

CITY DOCUMENT



ANNUAL REPORT
of the
WATER SUPPLY BOARD
of the
CITY OF PROVIDENCE

For the Year Ended September 30, 1966

CITY DOCUMENT

ANNUAL REPORT

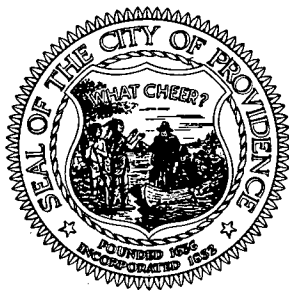
OF THE

WATER SUPPLY BOARD

OF THE

CITY OF PROVIDENCE

RHODE ISLAND



For the Year Ended September 30, 1966

IN CITY COUNCIL
APR 20 1967

READ:

WHEREUPON IT IS ORDERED THAT
THE SAME BE RECEIVED.

Vincent Vespe
CLERK

FILED

APR 14 3 36 PM '67

DEPT. OF CITY CLERK
PROVIDENCE, R. I.

R E P O R T

ADMINISTRATIVE OFFICE
WATER SUPPLY BOARD
CITY OF PROVIDENCE

October 1, 1966

TO THE HONORABLE JOSEPH A. DOORLEY, JR., MAYOR
AND THE HONORABLE CITY COUNCIL:

Gentlemen:

In compliance with Chapter XX of the Charter of the City of Providence, enacted by the General Assembly of the State of Rhode Island at its January Session, A. D. 1940, and approved April 26, 1940, we have the honor to present the twenty-sixth annual report of the Water Supply Board for the year ended September 30, 1966.

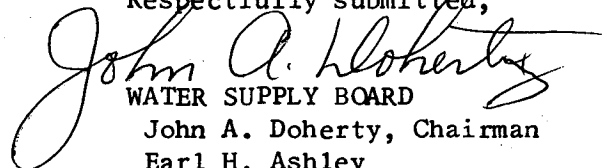
On January 14, 1966, John A. Doherty was reappointed a member of the Board for the ensuing term ending on the first Monday in January, 1970.

At the re-organization meeting held on January 14, 1966, John A. Doherty was re-elected Chairman and John J. Deary was reappointed Secretary.

The Board has held regular meetings throughout the year, meeting practically every week, at which careful consideration has been given to the many problems arising in connection with maintenance and operating activities, the Department's financial structure, matters relative to taxes levied on property owned in nearby communities, and other miscellaneous departmental duties which properly come before the Board. Special meetings were held throughout the year for consideration of particular problems which have arisen.

The report of the Chief Engineer with many important tables and statistical data is appended hereto, to which we invite your attention for details and particular information regarding the finances of the Department and conduct of the work during the above period.

Respectfully submitted,



WATER SUPPLY BOARD

John A. Doherty, Chairman

Earl H. Ashley

Ugo Riccio

John J. Tierney

David R. McGovern, Ex-Officio

REPORT OF THE CHIEF ENGINEER

Providence, R.I.
October 1, 1966

WATER SUPPLY BOARD
CITY OF PROVIDENCE

Gentlemen:

The following is the report of operations of the Providence Water Works for the fiscal year ended September 30, 1966.

The extended dry spell on the Scituate watershed continued throughout the year and this was the fifth consecutive year that rainfall was below the long-term average. Since the start of the drought in 1962, the accumulated deficiency in rainfall totals 32.09 inches. The loss in runoff during this same period, which is the amount of precipitation collected, amounts to 38.41 inches. This represents a drop in production on the watershed of almost 62,000,000,000 gallons and exceeds the volume of water consumed throughout the entire system over the last three years of approximately 57,000,000,000 gallons.

The yield from the drainage basin for the fiscal year was the lowest ever recorded in the records of the department that go back to 1915. The average daily yield was only 47,840,000 gallons, far below the Estimated Safe Yield of 84,020,000 gallons daily. During the last 51 years, the daily yield has averaged 107,560,000 gallons per day. In other words, our production from the catchment area was only 57% of the Estimated Safe Yield and 44% of the 51-year average.

Without any official restrictions on the use of water, the customers within the district exercised some restraint. The average daily consumption for the year was only 50,480,000 gallons compared to 53,340,000 gallons daily for the previous year, a reduction of 2,860,000 gallons daily. Naturally, this reduction in water use will affect our revenue and will result in a loss of income of about \$160,000.

On March 21, 1966, the department filed applications with the U. S. Department of Commerce, Economic Development Administration that had been signed by Mayor Joseph A. Doorley, Jr. and were authorized under City Council Resolutions No. 143, No. 144 and No. 145 dated March 7, 1966. The department's applications requested the Economic Development Administration for a 50% Federal grant on the following projects:

1. New Raw Water Booster Pumping Station with 1750 KW Diesel Generator and Four Dual Electric-Driven Pumps with a capacity of 160 million gallons daily. The new station to be located at the base of Gainer Memorial Dam adjacent to the Meter Chamber.
2. Supplemental Tunnel and Aqueduct from the Water Purification Works in Scituate to connect with our trunk main feeders at the Budlong Road section in the City of Cranston.
3. Four Additional Rapid Sand Filters at the Water Purification Works in Scituate together with other necessary appurtenant equipment to increase the plant capacity to 144 million gallons daily.

The cost of constructing the Booster Pumping Station was estimated to be \$1,500,000 and originally it was planned to finance the project from current revenue. The estimated cost of the Supplemental Tunnel and Aqueduct was \$10,500,000 and the Four Additional Filters \$2,500,000. Both of these projects were to be financed from a \$13,000,000 bond issue approved by the voters in the General Election held on November 3, 1964. The General Assembly passed enabling legislation under Chapter 46 of the Public Laws of 1965 authorizing Providence to issue bonds in the sum of \$13,000,000 for the construction of the Tunnel and Aqueduct and the Additional Filters.

Mayor Doorley consulted frequently with the R. I. Congressional Delegation as well as officials of the Economic Development Administration in his efforts to obtain a 50% Federal grant on all three projects. On June 13, 1966, the Mayor was notified of the Economic Development Administration offer to make a grant not to exceed \$750,000 to aid in the construction of the Raw Water Booster Pumping Station (Project No. 01-1-00089) estimated to cost \$1,500,000. On the following day, June 14, 1966, a similar notice was received informing the Mayor of a grant not to exceed \$5,250,000 to aid in the construction of the Supplemental Tunnel and Aqueduct (Project No. 01-1-00087) estimated to cost \$10,500,000; also, a grant of \$1,250,000 to aid in the construction of the Four Additional Filters (Project No. 01-1-00088) estimated to cost \$2,500,000. On June 21, 1966, Mayor Doorley notified Eugene P. Foley, Administrator of the Economic Development Administration and Assistant Secretary of the Department of Commerce, that the City accepted all three grants totalling \$7,250,000.

Under Chapter 40 of the 1965 Public Laws, the City of Providence was authorized to acquire land to build a Supplemental Tunnel and Aqueduct that would run from the Water Purification Works in Scituate to the Budlong Road section in the City of Cranston. On December 16, 1965, the department filed a statement of the taking of certain real property and interests, rights and easements in land by the City of Providence in the Towns of Scituate and West Warwick and the City of Cranston together with

a complete set of condemnation plans. The condemnation involved 154 parcels, 29 in the Town of Scituate; 49 in West Warwick and 76 in the City of Cranston. In Scituate, the City acquired in fee simple title to Parcels numbered 1519, 1532 and 1538; in West Warwick 1557, 1559, 1562, 1563, 1564, 1565, 1567, 1568, 1569, 1570, 1571, 1572, 1573, 1574, 1576, 1577, 1579, 1580, 1581, 1587, 1592, 1594, 1595, 1598, 1603 and 1608; in Cranston 1612, 1633, 1668, 1669, 1670, 1674, 1678, 1679, 1681 and 1682. The City acquired a perpetual easement in the remaining 26 parcels in Scituate; remaining 23 parcels in West Warwick as well as the 66 parcels in the City of Cranston.

Supplementary condemnation plans were filed on April 12, 1966 in the Town Clerks' Office of Scituate and West Warwick. The City acquired an easement in Parcel 1508-S located in Scituate and Parcel 1598-S located in West Warwick was taken in fee.

On February 21, 1966, the Board of Contract and Supply voted to advertise for bids covering the construction of a portion of the Supplemental Tunnel and Aqueduct under Contract No. 1. Bids were received on March 14, 1966 and the low bid was submitted by Fanning and Doorley Construction Company of Providence who quoted a total price on a unit cost basis of \$966,072.50. On March 21, 1966 the Board of Contract and Supply awarded the contract to this firm. Work completed at the end of the fiscal year represents approximately 48.14% of the contract.

At the meeting of the Board of Contract and Supply held on March 28, 1966, it was voted to advertise for bids on Furnishing and Installation of Pumps, Motors, Piping, Valves, Switchgear, Auxiliary Power Plant, Power and Control Wiring, Underground Ducts and Related and Appurtenant Work for the New Raw Water Booster Pumping Station in Scituate. Bids were received on April 18, 1966 and the low bid was submitted by Hart Engineering Company of East Providence in the amount of \$786,947. At the meeting of the Board of Contract and Supply on April 25, 1966, it was voted to award the contract to this company. The work was approximately 5% completed on this contract at the end of the year.

The Board of Contract and Supply voted to advertise for bids on May 2, 1966 covering the construction of the Raw Water Booster Pumping Station Building and Site Improvements. Bids were received on May 23, 1966 and the low bid was submitted by Ayers-Hagan-Booth who quoted a price of \$312,500. On May 31, 1966 the award was made to this firm and at the end of the fiscal year about 5% of the contract was completed.

In connection with the Four Additional Filters and other appurtenant work at the Water Purification Works, Oresto DiSaia, Providence architect, was engaged as a consultant for this project on December 22, 1965. This will be a joint venture with the department's engineers preparing plans and specifications for the rapid sand filters, filter piping, material handling system and the centralized electrical control system and all

electrical work, structural, heating, lighting and other phases of the project to be carried out by the staff of Oresto DiSaia.

The final stage of the Southeasterly Trunk Main was placed into service on April 12, 1966 and all contract work was completed on June 27, 1966. The last stage of this reinforcement involved a little over 6,200 feet of 30-inch water main between Allens Avenue at Ernest Street and the intersection of Public and Eddy Streets. The final cost was \$324,672.42, somewhat lower than the bid price of \$326,140.

The Westinghouse Generator at the Hydro-Electric Station at Gainer Dam was removed from service on Monday, September 19, 1966. Evidence of a fault in the Kingsbury Thrust Bearing was observed in operation prior to the shutdown and authority was obtained from the Board of Contract and Supply to engage field service representatives from the Westinghouse Electric Company, Allis Chalmers Manufacturing Company and the rigging firm of Zavota Brothers of Providence to dismantle the equipment and effect the necessary repairs together with the periodic general inspection. At the end of the fiscal year, the Hydro-Electric Station was still out of service undergoing repairs.

At the invitation of Mayor Joseph A. Doorley, Jr., numerous State and municipal officials attended a seminar held in the auditorium at the Water Purification Works in Scituate on May 10, 1966. The Mayor called this conference for the purpose of discussing the urgent matter of development of a state-wide water plan. A report by Arthur D. Little, Inc., retained as consultants by the State Water Resources Coordinating Board, was presented and discussed together with talks by Governor Chafee, Mayor Doorley and the Chief Engineer of the Water Supply Board.

"Open House" for public visitation to the Water Purification Works was held on October 10, 1965 and again on June 5, 1966. An estimated 3,300 persons were given guided tours by plant personnel. As experienced during several previous "Open House" days, many enthusiastic comments were received on the modern features and operation of the plant. Periodic visitations will be arranged for the future to acquaint others with the plant facilities.

The program of guided tours through the Water Purification Works for school children of advanced grades and their instructors was continued throughout the year. As part of the tours, the department's colored, sound film "Pure Water--The Lifeline of Providence" was shown together with lectures in the plant auditorium to explain the collection, treatment and distribution of water by a large modern water supply system. Including visitors from all academic levels, a total of 1,003 students and teachers comprising 36 school, college and university groups participated in the program. In addition, tours were conducted for approximately 550 visitors from various civic, engineering and vocational groups.

The installation of new extensions to the distribution system and the replacement and relocation of existing mains required the installation of 41,394.01 feet of various size and kind of pipe. A major part of the footage was installed by contractors under competitive bidding. C. Brito Construction Company of Bristol completed the Group 52 Contract that was awarded the previous year and included the laying of 7,335.78 feet during the fiscal year. This same firm under the Group 53 Contract installed 8,320.95 feet of main and under the Group 54 Contract 13,540.30 feet. This company was also awarded the Group 55 Contract but no work was completed during the fiscal year. In connection with the replacement and relocation of mains resulting from State highway construction and other programs, Fanning and Doorley Construction Company laid 1,430.00 feet of water mains; Campanella and Cardi Construction Company 959.10 feet and M. A. Gammino Construction Company 312.20 feet. Fanning and Doorley installed 6,295.67 feet under the final stage of the Southeasterly Trunk Main contract.

Other extensions involved the laying of 3,200.01 feet of main consisting of 1,483.66 feet of 6-inch and 1,716.35 feet of 8-inch which was laid by the department's forces.

One hundred and forty main installations were made in various streets during the year. At the end of the year, approximately 6,171 feet of main extensions contracted for remained to be laid.

Under Cranston City Council Resolution No. 238 approved June 27, 1966, the department was requested to install 40 hydrants in various locations throughout Cranston. Due to labor problems at the plant of the hydrant manufacturer, we were unable to obtain delivery so it was necessary to postpone the preparation of the specifications for this work until the next fiscal year. This work will be started some time in the spring of 1967.

Capital improvements completed during the fiscal year totalled \$838,626.65. New main extensions amounted to \$559,811.73 including \$324,672.42 for the cost of completing the final stage of the Southeasterly Trunk Main Reinforcement. New services cost \$106,897.80, hydrants \$119,710.08 and new gate valves \$52,270.04.

Applications for water services totalled 1,050 or 28 more than in the previous year. Of this number, 119 required extensions to the distribution system. A total of 952 new services were installed, 932 general supplies and 20 fire supplies.

Under the terms of Chapter 1525 of the Ordinances and Resolutions of the City of Providence for 1946, this department is charged with the operation of the Sewer Rental Law which took effect on October 1, 1946. During the fiscal year ended September 30, 1966, the net sewer rental collection totalled \$141,391.74.

Automotive and construction equipment owned and in use by the department totalled 29 various trucks, 20 passenger cars including 2 jeeps, 11 compressors, 3 trenchers, one loader-skidder, various pumps and other miscellaneous equipment. The records of the department indicate the trucks were operated 20,968 hours at a cost of 67 cents per hour and passenger cars were driven 227,634 miles at a cost of 6 cents per mile.

SOURCE OF SUPPLY

SCITUATE WATERSHED - RAINFALL AND RUNOFF

The rainfall on the 92.8 square mile Scituate Watershed above Gainer Dam was measured as usual by rain gages at Rocky Hill, Hopkins Mills, North Scituate, Westcott District, and Gainer Dam. Due to the extended severe drought, a total of only 40.63 inches was recorded for the year ended September 30, 1966. This was the eighth lowest yearly rainfall experienced during the 51-year (1916-1966) period; it was 7.27 inches less than the long-term average of 47.90 inches and only 61% of the maximum of 66.28 inches established during the year ended September 30, 1958.

There were two long periods when no rainfall was recorded, one of nine days from October 23 through October 31, 1965 and one of seven days from August 24 to 30, 1966 inclusive. In addition, there were two periods of seven days and one of eight days when only trace amounts were observed. There were four intervals of four days, two of five, and one of six days of successive measurable rainfall, with the most productive of these occurring during the four-day period February 10 through February 13, 1966. During this time a total of 2.414 inches was recorded, with a high of 2.340 inches on February 13 and a low of 0.012 inches on February 11.

During the months of January, February, May and September, 1966 the rainfall exceeded the 51-year averages, the maximum monthly rainfall occurring in January, when 5.93 inches were measured. This was 1.74 inches greater than the 51-year average and was the ninth highest rainfall recorded for January, the maximum for that month being 8.81 inches measured in 1936. The minimum monthly rainfall during the past year occurred in March when a total of only 1.59 inches was recorded, an amount 2.71 inches below the long-term average for that month. Together with March, 1927 when only 1.59 inches were measured, it was the second driest March in the 51-year period; the driest was in 1946 when 1.42 inches were recorded. The maximum day's rainfall for the year occurred on February 13, 1966, when a total of 2.34 inches was recorded, with the stations at Hopkins Mills and Westcott each measuring 2.41 inches.

The runoff for the year totalled only 10.83 inches, the lowest during the 51-year (1916-1966) period. This was 13.53 inches less than the long-term average of 24.36 inches, and 1.19 inches less than the previous minimum of 12.02 inches for the year ended September 30, 1930. Runoff during each month was less than the 51-year averages; the maximum monthly runoff occurred in March, when 3.11 inches were recorded, an amount 1.53 inches below the long-term average for that month. The minimum monthly runoff during the past year was measured in October, 1965, when only 0.04 inches were recorded, an amount 0.79 inches less than the long-term average of 0.83 inches for that month. Together with October, 1950, when an equally low runoff occurred, it was the sixth lowest runoff for the month during the 51-year period.

Statistical rainfall and runoff data for the year ended September 30, 1966, and the years of previous watershed record, may be found in Tables 1, 2, 3 and 4 of the Appendix.

SCITUATE WATERSHED - STORAGE, DRAFT AND YIELD

On October 1, 1965 the water in Scituate Reservoir was at elevation 272.71, or 11.30 feet below the spillway level. The total storage amounted to 25,624,000,000 gallons, or 69.2% of capacity. At the end of the year, October 1, 1966, the reservoir was at elevation 270.63, or 13.38 feet below the spillway level, with a storage of 24,142,000,000 gallons, or 65.2% of capacity. From October 1, 1965, the elevation decreased steadily, with minor fluctuations, to 266.28 on February 11, 1966, or 17.73 feet below the spillway. The total storage at that time amounted to 20,050,000,000 gallons, or 54.2% of capacity, the smallest amount in storage during the entire year. Following a rapid rise to 272.63 on April 5, 1966, then a stationary period to 272.61 on May 1, the elevation rose at a moderate rate to 273.59 on June 9. In order to reduce evaporative losses and provide more favorable head characteristics between the intake structure at the main dam and the Water Purification Plant, the five upstream reservoirs mentioned in the following paragraph were drained. As a result of this procedure, which began on June 9, the elevation rose rapidly to the maximum for the year of 275.95 on June 27, or 8.06 feet below the spillway. At that time the total storage amounted to 28,649,000,000 gallons, or 77.4% of capacity. The continued effect of the drought then brought about a large decrease of 5.32 feet in the elevation, from 275.95 on June 27 to 270.63 at the end of the year.

