1,951 78
For shutting off and letting on water, &c.,	335 70
From 179 six per cent. water loan bonds sold or paid on contracts during 1858,	159,505 14
Sales of old pipe and broken pipe, old zinc and other materials,	1,089 00
Sale of earth at West Reservoir lot,	13 50
Rent of South Reservoir lot,	120 00
City of Chicago for laying pipe to City Hospital in 1857,	1,069 30
Sewerage Commissioners for changes of pipes and repairs in 1857,	143 20
Sums on pay rolls not called for, and returned to the Treasurer,	24 65
Interest on deposits,	905 51
	<hr/>
	\$267,284 72
Add balance in Treasurer's hands Jan. 1st, 1858,	84 60
	<hr/>
	\$267,369 32

EXPENDITURES.

Additions at the pumping works, and main and distributing water pipes laid,	\$74,374 92
North Reservoir building,	42,014 50
West Reservoir building,	40,432 93
Payments for service cocks, and for services and expenses of tappers,	1,879 09
Payments for operating expenses,	33,033 09
Interest—coupon payments of July 1st, 1858, and January 1st, 1859, &c.,	56,893 33
Water pipes on hand January 1st, 1859,	13,577 13
Coal on hand January 1st, 1859,	4,488 00
	<hr/>
	\$266,692 99
Add balance in Treasurer's hands, January 1st, 1859,	676 33
	<hr/>
	\$267,369 32

STATEMENT NO. 4.

This statement shows in detail the application of all monies expended during 1858, and nothing else. It does not show any additions to the cost of the works arising from the use of materials previously paid for, or for other matters charged to the various accounts, but not included in the actual payments of the year.

ACCOUNTS OUTSTANDING JANUARY 1st, 1858, FOR EXTENSION AND OPERATING EXPENSES.

There was reported outstanding January 1st, 1858, due sundry parties the amount of \$12,219 20. The items making up this indebtedness were charged to their proper accounts for 1857. The payment of this indebtedness was made in 1858, and is distributed as follows:

EXTENSION OF PIPES.

Trenching and backfilling, .	\$2,187 09	
Iron castings — branches, sleeves and other small pieces,	552 82	
Hauling pipe,	110 30	
Labortesting and laying pipe,	187 00	
Lead,	113 36	
Repairing tools for caulkers,	87 40	
Hemp packing,	174 11	
Forage for horses,	178 90	
Repairing wagons,	32 63	
Rubber packing, for pipe yard,	32 50	
Brass castings for pipe yard	4 95	
12 fire hydrants,	330 00	
Stop-cock and hydrant boxes,	131 19	
		4,122 25
Planting trees North Reservoir lot,		21 24
Making sidewalk North Reservoir lot,		64 00
Lumber used in taking up and replacing river pipe at Chicago avenue,		28 02
Amount carried forward,	\$4,235 51	

ADDITIONS AT THE PUMPING WORKS RESULTING FROM THE INTRODUCTION OF NEW ENGINE AND BOILERS.

Amount brought forward,	\$4,235 51	
Iron works — chiefly for smoke pipe,	637 80	
Masonry — foundation new boilers,	56 50	
Flagging fire room	119 24	
Flooring engine house,	337 06	
Paints and painting,	24 25	
Hardware,	27 12	
Brass and copper work,	79 69	
Iron castings,	93 87	
Blacksmithing,	43 38	
Labor,	75 62	
Miscellaneous,	37 00	
		1,531 53

OPERATING EXPENSES OFFICE.

Services clerks, collectors &c.	717 54	
Gas—Dec. '57,	4 66	
Gas fixtures,	13 48	
Hay,	13 20	
		748 88

OPERATING EXPENSES—SALARIES.

Services as Commissioner G. W. Dole, April 1st, to Dec. 31st, 1857,	744 50	
Services as Commissioner O. Lunt, July 1st, to Dec. 31st, 1857,	500 00	
Services as Commissioner, John C. Haines, July 1st, to Dec. 31st, 1857,	500 00	
Services Superintendent, B. F. Walker Nov. and Dec. 1857,	300 00	
Services as Secretary, A. W. Tinkham, Nov. and Dec. 1857,	250 00	
		2,294 50

COAL.

Hauling and wheeling coal,	329 37	
Amount carried forward,	\$9,139 79	

●OPERATING EXPENSES—ENGINE HOUSE.

Amount brought forward, . . .	\$9,139 79	
Services engineer and assistant engineers, . . .	516 66	
Services of firemen and laborers, . . .	294 33	
New smoke pipe to old boiler, repairs of boilers, &c., . . .	263 31	
Brass and copper work, . . .	59 54	
Blacksmithing, . . .	27 61	
Gas at engine house, Dec., . . .	36 91	
Lumber, . . .	71 91	
Carpentry, repairing doors &c. . .	38 82	
Hardware, . . .	13 65	
Paints, . . .	14 22	
Rubber and hemp packing, . . .	38 33	
Oil, . . .	96 50	
Tallow, . . .	22 32	
Miscellaneous, . . .	6 41	
	<hr/>	1,500 52

OPERATING EXPENSES—MISCELLANEOUS.

Repairing South Reservoir tank, labor and materials, . . .	138 59	
Repairing hydrants and stop cock boxes, . . .	95 60	
Services laborers, caulkers and overseers, repairs and operating, . . .	568 98	
Brass and copper work, repairing stop-cocks, . . .	81 17	
Blacksmithing, . . .	79 85	
Forage for horses, . . .	60 55	
Covering pipe to secure it from frost, . . .	15 75	
Repairing wagons, . . .	20 00	
Hardware, . . .	12 87	
Iron castings, . . .	24 00	
Lead pipe 10-61—miscellaneous 12-19, . . .	22 81	1,120 17
	<hr/>	\$11,760 48
Amount carried forward, . . .		

Amounts brought forward, . . . \$11,760 48

SERVICE COCKS.

Services of Tapper, Nov. and Dec., 1857, . . .	89 17	
Service cocks, . . .	271 60	
Service cocks boxes, . . .	82 95	
Repairs of wagon, . . .	15 00	458 72
	<hr/>	\$12,219 20

Deduct for difference between amounts credited sundry parties, and amounts paid them, . . . 10

Total amount paid in 1858 for accounts which accrued in 1857, . . . \$12,219 10

At the close of 1858 there was no outstanding indebtedness. The payments of the accounts of 1858 are distributed as follows:

FOR EXTENDING THE WATER PIPES.

4, 6, 8, 10 and 12 inch pipe purchased and used, . . .	\$37,044 47	
Labor testing and laying the same, . . .	3,444 38	
Hauling distributing pipes, . . .	743 02	
Trenching and backfilling, planking, macadamizing, &c., . . .	7,800 46	
Lead used for distribution pipes, . . .	4,289 80	
Hemp packing for distribution pipes, . . .	251 02	
Coal for distribution pipes, . . .	59 06	
94 3-inch Hamilton's Fire Hydrants at \$35—\$3,290. . .		
6 4-inch do at \$50—\$300, . . .	3,590 00	
	<hr/>	

Amounts carried forward, . . . \$57,222 21 \$12,219 10

Amounts brought forward, .	\$57,222 21	\$12,219 10
25 4-inch Hamilton's stop-cocks, \$621-40, 25 6-inch do. at \$35—\$875. 3 8-inch do. at \$50—\$150, . . .	1,646 40	
Repairs &c., fire hydrants, .	15 30	
Iron covers for stop-cock boxes,	65 96	
Hydrant and stop-cock boxes materials and labor, . .	825 56	
16-inch main pipe purchased and used,	3,713 52	
Boring 16-inch sleeves, . .	66 00	
Hauling main,	62 62	
Testing and laying 16-inch main,	222 00	
Lead for main,	128 80	
Coal and Gasket,	10 20	
Trenching for main,	228 00	
Tools and repairs of tools for pipe layers,	151 81	
Forage for horses,	185 77	
Horse shoeing,	20 76	
Repairing wagons,	11 12	
Miscellaneous,	19 16	
Maps and drawings,	181 00	
Advertising for proposals for pipes and trenching, . .	89 75	
Packing for pipe yard, . . .	56 29	
Lumber for pipe yard,	7 16	
Plumbing at pipe yard, and repairs of testing press, . .	26 32	64,955 71

ADDITIONS AT THE PUMPING WORKS.

Engine for pumping out the well,	1,136 03	
Amounts carried forward, .	\$1,136 03	\$64,955 71 \$12,219 10

Amounts brought forward, .	\$1,136 03	\$64,955 71	\$12,219 10
Payments on account G. W. Quintard for matters connected with the new engine,	1,827 69		
Hardware, nails, bolts, &c.,	13 51		
Lumber,	3 18		
Carpentry,	17 75		
24-inch wrought iron pipe, . .	113 20		
Advertising,	28 00	3,139 36	

WATER PIPES.

For water pipe on hand Dec. 31st, 1858,	13,577 13	
NORTH RESERVOIR BUILDING.		
Advertising for proposals, . .	95 38	
Surveys,	7 50	
Drawings,	43 50	
Masonry as per contract, paid Carter & Miller, . .	20,000 00	
Masonry, extra, paid Carter & Miller,	150 09	
Iron work—amount paid C. Reissig & Co.,	16,582 72	
Carpentry,	1,477 48	
Painting,	67 03	
Lumber,	9 94	
Nails,	1 70	
Lead used in capping walls, . .	174 15	
Iron Beams,	2,184 96	
Freight of Iron Beams,	100 38	
Dockage of Iron Beams,	6 25	
Cartage of Iron Beams,	12 50	
Use of derrick,	10 00	
Earth hauled,	523 50	
Hose for puddling,	12 50	

Amounts carried forward, . \$41,459 58 \$81,672 20 \$12,219 10

Amounts brought forward, .	\$41,459 58	\$81,672 20	\$12,219 10
Services of overseers and laborers,	532 68		
Burning fluid, &c.,	1 00		
Trees around lot,	21 24	42,014 50	

WEST RESERVOIR BUILDING.

Surveys,	12 50		
Drawings,	43 50		
Advertising proposals,	95 37		
Masonry as per contract— paid Mortimer & Loberg,	18,957 00		
Masonry extra, amount paid Mortimer & Loberg,	167 89		
Iron work—amount paid C. Reissig & Co.,	16,582 72		
Carpentry,	1,461 98		
Painting,	67 02		
Lumber,	7 05		
Lead used for capping walls,	174 15		
Iron Beams,	2,184 96		
Freight of Iron Beams,	100 38		
Dockage of Iron Beams,	6 25		
Cartage of Iron Beams,	12 50		
Use of derrick, and labor hoisting and placing iron beams,	20 00		
Services of overseers and laborers,	534 90		
Miscellaneous,	4 76	40,432 93	

EXTENSION INCIDENTAL EXPENSES.