On October 1, 1965 the combined storage on the watershed, including Regulating, Westconnaug, Barden, Moswansicut, Ponaganset and Scituate Reservoirs, amounted to 29,407,000,000 gallons, or 71.3% of combined total capacity. At the end of the year, the combined storage was 24,929,000,000 gallons, or 60.4% of capacity. The maximum combined storage was on June 1, 1966 when 30,840,000,000 gallons, which is 74.7% of capacity, were impounded. The minimum combined storage was on February 12, 1966, when 24,250,000,000 gallons, which is 58.8% of capacity were impounded.

Available storage statistics will be found in Table 5 of the Appendix.

The total draft from the Scituate Watershed for the year was 21,938,920,000 gallons, or an average of 60,110,000 gallons per day. The draft for water supply purposes was 18,763,280,000 gallons, or an average of 51,410,000 gallons per day. The discharge into the north branch of the Pawtuxet River totalled 3,175,640,000 gallons, equal to 8,700,000 gallons per day. The discharge to the river was released at rates and during the hours which were most advantageous to the mills on the Pawtuxet River below Gainer Dam.

The yield from the Scituate Watershed for the year was 17,460,920,000 gallons, or an average of 47,840,000 gallons per day, which was 12,270,000 gallons per day less than the average daily draft, and 59,720,000 gallons per day less than the 107,560,000 gallons per day average yield for the 51-year period 1916 through 1966.

Draft and yield statistics will be found in Table 6 of the Appendix.

SCITUATE WATERSHED

WATERSHED MANAGEMENT OPERATIONS - 1966

THE MAINTENANCE PROGRAM

Management of turf on Gainer Memorial Dam, on the three distribution reservoirs and at the Purification Works intensified during the year. Applications of fertilizer were made in spring and fall. Ground limestone was spread as scheduled for retention of optimum soil pH levels. Extensive spot applications of grass seed were made in September of 1966 to areas in need of treatment on the slopes of Gainer Dam. Subsequent examination indicates excellent germination of seed and survival of grass seedlings.

Receiving herbicidal spray treatment during the summer growing season were 6.1 miles of firelanes and forest access roads, 24.0 miles of roadside fenceline, and 2.7 miles of aqueduct and rights-of-way. Hardwood sprout growth was sprayed at various shoreline areas of the Scituate and Regulating Reservoirs. Sprout growth was mechanically cleared from City property adjacent to the village of North Scituate. Aesthetic improvements were made in woodland under Gainer Dam and in the Brandy Brook section near the Scituate Reservoir. Roadside improvement, including the chipping of slash and pruning of conifers, was accomplished at other locations.

Improvement of the forest-access road system continued during the year. The purchase of a four-wheel drive tractor with loader and skidder capabilities provided the department with equipment that can be effectively used in the improvement of forest access roads. Work was concentrated in the Ashland Block where 2700 feet of road was opened to facilitate a release operation. A culvert installation was made to provide access over Kent Brook, and 2300 feet of existing forest access road was graded and topped with gravel.

A 15-foot sanitary trailer was purchased for use by forestry and maintenance crews working the watershed forests. The trailer is towed by a four-wheel drive pickup truck to various sites where toilet facilities are not available to the work crews.

Maintenance was performed as scheduled on distribution reservoirs, rights-of-way, fencelines, roadside areas, firelanes, forest access roads, and miscellaneous facilities. Installation and repair of gates, fencing, and barriers was accomplished as necessary. Annual maintenance to turf and access roads of Rockland Cemetery was carried out as required.

THE FORESTRY PROGRAM TIMBER PRODUCTION

Harvested in thinning and timber-stand improvement operations were 875.5 tons of softwood pulpwood, 70.2 cords of hardwood pulpwood and fuelwood, 11 cords of red cedar, and 740 red-cedar posts. Sawtimber stumpage sold during the year totalled 48,378 board feet of hardwood and 26,368 board feet of softwood. The major sawtimber sales were conducted in the Quonopaug and Kent Blocks of the watershed forest.

TIMBER CULTURE

A total of 106.8 acres of understory conifers were released by frilling overtopping, low-quality hardwoods. Ninety acres of white pine were released by this method in the Ashland Block. In much of the area, volunteer white pine were scattered to the extent that trees were released on an individual basis. The resultant mixed composition of the stand should enhance development of the released pine. Other frill-release operations were conducted in the Peep-toad and Quonopaug Blocks. Mechanical release of recently planted conifers was carried out in four separate forest stands totalling 8.4 acres.

REFORESTATION

A total of 15,000 trees were planted on 30.3 acres. Species planted were larch, hemlock, and white pine. A reinforcement planting of larch and hemlock was made in a six-acre swamp south of Gainer Dike previously planted to fir and hemlock in 1965. It was necessary to replant 2.2 acres in the North Scituate Block. A fire, which burned in the spring of 1965, destroyed seedlings planted several weeks before the fire occurred. The greatest proportion of tree seedlings were planted in a scrub-oak type in the Burnt Hill Block.

BOUNDARY INSPECTION

In order to effectively control trespass and conduct managerial practices within the watershed forests, it is necessary to maintain a well-defined system of boundaries. A physical review of property lines was initiated during the year consisting of resurveying and marking existing lines. Using a technique listed by the U. S. Public Land Survey,

25.18 miles of boundary line were surveyed and marked with painted tree blazes. Witness trees were selected and marked at corner bounds. This program will continue during 1967 until all property lines have been reviewed.

PROTECTION OF THE WATERSHED

Forest Fires: Two small fires burned insignificant acreage in the Cork Brook and Moswansicut Blocks of the watershed forest. The fire tower on Tunk Hill was manned 75 hours on 13 days during the fall season of 1965 and 284 hours on 46 high-hazard days in the spring fire season of 1966. A 15-year review from 1952 to 1966 indicates that 38 fires have burned over 52 acres of Water Supply Board forestland. These statistics provide an average fire size of 1.36 acres during the 15-year period.

Forest Insects: White-pine weevil control measures were conducted on 20 acres of white-pine plantations which averaged 3 to 15 feet in height. In continuation of a cooperative venture with the U. S. Forest Service, established experimental research plots were inspected and necessary data recorded in regard to white-pine weevil incidence. Gypsy-moth infestations within and on the periphery of the watershed were at endemic proportions and under close surveillance. The decline of white spruce in growth habit and vigor continues within plantations on the watershed. As described in previous annual reports, drought coupled with spider-mite infestations are suspected as contributing to the deterioration of the spruce.

Forest Diseases: The effects of Fomes annosus root and butt disease continue to be noted in coniferous plantations on the watershed. Stumps of freshly cut conifers are treated with borax to prevent infection and spread of the disease. Pulpwood harvesters have increased the efficiency of the stump-treatment operation by applying borax to the stump immediately after individual trees are cut. The chance of stumps being overlooked is greatly reduced when the pulpwood operator performs the treatment. An adjustment has been made on the stumpage price to cover the cost of treatment.

In 1965 experimental work was initiated in a plantation seriously infected with F. annosus in the Brandy Brook Block. Through the year this work has continued. Different methods of site treatment are being applied and studied to determine the future direction of managerial decisions in plantation stands heavily infected by F. annosus.

Control of Trespass: A total of 285 violations were recorded during the year. Local police authorities cooperated in the prosecution of two chronic violators and the referral of three youths with habitual trespass records to juvenile court. Thirteen additional juvenile offenders were referred to the local police department for disciplinary action purposes. Twenty-nine separate acts of vandalism or related activity occurred. Theft of trees during the Christmas season and theft of

capstones from rustic stone walls are offenses which continue to plague the department. Roadside littering and boundary encroachment by abutting owners are other significant problems in the suburbia developing around the watershed forests.

GAINER DAM - HYDRO-ELECTRIC PLANT

The Hydro-Electric Station at Gainer Dam was operated on a regular weekly schedule from the beginning of the year October 1, 1965 to September 19, 1966 at which time it was necessarily removed from service for the purpose of making repairs to the Kingsbury Thrust Bearing of the generator unit, and to make a general inspection of the hydraulic turbine and its appurtenances. The station remained out of service for the balance of the year and water obligated to be discharged into the Pawtuxet River was accomplished through the 36-inch blowoff valve at the base of Gainer Dam on a 24-hour flow basis with the weekly obligation discharged between Mondays A.M. and Fridays P.M.

From the beginning of the year to the out-of-service date of September 19, the Hydro-Electric Generator was operated for a total of 241 days representing 1,535 hours.

The total discharge of water to the Pawtuxet River from Scituate Reservoir for the entire year was 3,175,640,000 gallons, of which 3,085,440,000 gallons were used for the generation of power and the balance of 90,200,000 gallons was discharged through the 36-inch blowoff valve.

Power generated from the 3,085,440,000 gallons discharged through the 1875 KVA Hydro-Electric Turbo Generator to the Pawtuxet River amounted to 267,700 kilowatt hours, requiring 11,526 gallons of water for each kilowatt hour of generation. The reduced level of Scituate Reservoir, resulting from the extended drought, is reflected in the increased water used per kilowatt hour of generation, which was approximately 215% of the average amount used in past years under normal storage conditions. Also, as a result of the extended drought, the low amount of total power generation is reflected in the net exchange of electricity with the Narragansett Electric Company. For the second successive year, and the only 2 of the past 32 years, there was no surplus power generation and it was necessary to obtain from the power company's system 604,800 kilowatt hours in excess of the generated power for use at the Water Purification Works.

Of the 267,700 kilowatt hours generated, 94,400 kilowatt hours or 35.26% was delivered to the Narragansett Electric Company and 151,910 kilowatt hours was used at the Water Purification Works. The discharge to the Pawtuxet River of water used for power generation, which was

concentrated during the hours of downstream mill operations, was at an average rate of 48.24 million gallons per day.

Hydro-Electric Plant Statistics on the basis of the "Contract Year" with the Narragansett Electric Company are shown in Table 8 of the Appendix.

WATER PURIFICATION WORKS

The Water Purification Works, located on the North Scituate-Hope Road about three-fourths of a mile from the Scituate Reservoir, has been in continuous and satisfactory operation throughout the year.

Water was drawn from Scituate Reservoir between elevations 213 and 220 and totalled 18,763,282,000 gallons, or an average of 51,406,000 gallons per day; the maximum for any one day being 83,253,000 gallons on June 29, 1966, and the minimum 28,879,000 gallons on December 25, 1965.

This water was treated with Ferri-Floc, aerated, dosed with slaked lime, mixed in the tangential mixer, and coagulated in two concrete basins operated in series. Following a sedimentation period averaging slightly less than three days it was filtered through rapid sand filters, treated with sodium silicofluoride, and finally chlorinated before being delivered into the Scituate Aqueduct leading to the water distribution system.

With the exception of a few short-period shutdowns to service equipment and examine plant structures, influent flow and chemical treatment were carried on 24 hours daily to obtain a constant and unvarying degree of coagulation and filter efficiency. The Ferri-Floc feeders and the quicklime feeders and slakers are the loss-in-weight gravimetric type, the automatic operation of each being controlled by an electric signalling device proportional to the rate of flow of water through the influent Venturi.

Water for dissolving Ferri-Floc and for lime slaking was maintained at a temperature of from 90 to 100 degrees Fahrenheit. The Ferri-Floc was dissolved by using a ratio of three pounds of water to each pound of chemical, and the quicklime was slaked by using a ratio of seven pounds of water to each pound of material.

Ferri-Floc used totalled 1,578,466 pounds, or an average of 4,325 pounds daily; with a maximum for any one day of 7,467 pounds on November 6, 1965, and a minimum of 2,090 pounds on December 25, 1965. The dosage averaged 0.59 grains per gallon, the maximum for any one day being 0.73 and the minimum 0.50 grains per gallon.

Quicklime used during the year totalled 1,611,953 pounds, or an average of 4,416 pounds daily; with a maximum for any one day of 7,559 pounds on August 30, 1966, and a minimum of 2,116 pounds on December 25, 1965. The lime dosage averaged 0.60 grains per gallon, the maximum for any one day being 0.80 and the minimum 0.51 grains per gallon.

Filters were operated a total of 76,048.95 hours during the year, at an average of 208.35 filter hours per day; the average length of filter runs being 58.35 hours, which is 3.22 hours, or 5.2 per cent less than the average of 61.57 hours for the previous year. The maximum daily average of filter runs was 95.48 hours on April 24, 1966, as compared to a maximum of 118.75 hours during the previous year; and the minimum was 31.80 hours on January 10, 1966, as compared to a minimum of 32.69 hours during the previous year.

Wash water rates varied from 15 to 31 inches rise per minute, the rate of rise being adjusted to the temperature of the wash water. Filters 1 to 10, exclusive of number 2, were washed at rates which varied from 20 to 31 inches rise per minute, and an average sand expansion of 30%. These nine filters have sand with an effective size of 0.52 millimeters. Filter number 2, which has 0.65 millimeter sand, was washed at rates varying from 29 to 31 inches per minute rise, and an average sand expansion of 26%. Filters 11, 12, 13 and 14, which have 0.46 millimeter sand, were washed at rates varying from 15 to 29 inches per minute rise, and an average sand expansion of 38%. A total of 110 tests were made during the year to determine the sand expansion and rate of rise. The total wash water used was 163,292,000 gallons, an average of 447,000 gallons per day, or 125,032 gallons per wash. The 163,292,000 gallons of wash water used was 4.4% more than the 156,445,000 gallons used during the previous year.

The total water filtered for the year amounted to 18,587,913,000 gallons, an average of 50,926,000 gallons daily; the maximum day being 78,993,000 gallons on June 28, 1966, and the minimum 30,412,000 gallons on January 1, 1966. The average rate of filtration per filter was 5,870,000 gallons per day, and the average amount of water filtered per filter per run was 14,270,000 gallons, or 11.6% less than the 16,140,000 gallons for the previous year.

The total plant effluent, or pure water delivered to the Scituate Aqueduct and the Kent County Water Authority, amounted to 18,424,621,000 gallons, an average of 50,478,000 gallons per day, with a maximum of 78,857,000 gallons on June 28, 1966, and a minimum of 30,088,000 gallons on January 1, 1966.

With the exception of a few short-period shutdowns to make inspections and adjustments to the fluoridizers, fluoridation of the plant effluent delivered to the Scituate Aqueduct was carried on 24 hours daily. With

respect to fluoridation, the City of Providence Water Supply Board is acting solely as the agent of the R. I. State Health Department in carrying out their directives relative to the chemical used, the applied dosage and the type of feeding equipment. Sodium silicofluoride has been added in amounts sufficient to produce a fluoride ion concentration of 1.0 part per million throughout the distribution system.

Plant effluent delivered to the Scituate Aqueduct and treated with sodium silicofluoride amounted to 18,159,294,000 gallons, an average of 49,751,000 gallons per day. Sodium silicofluoride used during the year totalled 219,673 pounds, or an average of 602 pounds per day; with a maximum for any one day of 949 pounds on June 28, 1966, and a minimum of 357 pounds on January 1, 1966. The actual dosage of fluoride ion averaged 0.86 parts per million. Water delivered to the Kent County Water Authority is not treated with sodium silicofluoride. The amount of plant effluent delivered to the Authority totalled 230,247,000 gallons, an average of 631,000 gallons per day.

Chlorination of the plant effluent delivered to the Scituate Aqueduct was carried on continuously, out of abundant caution. The amount treated with chlorine totalled 18,194,374,000 gallons, an average of 49,848,000 gallons per day. Water delivered to Kent County is chlorinated separately by their facilities. Chlorine used during the year totalled 33,326 pounds, or an average of 91 pounds per day; with a maximum for any one day of 175 pounds on September 13, 1966, and a minimum of 31 pounds on February 26, March 5 and March 13, 1966. The chlorine dosage averaged 0.22 parts per million, the maximum and minimum dosages being 0.36 and 0.09 parts per million. Chlorine residual of the water at a point adjacent to the main aqueduct averaged 0.014 parts per million; it averaged 0.008 parts per million in the Providence Journal Building tap water.

The following tabulation shows that the cost of chemical treatment for the year was \$4.25 per million gallons, or 11.3% less than the figure of \$4.79 last year. The price per ton of Ferri-Floc was \$54.05 for the entire year, the same as for the previous year. Quicklime was purchased for \$20.19 a ton; this compares with a price range of \$20.27 down to \$20.19 per ton during the prior fiscal year. The price per ton of sodium silicofluoride was \$163.80; the cost of this material during the year ended September 30, 1965 decreased from \$164.40 to \$163.80 a ton. Chlorine was purchased for \$135.00 a ton, the same price that was paid during the previous year.

	Year Ended Sept. 30, 1965	Year Ended Sept. 30, 1966
Ferri-Floc	0.70 G.P.G.	0.59 G.P.G.
Quicklime	0.65 G.P.G.	0.60 G.P.G.
Sodium Silicofluoride	*0.88 P.P.M.	*0.86 P.P.M.
Chlorine	0.22 P.P.M.	0.22 P.P.M.
Length of Filter Runs	61.57 Hours	58.35 Hours
Tap Water Color	4 P.P.M.	3 P.P.M.
Tap Water Iron	0.01 P.P.M.	0.02 P.P.M.
Cost of Chemicals per M.G. of Water Treated	\$4.79	\$4.25

*Dosage expressed as P.P.M. (parts per million) of fluoride.
G.P.G. = Grains per gallon.

Operating figures and statistics relative to chemical use and cost will be found in Tables 9 and 10 of the Appendix.

The Ferri-Floc used as a coagulant was obtained under contract from Faesy & Besthoff, Inc., New York, for the period October 1, 1965 to September 30, 1966 at \$54.05 per ton.

Specifications for Ferri-Floc read as follows: "The material furnished shall be ferric sulphate. It shall contain not less than sixty-nine per cent (69%) of water soluble Ferric Sulphate ($\text{Fe}_2(\text{SO}_4)_3$). The content of ferrous iron shall not exceed two and one-half per cent (2.5%) as (Fe). It shall be free of foreign material or material deemed undesirable in water purification processes. The material shall be in granular or lump form. Not more than sixty per cent (60%) shall pass a 20 mesh per inch screen, and no particle shall be larger than will pass a one-inch mesh screen. Deliveries to be made in cars suitably lined to protect the material from moisture and foreign matter." Another provision of the specifications allows us to penalize the supplier at the end of the contract year in the event that the total amount of material received falls below an average of sixty-nine per cent (69%) of water soluble ferric sulphate ($\text{Fe}_2(\text{SO}_4)_3$).

Ferri-Floc has been delivered in bulk carload lots to the railroad siding at Washington, R. I., about five and one-half miles from the Water Purification Works. Deliveries to the plant have been made by our force with the use of a pneumatic transfer truck, which removes the material from the car and delivers it into a storage silo of glazed segment tile masonry. This silo has an inside diameter of 16 feet, a height of 55 feet, and a capacity of 180 tons. A combination suction-pressure pneumatic conveying system transfers the material from the silo to three 20-ton secondary steel storage hoppers located directly over the three Ferri-Floc feeders in the Central Operations and Control Building. The 240 tons storage provided by the silo and hoppers assures a maximum of approximately 111 average days' supply.