Express charges on bonds sent to New York,	73 15		
Traveling expenses of Commissioner negotiating sale of bonds,	143 87		

Amounts carried forward, . \$217 02 \$164,119 63 \$12,219 10

Amounts brought forward, .	\$217 02	\$164,119 63	\$12,219 10
Legal services,	100 00	317 02	

INTEREST ON BONDS.

Coupons of water loan bonds payable July 1st, 1858,	25,440 00		
Coupons of water loan bonds payable January 1st, 1859,	30,570 00		
Interest on temporary loans,	181 08		
Exchange on July and Jan'y interest,	500 75		
Traveling expenses Commissioner sent to New York,	75 38		
Commissions—Duncan, Sherman & Co., for payments July and January interest,	126 12	56,893 33	

OPERATING EXPENSES ENGINE HOUSE.

Services of one engineer and two assistant engineers for the year 1858,	2,599 99		
Services of firemen, &c., for 1858,	1,806 31		
Gas for the year,	383 15		
Oil,	302 42		
Tallow,	25 26		
Coal purchased and used,	3,819 27		
Cotton waste,	51 57		
Hemp packing,	55 91		
Rubber packing,	18 25		
Felting steam pipe, &c.,	57 54		
Blacksmithing and iron work,	60 95		
Brass and copper work,	41 93		
Iron castings, grate bars, &c.	23 57		
Repairs of old boiler,	33 07		

Amounts carried forward, . \$9,279 19 \$221,329 08 \$12,219 10

Amounts brought forward, .	\$9,279 19	\$221,329 98	\$12,219 10
Repairs of new boiler, .	13 58		
Glazing and painting of doors, floors, &c., .	115 49		
New roofing fire rooms of engine house, .	300 00		
Painting new roof of fire rooms, .	35 00		
Hose, coupling and nozzle pipe, .	110 50		
Carpentry, .	43 25		
Lumber, .	21 25		
Traveling expenses engineer to New York, about pump-valves, &c., .	81 00		
Freight of new valves, .	19 70		
Freight of piston springs, .	1 75		
Hardware, nails and tools, .	48 04		
Shovels, .	10 25		
Gas fitting, .	3 00		
Repairing platform scales, .	10 75		
Ice, .	14 12		
Plank for coal, .	20 07		
Miscellaneous, .	5 26	10,132 18	

COAL.

Coal on hand Dec. 31, '58, . 4,488 00

●OPERATING EXPENSES—MISCELLANEOUS.

Services of laborers, caulkers, &c., on repairs, flushing, &c., .	1,790 12
Hauling pipe for repairs, .	34 56
Pipe used in repairs, .	169 14
Lead used in repairs, .	40 00
Coal used in repairs, .	7 00
Packing used in repairs, .	1 20

Amounts carried forward, . \$2,042 02 \$235,950 16 \$12,219 10

Amounts brought forward, .	\$2,042 02	\$235,950 16	\$12,219 10
7 of Hamilton's hydrants, substituted for others out of order, .	245 00		
1 4-inch stop-cock of Hamilton's, .	25 00		
Repairing South Reservoir tank, .	303 92		
Forage for teams, .	103 28		
Harnesses, .	37 43		
Wagon repairs, .	41 52		
Horse shoeing, .	17 85		
Horse doctoring, .	5 00		
Repairing stop-cocks, .	121 16		
Carpentry — repairing hydrants and stop-cock boxes, .	194 30		
Lumber—repairing hydrants and stop-cock boxes, .	13 53		
Blacksmithing — repairing hydrant boxes, .	7 38		
Stop-cock box covers, .	40 88		
Nails, &c., .	32 09		
Public hydrants, .	8 00		
Plumbing, .	12 25		
Lead pipe for waste for fire hydrants, .	25 45		
Repairing tools, .	56 85		
Plumbing to supply stable with water, .	37 40		
Teaming to bank fire hydrants, .	45 00		
Repairing paving, .	24 82		
Oil for hydrants, .	7 20		
Repairing fire hydrants, .	37 93		
Paints, .	4 45		
Wire screen for inlet pipe, .	35 75		

Amounts carried forward, . \$3,525 46 \$235,950 16 \$12,219 10

Amounts brought forward, . \$3,525 46 \$235,950 16 \$12,219 10

Printing report, bathing posters, &c., . . . 105 50

Miscellaneous, . . . 29 05 3,660 01

SERVICE COCKS.

Tappers' services during '58, 370 65

Service cocks purchased in 1858, . . . 1,072 18

Service cock boxes, . . . 216 63

Blacksmithing — repairing tappers' tools, . . . 36 91

Spring wagon, . . . 90 00

Use of hired teams, . . . 16 50

Horse doctoring . . . 8 00

Horse shoeing, . . . 5 44

Forage, . . . 57 95

Harness, . . . 4 83 1,879 09

OPERATING EXPENSES—OFFICE.

Services clerks during 1858, 1,800 00

Services collectors, . . . 2,615 15

Services laborers, . . . 217 25

Office rent . . . 1,200 00

Tax books, . . . 40 00

Binding maps, . . . 6 00

Printed stationery, water bills, pay rolls, &c., &c., . 147 25

Miscellaneous stationery, . . . 68 62

Gas, . . . 14 02

Coal, . . . 25 50

Stoves, . . . 16 25

Washing towels, . . . 12 35

Office cleaning, postage and petty expenses, . . . 46 53

Advertising May and November water rents, . . . 113 38

Amounts carried forward, . \$6,322 30 \$241,489 26 \$12,219 10

Amounts brought forward . \$6,322 30 \$241,489 26 \$12,219 10

Newspapers, . . . 31 00

Horse shoeing, . . . 15 42

Forage, . . . 66 42

Legal services, . . . 40 00

Ice, . . . 18 75

Making desk, . . . 6 00 6,499 89

OPERATING EXPENSES—SALARIES.

Services G. W. Dole, as

Commissioner one year,

\$1,000; O. Lunt for do.,

\$1,000, . . . 2,000 00

Services John C. Haines as

Commissioner, Jan. 1st, to

March 16th, \$211 11; N.

Sturtevant, March 22d, to

Dec. 31, \$777 78 . . . 988 89

Services B. F. Walker, Su-

perintendent, one year,

\$1,800; A. W. Tinkham,

Secretary, \$1500 . . . 3,300 00 6,288 89

SEWERAGE COMMISSIONERS,

For labor and materials,

raising pipe, and repairs

in 1858 . . . 195 85 254,473 89

Total of monies expended by

Chicago Hydraulic Com-

pany during 1858, . . . \$266,692 99

Superintendent's Report.

WATER COMMISSIONERS' OFFICE.

CHICAGO, ILL., JANUARY 1, 1899.

Board of Water Commissioners of the City of Chicago:

GENTLEMEN: Notwithstanding the prostration of business throughout the country, our city improvements have seemed rather accelerated during the year just past. Especially has it been a year of increased activity in the department over which you have the honor to preside. Two new Reservoirs, of great strength and utility, and of the same capacity of the old one in the South Division, have been erected the past season, neither of which were commenced until after the first of May last, and both of which are now so near completion as to be used for the purpose intended. We have also extended the distribution pipes more the past season than in any previous year since the works have been in operation.

The whole amount expended the past year on account of extension is as follows:

West Reservoir,	\$40,674 78
North "	42,299 50
14 1-10 miles main and dist. pipe,	83,918 86
107 new Hydrants,	3,835 00
54 Stop Cocks,	1,671 40
Total,	\$172,399 54

The large excess of consumption in the South Division, over that of the West and North, in connection with smaller size of the main leading to the Adams street or South Division Reservoir, (which adds materially to the friction,) renders it necessary to partially close the gate in the main leading to the Reservoir in the North and West Divisions, in order to have all fill at the same time. If we had a main of the same capacity leading from the pumping works to the South Reservoir which we now have to the North

and West, it would be a great advantage in this regard, and of course a considerable saving of fuel. The time is probably not far distant when another Reservoir will be required in the South Division, somewhere in the vicinity of Old Street. When this necessity occurs it will be time to enlarge the main on Wolcot and State streets, till which, the extra interest on the cost of a twenty-four inch main will perhaps more than balance the cost of the excess of fuel required to overcome the friction, &c. Fortunately, our river pipe at State street is large enough to accommodate the enlargement of the main above suggested.

In regard to the duty of the Engines, the amount of water pumped and other matters pertaining thereto, I refer you to the minutes furnished by the Engineer in charge at the works, and which are made a part of this report.

BASIN IN THE LAKE.

In my report of last year, I stated that it would be necessary to have some dredging done in the basin early in the spring, to remove the deposit of sand and prevent the aqueduct leading to the pump-well from filling up, but on examination it was found in a better condition than was expected; consequently, nothing has been done in that direction, but I think it will not be safe to defer the matter much longer. The repairs on the protection have been very trifling, and no repairs have been required on the aqueduct except for a strainer over the end, amounting in all to the sum of \$35 75.

ENGINE HOUSE.

The zinc has been removed from the roofs of the two wings of the engine house and the roofs covered with matched flooring, shingled with best pine shingles, and painted inside and out in the same manner as the roof of the main building. This is an improvement very much needed in order to absorb the condensed steam which in cold weather was very annoying as well as injurious to the covering of the boilers. The cost of this alteration above what the old material sold for was only \$85 62.

Other repairs on the engine house, repairing windows, &c., \$231 01.

ENGINES AND BOILERS.

The amount expended on the old boiler is \$127 76.

Repairs on engines, \$205 33.

SOUTH RESERVOIR.

The bearings for the tank of the South Division Reservoir were placed so far apart that the iron occasionally cracks and the bottom has had to be repaired several times during the year. The repairs amount to \$303 92. The bottom will soon have to be taken out and the bearings put nearer together, or the masonry made solid, and I would recommend that this matter be attended to very soon, as I think the good of the structure requires immediate attention.

WEST DIVISION RESERVOIR.