Analysis of the Ferri-Floc received showed an average ferrous iron content of 1.9%, which was 0.6% less than the maximum of 2.5% allowed by the specifications. The average water soluble ferric sulphate ($\text{Fe}_2(\text{SO}_4)_3$) content was 72.2%, or 3.2% more than the minimum of 69% permitted by specification requirements. The average amount of material passing a 20 mesh per inch screen was 52.8%, as compared to the permissible maximum of 60%. The following table shows the date of delivery, together with the percent of ferrous iron, per cent of water soluble ferric sulphate, and per cent passing a 20 mesh per inch screen.

Date Received	Percent Ferrous Iron	Percent Water Soluble Ferric Sulphate	Percent Passing a 20 Mesh per Inch Screen
October 11, 1965	1.9	72.4	60.0
October 20, 1965	2.1	71.6	52.8
October 25, 1965	1.8	72.4	53.3
November 26, 1965	1.9	71.2	52.3
December 6, 1965	1.8	73.4	49.1
December 13, 1965	2.0	71.6	51.8
February 17, 1966	1.9	70.9	52.4
March 2, 1966	1.8	72.7	53.8
March 4, 1966	1.8	72.7	51.6
April 22, 1966	1.8	72.0	51.2
April 22, 1966	1.9	74.1	51.3
May 4, 1966	1.7	72.3	54.2
June 27, 1966	1.7	73.0	55.3
July 5, 1966	1.9	72.0	52.1
July 8, 1966	1.9	72.0	56.8
August 3, 1966	1.8	71.6	52.9
September 7, 1966	2.0	72.7	52.1
September 9, 1966	2.3	71.2	50.4
September 19, 1966	2.3	71.2	50.3

The table shows that all nineteen shipments met the specifications with respect to ferrous iron and ferric sulphate contents, and per cent passing a 20 mesh per inch screen.

Quicklime was obtained under contract with the Minerals, Pigments, and Metals Division of Charles Pfizer and Company, Inc., Adams, Mass. at a price of \$20.19 per ton. Specifications for the quicklime purchased from this company read as follows: "The material furnished shall be granular or fine grain quicklime, of which 100% shall pass a 4 mesh per inch screen and not less than 90% shall be retained on a 100 mesh per inch screen. Insoluble matter shall be less than 2%, and magnesium oxide shall be less than 3%. It shall have an available calcium oxide (CaO) content of not less than 90%. The calculation of the available lime shall be on an 'As Received' basis."

Analysis of the quicklime received showed an average available calcium oxide content of 94.1%, or 4.1% more than specification requirements. The per cent of material passing a 4 mesh per inch screen was 100% on every delivery, and the amount retained on a 100 mesh per inch screen averaged 99.4%. The following table shows the date of delivery, together with the per cent of available calcium oxide and the per cent of material retained on a 100 mesh per inch screen:

Date Received	Percent Available Calcium Oxide	Percent Retained on a 100 Mesh per Inch Screen
November 1, 1965	95.1	99.8
November 5, 1965	95.1	99.6
November 12, 1965	94.1	99.5
January 31, 1966	93.7	99.4
February 7, 1966	94.5	99.4
February 17, 1966	93.7	99.3
March 25, 1966	94.5	99.3
April 1, 1966	95.3	99.5
April 8, 1966	94.8	99.2
May 2, 1966	93.7	99.2
May 9, 1966	94.8	99.4
May 24, 1966	94.8	99.5
July 13, 1966	92.0	99.6
July 15, 1966	94.5	99.7
July 18, 1966	92.3	99.5
September 19, 1966	92.8	99.1
September 23, 1966	93.3	99.4
September 30, 1966	94.2	99.1

The table shows that all eighteen deliveries met specification requirements.

Quicklime has been delivered in bulk carload lots to the railroad siding at Washington, R. I. Deliveries to the plant have been made by our force with the use of the same pneumatic transfer truck used for transporting the Ferri-Floc. The material has been delivered into a storage silo of the same size and construction as the Ferri-Floc silo. A combination suction-pressure pneumatic conveying system transfers the material from the silo to three 20-ton secondary steel storage hoppers located directly over the three combination lime feeders and slakers in the Central Operations and Control Building. The 240 tons storage provided by the silo and hoppers assures a maximum of approximately 109 average days' supply.

Sodium silicofluoride used during the year was purchased under contract with the Henry Sundheimer Company, New York, for \$163.80 per ton. The specifications covering this material are the American Water

Works Association Standard for Sodium Silicofluoride, AWWA B702-60, with slight modifications as to size and type of shipping containers, and exclusion of material not of domestic manufacture. Among other requirements, the specifications call for a minimum of 98 per cent sodium silicofluoride which corresponds to approximately 59.4 per cent fluoride ion. The sodium silicofluoride content of the shipments tested averaged 98.4.

Sodium silicofluoride has been delivered to the plant in 400-pound fiber drums and stored in a separate room on the second floor of the Central Operations and Control Building. Space for storage of 40-tons of the chemical provides a maximum of approximately 133 average days' supply. The material is conveyed by a suction type pneumatic transfer system from the drums to either of two 6000-pound capacity storage-receiver units. These units are located in an adjacent room, directly over the loss-in-weight gravimetric fluoridizers. The fluoridizers are automatically and proportionally controlled to the plant effluent by summation metering equipment.

The liquid chlorine used to treat the water was obtained under contract with the Fields Point Manufacturing Company, Inc., Providence, for the period October 1, 1965 to September 30, 1966 at \$135.00 per ton. This material was delivered to the Purification Plant by our force in lots of two cylinders, each containing one ton of chlorine. Special tramrail equipment is used to transfer the containers from tailboard delivery to platform scales. Two one-ton cylinders are carried on each of two platform scales, with four additional containers stored in cradles in the same room.

This room, equipped with a special exhaust system to remove any escaping chlorine fumes, is located on the second floor of the Central Operations and Control Building, directly over the gas feed chlorinators. Total storage of 16,000 pounds assures a maximum of approximately 176 average days' supply.

Number 6 fuel oil used for heating the plant from October, 1965 to May, 1966 and during September, 1966 totalled 55,703 gallons, an average of 4,642 gallons per month. Number 2 fuel oil for heating water was used during October, 1965, November, 1965, January, 1966, and from April to September, 1966. The amount used totalled 5,601 gallons, an average of 467 gallons per month.

WATER PURIFICATION WORKS

LABORATORY

The fully equipped and modern laboratory maintained at the Purification Works for control over the quality of the water supply, from the raw water on the watershed to the tap at the consumers' premises, has been in operation throughout the year, with constant vigilance being

exercised by the chemists and bacteriologists. Samples of tap water were obtained daily from not less than eight consumers' taps in various parts of the distribution system. A daily tap sample was also collected at the Providence Journal building. In addition, samples were taken daily from Longview and Neutaconkanut distribution reservoirs. Also, samples for analysis were obtained from the brooks, streams and reservoirs on the watershed, the raw water from the lower intake of Scituate Reservoir, the reservoir surface water, Gainer Memorial Dam meter chamber, Fiskeville Reservoir, twelve locations on the Pawtuxet River below the Dam, the various stages of the purification process, coincident with the investigation of complaints, from extensions to the distribution system, selected locations in the distribution system, and from miscellaneous sources.

The total number of samples obtained from all sources during the year amounted to 12,348 which, based on a forty-hour work week, means that one sample or another was obtained every 10 minutes. Tests made on these samples included chemical, sanitary chemical, and mineral analyses, and bacteriological and microscopical examinations. The total number of tests made amounted to 100,973 which, based on a forty-hour work week, means that the water was receiving one test or another every 74 seconds. Each delivery of Ferri-Floc and quicklime was tested to determine conformance to specifications and the optimum dosages required for coagulation and pH control. Deliveries of sodium silicofluoride were also tested, not only for conformance to specifications, but to assure that the proper concentration of fluoride ion would be maintained throughout the distribution system. Filter washings were regulated by means of tests on the sand expansion and rate of rise of wash water. Samples taken after disinfection of extensions to the distribution system were tested for chlorine residual, coliform bacteria, and 35°C and 20°C bacteria before permitting any extension to be placed in service. Consumer complaints were serviced, and recommendations made to eliminate the source of trouble.

Some idea of the laboratory control over the quality of the water supply may be had by a comparison of our sampling schedule with that recommended by the U. S. Public Health Service Drinking Water Standards. The following table, compiled from a graph in the Standards, shows the minimum number of bacteriological samples that should be obtained from the distribution system per month for any given population served:

Population Served	Minimum Number of Samples per month
2,000 and under	2
10,000	13
25,000	30
100,000	105
1,000,000	320
2,000,000	400
5,000,000	510

The population served by the City of Providence water supply is approximately 385,887. In accordance with the above table, the minimum number of bacteriological samples that should be obtained from the distribution system per month for this population is 210.

However, of this total of 385,887 the City of Warwick, the Kent County Water Authority, the East Smithfield Water Company and the Smithfield Water Department furnish Providence water, through distribution systems owned and maintained by them, to an estimated population of 96,130. These communities have engaged other laboratories to provide the services necessary to meet the Standards.

This leaves a total of approximately 289,757 supplied directly by our distribution system. The above mentioned table shows that a minimum of 190 bacteriological samples should be obtained per month for this population. The actual number of samples collected from our distribution system amounted to a total of 3,139, or an average of 262 per month; a figure 38% greater than recommended by the Standards, and about equal to the number required for a population of 600,000. A sample for chemical and sanitary chemical analysis was also obtained with each bacteriological sample.

Coagulation tests were made on one liter quantities of raw water treated with various amounts of Ferri-Floc and slaked lime, simulating all the operations of the purification processes on a laboratory scale for the purpose of determining the most economical dosage consistent with good coagulation.

Civil Defense activities were continued during the year, consisting of monitoring the water for radioactivity, and of continual study of developments in the field.

Samples of water obtained from dead end cast iron mains were tested for fluoride concentration. These tests, together with earlier studies, established that no conditions known to exist in a water main will cause extraction of significant amounts of fluoride from the water or solution from coatings which now exist there.

Rigid laboratory control has resulted in the continuation of economies consistent with an excellent quality of water. Constant vigilance over the chemical treatment machines and filter operation has aided greatly in keeping the cost of treatment low despite high costs for chemicals. These operations have been responsible for maintaining long filter runs and an excellent quality of water.

Tables 11 to 21 of the Appendix show statistics relative to the quality of the water and the kind and number of laboratory examinations made during the past year.

TRANSMISSION AND DISTRIBUTION

SCITUATE AQUEDUCT

The Scituate Aqueduct, which conveys the effluent water from the Water Purification Works in Scituate to the distribution system, has been in continuous and satisfactory service throughout the year.

Maintenance of the property along the Scituate Aqueduct included cutting and burning brush, repairs to grassed embankments, repairs to fencing, and other miscellaneous work as required.

HIGH SERVICE PUMPING STATIONS

Neutaconkanut and Bath Street Pumping Stations, supplying water to the high service portion of the distribution system generally above elevation 140, and to the special high pressure fire service in the congested area of downtown Providence, have been in satisfactory operation throughout the year.

Water pumped into the high service area totalled 3,309,205,000 gallons, or an average of 9,066,000 gallons per day.

Neutaconkanut Station pumped 1,226,860,000 gallons through the east Venturi and 1,329,910,000 gallons through the west Venturi meter for a total of 2,556,770,000 gallons, or 7,005,000 gallons per day, and Bath Street Station pumped 752,435,000 gallons, or 2,061,000 gallons per day.

The total power required for pumping at both stations amounted to 1,304,140 kilowatt-hours. Neutaconkanut Station required 996,000 and Bath Street Station 308,140. The cost of power at both stations was \$21,369.04, or \$6.46 per million gallons pumped.

Test runs of the auxiliary gasoline engine-driven pump at Neutaconkanut Pumping Station were made weekly, the pump being operated a total of 51 hours, pumping 22,910,000 gallons during the year. Periodic test runs of the auxiliary gasoline engine driven-pump at the Bath Street Pumping Station were made throughout the year. This pump was operated a total of 42 hours, pumping 11,670,000 gallons for the year.

Operating statistics for the high service pumping stations will be found in Tables 22 and 23 of the Appendix.

DISTRIBUTION RESERVOIRS

The 40.03 million gallon Aqueduct Low Service Distribution Reservoir, located off Scituate Avenue in Cranston, the 38.58 million gallon Neutaconkanut Low Service Distribution Reservoir, on Neutaconkanut Hill in Johnston, and the 11.94 million gallon Longview High Service Distribution Reservoir, at Mineral Spring Avenue and Smithfield Road in North Providence, have been in continuous and satisfactory operation throughout the year.

Routine maintenance activities at the three reservoirs were carried on with respect to the care of equipment, grounds, fencing, etc.

Operating statistics for the Distribution Reservoirs will be found in Tables 24, 25, and 26 of the Appendix.

WATER DISTRIBUTION SYSTEM

The water distribution system has been maintained in satisfactory and continuous operation throughout the year. Extensions of mains, the installation of various types of valves, hydrants and services, and necessary repairs and replacement of the system's appurtenances were made when and where required. The construction of new highways and the reconstruction and repairs to existing highways during the year accounted for a major part of the repairs to and the replacement of the appurtenances.

The amount of pipe laid during the year, all sizes, totalled 41,394.01 feet, including 32,354.72 feet of asbestos-cement pipe, 2,869.67 feet of cement-lined cast iron pipe and 6,169.62 feet of prestressed reinforced concrete steel cylinder pipe.

A total of 11,353.55 feet of pipe was removed or abandoned resulting in a net increase to the distribution system of 30,040.46 feet. In the City of Providence, there was an increase of 2,276.09 feet; in the City of Cranston, there was an increase of 10,109.79 feet; in the Town of Johnston, the increase amounted to 10,518.08 feet and the Town of North Providence 7,136.50 feet.

At the end of the year the total length of mains in the distribution system aggregated 798.16 miles, including 12.90 miles in the special high service fire system in the City of Providence. Asbestos-cement pipe in the system totalled 1,012,972.91 feet, consisting of 513,855.91 feet of 6-inch, 454,806.35 feet of 8-inch, 32,280.05 feet of 12-inch, 8,615.28 feet of 16-inch and 3,415.32 feet of 20-inch. Prestressed reinforced concrete steel cylinder pipe totalled 73,231.80 feet, consisting of 2,380.54 feet of 16-inch, 42,388.88 feet of 24-inch, 25,979.51 feet of 30-inch, 116.01 feet of 36-inch, 126.97 feet of 48-inch and 2,239.89 feet of 60-inch. Reinforced concrete steel cylinder pipe totalled 36,597.00 feet, including 715.00 feet of 36-inch, 15,312.00 feet of 48-inch, and 20,570.00 feet of 60-inch. Steel pipe totalled 10,032.00 feet, consisting of 1,584.00 feet of 48-inch and 8,448.00 feet of 66-inch. The remaining footage was of

cast iron pipe including 1,867,444.62 feet of 6-inch, 523,729.02 feet of 8-inch, 12,125.78 feet of 10-inch, 360,264.85 feet of 12-inch, 143,939.32 feet of 16-inch, 16,756.92 feet of 20-inch, 62,306.15 feet of 24-inch, 60,129.59 feet of 30-inch, 9,235.80 feet of 36-inch and 25,500.74 feet of 42-inch totalling 3,081,432.79 feet.

Details of pipe laid, removed and in use at the end of the year are shown in Tables 27 and 28 of the Appendix.

Stop gates installed during the year, including replacements, totalled 146. In Providence a total of 67 stop gates was installed, forty-five 6-inch, eleven 8-inch, six 12-inch and five 16-inch. In Cranston a total of 33 stop gates was installed, nine 6-inch, twenty-one 8-inch and three 12-inch. Stop gates installed in Johnston totalled 25 including one 6-inch, twenty-three 8-inch and one 12-inch and in North Providence a total of 21 was installed, twelve 6-inch and nine 8-inch.

Stop gates removed or abandoned totalled 74. In Providence a total of 68 was removed including fifty-four 6-inch, six 8-inch, one 10-inch, two 12-inch and five 16-inch. In Cranston four 6-inch were removed. In Johnston one 8-inch and in North Providence one 6-inch.

At the end of the year, there was a total of 10,925 stop gates in use in the system ranging from 6-inch to 60-inch, including five 12-inch and fifteen 16-inch rotary plug valves and ten 16-inch, two 20-inch, nine 24-inch, two 30-inch, four 36-inch, one 42-inch, eight 48-inch and one 60-inch butterfly valves.

Hydrant gates in use at the end of the year totalled 4,648 which included 3,115 six-inch and 1,533 eight-inch. In Providence there were 1,481 six-inch, an increase over the previous year of 69, while the number of eight-inch dropped to 1,517, a decrease of 35. In Cranston the six-inch totalled 1,052, representing an increase of 9, while the eight-inch numbered 5, the same as the previous year. In Johnston there are 274 six-inch, an increase of 5, and no change in the eight-inch with the number remaining 11. North Providence has 308 six-inch, an increase of 11.

Gates on unwatering hydrants and blowoffs totalled 44; twelve 6-inch, twenty-six 8-inch and six 12-inch.

The total number of gates in the system, not including service gates, all sizes, in use at the end of the year totalled 15,617.

Details of gates in use September 30, 1966 are shown in Table 29 of the Appendix.

Private pipes connected to the distribution system at the end of the year totalled 182. In Providence there was a total of 106, in Cranston 46, in Johnston 14 and in North Providence a total of 16.

A total of 952 services, including general and fire supplies, was installed during the year; 257 in Providence, 378 in Cranston, 140 in Johnston and 177 in North Providence. The number of active services in the system at the end of the year, including both general and fire supplies, totalled 63,356 consisting of 63,313 metered services and 43 unmetered services. Active metered services at the end of the year constituted 99.93% of the total active services in the system.

Statistics relative to services will be found in Tables 30 and 31 of the Appendix.

Public fire hydrants in use at the end of the year totalled 4,805 which included 553 flush type hydrants. Post hydrant installations totalled 242 including 211 in Providence, 10 in Cranston, 8 in Johnston and 13 in North Providence. In Providence 209 flush hydrants were removed and replaced with the post type and 15 post hydrants were removed; 2 post hydrants were removed in Cranston, 4 in Johnston and 2 in North Providence.

Statistics relative to public fire hydrants will be found in Table 32 of the Appendix.

Leaks in the transmission and distribution mains totalled 57 during the year, 29 occurring at joints and 28 as a result of ruptured mains. Leaks at joints averaged 1 for every 28 miles of mains while total leaks averaged 1 for every 14 miles of mains.

The number of meters repaired and tested in our meter repair shop was 8,156 while those receiving attention in the field numbered 126 making a total of 8,282 or 669 less than during the preceding year. The cost of meter repairs in the shop averaged \$2.19 per meter as against \$2.20 last year. Meters requiring service in the field involved an average expenditure of \$2.21 during the current year as compared to \$3.23 the previous year.

The number, make and size of meters on active services at the end of the year are shown in Table 33 of the Appendix.