The masonry for the new West Division Reservoir was let to Messrs. Mortimer & Loberg, of this city, for the sum of \$18,957. The contract was signed on the 3d day of May, and the work completed on the 10th day of December. This structure is built of beautiful Athens stone, furnished by Messrs. Singer & Talcott, of Chicago, and stands on a solid foundation covering a circular area seventy-one feet in diameter. The outer walls are octagon form, sixty-two feet diameter, three feet in thickness, besides the projections at the corners, the inside being a true circle. The outside is heavy rock face, with quoins on the corners and cut stone trimmings for all the openings. The walls are $42\frac{1}{2}$ feet above the grade. There are two circular walls inside about nine feet apart and three feet in thickness, of hard burnt brick, which are carried up to the same height of the outer wall, and all covered with a coping ten inches thick. On these walls are laid nine inch wrought iron beams, radiating from the center, and not over two feet apart at the farthest point, and on which the tank rests.

The tank is made of boiler iron, the bottom and a portion of the sides are $\frac{5}{16}$ of an inch in thickness. The sides are strengthened with heavy wrought iron hoops and ribs, held in their places by rods radiating from rings in the center. The tank is sixty feet in diameter and twenty-eight feet high, and will contain about 500,000 U. S. A. gallons.

The tank has a casing of two-inch pine plank, leaving a space of one foot between the casing and the tank, to prevent freezing.

The frame work of the roof is of iron and covered with pine sheathing and best pine shingles. The wrought iron beams were furnished by the Trenton Iron Co., Cooper, Hewitt & Co., Agents. The contract for all the iron work, except beams, was let to C. Reissig & Co., of this city, for the sum of \$38,050. The tank was so far completed as to receive the water on the 17th day of December.

The carpenter work was awarded to Boyington & McWilliams, of this city, for the sum of \$2750. Contract dated the 15th day of July, 1858, and is now nearly completed.

The contract for painting and glazing was awarded to Peter Neff, for the sum of \$150. The whole cost of this structure, including superintendence and extras, &c., will amount to near the sum of \$45,200.

NORTH DIVISION RESERVOIR.

The contract for masonry of the North Division Reservoir was let to Messrs. Carter & Miller, of this city. The contract was signed on the third day of May, for the sum of \$20,000. This contract was fully completed on the 25th day of December. This building is made on the plan of the West Division Reservoir, with the exception of having heavy brick inverted arches at the bottom to support the walls. The stone was principally from Joliet, and are of a darker shade and the blocks not as large as those in the West Division. There is not, however, the least appearance of yielding or settling in either of the structures.

The contracts for carpenter work, iron work, painting and glazing for this reservoir were let to the same parties and at the same prices as those of the West Division.

The whole cost of this structure, including extras, superintendence and filling the lot is about \$47,000.

FENCING LOTS.

I would again respectfully call the attention of the Board to the subject of fencing and ornamenting the engine-house and reservoir lots. It will be recollected that in my estimates for the north and west division reservoirs, I included an amount sufficient to

cover the cost of fencing, and otherwise ornamenting the lots. The low price of labor and materials the past season has enabled us to erect our new reservoirs thirty per cent. less than the estimated cost, and believing that the Board are now prepared to entertain the proposition for the improvements alluded to above, I have prepared plans and estimates suited to the character of the works, which are herewith submitted.

FENCING ENGINE-HOUSE LOT.

51 cords stone foundation, at \$12,	\$612 00
140 M. brick at \$10,	1,400 00
1018 feet stone coping at 50 cts.	509 00
1018 feet of fence at 50 cts.	509 00
	<hr/> \$3,030 00

FENCING NORTH RESERVOIR LOT.

25 cords stone foundation at \$12,	\$300 00
520 feet coping 16x8 at \$1,	520 00
520 lineal feet of iron fence at \$1 50,	780 00
	<hr/> 1,600 00

WEST RESERVOIR LOT.

540 lineal feet complete at \$3 08	\$1,663 20
70 shade trees set at \$1,	70 00
	<hr/> 1,733 20

SOUTH RESERVOIR.

790 lineal feet complete at \$3 08,	\$2,433 20
100 shade trees,	100 00
	<hr/> 2,533 20

TOTAL,

\$8,896 40

COAL SHEDS RECOMMENDED.

It is evident that a considerable per centage of our coal is wasted by being exposed to the weather, as it has been without any kind of covering. I would therefore recommend that substantial posts be set in the ground at convenient distances, to support a roof to be covered with composition roofing, and of a

sufficient capacity to protect our stock of coal from the influence of storms. The cost of sheds of this description would be about eight hundred dollars.

EXTENSION OF THE MAIN.

The 16-inch main has been extended on Munroe street from its terminus on the line of Union street to the new reservoir on the corner of Munroe and Morgan streets, 1650 feet.

EXTENSION OF DISTRIBUTING PIPES.

There has been laid the past season of distribution pipes as follows:

	Feet.
12 inch,	466
10 "	410
8 "	7,769
6 "	37,008
4 "	27,130

Or a little over 13 $\frac{3}{4}$ miles, distributed as follows:

SOUTH DIVISION.

Street Laid.	Between what Streets.	Size of Pipe.	No. of Feet.
State Street,	Cross st. to Palo Alto st.,	8 inch	1,999
North Street,	State st. to Indiana Av.,	8 "	1,327
Indiana Avenue,	North st. to Ringgold Av.,	6 "	2,650
Cottage Grove Av.,	Ringgold st. to nr Hardin Pl.	6 "	4,113
Michigan Avenue,	Palo Alto st. to Monterey st.	6 "	756
Palo Alto Street,	State st. to Michigan Av.,	4 "	927
Ringgold Avenue,	State st. east,	8 "	307
Archer Road,	State st. to Stewart Av.,	6 "	3,160
Clark Street,	End of pipe south to Liberty	8 "	800
Charles Street,	Wells st. to Franklin st.,	4 "	404
Eldridge Court,	State st. to Wabash Av.,	4 "	412
Peck Court,	State st. to Michigan Av.,	4 "	914
Rio Grande Street,	Cottage Gr. A. to Calumet A.	4 "	428
	Laid for Hydrants,	4 "	540
Total,			<hr/> 18,737

NORTH DIVISION.

Street Laid.	Between what Streets.	Size of Pipe.	No. of Feet Laid.
Division,	Sedgwick to Clybourne Av.	6 inch.	366
Clybourne Avenue,	Division to Blackhawk,	6 "	2,518
Blackhawk,	Clybourne Av. to Larrabee,	6 "	876
Larrabee,	" to North Avenue,	6 "	1,650
North Avenue,	Hubbard to Orchard,	6 "	1,312
Orchard,	North Avenue to Willow,	6 "	1,091
Sedgwick,	Division to Green,	6 "	1,020
Bremer Avenue,	Chicago Av. to Wessen's Pk.	4 "	1,276
Townsend,	" " "	4 "	1,266
Sedgwick,	" " "	4 "	1,279
Market,	" " Oak,	4 "	1,420
Franklin,	" " Division,	6 "	2,600
Wells,	Hinsdale to Division,	8 "	2,068
Goethe,	Sedgwick to Wells,	4 "	1,065
North Green,	" " "	4 "	1,074
Huron,	Market to Sedgwick,	6 "	435
"	Dearborn to Wolcott,	6 "	424
Oak,	Wolcott, east,	4 "	564
Hickory,	" " "	4 "	600
Market,	Huron south to end of pipe.	4 "	668
	For hydrants,	4 "	500
Total,			24,072

WEST DIVISION.

Street Laid.	Between what Streets.	Size of Pipe.	No. of Feet.
Van Buren,	Clinton to Halsted,	6 inch.	1,693
Randolph,	Morgan to Elizabeth,	6 "	1,631
Elizabeth,	Randolph to Lake,	4 "	461
Lake,	Carpenter to Reuben,	4 "	3,755
Carpenter,	Lake to Randolph,	4 "	483
Milwaukee Avenue,	Fourth to Carpenter,	4 "	1,370
Peoria,	Lake to Prairie,	4 "	804
Sangamon,	Fulton to Prairie,	4 "	375
Fulton,	Sangamon to Morgan,	4 "	339
Prairie,	Morgan to Carpenter,	4 "	327
Judd,	Clinton to Jefferson,	6 "	396
Jefferson,	Judd, north to alley,	6 "	90
Alley, bt. Twelfth &	O'Brien, Jefferson to Halsted	4 "	1,285
Morgan,	Adams to Reservoir,	10 "	410
Am't carried over,			13,419

WEST DIVISION—(CONTINUED.)

Streets Laid.	Between what Streets.	Size of Pipe.	No. of Feet.
Am't brought over,			13,419
Morgan,	Reservoir to Madison,	12 inch.	466
Morgan,	Madison to Randolph,	8 "	968
Madison,	May to Ann,	8 "	300
Madison,	Ann to Throop,	6 "	900
Throop,	Madison to Monroe,	4 "	468
Throop,	Adams to Jackson,	6 "	494
Adams,	Curtiss to Throop,	6 "	677
Mather,	Jefferson to Canal,	4 "	800
Ewing,	Clinton to Canal,	4 "	393
Desplaines,	Polk to Harrison,	6 "	843
Polk,	Clinton to Blue Island Av.,	6 "	2,245
Blue Island Avenue,	Harrison to Twelfth,	6 "	3,112
Carpenter,	Prairie to Third,	6 "	1,529
Third,	Green to Carpenter,	4 "	1,189
Green,	Fourth to Third,	4 "	583
Fourth,	Green to Milwaukee Av.,	4 "	100
Hubbard,	Peoria to Sangamon,	4 "	327
Sangamon,	Hubbard to Owen,	4 "	409
Prairie,	Sangamon to Peoria,	4 "	302
	For hydrants,	4 "	450
Total,			29,974

RECAPITULATION.

South Division,	18,737 feet.
North Division,	24,072 "
West Division,	29,974 "
	72,783 feet.
16 inch main,	1,650 "
Total,	74,433 "
Or 14 1-10 miles.	

NEW HYDRANTS.

Fire hydrants have been set the past year as follows:

SOUTH DIVISION.

1	3 inch,	Corner Archer Road and Clark Street.
1	3 "	" " " Commerce Street.
1	3 "	" " " South Street.
1	3 "	" " " Stewart Avenue.
1	3 "	" State and Commerce Streets.
6		

- 1 3 inch, Corner State and South Streets.
 1 3 " " Palo Alto and Michigan Avenue.
 1 3 " " Michigan Avenue and Monterey Street.
 1 3 " " " North Street.
 1 3 " " Indiana Avenue and " "
 1 3 " " " Old "
 1 3 " Indiana Avenue south of Old Street.
 1 3 " Corner Cottage Grove and Rio Grande Sts.
 1 3 " " Charles and Franklin Streets.
 1 3 " Clark Street, north of Liberty.
 1 4 " Corner Randolph and State Streets.
 1 3 " " Clark and Cross Streets.
 1 3 " " Dearborn and Cross Streets.
 1 3 " " State and Old Streets.
 1 3 " " " Springer Streets.
 1 3 " " " North "
 1 3 " " Washington and Lasalle Streets.
 1 3 " " State and Cross Streets.
 2 3 " Wabash Avenue, bet. Twelfth and North Sts.
 1 3 " Sherman, between Harrison and Polk "
 1 3 " State, cor. alley bet. State and Randolph "
 1 4 " Corner State and Van Buren Streets.
 1 4 " " " Randolph "
 1 3 " " " Madison "
 1 3 " " " Congress "
 1 3 " " Cottage Grove and Monterey Streets.
 1 4 " " Clark and Twelfth Streets.