CONSUMPTION

Water consumption for the year ended September 30, 1966 amounted to 18,425,480,000 gallons, or an average of 50,480,000 gallons per day. This was 2,860,000 gallons per day less than the average for the previous year. A comparison between this year and last year shows that decreases occurred in every month, ranging from 70,000 gallons per day less in April to 5,930,000 gallons per day less in June.

The maximum daily consumption occurred on June 28, 1966 when 82,293,000 gallons were used; this was 6,162,000 gallons less than the record maximum of 88,455,000 gallons on June 23, 1965. An analysis of the hourly consumption for June 28, 1966 showed that the peak demand came between 10 and 11 A.M. when the rate of consumption was 118,920,000 gallons per day. The peak hour on June 23, 1965 was at the rate of 134,064,000 gallons per day; the record maximum hourly rate of 139,620,000 gallons per day was established on June 30, 1964.

The maximum month's consumption during the year was in July, when 1,914,000,000 gallons were used, and the minimum was in February, when 1,258,180,000 gallons were consumed.

Water consumption statistics will be found in Tables 34, 35, 36, 37 and 38 of the Appendix.

FINANCIAL SUMMARY

The gross income for the year ended September 30, 1966, totalled \$3,522,386.10, an increase of \$46,316.17 over the previous year. Revenue from the sale of water alone was \$3,149,078.53, an increase over the previous year of \$35,210.27. The remaining income of \$373,307.57 was received from other sources, including hydrant rentals, installation of services, miscellaneous items and the surplus in the Meter Revolving Fund. The receipts for these items show an increase of \$11,105.90.

During the year total payments for water main extensions amounted to \$119,505.76, an increase over the previous year of \$3,928.75. Income from service connection charges amounted to \$103,203.00, an increase of \$8,679.00 over the previous year. At the end of the fiscal year, unpaid water bills totalled \$249,890.37 as compared with \$251,832.97 at the beginning of the year or 7.1% of the total net billing. Miscellaneous Accounts Receivable amounted to \$18,945.89 at the end of the year as compared with \$13,513.23 at the beginning of the year.

Operating expenses, including Taxes, Employees' Retirement System and Social Security payments totalled \$2,209,045.81, a decrease from the previous year of \$17,489.20.

Interest on the Bonded and Floating Debt, Principal Payments on Serial Bonds and the Floating Debt, plus the appropriation to the Water Depreciation and Extension Fund totalled \$786,117.56. The aggregate of all expenditures of the Board during the year was \$2,995,163.37 which deducted from the gross revenue of \$3,522,386.10 leaves a net balance of \$527,222.73. According to law, this reverts to the Sinking Fund for the retirement of water bonds. For the fiscal year ended September 30, 1966, there are still outstanding \$1,500,000.00 of Sinking Fund Bonds that will not be retired until January, 1968.

The total Bonded Debt as of September 30, 1966 is \$4,455,000.00 and the reserve for the retirement of Bonds \$2,856,361.38 which leaves a net Bonded Debt at the end of the present fiscal year of \$1,598,638.62 and outstanding short term notes of \$118,700.00.

Financial accounts of the department, tabulation of water works property, statements of revenues, expenses, various special funds, outstanding bond issues and sinking fund requirements, inventories and other statistics may be found in Tables 40 to 56 of the Appendix. A summary of statistics of the Providence Water Supply Board for the year ended September 30, 1966 may be found in Table 57 of the Appendix.

Respectfully submitted,

Philip J. Holton, Jr.
Chief Engineer

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TABLE 1
MONTHLY RAINFALL IN INCHES ON SCITUATE WATERSHED
YEAR ENDED SEPTEMBER 30, 1966

1965-1966	STATIONS ON WATERSHED					Average
	Rocky Hill	Hopkins Mills	North Scituate	Westcott	Gainer Dam	
October	4.05	4.39	3.17	3.28	3.03	3.58
November	2.77	2.36	2.53	2.59	2.16	2.48
December	2.29	2.26	1.94	1.50	1.77	1.95
January	4.45	7.73	5.63	5.84	5.98	5.93
February	5.05	5.30	4.98	5.10	5.03	5.09
March	1.71	1.60	1.51	1.58	1.53	1.59
April	2.12	2.14	1.71	2.10	1.66	1.95
May	3.80	3.42	3.23	3.70	3.71	3.57
June	2.74	2.20	2.12	2.75	2.20	2.40
July	4.45	3.88	3.37	3.55	3.29	3.71
August	2.78	2.22	2.12	2.85	5.53	3.10
September	5.26	4.79	5.17	5.82	5.36	5.28
Total	41.47	42.29	37.48	40.66	41.25	40.63*
Monthly Average	3.46	3.52	3.12	3.39	3.44	3.39

*Total of averages.

TABLE 2

MONTHLY AND YEARLY RAINFALL IN INCHES ON SCITUATE WATERSHED

Year	YEARS ENDED SEPTEMBER 30												Jan.	Dec.	
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total	Year	Total
1915-1916	2.75(e	2.88	5.86	1.88	5.88	2.46	3.60	4.83	5.71	7.38	1.33	1.24	45.80	1916	42.56
1916-1917	2.61	2.34	3.30	3.96	2.18	4.91	2.70	4.15	4.54	1.51	6.13	2.66	40.99	1917	43.16
1917-1918	6.71	0.48	3.23	3.56	3.73	2.15	4.56	3.12	4.49	5.13	4.14	8.79	50.09	1918	47.09
1918-1919	1.07	2.60	3.75	4.89	3.42	6.05	4.31	5.99	3.65	5.47	6.65	6.07	53.92	1919	56.42
1919-1920	2.29	5.05	2.58	3.03	6.10	4.90	6.28	3.95	7.93	4.44	3.86	3.04	53.45	1920	55.81
1920-1921	1.34	5.85	5.09	3.46	3.06	3.72	5.45	3.73	4.30	6.80	2.97	2.53	48.30	1921	47.84
1921-1922	1.26	8.02	2.54	1.91	2.67	6.40	1.98	5.22	6.34	8.36	9.09	5.35	59.14	1922	54.76
1922-1923	2.92	1.41	3.11	6.78	1.82	3.73	5.92	1.48	4.93	2.78	2.35	2.15	39.38	1923	48.39
1923-1924	5.67	5.68	5.10	4.49	2.92	2.80	6.12	3.66	1.49	1.72	5.85	5.28	50.78	1924	39.15
1924-1925	0.21	2.23	2.38	4.41	2.22	4.76	2.85	2.72	2.36	6.14	1.70	2.96	34.94	1925	44.45
1925-1926	4.32	4.83	5.18	3.26	6.10	3.73	2.46	2.27	1.74	3.80	3.94	1.89	43.52	1926	43.33
1926-1927	5.04	5.55	3.55	2.98	3.31	1.59	2.56	3.41	3.36	3.99	8.55	2.61	46.50	1927	52.45
1927-1928	5.24	9.22	5.63	2.72	4.32	2.70	5.43	1.45	3.91	5.06	5.50	4.80	55.98	1928	45.59
1928-1929	3.99	2.50	3.21	5.20	4.89	3.92	7.56	3.47	2.27	2.06	2.93	1.35	43.35	1929	43.95
1929-1930	3.09	3.06	4.15	2.86	2.88	3.23	2.03	2.74	3.05	3.33	3.00	1.35	34.77	1930	35.58
1930-1931	3.36	4.65	3.10	3.55	2.57	6.37	3.36	4.19	6.31	3.74	5.96	1.97	49.13	1931	44.43
1931-1932	2.22	1.03	3.16	6.16	2.38	6.16	1.97	2.57	2.75	2.57	6.44	11.75	49.16	1932	58.60
1932-1933	6.63	7.13	2.09	2.02	3.81	6.55	6.18	3.76	4.04	2.00	3.60	7.56	55.37	1933	48.13
1933-1934	3.41	1.48	3.72	3.87	4.53	4.03	5.24	3.98	4.79	2.20	3.89	7.37	48.51	1934	51.14
1934-1935	3.25	4.44	3.55	7.24	3.09	1.93	4.76	2.27	5.12	4.10	1.42	3.59	44.76	1935	41.30
1935-1936	1.04	5.86	0.88	8.81	4.16	9.31	3.80	1.98	2.98	2.63	3.28	7.72	52.45	1936	57.75
1936-1937	2.00	1.25	9.83	5.02	2.45	4.09	5.42	3.05	3.40	1.58	6.47	4.19	48.75	1937	50.58
1937-1938	3.92	8.10	2.89	5.29	2.91	2.70	2.60	4.17	8.62	11.49	3.10	6.76	62.55	1938	57.83
1938-1939	2.64	3.91	3.64	3.08	5.06	5.86	4.53	0.94	2.95	1.20	6.52	3.47	43.80	1939	44.17
1939-1940	5.76	1.40	3.40	2.82	5.97	4.04	6.00	5.76	2.45	4.41	2.01	2.63	46.65	1940	47.18
1940-1941	2.00	6.81	2.28	3.12	3.37	2.97	1.36	3.16	4.92	5.90	4.00	0.20	40.09	1941	37.88
1941-1942	1.75	3.35	3.78	4.95	3.30	8.35	0.89	2.80	3.88	5.38	4.32	1.94	44.69	1942	51.98
1942-1943	4.26	5.52	6.39	3.56	1.95	3.68	3.90	3.87	1.99	3.41	2.15	1.30	41.98	1943	36.84
1943-1944	6.38	3.43	1.22	1.79	2.50	5.05	4.11	1.35	3.75	1.74	2.01	11.03	44.36	1944	48.82
1944-1945	2.71	8.45	4.33	3.45	5.79	2.13	3.36	4.89	5.17	2.74	3.06	2.84	48.92	1945	52.25
1945-1946	2.21	9.03	7.58	3.82	3.81	1.42	2.37	4.92	3.31	2.49	11.48	3.69	56.13	1946	43.01
1946-1947	0.48	1.32	3.90	2.98	2.60	3.85	5.40	3.37	4.10	4.86	2.91	4.02	39.79	1947	47.68
1947-1948	3.26	6.42	3.91	7.14	2.57	4.26	3.97	9.36	4.20	3.73	3.14	1.59	53.55	1948	55.70
1948-1949	4.86	7.43	3.45	4.38	3.62	2.47	4.65	4.03	0.10	1.24	6.07	3.49	45.79	1949	38.58
1949-1950	2.27	3.47	2.79	3.68	4.62	3.99	3.68	3.51	2.93	1.62	5.04	2.03	39.63	1950	45.11

(e Estimated

TABLE 2 (Continued)

MONTHLY AND YEARLY RAINFALL IN INCHES ON SCITUATE WATERSHED

Year	YEARS ENDED SEPTEMBER 30												Jan.-Dec.		
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total	Year	Total
1950-1951	2.23	7.21	4.57	4.95	4.48	5.91	3.97	5.20	2.71	3.36	3.08	2.41	50.08	1951	55.38
1951-1952	4.14	9.64	5.53	4.88	4.31	4.13	4.41	3.97	3.16	1.20	7.33	2.21	55.41	1952	45.26
1952-1953	1.94	3.02	4.20	7.38	4.64	9.33	7.54	3.24	1.67	4.27	2.94	2.74	52.91	1953	61.10
1953-1954	5.57	6.22	5.56	2.91	3.16	4.36	5.37	4.91	1.55	2.76	9.10	7.63	59.10	1954	57.44
1954-1955	3.13	5.65	6.91	1.00	4.96	4.17	4.16	1.78	4.53	2.43	12.75	4.53	56.00	1955	57.74
1955-1956	11.48	5.23	0.72	5.39	4.39	7.91	3.84	2.42	2.10	4.13	1.56	3.98	53.15	1956	49.06
1956-1957	2.96	4.92	5.46	2.90	2.46	3.33	5.01	1.55	0.72	0.96	1.58	1.58	33.43	1957	36.13
1957-1958	3.07	5.50	7.47	8.46	4.50	5.46	7.55	3.84	2.69	7.04	4.58	6.12	66.28	1958	58.88
1958-1959	3.83	3.03	1.78	2.56	4.12	7.13	4.41	1.15	5.55	6.74	2.27	0.57	43.14	1959	53.82
1959-1960	8.37	5.35	5.60	3.59	5.65	3.27	3.06	4.49	1.15	4.86	2.55	8.10	56.04	1960	47.42
1960-1961	3.58	2.86	4.26	3.24	3.48	4.27	5.92	5.65	2.25	3.01	4.02	9.43	51.97	1961	50.52
1961-1962	2.60	3.18	3.47	4.55	6.15	3.67	2.16	2.05	4.68	1.33	3.37	3.49	40.70	1962	47.58
1962-1963	8.95	4.20	2.98	3.23	3.41	3.71	2.03	3.06	3.36	3.59	1.65	4.41	44.58	1963	40.63
1963-1964	1.59	7.82	2.77	6.32	5.36	2.63	5.65	1.15	1.98	3.86	2.14	3.56	44.83	1964	45.58
1964-1965	2.84	3.81	6.28	4.13	4.51	2.13	2.54	2.03	2.71	2.61	2.58	1.96	38.13	1965	33.21
1965-1966	3.58	2.48	1.95	5.93	5.09	1.59	1.95	3.57	2.40	3.71	3.10	5.28	40.63	1966	45.45
51 Years Average	3.58	4.63	4.00	4.19	3.88	4.30	4.14	3.45	3.55	3.78	4.30	4.10	47.90*	Avg.	47.93
51 Years Maximum	11.48	9.64	9.83	8.81	6.15	9.33	7.56	9.36	8.62	11.49	12.75	11.75	66.28	Max.	61.10
51 Years Minimum	0.21	0.48	0.72	1.00	1.82	1.42	0.89	0.94	0.10	0.96	1.33	0.20	33.43	Min.	33.21

*Total of monthly averages.

TABLE 3

MONTHLY AND YEARLY RUNOFF IN INCHES ON SCITUATE WATERSHED (92.8 SQ. MI.)

Year	YEARS ENDED SEPTEMBER 30													Jan.-Dec.	
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total	Year	Total
1915-1916	0.75(e)	1.24(e)	3.03(e)	2.50	3.70	3.99	4.64	3.69	3.42	2.74	1.09	0.42	31.21	1916	28.25
1916-1917	0.51	0.58	0.97	1.91	1.30	4.29	3.05	2.79	2.18	0.79	0.71	0.63	19.71	1917	22.41
1917-1918	1.79	1.59	1.38	1.83	4.04	3.17	3.40	2.24	1.24	0.47	0.82	1.81	23.78	1918	23.75
1918-1919	1.02	1.34	2.37	3.81	2.27	5.01	4.43	3.86	1.27	1.35	0.91	3.33	30.97	1919	32.65
1919-1920	1.45	2.25	2.71	1.19	1.69	9.60	5.10	3.73	4.15	1.38	0.79	0.34	34.38	1920	33.29
1920-1921	0.37	1.73	3.22	2.79	1.69	4.19	3.68	2.85	0.95	2.56	0.93	0.31	25.27	1921	24.52
1921-1922	0.24	1.65	2.68	1.13	1.80	4.81	3.92	3.50	2.39	3.50	3.59	4.39	33.60	1922	33.32
1922-1923	1.66	1.26	1.37	4.16	2.46	6.10	4.06	2.68	1.15	0.64	0.40	0.25	26.19	1923	29.75
1923-1924	1.27	2.01	4.57	4.52	1.88	3.43	5.70	3.38	1.05	0.20	0.56	0.68	29.25	1924	23.31
1924-1925	0.49	0.45	0.97	0.91	3.65	3.41	2.46	1.46	0.52	0.58	0.39	0.32	15.61	1925	19.04
1925-1926	0.61	1.48	3.25	2.23	3.11	4.38	3.00	1.70	0.62	0.40	0.42	0.17	21.37	1926	21.03
1926-1927	0.76	2.15	2.09	3.34	2.64	3.05	1.71	2.03	1.44	0.32	1.59	0.64	21.76	1927	30.14
1927-1928	1.95	6.73	4.70	2.62	3.76	2.86	3.18	2.05	1.15	1.08	1.17	0.80	32.05	1928	23.03
1928-1929	1.21	1.16	1.99	4.02	3.65	5.56	6.09	3.56	0.48	0.06	0.07	-0.09	27.76	1929	25.18
1929-1930	0.07	0.53	1.18	1.96	2.38	2.74	1.84	0.88	0.42	0.09	0.04	-0.11	12.02	1930	11.82
1930-1931	0.12	0.63	0.83	1.56	2.11	5.95	3.21	3.10	2.97	0.69	0.85	0.10	22.12	1931	21.67
1931-1932	0.07	0.15	0.91	3.35	2.16	4.10	3.08	1.35	0.39	0.07	0.35	3.27	19.25	1932	30.15
1932-1933	3.48	6.29	2.26	2.24	2.70	6.28	6.88	1.93	1.57	0.17	0.25	1.52	35.57	1933	27.13
1933-1934	0.95	0.82	1.82	3.78	1.18	5.48	6.08	2.88	1.47	0.08	0.14	1.40	26.08	1934	28.94
1934-1935	1.33	1.91	3.21	4.78	2.83	4.22	4.05	1.71	1.78	0.62	-0.14	0.26	26.56	1935	21.82
1935-1936	-0.13	1.09	0.75	3.94	1.93	11.51	4.45	1.59	0.44	0.03	-0.02	0.82	26.40	1936	31.64
1936-1937	0.46	0.43	6.06	4.59	2.77	3.34	3.79	2.52	0.75	0.02	0.60	0.57	25.90	1937	27.16
1937-1938	0.79	4.17	3.25	4.15	2.99	2.99	2.29	1.84	2.85	6.93	1.32	1.66	35.23	1938	33.76
1938-1939	1.22	1.90	3.62	2.11	4.12	5.24	4.90	1.08	0.31	-0.24	0.22	0.09	24.57	1939	21.35
1939-1940	0.63	1.35	1.54	2.03	1.51	4.86	6.89	3.17	1.65	0.84	-0.14	-0.04	24.29	1940	23.98
1940-1941	-0.07	1.63	1.65	1.53	2.88	2.42	1.65	1.16	1.33	0.54	0.10	-0.41	14.41	1941	12.43
1941-1942	-0.15	0.52	0.86	1.87	2.54	7.14	1.75	1.06	0.59	0.86	0.26	-0.17	17.13	1942	22.77
1942-1943	0.45	1.86	4.56	2.45	3.46	4.40	2.68	3.01	0.36	0.02	-0.16	-0.22	22.87	1943	17.97
1943-1944	0.60	0.95	0.42	0.73	1.23	3.24	3.53	1.08	0.43	-0.26	-0.31	1.73	13.37	1944	18.61
1944-1945	0.50	3.16	3.55	2.91	2.58	5.61	2.15	3.10	1.26	0.15	-0.12	-0.15	24.70	1945	24.02
1945-1946	0.06	1.88	4.59	3.93	2.98	3.70	1.43	2.50	1.65	0	2.35	0.56	25.63	1946	21.08
1946-1947	0.49	0.30	1.19	2.16	1.52	4.01	3.31	2.86	1.09	0.53	0.12	0.31	17.89	1947	20.47
1947-1948	0.23	2.94	1.39	1.55	3.15	7.16	3.76	5.25	3.12	0.56	0.15	-0.21	29.05	1948	29.08
1948-1949	0.35	2.24	2.00	3.57	3.22	2.92	3.20	1.78	-0.02	-0.26	0.02	0.09	19.11	1949	16.40
1949-1950	0.05	0.57	1.26	2.03	2.42	4.16	3.01	2.20	1.00	-0.11	0.22	-0.02	16.79	1950	19.39

(e Estimated)

TABLE 3 (Continued)

MONTHLY AND YEARLY RUNOFF IN INCHES ON SCITUATE WATERSHED (92.8 SQ. MI.)

YEARS ENDED SEPTEMBER 30

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total	Jan.-Dec.	
														Year	Total
1950-1951	0.04	1.85	2.59	3.24	4.95	4.35	4.30	2.70	1.21	0.14	0.07	-0.07	25.38	1951	30.16
1951-1952	0.34	4.62	4.30	4.24	3.30	5.02	2.97	2.46	0.98	-0.35	0.53	-0.20	28.21	1952	20.27
1952-1953	-0.20	0.37	1.15	4.61	4.35	7.24	6.36	3.20	0.20	0.07	-0.05	-0.13	27.17	1953	32.41
1953-1954	0.38	1.86	4.32	2.12	2.66	3.56	4.01	3.71	0.33	-0.01	0.93	3.95	27.83	1954	32.15
1954-1955	1.33	3.65	5.90	2.46	3.61	4.26	2.76	1.62	0.89	0.02	4.04	1.19	31.73	1955	35.13
1955-1956	7.22	5.56	1.50	3.27	4.09	4.57	6.57	1.98	0.96	0.37	-0.22	0.05	35.92	1956	25.87
1956-1957	0.23	1.10	2.90	2.41	2.10	2.78	4.54	0.58	-0.18	-0.41	-0.38	-0.22	15.45	1957	14.20
1957-1958	0.06	0.52	2.40	6.59	2.69	6.03	6.89	3.88	0.83	0.85	0.86	1.31	32.91	1958	35.66
1958-1959	2.05	1.85	1.83	1.65	2.58	5.86	4.52	1.45	1.23	2.09	0.07	-0.23	24.95	1959	26.97
1959-1960	1.17	2.18	4.40	3.29	5.09	3.15	4.01	2.19	0.35	0.38	0.00	1.54	27.75	1960	25.51
1960-1961	0.98	2.11	2.42	2.21	3.68	4.97	4.75	3.63	1.30	0.25	0.20	2.30	28.80	1961	27.93
1961-1962	1.28	1.53	1.83	4.32	1.66	5.24	3.61	1.53	0.98	-0.09	0.04	0.07	22.01	1962	24.34
1962-1963	1.89	2.97	2.12	1.81	1.88	4.47	1.69	1.88	0.54	0.10	-0.25	-0.02	19.08	1963	15.25
1963-1964	-0.11	1.59	1.67	4.68	2.82	3.47	4.61	0.87	0.01	0.03	-0.14	-0.11	19.39	1964	19.30
1964-1965	0.11	0.47	2.48	1.68	3.43	3.02	1.89	1.04	0.44	-0.10	-0.14	-0.06	14.26	1965	11.89
1965-1966	0.04	0.21	0.44	0.70	2.26	3.11	1.10	1.68	0.73	0.11	0.09	0.36	10.83	1966	13.88
51 Years Average	0.83	1.83	2.44	2.81	2.77	4.64	3.78	2.35	1.14	0.60	0.49	0.68	24.36*	Avg.	24.34
51 Years Maximum	7.22	6.73	6.06	6.59	5.09	11.51	6.89	5.25	4.15	6.93	4.04	4.39	35.92	Max.	35.66
51 Years Minimum	-0.20	0.15	0.42	0.70**	1.18	2.42	1.10**	0.58	-0.18	-0.41	-0.38	-0.41	10.83**	Min.	11.82

*Total of monthly averages.

**New minimum.

TABLE 4

MONTHLY AND YEARLY PERCENT OF RAINFALL COLLECTED ON SCITUATE WATERSHED

YEARS ENDED SEPTEMBER 30

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total	Jan.-Dec. Year	Jan.-Dec. Total
1915-1916	27.3(e)	43.0(e)	51.7(e)	133.0	62.9	162.2	128.9	76.4	59.9	37.1	82.0	33.9	68.1	1916	66.4
1916-1917	19.5	24.8	29.4	48.2	59.6	87.4	113.0	67.2	48.0	52.3	11.6	23.7	48.1	1917	51.9
1917-1918	26.7	331.2	42.7	51.4	108.3	147.4	74.6	71.8	27.6	9.2	19.8	20.6	47.5	1918	50.4
1918-1919	95.3	51.5	63.2	77.9	66.4	82.8	102.8	64.4	34.8	24.7	13.7	54.8	57.4	1919	57.9
1919-1920	63.3	44.6	105.0	39.3	27.7	195.9	81.2	94.4	52.3	31.1	20.5	11.2	64.3	1920	59.6
1920-1921	27.6	29.6	63.3	80.6	55.2	112.6	67.5	76.4	22.1	37.6	31.3	12.2	52.3	1921	51.2
1921-1922	19.0	20.6	105.5	59.2	67.4	75.2	198.0	67.0	37.7	41.9	39.5	82.0	56.8	1922	60.8
1922-1923	56.8	89.4	44.0	61.4	135.2	163.5	68.6	181.1	23.3	23.0	17.0	11.6	66.5	1923	61.5
1923-1924	22.4	35.4	89.6	100.7	64.4	122.5	93.1	92.3	70.5	11.6	9.6	12.9	57.6	1924	59.5
1924-1925	233.3	20.2	40.8	20.6	164.4	71.6	86.3	53.7	22.0	9.4	22.9	10.8	44.7	1925	42.8
1925-1926	14.1	30.6	62.7	68.4	51.0	117.4	122.0	74.9	35.6	10.5	10.6	9.0	49.1	1926	48.5
1926-1927	15.1	38.7	58.9	112.1	79.8	191.8	66.8	59.5	42.8	8.0	18.6	24.5	46.8	1927	57.5
1927-1928	37.2	73.0	83.5	96.3	87.0	105.9	58.6	141.4	29.4	21.3	21.3	16.7	57.2	1928	50.5
1928-1929	30.3	46.4	62.0	77.3	74.6	141.8	80.6	102.6	21.1	2.9	2.4	-6.7	64.0	1929	57.3
1929-1930	2.3	17.3	28.4	68.5	82.6	84.8	90.6	32.1	13.8	2.7	1.3	-8.1	34.6	1930	33.2
1930-1931	3.6	13.5	26.8	43.9	82.1	93.4	95.5	74.0	47.1	18.4	14.3	5.1	45.0	1931	48.8
1931-1932	3.2	14.6	28.8	54.4	90.8	66.6	156.3	52.5	14.2	2.7	5.4	27.8	39.2	1932	51.4
1932-1933	52.5	88.2	108.1	110.9	70.9	95.9	111.3	51.3	38.9	8.5	6.9	20.1	64.2	1933	56.4
1933-1934	27.9	55.4	48.9	97.7	26.0	136.0	116.0	72.4	30.7	3.6	3.6	19.0	53.8	1934	56.6
1934-1935	40.9	43.0	90.4	66.0	91.6	218.6	85.1	75.3	34.8	15.1	-9.8	7.2	59.3	1935	52.8
1935-1936	-12.5	18.6	85.2	44.7	46.4	123.6	117.1	80.3	14.8	1.1	-0.6	10.6	50.3	1936	54.8
1936-1937	23.0	34.4	61.6	91.4	113.1	81.7	69.9	82.6	22.0	1.3	9.3	13.6	53.1	1937	53.7
1937-1938	20.2	51.5	112.5	78.4	102.7	110.7	88.1	44.1	33.1	60.3	42.6	24.6	56.3	1938	58.4
1938-1939	46.2	48.6	99.4	68.5	81.4	89.4	108.2	114.9	10.5	-20.0	3.4	2.6	56.1	1939	48.3
1939-1940	10.9	96.4	45.3	72.0	25.3	120.3	114.8	55.0	67.3	19.0	-7.0	-1.5	52.1	1940	50.8
1940-1941	-3.5	23.9	72.4	49.0	87.4	81.5	121.3	36.7	27.0	9.2	2.5	-205.0	35.9	1941	32.8
1941-1942	-8.6	15.5	22.8	37.8	77.0	85.5	196.6	37.8	15.2	16.0	6.0	-8.8	38.3	1942	43.8
1942-1943	10.6	33.7	71.4	68.8	177.4	119.6	68.7	77.8	18.1	0.6	-7.4	-16.9	54.5	1943	48.8
1943-1944	9.4	27.7	34.4	40.8	49.2	64.2	85.9	80.0	11.5	-14.9	-15.4	15.7	30.1	1944	38.1
1944-1945	18.4	37.4	82.0	84.3	44.6	263.4	64.0	63.4	24.4	5.5	-3.9	-5.3	50.5	1945	46.0
1945-1946	2.7	20.8	60.6	102.9	78.2	260.6	60.3	50.8	49.8	0	20.5	15.2	45.7	1946	49.0
1946-1947	102.1	22.7	30.5	72.5	58.5	104.2	61.3	84.9	26.6	10.9	4.1	7.7	45.0	1947	42.9
1947-1948	7.0	45.8	35.5	21.7	122.6	168.1	94.7	56.1	74.3	15.0	4.8	-13.2	54.2	1948	52.2
1948-1949	7.2	30.1	58.0	81.5	89.0	118.2	68.8	44.2	-20.0	-21.0	0.3	2.6	41.7	1949	42.5
1949-1950	2.2	16.4	45.2	55.2	52.4	104.3	81.8	62.7	34.1	-6.8	4.4	-1.0	42.4	1950	43.0

(e Estimated)

TABLE 4 (Continued)

MONTHLY AND YEARLY PERCENT OF RAINFALL COLLECTED ON SCITUATE WATERSHED

YEARS ENDED SEPTEMBER 30

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total	Jan.-Dec. Year	Total
1950-1951	1.8	25.6	56.7	65.4	110.5	73.8	108.3	51.9	44.6	4.2	2.3	-2.9	50.7	1951	54.5
1951-1952	8.2	47.9	77.8	86.9	68.6	121.5	67.3	61.7	31.0	-29.2	7.2	-9.0	50.9	1952	44.8
1952-1953	-10.3	12.2	27.4	62.5	93.8	77.6	84.4	98.8	12.0	1.6	-1.7	-4.7	51.4	1953	53.0
1953-1954	6.8	29.9	77.7	72.8	84.2	81.6	74.7	75.6	21.3	-0.4	10.2	51.9	47.1	1954	56.0
1954-1955	42.5	64.6	85.4	246.0	72.8	102.2	66.3	91.0	19.6	0.8	32.7	26.3	56.7	1955	60.8
1955-1956	62.9	122.7	208.3	60.7	93.2	57.8	171.1	81.8	45.7	8.9	-14.1	1.2	67.6	1956	52.7
1956-1957	7.8	22.4	53.1	83.1	85.4	83.5	90.6	37.4	-25.0	-42.7	-24.1	-13.9	46.2	1957	39.3
1957-1958	2.0	9.5	32.1	77.9	59.8	110.4	91.3	101.0	30.9	12.1	18.8	21.4	49.7	1958	60.6
1958-1959	53.5	61.1	102.8	64.5	62.6	82.2	102.5	126.1	22.2	31.0	3.1	-40.4	57.8	1959	50.1
1959-1960	14.0	40.7	78.6	91.6	90.1	96.3	131.0	48.8	30.4	7.8	-0.1	19.0	49.6	1960	53.8
1960-1961	27.4	73.8	56.8	68.2	105.7	116.4	80.2	64.2	57.8	8.3	5.0	24.4	55.4	1961	55.3
1961-1962	49.2	48.1	52.7	94.9	27.0	142.8	167.1	74.6	20.9	-6.8	1.2	2.0	54.1	1962	51.1
1962-1963	21.1	70.7	71.1	56.0	55.1	120.5	83.3	61.4	16.1	2.8	-15.2	-0.5	42.8	1963	37.5
1963-1964	-6.8	20.3	60.3	74.1	52.6	131.9	81.6	75.7	0.5	0.8	-6.5	-3.1	43.3	1964	42.3
1964-1965	3.9	12.3	39.5	40.7	76.1	141.8	74.4	51.2	16.2	-3.8	-5.4	-3.1	37.4	1965	35.8
1965-1966	1.1	8.5	22.6	11.8	44.4	195.6	56.4	47.1	30.4	3.0	2.9	6.8	26.7	1966	30.5
51 Years Average	23.2	39.5	61.0	67.1	71.4	107.9	91.3	68.1	32.1	15.9	11.4	16.6	50.9	Avg.	50.8
51 Years Maximum	233.3	331.2	208.3	246.0	177.4	263.4	198.0	181.1	74.3	60.3	82.0	82.0	68.1	Max.	66.4
51 Years Minimum	-12.5	8.5*	22.6*	11.8*	25.3	57.8	56.4*	32.1	-25.0	-42.7	-24.1	-205.0	26.7*	Min.	30.5*

*New minimum.

TABLE 5

SCITUATE WATERSHED

(92.8 Square Miles)

STATISTICS OF STORAGE - YEAR ENDED SEPTEMBER 30, 1966

	1		2		3		4		5		Total		6		Total	
	Regulating Reservoir		Westconnaug Reservoir		Barden Reservoir		Moswansicut Reservoir		Ponaganset Reservoir		1-5		Scituate Reservoir		1-6	
	Elev.	Avail. Storage M.G.	Elev.	Avail. Storage M.G.	Elev.	Avail. Storage M.G.	Elev.	Avail. Storage M.G.	Elev.	Avail. Storage M.G.	Avail. Storage M.G.	% of Total Avail.	Elev.	Avail. Storage M.G.	Avail. Storage M.G.	% of Total Avail.
1965																
1966																
October	281.90	176	452.70	372	344.65	817	301.00	626	632.74	670	2,661	84.9	272.71	25,224	27,885	70.2
November	281.50	155	452.60	367	345.05	849	300.85	612	632.87	680	2,663	84.9	270.70	23,408	26,071	65.6
December	281.38	150	452.58	366	345.20	861	300.90	616	633.05	693	2,686	85.7	269.01	21,918	24,604	61.9
January	282.15	190	452.70	372	345.25	865	301.10	636	633.37	717	2,780	88.7	267.69	20,826	23,606	59.4
February	283.50	276	453.19	397	345.31	870	301.63	688	633.35	716	2,947	94.0	266.76	20,048	22,995	57.9
March	285.74	441	454.61	478	345.59	892	302.08	733	633.62	737	3,281	104.7	268.84	21,782	25,063	63.1
April	285.61	430	454.45	469	345.25	865	301.92	717	633.37	717	3,198	102.0	272.57	25,081	28,279	71.1
May	285.65	433	454.45	469	345.40	877	302.00	725	633.33	714	3,218	102.6	272.61	25,122	28,340	71.3
June	285.60	429	454.50	472	345.40	877	301.93	718	633.33	714	3,210	102.4	273.71	26,108	29,318	73.8
July	275.80	0	447.96	147	320.35	1	295.63	152	621.20	51	351	11.2	275.84	28,137	28,488	71.7
August	274.80	0	442.90	8	319.30	0	294.78	86	613.70	0	94	3.0	274.08	26,418	26,512	66.7
September	274.75	0	441.65	1	319.05	0	294.43	60	613.55	0	61	1.9	272.00	24,530	24,591	61.9
Maximum for Year	March 5	444	March 5	488	February 19	921	March 5	735	March 5	747	March 5	106.0	June 27	28,249	June 1	73.8
Minimum for Year	Drained		Drained		Drained		Drained		Drained		Drained		February 11	19,650	February 12	57.2
1. Regulating Reservoir-Spillway	Elev. 285.50;	Total Storage	428 M.G.;	Dead Storage	7 M.G.;	Total Available Storage	421 M.G.									
2. Westconnaug	"	"	"	454.17;	"	"	453 "	"	"	"	0 "	"	"	"	"	453 "
3. Barden	"	"	"	345.10;	"	"	853 "	"	"	"	0 "	"	"	"	"	853 "
4. Moswansicut	"	"	"	301.90;	"	"	1,781 "	"	"	"	1,066 "	"	"	"	"	715 "
5. Ponaganset	"	"	"	633.05;	"	"	742 "	"	"	"	49 "	"	"	"	"	693 "
Total 1-5					Total Storage	4,257 M.G.;	Dead Storage	1,122 M.G.;	Total Available Storage	*3,135 M.G.						
6. Scituate Reservoir-Spillway	Elev. 284.01;	"	"	37,011	"	"	"	"	"	"	400 "	"	"	"	"	36,611 "
Total 1-6					Total Storage	41,268 M.G.;	Dead Storage	1,522 M.G.;	Total Available Storage	**39,746 M.G.						

Note: Elevations shown are in feet above mean high water in Providence Harbor.
 Statistics shown are for the first day (7 A.M.) of the month indicated.

TABLE 6

SCITUATE WATERSHED

(92.8 Square Miles)

DRAFT AND YIELD - YEAR ENDED SEPTEMBER 30, 1966

1965 1966	DRAFT FROM SCITUATE RESERVOIR Million Gallons				WATERSHED YIELD Million Gallons				
	To River Over Spill- way	Below Gainer Dam Through Gate- house	Dam Total	To Water Purification Works	Total For Month	Average per. Day	For Month	Average per Day 51-Year Mean 1965-1966	1916-1966
October	0	325.20	325.20	1,560.83	1,886.03	60.84	72.03	2.32	43.18
November	0	313.77	313.77	1,487.86	1,801.63	60.05	334.63	11.15	98.38
December	0	314.62	314.62	1,392.52	1,707.14	55.07	709.14	22.88	126.94
January	0	326.41	326.41	1,407.73	1,734.14	55.94	1,123.14	36.23	146.19
February	0	293.17	293.17	1,282.79	1,575.96	56.28	3,643.96	130.14	158.14
March	0	358.65	358.65	1,436.66	1,795.31	57.91	5,011.31	161.66	241.39
April	0	283.01	283.01	1,431.13	1,714.14	57.14	1,775.14	59.17	203.21
May	0	191.08	191.08	1,538.92	1,730.00	55.81	2,708.00	87.35	122.26
June	0	199.42	199.42	1,811.58	2,011.00	67.03	1,179.00	39.30	61.28
July	0	180.45	180.45	1,975.61	2,156.06	69.55	177.06	5.71	31.21
August	0	199.13	199.13	1,870.35	2,069.48	66.76	147.48	4.76	25.49
September	0	190.73	190.73	1,567.30	1,758.03	58.60	580.03	19.33	36.56
For Year	0	3,175.64*	3,175.64	18,763.28	21,938.92	60.11	17,460.92	47.84	107.56

*Of this amount, 90.20 M.G. were discharged to the Pawtuxet River through the 36-inch blow-off outlet from the south 60-inch steel pipe aqueduct.