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WEST DIVISION.

- 1 4 inch, Corner Munroe and Morgan Streets.
 1 3 " Jefferson, corner alley between Twelfth and
 O'Brien Streets.
 1 3 " Halsted, corner alley between Twelfth and
 O'Brien Streets.
 1 3 " Corner Lake and Elizabeth Streets.
 1 3 " " " Sheldon "
 1 3 " " " Park Place "
 1 3 " " " Reuben "

- 1 3 inch, Corner Desplains and Van Buren Streets.
 1 3 " " Randolph and Curtis "
 1 3 " " Lake " " "
 1 3 " " Randolph and Ann "
 1 3 " " Milwaukee Av. and Carpenter Streets.
 1 3 " " " Third "
 1 3 " " Munroe and Throop Streets.
 1 3 " " Madison and Elizabeth Streets.
 1 3 " " Blue Island Av. and Morgan Street.
 1 3 " " " Twelfth "
 1 3 " " " Harrison "
 1 3 " " " Hope "
 1 3 " " " Ewing "
 1 3 " " Green and Jackson Streets.
 1 3 " " Carpenter and Third "
 1 3 " " Green " " "
 1 3 " " Carpenter and Hubbard Streets.
 1 3 " " Throop and Jackson "
 1 3 " " Polk and Desplains "
 1 3 " " " Halsted "
 1 3 " " Lake and Green "
 1 3 " Sherman, between Polk and Harrison Streets.

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NORTH DIVISION.

- 1 3 inch, Corner Franklin and Oak Streets.
 1 3 " Larabee, centre of Block, between Black
 Hawk Street and Clybourne Avenue.
 1 3 " Corner Huron and Dearborn Streets.
 1 3 " " Sedgwick and Huron "
 1 3 " " Market and Erie Streets.
 1 3 " " Orchard and Willow Streets.
 1 3 " " " Street and North Avenue.
 1 3 " Bremer Avenue, at Wesson's Park.
 1 3 " " " bet. Chicago Av. and Park.
 1 3 " Corner Townsend and White Streets.
 1 3 " " Sedgwick St. and Chicago Avenue.
 1 3 " Sedgwick Street, at Wesson's Park.
 1 3 " Corner Market and Pearson Streets.

1	3 inch,	Corner Market and Oak Streets.
1	3 "	" " " White "
1	3 "	" Wells and Wendell Streets.
1	3 "	" Wells and Whiting Streets.
1	3 "	Oak, at east end of pipe.
1	3 "	Corner Clybourne Avenue and Division Street.
1	3 "	Clybourne Av., bet. Larabee and Division Sts.
1	3 "	Corner Clybourne Avenue and Larabee Street.
1	3 "	" " " Black Hawk St.
1	3 "	" Larabee and Black Hawk Streets.
1	3 "	" " " North Avenue
1	3 "	Hickory Street, east end of pipe.
1	3 "	Corner Division Street and Clybourne Avenue.
1	3 "	" Green and Sedgwick Streets.
1	3 "	" Franklin and Hill "
1	4 "	At New Reservoir, Chicago Avenue.

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STOP COCKS.

Additional Stop Cocks have been inserted, as follows :

SOUTH DIVISION.

1	8 inch,	Corner State and North Streets.
1	8 "	" " " Ringold "
1	6 "	" " " North "
1	6 "	" Wabash Avenue and North Streets.
1	6 "	" Indiana " " " "
1	6 "	" State and Palo Alto Streets.
1	6 "	" Michigan Ave. and Monterey Streets.
1	6 "	" Cottage Grove Av. and Monterey St.
1	4 "	" State Street and Peck Court.
1	4 "	" Wabash Avenue and Peck Court.
1	6 "	" Archer Road and Clark Street.
1	6 "	" State and Twelfth Streets.
1	4 "	" Michigan Avenue and Twelfth Street.
1	4 "	" Buffalo and Twelfth Streets.

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WEST DIVISION.

1	6 inch,	Corner Blue Island Avenue and Harrison St.
1	6 "	" " " " " Polk Street,

1	6 inch,	Corner Halsted and Polk Streets.
1	6 "	" Adams and Throop Street,
1	4 "	" Lake and Elizabeth Street,
1	4 "	" Randolph and Elizabeth Street,
1	6 "	" Randolph and Carpenter Street,
1	6 "	" Kinzie and Carpenter Street,
1	16 "	at West Reservoir on main,
1	8 "	at " " " distribution.

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NORTH DIVISION.