TABLE 7

SCITUATE WATERSHED - REFORESTATION

NUMBER AND KINDS OF TREES PLANTED IN VARIOUS YEARS

Planted During Calendar Year	Fraser Fir	Balsam Fir	Red Pine	White Pine	Douglas Fir	Austrian Pine	Scotch Pine	Jack Pine	White Spruce	Norway Spruce	Hemlock	Larch	Total Number Planted Yearly
1926	0	0	160,000	40,000	0	0	0	0	0	0	0	0	200,000
1927	0	0	60,000	150,000	0	0	0	0	0	0	0	0	210,000
1928	0	0	10,000	10,000	0	0	0	0	0	0	0	0	20,000
1929	0	0	10,000	75,000	0	0	0	0	0	0	0	0	85,000
1930	0	0	40,000	40,000	0	0	0	0	0	0	0	0	80,000
1931	0	0	40,000	50,000	0	0	0	0	9,000	0	0	0	99,000
1932	0	0	40,000	40,000	0	0	0	0	20,000	0	0	0	100,000
1933	0	0	0	0	0	0	0	0	0	0	0	0	0
1934 & 1935	0	0	755,000	255,000	0	36,000	136,000	4,000	505,000	204,000	3,000	0	1,898,000
1936	0	0	453,700	111,000	0	14,400	0	0	20,000	15,000	26,000	0	640,100
1937	0	0	481,100	0	0	0	0	0	213,200	0	0	0	694,300
1938	0	0	229,000	21,693	0	0	0	0	0	0	0	0	250,693
1939	0	0	8,000	761,000	0	0	0	50,000	0	0	0	0	819,000
1940	0	0	267,387	618,828	0	45,916	0	67,750	0	0	0	0	999,881
1941	0	0	51,000	295,650	0	0	0	0	34,350	0	0	0	381,000
1942	0	0	0	308,120	0	0	0	0	0	0	0	0	308,120
1943	0	0	0	0	0	0	0	0	0	0	0	0	0
1944	0	0	0	0	0	0	0	0	0	0	0	0	0
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0	0	0	0	0	0
1950	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 7 (Continued)

SCITUATE WATERSHED - REFORESTATION
NUMBER AND KINDS OF TREES PLANTED IN VARIOUS YEARS

Planted During Calendar Year	Fraser Fir	Balsam Fir	Red Pine	White Pine	Douglas Fir	Austrian Pine	Scotch Pine	Jack Pine	White Spruce	Norway Spruce	Hemlock	Larch	Total Number Planted Yearly
1951	0	0	0	1,500	12,000	0	0	0	0	0	0	0	13,500
1952	0	0	20,000	0	0	0	0	0	10,000	0	0	10,000	40,000
1953	0	0	10,000	0	0	0	0	0	6,000	0	0	0	16,000
1954	0	2,000	0	0	2,000	0	0	0	0	0	0	6,000	10,000
1955	0	0	0	5,000	0	0	0	0	0	0	0	5,000	10,000
1956	0	0	0	5,000	0	4,500	0	0	0	0	0	0	9,500
1957	0	0	0	6,000	0	0	0	0	0	0	0	0	6,000
1958	0	0	2,700	2,000	0	0	0	0	0	0	0	0	4,700
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	140	540	6,874	784	405	0	0	3,401	49	0	3,461	15,654
1961	0	0	0	2,300	144	0	0	0	0	0	2,000	0	4,444
1962	0	0	0	5,000	0	0	0	0	150	0	2,000	2,000	9,150
1963	0	0	0	5,000	0	0	0	0	170	0	5,000	5,000	15,170
1964	0	0	0	5,000	0	0	0	0	510	0	5,000	5,000	15,510
1965	1,000	2,000	0	5,000	0	0	0	0	0	0	10,000	5,000	23,000
1966	0	0	0	5,000	0	0	0	0	0	0	5,000	5,000	15,000
Totals	1,000	4,140	2,638,427	2,829,965	14,928	101,221	136,000	121,750	821,781	219,049	58,000	46,461	6,992,722

TABLE 8

GAINER DAM HYDRO-ELECTRIC PLANT*

POWER STATISTICS ON THE BASIS OF THE "CONTRACT YEAR" WITH
THE NARRAGANSETT ELECTRIC COMPANY

Contract Year	KWH Generated at Gainer Dam	KWH Used at Gainer Dam and Water Purification Works	Net KWH Delivered to Narragansett Electric Co.	Payment Received
(Period June 20-30, 1930)	87,000	6,470	75,100	\$ 300.40
July 1930-June 1931	3,023,000	152,940	2,758,340	20,000.00
July 1931-June 1932	4,201,500	158,070	3,980,570	19,600.00
July 1932-June 1933	7,024,900	155,210	6,697,656	26,790.62
July 1933-June 1934	5,080,900	152,420	4,837,371	19,349.48
July 1934-June 1935	7,102,900	174,710	6,756,101	27,024.40
July 1935-June 1936	5,761,200	173,530	5,394,176	21,576.70
July 1936-June 1937	5,626,000	174,110	5,262,807	21,051.23
July 1937-June 1938	6,438,300	156,710	6,069,927	24,279.71
July 1938-June 1939	8,915,000	159,860	8,457,980	33,831.92
July 1939-June 1940	4,681,100	231,850	4,329,115	17,316.46
July 1940-June 1941	3,291,200	185,540	2,982,991	16,000.00
July 1941-June 1942	2,585,300	194,250	2,322,916	15,600.00
July 1942-June 1943	4,655,800	170,520	4,372,359	17,489.44
July 1943-June 1944	2,290,100	183,250	2,096,811	14,597.25
July 1944-June 1945	4,146,200	187,080	3,879,622	15,518.49
July 1945-June 1946	4,754,100	200,200	4,460,596	17,343.70
July 1946-June 1947	3,494,400	251,270	3,224,049	13,600.00
July 1947-June 1948	5,576,900	249,940	5,313,209	21,252.84
July 1948-June 1949	3,790,500	264,160	3,521,404	14,085.62
July 1949-June 1950	1,972,200	303,460	1,548,000	9,288.00
July 1950-June 1951	4,965,900	322,220	4,476,900	26,861.40
July 1951-June 1952	6,381,400	329,080	5,836,700	35,020.20
July 1952-June 1953	4,993,400	351,080	4,429,900	26,579.40
July 1953-June 1954	3,945,700	389,050	3,389,000	20,334.00
July 1954-June 1955	6,776,900	422,250	6,111,000	36,666.00
July 1955-June 1956	9,521,700	480,300	8,747,900	52,487.40
July 1956-June 1957	2,195,400	466,480	1,608,100	9,648.60
July 1957-June 1958	4,141,000	541,760	3,432,900	**20,597.40
July 1958-June 1959	4,987,600	504,310	4,297,300	25,783.80
July 1959-June 1960	5,754,000	515,280	5,078,000	30,468.00
July 1960-June 1961	4,912,500	583,050	4,159,400	24,956.40
July 1961-June 1962	3,998,900	614,800	3,267,600	19,605.60
July 1962-June 1963	2,116,200	679,400	1,334,800	8,008.80
July 1963-June 1964	2,550,450	735,790	1,716,800	10,418.40
July 1964-June 1965	184,800	759,140	0	0.00
July 1965-June 1966	303,700	746,340	0	0.00

*1875 KVA 3 Phase, 60 Cycle, 2300 Volts, 80 Ft. Head Turbo-Generator.

**Involves net exchange for portion of previous year.

TABLE 9

WATER PURIFICATION WORKS

OPERATING STATISTICS - YEAR ENDED SEPTEMBER 30, 1966

	Influent Aerator	Plant Influent Mil. Gals.		Water Filtered Mil. Gals.		Wash Water Mil. Gals.			Plant Effluent Mil. Gals.		Plant Effluent Flow	Number of Filters in Operation		
	Hours Operated	Total	Average per day	Total	Average per day	Total	Average per Day	% of Water Filt.	Total	Average per day	Hours	Max.	Min.	Avg.
1965														
1966														
October	742.5	1,560.831	50.349	1,570.141	50.650	16.791	0.542	1.1	1,553.350	50.108	745.0	11.5	5.0	8.6
November	718.4	1,487.864	49.595	1,428.093	47.603	14.062	0.469	1.0	1,414.031	47.134	720.0	11.0	5.0	8.1
December	744.0	1,392.517	44.920	1,397.168	45.070	13.101	0.423	0.9	1,384.067	44.647	744.0	11.0	4.0	7.7
January	744.0	1,407.729	45.411	1,401.198	45.200	13.009	0.420	0.9	1,388.189	44.780	744.0	10.0	3.0	7.7
February	672.0	1,282.786	45.814	1,269.673	45.345	11.077	0.396	0.9	1,258.596	44.950	672.0	10.5	5.0	7.7
March	743.0	1,436.661	46.344	1,430.047	46.131	10.813	0.349	0.8	1,419.234	45.782	744.0	10.5	4.0	7.9
April	715.1	1,431.127	47.704	1,413.753	47.125	9.412	0.314	0.7	1,404.341	46.811	719.0	11.0	3.0	8.0
May	744.0	1,538.917	49.642	1,515.912	48.900	12.742	0.411	0.8	1,503.170	48.489	744.0	11.5	4.5	8.3
June	720.0	1,811.583	60.386	1,795.216	59.841	17.672	0.589	1.0	1,777.544	59.251	720.0	14.0	3.0	10.2
July	744.0	1,975.615	63.730	1,930.453	62.273	14.145	0.456	0.7	1,916.308	61.816	744.0	14.0	2.5	10.6
August	744.0	1,870.350	60.334	1,870.579	60.341	14.585	0.470	0.8	1,855.994	59.871	744.0	14.0	4.5	10.3
September	719.4	1,567.302	52.243	1,565.680	52.189	15.883	0.529	1.0	1,549.797	51.660	720.0	13.5	3.5	8.9
Totals	8,750.4	18,763.282		18,587.913		163.292			18,424.621		8,760.0			
Average	729.2		51.406		50.926		0.447	0.9		50.478	730.0			8.7

Raw water treated with Ferri-Floc before Influent Aeration.

Quicklime added to Ferri-Floc treated water in conduit to tangential mixer.

Chlorine added to water after filtration.

Sodium Silicofluoride added to water after filtration.

Raw water drawn from lower intake at Gainer Memorial Dam all year.

TABLE 9 (Continued)

WATER PURIFICATION WORKS

OPERATING STATISTICS - YEAR ENDED SEPTEMBER 30, 1966

1965 1966	Average Rate of Filtration per Filter M.G.D.	Number of Filters Washed			Ferri-Floc Used			Quicklime Used			Chlorine Used			Sodium Silicofluoride Used		
		Total	Avg. per Day	Average Filter Run Hours	Lbs.	Avg. per Day	Gr. per Gal.	Lbs.	Avg. per Day	Gr. per Gal.	Lbs.	Avg. per Day	Parts per Mil.	Lbs.	Avg. per Day	Parts per Mil.*
October	5.88	122	3.9	54.25	134,828	4,349	0.60	131,016	4,226	0.59	3,272	106	0.26	18,537	598	0.86
November	5.87	106	3.5	53.30	133,668	4,456	0.63	121,202	4,040	0.57	2,943	98	0.25	16,734	558	0.86
December	5.87	110	3.5	53.95	105,679	3,409	0.53	104,918	3,384	0.53	2,873	93	0.25	16,394	529	0.86
January	5.85	121	3.9	47.24	109,526	3,533	0.55	107,068	3,454	0.53	2,603	84	0.23	16,518	533	0.86
February	5.85	106	3.8	50.36	111,299	3,975	0.61	105,443	3,766	0.58	1,092	39	0.11	15,009	536	0.86
March	5.85	101	3.3	58.09	124,138	4,004	0.61	121,362	3,915	0.59	1,556	51	0.13	16,813	543	0.86
April	5.88	86	2.9	67.55	124,504	4,150	0.61	118,050	3,935	0.58	1,881	63	0.16	16,612	554	0.86
May	5.87	104	3.4	58.99	134,455	4,337	0.61	126,996	4,097	0.58	2,535	82	0.21	17,990	580	0.86
June	5.85	130	4.3	57.01	157,278	5,243	0.61	152,487	5,083	0.59	3,014	100	0.21	21,343	711	0.87
July	5.87	101	3.3	75.56	167,381	5,399	0.59	173,568	5,599	0.63	3,250	105	0.21	23,120	746	0.87
August	5.86	105	3.4	72.81	148,546	4,792	0.56	185,276	5,977	0.69	3,940	127	0.26	22,346	721	0.86
September	5.89	114	3.8	58.34	127,164	4,239	0.57	164,567	5,486	0.74	4,367	146	0.34	18,257	609	0.86
Totals		1,306			1,578,466			1,611,953			33,326			219,673		
Average	5.87		3.6	58.35		4,325	0.59		4,416	0.60		91	0.22		602	0.86

Total Filter Hours for year, 76,048.95; average per day, 208.35.

Average quantity of water filtered per filter per run, 14.27 m.g.

*Dosage expressed as p.p.m of Fluoride ion.

TABLE 10
WATER PURIFICATION WORKS
CHEMICALS USED - YEAR ENDED SEPTEMBER 30, 1966

Chemicals	Pounds of Chemicals Used Total	Lbs. per Day (Average)	Total Gallons of Water Treated	Cost of Chemicals	Pounds of Chemicals Used per 1,000,000 Gals. of Water Treated (Average)	Cost of Chemicals per 1,000,000 Gals. of Water Treated
Ferri-Floc	1,578,466	4,325	18,754,492,000	\$42,658.04	84.16	\$2.27
Quicklime	1,611,953	4,416	18,755,445,000	16,272.67	85.95	0.87
Chlorine	33,326	91	18,194,374,000	2,249.51	1.83	0.12
Sodium Silicofluoride	219,673	602	18,159,294,000	17,991.27	12.10	0.99
Totals	3,443,418			\$79,171.49		\$4.25

Price of Ferri-Floc--From Oct. 1, 1965 to Sept. 30, 1966--\$54.05 per ton.

Price of Quicklime---From Oct. 1, 1965 to Sept. 30, 1966--\$20.19 per ton.

Price of Chlorine----From Oct. 1, 1965 to Sept. 30, 1966--\$135.00 per ton.

Price of Sodium Silicofluoride--From Oct. 1, 1965 to Sept. 30, 1966--\$163.80 per ton.

TABLE 11

WATER PURIFICATION WORKS

*CHEMICAL AND PHYSICAL CHARACTERISTICS OF WATER IN PROCESS OF FILTRATION

YEAR ENDED SEPTEMBER 30, 1966

		Monthly Averages										Avg. for		
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Year
pH														
Raw		6.5	6.5	6.5	6.4	6.2	6.1	6.3	6.3	6.0	5.8	5.7	5.9	6.2
Aerated Influent		4.3	4.2	4.3	4.3	4.3	4.2	4.2	4.3	4.1	4.2	4.3	4.4	4.3
Treated		10.2	10.3	10.3	10.3	10.2	10.2	10.3	10.3	10.1	10.1	10.2	10.1	10.2
Settled		10.2	10.2	10.2	10.2	10.1	10.1	10.2	10.2	10.0	10.0	10.0	10.0	10.1
Filtered		10.1	10.1	10.2	10.2	10.1	10.1	10.2	10.2	10.0	10.0	10.0	10.0	10.1
**Effluent		10.1	10.1	10.2	10.2	10.1	10.1	10.2	10.1	10.0	10.0	10.0	10.0	10.1
Tap		10.0	10.0	10.1	10.1	10.1	10.1	10.1	10.1	9.9	9.9	9.9	9.9	10.0
Free CO ₂														
Raw		1.8	1.2	1.2	1.4	2.6	2.5	1.6	1.8	2.8	4.6	6.4	6.6	2.9
Aerated Influent		5.8	5.8	5.3	5.5	6.8	6.6	6.2	6.4	6.9	7.5	7.7	7.5	6.5
Phenolphthalein Alkalinity														
Treated		9.6	9.0	8.6	8.5	8.4	9.0	9.2	8.9	8.9	9.3	10.8	11.8	9.3
Settled		9.2	8.5	8.1	8.1	7.9	8.4	8.4	8.2	8.2	8.3	9.7	11.1	8.7
Filtered		9.0	8.3	7.9	8.0	7.7	8.2	8.2	8.0	8.1	8.3	9.7	10.9	8.5
**Effluent		9.1	8.3	8.0	7.9	7.8	8.2	8.2	8.1	8.1	8.3	9.7	10.9	8.6
Tap		6.9	6.1	5.9	5.7	5.9	6.4	6.1	6.0	6.0	6.2	7.4	8.4	6.4
Methyl Orange Alkalinity														
Raw		4.5	4.6	4.4	4.2	4.1	4.1	4.0	3.9	3.6	3.6	4.0	4.5	4.1
Treated		14.7	14.0	13.5	13.5	13.9	14.4	14.1	13.9	13.8	14.9	17.8	19.1	14.8
Settled		14.7	13.6	13.1	13.1	13.5	14.1	13.5	13.3	13.4	14.3	16.9	18.9	14.4
Filtered		14.6	13.4	13.0	13.0	13.4	14.0	13.3	13.1	13.3	14.1	16.8	18.4	14.2
**Effluent		14.6	13.4	13.1	13.0	13.4	14.0	13.2	13.2	13.3	14.2	16.7	18.4	14.2
Tap		13.4	12.1	11.8	11.3	11.7	12.6	12.0	12.0	12.0	12.6	14.9	16.8	12.8
Color														
Raw		8	6	6	7	8	7	8	8	7	7	8	15	8
Settled		8	9	8	8	9	8	8	9	10	9	8	11	9
**Effluent		3	3	3	2	2	2	3	3	3	3	3	4	3
Tap		3	3	3	3	3	3	3	3	3	3	3	3	3
Turbidity														
Raw		0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.1	0.1	0.2	0.3	0.7	0.3
Settled		.1	.1	.1	.1	.1	.2	.2	.1	.1	.2	.2	.2	.1
**Effluent		.0	.1	.1	.1	.1	.1	.1	.0	.0	.0	.0	.0	.1
Hardness														
Raw		11	11	11	12	12	12	12	11	11	12	12	13	12
**Effluent		27	27	26	26	29	29	29	27	27	28	30	32	28
Tap		28	28	26	27	29	30	30	28	27	28	30	32	29
Iron														
Raw		0.11	0.08	0.08	0.12	0.13	0.09	0.07	0.05	0.05	0.06	0.10	0.34	0.11
Settled		.26	.35	.31	.33	.35	.33	.29	.29	.28	.25	.22	.21	.29
**Effluent		.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Tap		.02	.02	.02	.02	.02	.02	.02	.02	.01	.02	.02	.02	.02
Manganese														
Raw		0.04	0.03	0.04	0.03	0.03	0.03	0.04	0.04	0.03	0.04	0.12	0.30	0.06
Settled		.00	.00	.00	.00	.00	.01	.01	.01	.01	.01	.02	.06	.01
**Effluent		.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Tap		.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Fluoride														
Raw		0.15	0.15	0.15	0.15	0.14	0.15	0.15	0.14	0.15	0.14	0.15	0.15	0.15
**Effluent		.15	.14	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
Tap		.99	.99	1.00	1.00	1.00	.99	.99	1.00	.99	1.00	1.00	.99	1.00
Temperature (°F)														
Air (Avg. of Daily Max.)	63	52	45	37	42	51	57	68		80	85	81	71	61
Air (Avg. of Daily Min.)	42	32	28	20	22	31	37	45		55	60	58	51	40
Raw	58	48	39	34	35	37	42	48		51	53	54	58	46
Settled	55	45	37	34	33	37	42	50		55	57	59	58	47
Tap	61	54	46	41	41	44	48	55		62	66	66	65	54

*Parts per million, except pH and Temperature.

**Before treatment with chlorine and sodium silicofluoride

TABLE 12

WATER PURIFICATION WORKS

*CHEMICAL AND PHYSICAL CHARACTERISTICS OF WATER IN VARIOUS BROOKS AND RESERVOIRS
ON SCITUATE WATERSHED

YEAR ENDED SEPTEMBER 30, 1966

Monthly Analyses	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Avg. for Year
Color													
Ponaganset Reservoir	9	7	5	3	5	3	3	2	13	**	70	29	14
Coventry Brook	27	25	31	14	23	23	56	43	33	18	18	18	27
Wilbur Brook	88	35	86	28	32	60	65	100	165	110	135	67	81
Westconnaug Reservoir	17	15	35	12	7	15	23	17	18	23	12	17	18
Barden Reservoir	10	7	13	12	28	23	27	22	60	50	32	25	26
Cork Brook	26	13	28	8	12	17	62	23	12	7	**	10	20
Rush Brook	60	20	40	17	22	30	32	32	65	17	13	12	30
Huntinghouse Brook	58	22	43	15	18	23	33	27	44	**	**	17	30
Harrisdale Brook	15	14	14	13	22	20	12	22	18	17	15	13	16
Blanchard Brook	80	64	94	78	75	95	115	110	330	300	**	170	137
Moswansicut Pond	7	10	11	7	8	9	17	11	12	10	7	12	10
Regulating Reservoir	9	8	9	13	12	18	132	17	16	19	22	12	24
Quonapaug Brook	58	35	80	43	65	66	42	116	185	300	65	85	95
Hemlock Brook	8	13	64	30	28	38	23	23	65	64	24	33	34
Betty Pond Stream	**	**	24	28	13	16	85	22	23	32	18	34	30
Spruce Brook	40	31	37	18	28	32	80	66	34	32	28	23	37
Brandy Brook	24	20	34	45	50	33	65	70	43	24	26	54	41
Moswansicut-South	20	5	12	17	6	6	23	24	44	23	**	**	18
Windsor Brook	26	16	29	15	12	11	28	23	23	16	13	10	19
Paine Pond	**	**	**	**	60	33	28	35	37	18	7	34	32
Unnamed Brook-A	**	**	**	**	44	65	84	110	**	**	**	**	76
Unnamed Brook-B	**	**	**	**	13	9	14	14	**	**	**	**	12
Turbidity													
Ponaganset Reservoir	0.3	0.4	0.1	0.4	0.4	0.3	0.2	0.1	0.3	**	1.0	0.3	0.3
Coventry Brook	0.3	0.1	0.2	0.2	0.4	0.1	0.3	0.1	0.1	0.2	0.1	0.1	0.2
Wilbur Brook	0.6	0.2	0.3	0.2	0.3	0.2	0.4	0.0	0.8	0.7	0.4	0.2	0.4
Westconnaug Reservoir	0.3	0.2	0.2	0.2	0.3	0.2	0.4	0.4	0.3	0.4	0.1	0.2	0.3
Barden Reservoir	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.1	0.6	0.6	0.4	0.2	0.3
Cork Brook	0.1	0.1	0.2	0.1	0.3	0.3	0.2	0.0	0.1	0.1	**	0.1	0.1
Rush Brook	1.1	0.3	5.9	0.5	3.5	1.4	3.2	0.6	1.6	0.2	0.2	0.1	1.6
Huntinghouse Brook	0.2	0.2	0.3	0.1	0.3	0.3	0.3	0.0	0.2	**	**	0.1	0.2
Harrisdale Brook	0.1	0.1	0.3	0.2	0.3	0.3	0.4	0.1	0.2	0.3	0.1	0.1	0.2
Blanchard Brook	0.1	0.3	0.2	0.2	0.4	0.3	0.1	0.1	0.2	0.4	**	0.1	0.2
Moswansicut Pond	0.3	0.3	0.3	0.2	0.4	0.3	0.1	0.1	0.2	0.2	0.1	0.1	0.2
Regulating Reservoir	0.2	0.1	0.3	0.5	0.5	0.3	0.1	0.2	0.3	0.6	0.1	0.2	0.3
Quonapaug Brook	0.2	0.1	0.2	0.2	0.5	0.2	0.1	0.0	0.3	0.7	0.1	0.1	0.2
Hemlock Brook	0.1	0.1	0.2	0.4	0.3	0.3	0.1	0.0	0.2	0.3	0.1	0.1	0.2
Betty Pond Stream	**	**	0.3	0.4	0.3	0.4	0.3	0.1	0.5	2.0	0.1	0.1	0.5
Spruce Brook	0.4	0.2	0.2	0.3	0.3	0.3	0.2	0.0	0.1	0.2	0.1	0.1	0.2
Brandy Brook	0.2	0.3	0.3	0.3	0.3	0.4	0.3	0.1	0.2	0.2	0.0	0.0	0.2
Moswansicut-South	0.4	0.2	0.4	0.5	0.3	0.3	1.0	0.1	1.0	0.4	**	**	0.5
Windsor Brook	0.2	0.2	0.3	0.3	0.3	0.3	0.1	0.1	0.1	0.2	0.1	0.1	0.2
Paine Pond	**	**	**	**	1.1	0.6	0.3	0.1	0.3	0.2	0.2	0.4	0.4
Unnamed Brook-A	**	**	**	**	0.3	0.4	0.3	0.4	**	**	**	**	0.4
Unnamed Brook-B	**	**	**	**	0.2	0.3	0.3	0.1	**	**	**	**	0.2

*Parts per million.

**No sample obtained--Dry.

NOTE: Unnamed Brook A is just north of Scituate Town Dump. Unnamed Brook B is southwest of the Foster Nike Site.

TABLE 12 (Continued)

WATER PURIFICATION WORKS

*CHEMICAL AND PHYSICAL CHARACTERISTICS OF WATER IN VARIOUS BROOKS AND RESERVOIRS
ON SCITUATE WATERSHED

YEAR ENDED SEPTEMBER 30, 1966

Monthly Analyses	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Avg. for Year
Iron													
Ponaganset Reservoir	0.16	0.08	0.07	0.07	0.06	0.10	0.01	0.03	0.24	**	1.70	0.44	0.27
Coventry Brook	.13	1.70	.05	.02	.03	.05	.10	.05	.13	.08	.04	.14	.21
Wilbur Brook	.82	.20	.22	.15	.13	.16	.09	.40	.18	.90	1.25	.67	.43
Westconnaug Reservoir	.14	.13	.15	.18	.08	.12	.10	.18	.22	.32	.07	.06	.15
Barden Reservoir	.08	.12	.03	.03	.07	.10	.23	.06	.33	.84	.49	.17	.21
Cork Brook	.02	.02	.05	.01	.02	.01	.08	.04	1.15	.02	**	.00	.13
Rush Brook	.70	.27	.28	.05	.12	.26	.08	.33	.02	.35	.04	.02	.21
Huntinghouse Brook	.20	.04	.05	.01	.01	.02	.17	.08	.32	**	**	.03	.09
Harrisdale Brook	.07	.24	.04	.03	.05	.10	.05	.12	.34	.27	.09	.19	.13
Blanchard Brook	.27	.46	.34	.20	.27	.14	.20	.45	1.60	.75	**	.12	.44
Moswansicut Pond	.02	.05	.37	.01	.00	.03	.19	.01	.02	.02	.03	.01	.06
Regulating Reservoir	.13	.05	.06	.02	.04	.06	.11	.03	.15	.09	.47	.14	.11
Quonapaug Brook	.27	.07	.16	.21	.13	.14	.15	.20	.35	.80	.15	.18	.28
Hemlock Brook	.10	.08	.09	.08	.09	.12	.14	.04	.32	.18	.17	.16	.13
Betty Pond Stream	**	**	.09	.08	.07	.09	.14	.18	.19	.03	.07	.15	.11
Spruce Brook	.10	.07	.18	.06	.02	.08	.28	.04	.10	.09	.14	.03	.10
Brandy Brook	.13	.08	.15	.10	.18	.19	.27	.26	.28	.07	.15	.12	.17
Moswansicut-South	.90	.02	.47	.23	.10	.08	.08	.15	.86	.37	**	**	.33
Windsor Brook	.04	.02	.03	.00	.01	.01	.07	.01	.07	.12	.14	.04	.05
Paine Pond	**	**	**	**	.24	.14	.12	.17	.24	.07	.08	.06	.14
Unnamed Brook-A	**	**	**	**	.14	.17	.28	.47	**	**	**	**	.27
Unnamed Brook-B	**	**	**	**	.00	.01	.00	.00	**	**	**	**	.00
Manganese													
Ponaganset Reservoir	0.04	0.13	0.09	0.08	0.08	0.08	0.08	0.08	0.00	**	0.05	0.02	0.07
Coventry Brook	.00	.04	.00	.00	.00	.01	.00	.01	.00	.00	.00	.00	.01
Wilbur Brook	.04	.04	.04	.00	.03	.02	.00	.02	.02	.01	.02	.04	.02
Westconnaug Reservoir	.00	.01	.00	.01	.00	.02	.02	.04	.03	.01	.11	.00	.02
Barden Reservoir	.00	.00	.00	.00	.08	.06	.04	.03	.06	.08	.03	.01	.03
Cork Brook	.00	.07	.01	.00	.01	.02	.01	.02	.02	.00	**	.00	.01
Rush Brook	.14	.01	.02	.00	.04	.08	.02	.00	.12	.00	.04	.01	.04
Huntinghouse Brook	.08	.00	.00	.00	.00	.01	.00	.00	.10	**	**	.01	.02
Harrisdale Brook	.00	.00	.00	.00	.00	.01	.00	.01	.00	.00	.00	.03	.00
Blanchard Brook	.05	.11	.03	.00	.04	.03	.03	.02	.00	.00	**	.03	.03
Moswansicut Pond	.00	.00	.04	.00	.00	.01	.01	.02	.01	.02	.04	.03	.02
Regulating Reservoir	.00	.00	.08	.04	.02	.03	.00	.03	.02	.00	.06	.01	.02
Quonapaug Brook	.20	.12	.06	.00	.02	.02	.00	.02	.00	.04	.06	.00	.05
Hemlock Brook	.00	.00	.01	.00	.02	.04	.00	.01	.00	.00	.01	.00	.01
Betty Pond Stream	**	**	.00	.00	.01	.01	.00	.02	.00	.01	.01	.00	.01
Spruce Brook	.00	.00	.01	.01	.02	.02	.02	.00	.00	.00	.00	.00	.01
Brandy Brook	.00	.00	.00	.00	.00	.00	.03	.00	.01	.00	.01	.00	.00
Moswansicut-South	.02	.00	.00	.00	.00	.04	.03	.04	.06	.16	**	**	.04
Windsor Brook	.01	.00	.01	.00	.01	.02	.00	.02	.08	.04	.04	.00	.02
Paine Pond	**	**	**	**	.04	.06	.01	.03	.04	.00	.00	.06	.03
Unnamed Brook-A	**	**	**	**	.00	.02	.00	.01	**	**	**	**	.01
Unnamed Brook-B	**	**	**	**	.03	.04	.02	.02	**	**	**	**	.03

*Parts per million.

**No sample obtained--Dry.

NOTE: Unnamed Brook A is just north of Scituate Town Dump. Unnamed Brook B is southwest of the Foster Nike Site.

TABLE 12 (Continued)

WATER PURIFICATION WORKS

*CHEMICAL AND PHYSICAL CHARACTERISTICS OF WATER IN VARIOUS BROOKS AND RESERVOIRS
ON SCITUATE WATERSHED

YEAR ENDED SEPTEMBER 30, 1966

Monthly Analyses	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Avg. for Year
pH													
Ponaganset Reservoir	5.3	4.9	4.8	4.7	4.8	4.7	4.8	4.7	4.9	**	6.7	6.6	5.2
Coventry Brook	6.2	6.1	6.1	6.1	6.2	5.8	6.1	6.2	6.2	6.7	6.3	6.4	6.2
Wilbur Brook	6.2	6.0	5.5	5.8	5.4	5.5	5.5	5.8	6.1	6.6	5.6	5.7	5.8
Westconnaug Reservoir	6.9	6.8	6.7	6.7	6.5	6.2	6.5	6.3	6.2	6.5	6.5	6.5	6.5
Barden Reservoir	6.9	6.4	6.2	6.0	5.3	5.4	5.8	5.9	5.6	6.7	6.8	6.8	6.2
Cork Brook	5.8	5.7	5.6	5.6	5.8	5.6	5.7	5.7	5.9	6.0	**	5.9	5.8
Rush Brook	6.1	6.2	6.2	6.3	6.3	6.2	6.3	6.3	6.6	6.5	6.4	6.4	6.3
Huntinghouse Brook	6.2	6.5	6.2	6.2	6.1	6.1	6.2	6.3	6.8	**	**	6.6	6.3
Harrisdale Brook	6.8	6.9	6.8	6.6	6.3	6.6	6.8	6.7	6.8	7.2	7.0	7.1	6.8
Blanchard Brook	5.3	4.7	4.7	4.8	4.8	4.9	5.0	4.9	5.0	5.4	**	4.9	4.9
Moswansicut Pond	6.3	6.4	6.3	6.4	6.6	6.5	6.6	6.5	6.3	7.0	6.9	6.6	6.5
Regulating Reservoir	6.6	6.7	6.7	6.5	6.5	6.5	5.5	6.6	6.5	6.8	6.8	6.8	6.5
Quonapaug Brook	5.8	5.4	5.0	5.0	5.2	5.2	5.3	5.3	5.8	6.2	5.7	5.3	5.4
Hemlock Brook	6.2	6.1	5.7	5.8	5.4	5.1	5.6	5.5	6.2	6.8	6.6	6.3	5.9
Betty Pond Stream	**	**	6.3	5.8	5.8	6.1	6.1	5.9	5.8	6.4	5.5	6.4	6.0
Spruce Brook	6.0	6.0	5.6	5.6	5.3	5.2	5.3	5.3	5.5	6.2	6.2	6.5	5.7
Brandy Brook	6.6	6.7	6.7	6.6	6.8	6.4	6.6	6.7	6.6	6.7	6.6	6.7	6.6
Moswansicut-South	6.2	6.5	6.0	5.7	5.9	6.1	6.3	6.3	6.2	6.5	**	**	6.2
Windsor Brook	6.2	6.1	5.7	5.7	5.8	5.6	5.9	5.1	6.3	6.7	6.5	6.5	6.0
Paine Pond	**	**	**	**	5.7	5.5	6.0	5.9	5.6	5.7	5.2	5.2	5.6
Unnamed Brook-A	**	**	**	**	5.7	5.5	6.1	6.2	**	**	**	**	5.9
Unnamed Brook-B	**	**	**	**	6.1	5.2	5.3	5.1	**	**	**	**	5.4
Free CO ₂													
Ponaganset Reservoir	2.5	2.5	3.0	3.5	5.0	3.5	3.5	3.5	3.0	**	8.0	2.5	3.7
Coventry Brook	7.0	5.0	5.5	5.0	4.5	4.0	4.5	4.0	4.0	2.5	2.5	2.5	4.3
Wilbur Brook	9.5	6.5	9.5	8.0	11.0	7.5	10.0	12.0	9.5	4.5	11.5	10.0	9.1
Westconnaug Reservoir	2.5	2.5	2.0	2.5	2.5	2.5	2.5	2.0	2.0	2.5	2.0	2.0	2.3
Barden Reservoir	1.5	1.5	2.0	3.0	5.0	3.5	2.5	3.0	4.0	3.0	3.0	1.5	2.8
Cork Brook	7.0	4.5	6.5	6.0	4.5	3.0	4.5	4.0	3.5	7.0	**	4.5	5.0
Rush Brook	11.5	3.5	2.5	3.5	3.0	4.0	3.0	3.0	3.0	6.0	2.5	3.0	4.0
Huntinghouse Brook	10.0	2.5	4.0	3.0	2.5	3.0	3.0	3.0	2.5	**	**	2.5	3.6
Harrisdale Brook	2.5	8.0	2.5	2.5	2.0	2.5	2.0	1.5	3.0	2.0	2.0	1.5	2.7
Blanchard Brook	9.5	3.0	14.0	17.0	12.5	8.0	8.5	10.5	15.0	17.5	**	10.5	11.5
Moswansicut Pond	3.5	2.0	2.5	1.5	1.5	2.0	2.5	1.5	1.5	1.5	2.0	2.0	2.0
Regulating Reservoir	2.5	2.0	1.5	3.0	3.5	2.5	2.0	2.0	2.5	2.5	3.0	0.5	2.3
Quonapaug Brook	16.0	8.5	14.0	12.5	14.5	10.0	11.0	12.5	13.5	17.0	9.0	11.0	12.5
Hemlock Brook	2.0	2.0	4.5	4.0	5.0	5.5	4.0	4.0	2.5	2.5	2.5	2.5	3.4
Betty Pond Stream	**	**	3.0	5.0	9.5	2.5	3.0	3.0	2.5	2.0	3.0	2.0	3.6
Spruce Brook	7.5	3.5	6.0	4.5	6.5	5.5	6.5	5.0	4.5	3.5	3.0	1.5	4.8
Brandy Brook	3.5	2.5	2.5	1.5	1.5	3.0	2.0	1.5	2.0	2.5	4.0	2.0	2.4
Moswansicut-South	9.5	1.5	8.0	1.5	7.5	5.0	3.0	4.0	2.0	1.0	**	**	4.3
Windsor Brook	4.0	2.5	3.0	3.5	2.5	4.0	3.0	4.0	2.0	2.5	3.0	1.5	3.0
Paine Pond	**	**	**	**	7.0	5.0	4.0	3.5	5.5	3.0	5.5	3.5	4.6
Unnamed Brook-A	**	**	**	**	8.5	5.5	7.0	7.0	**	**	**	**	7.0
Unnamed Brook-B	**	**	**	**	5.0	5.0	5.5	8.0	**	**	**	**	5.9

*Parts per million, except pH

**No sample obtained--Dry.

NOTE: Unnamed Brook A is just north of Scituate Town Dump. Unnamed Brook B is southwest of the Foster Nike Site.