1	12 inch,	At the North Reservoir,
1	4 "	" Clark Street Bridge,
1	4 "	Corner Wells and Green Street,
1	4 "	" Wells and Goethe Street,
1	6 "	" Sedgwick and Division Street,
1	6 "	" Clybourne Avenue and Division St.,
1	6 "	" North Avenue and Orchard St.

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Ninety-one fire hydrants have been added to the works the past season, six of which will throw a four-inch stream, and lead from large pipes, and are intended to give more than an ample supply for the steam fire engines.

The hydrants used this season are principally of Hamilton's patent, and operate very satisfactorily. One hundred and seven have been purchased, ninety-three of which are now in use, several having taken the place of old ones which need repairing, when they will be placed in localities where they will not require such constant use. We have also purchased of Mr. Hamilton,

3 8-inch Stop-Cocks,

25 6-inch "

26 4-inch "

Our water pipes used this season are principally from the furnace of Messrs. R. D. Wood & Co., of Philadelphia, and are of an excellent quality, showing the lowest per centage of waste of any purchased since the works have been in operation.

I am happy in being able, at this time, to represent the works in so perfect a condition, there being no repairs of any importance required at present, except the bottom of the tank in the South

Reservoir, and perhaps some new flues for the north boiler at the engine house. This boiler has been in almost constant use since the works were first put in operation, and but a small amount has been expended for repairs.

The works are now so far completed, and so arranged, that these repairs can be made without any serious detriment or obstruction to the supply of water. Nearly all the repairs on the engines have been done by the engineers and the employees at the Works, and if we had a small shop with a very few more tools, all our repairs, stop-cocks, service-cocks, &c., could be made with a trifling outlay above ordinary expenses.

All of which is respectfully submitted,

B. F. WALKER,

Superintendent.

Engineer's Report.

ENGINE HOUSE C. W. W.,
JANUARY 1st, 1859. }

Superintendent C. W. W.:

SIR: I have the honor to present to you the usual annual statement of the performances of the Engines, Boilers, etc., for the year ending December 31st, 1858, also the present condition of the same, and such other matters as I deem of interest, together with a table showing the number of hours run, and consumption of water each month during the past year.

OLD ENGINE.

The old engine has performed well in the past year, in which time it has been used 2176 hours and 5 minutes, being an average of 12 hours and 26 minutes per day; making in that time 912,498 revolutions, and delivering 473,403,963 gallons of water. This engine has needed but little repairs. The repairs on this and

other engines now in use has been done entirely by the regular employees of the Works, except such work as required lathes, etc. The old engine is in as good repair as at the date of my last statement.

NEW ENGINE.

The new engine has been used most of the time the past year, using one pump only, not having use for the other until the completion of the new reservoirs. On the 17th of December the other pump was connected and used, producing a favorable effect in the working of the engine. This engine has been used 3279 hours and 23 minutes, being an average of 15 hours and 24 minutes per day, making in that time 1,515,837 revolutions, delivering 618,461,496 gallons of water. This engine has performed well, and has not received any repairs except the usual packing, etc., and at the present time is in the most complete repair. While repairing the South Reservoir, in April last, this engine was run 107 hours without stopping.

NEW BOILERS.

The two new boilers have been used most of the time, (one at a time,) and have worked well. They have not required any repairs of importance beyond the usual cleaning, etc., and are at present in good order.

OLD BOILER.

The old boiler has also been used a portion of the time. The inside leaks badly after using a short time. It has received repairs several times the past year, but many of the leaks are in such a position that they cannot be reached without disconnecting parts of the boiler. I therefore think it false economy to bestow any more repairing of the kind upon it, but would suggest that it receive a new set of flues, when I think it will be as good as new.

WELL ENGINE.

The large steam pump erected for the purpose of cleaning the well has been used but once, (on the 15th of May last.) It remains in good order. The bottom of the well is quite free from sand, none of any consequence coming from the lake.

COAL.

The coal used for the past year has been about the usual quality. In April last some attention was given to ascertain the value of

several kinds of coal for steaming purposes, the result of which, at the time, was placed before you.

The city has been without water from these works twenty-eight hours and fifty-five minutes; in one case ten hours, during the night, while cleaning the well; once sixteen hours while making the connection to new North Reservoir; the balance of the time was caused by allowing the water to run out of South Reservoir in order to repair the bottom.

The following is a Monthly Statement of the hours run and water pumped for the past year:

HOURS RUN AND WATER PUMPED
FOR THE PAST YEAR.

MONTHS.	HOURS RUN.		GALLONS WATER PUMPED.
	H.	M.	
January.....	381	35	81,538,179
February.....	355	45	69,426,515
March.....	441	40	82,677,463
April.....	457	45	82,600,782
May.....	468	00	82,279,920
June.....	318	00	90,211,505
July.....	507	40	101,670,736
August.....	524	35	107,176,652
September.....	539	57	108,534,540
October.....	513	50	101,046,605
November.....	469	19	86,385,840
December.....	477	22	98,316,722

NOTE.—The smallest amount pumped any one day, 1,630,368, the largest amount pumped any one day, 4,312,560. There should be added to the above about 500,000 gallons each month, that amount being pumped by hand and *not* registered; also, about three hours per month running time.

Respectfully submitted,

DEWITT C. CREGIER,

Engineer.

RECAPITULATION.

Total number of hours run by both engines, . . . 5,455 28-60
Total number revolutions by both engines, . . . 2,428,355
Gallons water pumped by both engines, . . . 1,091,865,459