TABLE 12 (Continued)

WATER PURIFICATION WORKS

*CHEMICAL AND PHYSICAL CHARACTERISTICS OF WATER IN VARIOUS BROOKS AND RESERVOIRS
ON SCITUATE WATERSHED

YEAR ENDED SEPTEMBER 30, 1966

Monthly Analyses	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Avg. for Year
Alkalinity													
Ponaganset Reservoir	2.5	2.0	1.5	2.0	3.0	1.5	1.0	1.5	2.0	**	19.0	6.0	3.8
Coventry Brook	8.0	5.5	7.5	4.5	3.5	3.5	5.0	4.0	5.0	6.5	6.0	5.5	5.4
Wilbur Brook	9.0	6.0	4.0	5.0	2.5	3.0	4.0	3.5	6.0	6.5	4.0	4.5	4.8
Westconnaug Reservoir	11.5	9.0	9.0	8.5	3.5	3.5	5.5	4.5	3.5	4.5	6.0	5.5	6.2
Barden Reservoir	4.5	5.0	4.0	3.0	2.0	2.0	3.5	3.0	2.5	6.0	9.5	6.0	4.3
Cork Brook	5.0	4.0	3.5	3.5	2.0	2.0	3.0	3.5	3.5	4.5	**	3.0	3.4
Rush Brook	10.0	8.0	6.0	6.0	4.5	5.0	4.5	4.5	9.5	8.0	9.0	8.0	6.9
Huntinghouse Brook	12.0	10.5	4.5	6.0	2.5	4.0	4.0	4.5	9.5	**	**	9.5	6.7
Harrisdale Brook	11.5	10.5	12.0	10.5	5.0	5.5	8.0	8.0	10.5	11.0	12.5	10.5	9.6
Blanchard Brook	4.0	2.0	2.0	2.0	0.5	2.0	3.0	3.0	2.0	3.5	**	2.0	2.4
Moswansicut Pond	6.0	6.0	6.0	4.5	4.5	5.5	5.0	5.0	4.5	5.0	5.5	7.5	5.4
Regulating Reservoir	6.5	7.0	8.0	8.0	4.5	4.5	5.0	5.5	6.0	10.0	10.0	6.0	6.8
Quonapaug Brook	8.5	4.5	3.5	3.0	0.5	2.5	3.0	3.0	6.5	10.0	5.5	3.5	4.5
Hemlock Brook	3.5	4.5	3.5	3.5	3.0	2.0	3.0	3.0	4.0	5.5	6.0	4.5	3.8
Betty Pond Stream	**	**	6.0	7.0	4.0	3.5	4.5	4.0	3.5	3.0	2.5	4.0	4.2
Spruce Brook	6.0	5.0	3.5	3.0	2.0	2.5	3.0	2.5	3.0	3.5	5.5	4.0	3.6
Brandy Brook	10.5	9.5	8.0	8.0	6.5	5.5	6.0	7.5	9.0	10.0	8.5	7.5	8.0
Moswansicut-South	9.0	6.5	8.0	5.0	6.5	6.0	7.0	8.0	12.5	5.5	**	**	7.4
Windsor Brook	5.0	4.5	4.5	3.5	2.0	3.5	3.0	1.5	4.5	6.5	8.0	3.5	4.2
Paine Pond	**	**	**	**	3.0	3.5	3.5	4.0	3.5	2.5	1.5	3.0	3.1
Unnamed Brook-A	**	**	**	**	4.0	4.5	5.5	8.0	**	**	**	**	5.5
Unnamed Brook-B	**	**	**	**	4.5	2.5	2.5	2.5	**	**	**	**	3.0

*Parts per million.

**No sample obtained--Dry.

NOTE: Unnamed Brook A is just north of Scituate Town Dump. Unnamed Brook B is southwest of the Foster Nike Site.

TABLE 13

WATER PURIFICATION WORKS

CHEMICAL AND PHYSICAL CHARACTERISTICS OF WATER
IN VARIOUS PARTS OF THE DISTRIBUTION SYSTEM

YEAR ENDED SEPTEMBER 30, 1966

	Monthly Averages												Avg. for
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Year
pH													
Neutaconkanut Reservoir	10.0	10.0	10.1	10.1	10.1	10.0	10.1	10.1	9.9	9.8	9.9	9.9	10.0
Phenix Avenue, Cranston	10.0	10.0	10.1	10.1	10.1	10.0	10.1	10.1	9.9	9.8	9.9	9.9	10.0
Westminster St., Olneyville	10.0	10.0	10.1	10.1	10.1	10.0	10.1	10.1	9.9	9.8	9.9	9.9	10.0
*1291 Reservoir Ave., Cranston	10.0	10.0	10.1	10.1	10.1	10.0	10.1	10.1	9.9	9.8	9.9	9.9	10.0
750 Reservoir Ave., Cranston	10.0	10.0	10.1	10.1	10.1	10.1	10.2	10.1	9.9	9.9	9.9	9.9	10.0
Biltmore Hotel	10.0	10.0	10.1	10.1	10.1	10.1	10.1	10.1	9.9	9.8	9.9	9.9	10.0
Dexter Manor	10.0	10.0	10.1	10.1	10.1	10.1	10.2	10.1	9.9	9.9	9.9	9.9	10.0
State Office Building	10.0	10.0	10.1	10.1	10.1	10.1	10.2	10.1	10.0	9.9	9.9	9.9	10.0
**Longview Reservoir	10.1	10.1	10.2	10.2	10.2	10.1	10.2	10.1	10.0	9.9	10.0	9.9	10.1
***Police & Fire Hdqrs., Prov.	10.0	10.0	10.1	10.1	10.1	10.1	10.2	10.1	9.9	9.8	9.9	9.9	10.1
Phenolphthalein Alkalinity													
Neutaconkanut Reservoir	7.2	6.3	5.9	5.7	5.8	6.3	6.0	6.0	6.0	6.0	7.3	8.2	6.4
Phenix Avenue, Cranston	6.8	6.1	5.7	5.6	5.7	6.1	6.0	5.8	5.9	6.1	7.3	8.2	6.3
Westminster St., Olneyville	6.9	6.1	5.9	5.7	5.8	6.3	6.0	6.0	6.0	6.1	7.4	8.2	6.4
*1291 Reservoir Ave., Cranston	6.9	6.1	5.8	5.7	5.8	6.3	6.0	6.0	6.1	6.2	7.5	8.3	6.4
750 Reservoir Ave., Cranston	6.9	6.2	5.9	5.7	5.7	6.3	6.1	6.0	6.0	6.1	7.5	8.3	6.4
Biltmore Hotel	6.9	6.1	6.0	5.9	5.8	6.3	6.0	6.1	6.0	6.2	7.5	8.4	6.4
Dexter Manor	7.0	6.2	5.9	5.9	5.8	6.3	6.1	6.0	6.0	6.2	7.6	8.4	6.5
State Office Building	7.0	6.2	5.9	5.8	5.8	6.3	6.1	6.0	6.1	6.3	7.6	8.4	6.5
**Longview Reservoir	8.6	7.9	7.3	6.8	6.7	7.0	6.9	6.8	6.7	6.8	7.8	9.0	7.4
***Police & Fire Hdqrs., Prov.	6.9	6.2	6.0	5.8	5.8	6.3	6.0	6.0	6.1	6.3	7.6	8.4	6.5
Methyl Orange Alkalinity													
Neutaconkanut Reservoir	14.2	12.5	11.8	11.8	11.6	12.4	11.9	12.0	11.9	12.4	14.6	16.2	12.8
Phenix Avenue, Cranston	13.1	12.0	11.4	11.7	11.6	12.2	11.9	11.7	11.7	12.4	14.7	16.5	12.6
Westminster St., Olneyville	13.3	12.0	11.6	11.3	11.6	12.5	11.9	11.9	11.9	12.5	14.8	16.6	12.7
*1291 Reservoir Ave., Cranston	13.3	12.0	11.6	11.9	11.7	12.5	11.9	11.9	12.1	12.5	14.9	16.6	12.7
750 Reservoir Ave., Cranston	13.2	12.0	11.6	11.9	11.7	12.4	11.9	11.9	11.9	12.5	14.8	16.5	12.7
Biltmore Hotel	13.4	12.1	11.8	11.5	11.7	12.6	12.0	11.9	11.9	12.6	15.0	16.7	12.8
Dexter Manor	13.4	12.1	11.7	11.9	11.8	12.5	12.0	11.9	11.9	12.6	15.0	16.7	12.8
State Office Building	13.5	12.2	11.8	11.4	11.7	12.6	12.0	12.0	12.1	12.6	15.1	16.7	12.8
**Longview Reservoir	16.6	14.5	14.0	13.1	13.0	13.4	13.5	13.2	13.1	13.5	15.5	17.7	14.3
***Police & Fire Hdqrs., Prov.	13.5	12.1	11.7	11.9	11.8	12.5	12.0	11.9	12.0	12.7	15.0	16.6	12.8
Color													
Neutaconkanut Reservoir	3	3	2	2	2	2	3	3	3	3	3	3	3
Phenix Avenue, Cranston	3	2	2	2	3	2	2	3	3	3	3	3	3
Westminster St., Olneyville	3	2	2	2	3	2	2	3	3	2	3	3	3
*1291 Reservoir Ave., Cranston	3	2	2	2	2	2	2	3	3	3	3	3	3
750 Reservoir Ave., Cranston	3	2	2	2	2	2	3	3	2	3	3	3	3
Biltmore Hotel	3	2	2	2	3	2	3	3	3	3	3	3	3
Dexter Manor	3	2	2	2	3	2	3	3	3	3	3	3	3
State Office Building	3	2	2	2	3	2	3	3	3	3	3	3	3
**Longview Reservoir	4	3	3	3	3	3	3	3	3	4	3	4	3
***Police & Fire Hdqrs., Prov.	5	2	2	2	3	2	3	3	3	3	3	3	3
Iron													
Neutaconkanut Reservoir	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
Phenix Avenue, Cranston	.01	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.01	.00
Westminster St., Olneyville	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
*1291 Reservoir Ave., Cranston	.01	.01	.01	.00	.00	.00	.00	.00	.00	.01	.00	.01	.00
750 Reservoir Ave., Cranston	.01	.00	.01	.00	.01	.00	.00	.00	.00	.01	.01	.01	.01
Biltmore Hotel	.01	.01	.01	.01	.01	.01	.01	.01	.00	.01	.01	.01	.01
Dexter Manor	.01	.01	.01	.01	.01	.01	.01	.00	.00	.01	.01	.01	.01
State Office Building	.01	.01	.01	.01	.01	.01	.00	.00	.01	.01	.01	.01	.01
**Longview Reservoir	.03	.02	.02	.03	.04	.02	.02	.02	.03	.05	.04	.04	.03
***Police & Fire Hdqrs., Prov.	.06	.01	.01	.01	.02	.02	.01	.01	.01	.01	.01	.01	.02

*Changed to 1275 Reservoir Ave., Cranston on June 30.

**Sample obtained at Our Lady of Fatima Hospital, North Providence.

***Changed to Crown Hotel on October 13.

TABLE 13 (Continued)

WATER PURIFICATION WORKS

CHEMICAL AND PHYSICAL CHARACTERISTICS OF WATER
IN VARIOUS PARTS OF THE DISTRIBUTION SYSTEM

YEAR ENDED SEPTEMBER 30, 1966

	Monthly Averages												Avg. for
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Year
Chlorides													
Neutaconkanut Reservoir	6.0	6.0	6.1	6.0	6.1	6.0	6.0	6.2	5.8	5.0	5.1	5.7	5.8
Phenix Avenue, Cranston	6.0	6.0	6.0	6.0	6.1	6.0	6.0	6.1	5.6	5.0	5.1	5.7	5.8
Westminster St., Olneyville	6.0	6.0	6.1	6.0	6.1	6.0	6.0	6.2	5.7	5.0	5.0	5.7	5.8
*1291 Reservoir Ave., Cranston	6.0	6.0	6.1	6.0	6.1	6.0	6.1	6.2	5.7	5.0	5.1	5.7	5.8
750 Reservoir Ave., Cranston	6.0	6.0	6.0	6.0	6.1	6.0	6.1	6.2	5.6	5.0	5.1	5.7	5.8
Biltmore Hotel	6.0	6.0	6.0	6.0	6.1	6.0	6.1	6.1	5.7	5.0	5.1	5.6	5.8
Dexter Manor	6.0	6.0	6.1	6.0	6.1	6.0	6.1	6.1	5.7	5.0	5.0	5.7	5.8
State Office Building	6.1	6.0	6.1	6.0	6.1	6.0	6.1	6.1	5.7	5.1	5.1	5.7	5.8
**Longview Reservoir	6.0	6.0	6.0	6.0	6.1	6.0	6.0	6.1	5.6	5.0	5.1	5.6	5.8
***Police & Fire Hdqrs., Prov.	6.0	6.0	6.1	6.0	6.1	6.0	6.0	6.2	5.6	5.0	5.1	5.7	5.8
Nitrites													
Neutaconkanut Reservoir	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Phenix Avenue, Cranston	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Westminster St., Olneyville	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
*1291 Reservoir Ave., Cranston	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.001	.000
750 Reservoir Ave., Cranston	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Biltmore Hotel	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Dexter Manor	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
State Office Building	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.001	.000
**Longview Reservoir	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
***Police & Fire Hdqrs., Prov.	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Taste													
Neutaconkanut Reservoir	0	0	0	0	0	0	0	0	0	0	0	0	0
Phenix Avenue, Cranston	0	0	0	0	0	0	0	0	0	0	0	0	0
Westminster St., Olneyville	0	0	0	0	0	0	0	0	0	0	0	0	0
*1291 Reservoir Ave., Cranston	0	0	0	0	0	0	0	0	0	0	0	0	0
750 Reservoir Ave., Cranston	0	0	0	0	0	0	0	0	0	0	0	0	0
Biltmore Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Dexter Manor	0	0	0	0	0	0	0	0	0	0	0	0	0
State Office Building	0	0	0	0	0	0	0	0	0	0	0	0	0
**Longview Reservoir	0	0	0	0	0	0	0	0	0	0	0	0	0
***Police & Fire Hdqrs., Prov.	0	0	0	0	0	0	0	0	0	0	0	0	0
Odor													
Neutaconkanut Reservoir	0	0	0	0	0	0	0	0	0	0	0	0	0
Phenix Avenue, Cranston	0	0	0	0	0	0	0	0	0	0	0	0	0
Westminster St., Olneyville	0	0	0	0	0	0	0	0	0	0	0	0	0
*1291 Reservoir Ave., Cranston	0	0	0	0	0	0	0	0	0	0	0	0	0
750 Reservoir Ave., Cranston	0	0	0	0	0	0	0	0	0	0	0	0	0
Biltmore Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Dexter Manor	0	0	0	0	0	0	0	0	0	0	0	0	0
State Office Building	0	0	0	0	0	0	0	0	0	0	0	0	0
**Longview Reservoir	0	0	0	0	0	0	0	0	0	0	0	0	0
***Police & Fire Hdqrs., Prov.	0	0	0	0	0	0	0	0	0	0	0	0	0
Fluoride													
Neutaconkanut Reservoir	1.00	1.00	0.99	1.00	1.00	1.00	0.99	0.99	1.00	1.00	1.00	0.99	1.00
Phenix Avenue, Cranston	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00
Westminster St., Olneyville	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00
*1291 Reservoir Ave., Cranston	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	1.00	0.97	0.99
750 Reservoir Ave., Cranston	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	0.99	1.00	1.00	0.99	1.00
Biltmore Hotel	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Dexter Manor	1.00	0.99	0.99	1.00	0.99	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00
State Office Building	1.00	0.99	1.00	1.00	0.99	0.99	1.00	1.00	1.00	1.00	1.00	0.99	1.00
**Longview Reservoir	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00
***Police & Fire Hdqrs., Prov.	1.00	0.99	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00

*Changed to 1275 Reservoir Ave., Cranston on June 30.

**Sample obtained at Our Lady of Fatima Hospital, North Providence.

***Changed to Crown Hotel on October 13.

TABLE 14

WATER PURIFICATION WORKS

BACTERIOLOGICAL EXAMINATION OF WATER IN PROCESS OF FILTRATION

YEAR ENDED SEPTEMBER 30, 1966

Bacteria per ML. (48 Hours on Agar at 20° C.)

1965-1966	Raw-A.M.			Raw-P.M.			Settled			*Effluent-A.M.			*Effluent-P.M.			Tap		
	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.
October	150	25	93	245	25	115	270	30	144	130	9	64	140	20	83	40	0	6
November	170	5	50	130	10	48	1,500	6	610	630	6	184	900	10	308	3	0	0
December	225	9	30	200	2	31	1,800	40	621	300	3	70	220	1	67	10	0	1
January	46	1	18	40	5	17	5,500	4	1,144	270	0	34	560	0	72	1	0	0
February	180	3	23	50	4	19	3,700	0	960	480	0	30	80	0	39	3	0	1
March	102	6	31	70	1	26	1,800	25	347	140	0	43	180	7	55	25	0	11
April	75	1	17	45	3	13	475	25	119	130	1	38	60	5	32	20	0	10
May	150	5	28	110	2	25	800	12	279	350	10	120	220	15	107	18	0	2
June	50	5	24	45	4	19	150	8	43	70	4	22	90	1	21	4	0	0
July	100	3	43	70	0	32	65	0	22	30	2	11	107	0	18	2	0	0
August	180	10	51	85	11	42	180	20	67	60	4	23	75	2	37	1	0	0
September	90	8	40	90	10	39	180	30	103	60	10	30	80	10	40	4	0	1
For Year	225	1	37	245	0	36	5,500	0	372	630	0	56	900	0	73	40	0	3

*Before treatment with chlorine and sodium silicofluoride.

A.M. refers to samples obtained in the morning; P.M. to samples obtained in the afternoon

TABLE 15

WATER PURIFICATION WORKS

BACTERIOLOGICAL EXAMINATION OF WATER IN PROCESS OF FILTRATION

YEAR ENDED SEPTEMBER 30, 1966

Bacteria per ML. (24 Hours on Agar at 35° C.)

1965-1966	Raw-A.M.			Raw-P.M.			Settled			*Effluent-A.M.			*Effluent-P.M.			Tap		
	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.
October	900	3	70	200	0	35	25	0	2	15	0	1	30	0	3	27	0	2
November	52	0	7	10	0	3	25	0	3	125	0	8	45	0	5	8	0	1
December	16	0	2	25	0	3	14	0	2	13	0	2	19	0	2	20	0	2
January	31	0	3	20	0	4	6	0	1	10	0	2	40	0	2	17	0	2
February	45	0	3	3	0	1	4	0	0	1	0	0	10	0	1	14	0	1
March	12	0	1	32	0	3	7	0	0	2	0	0	3	0	0	77	0	3
April	22	0	3	48	0	6	30	0	3	16	0	1	25	0	3	5	0	0
May	2	0	0	2	0	1	6	0	1	5	0	1	9	0	1	3	0	0
June	16	0	4	5	0	2	4	0	1	10	0	2	10	0	1	15	0	2
July	30	0	10	20	0	8	9	0	2	40	0	7	5	0	1	5	0	1
August	55	0	19	38	0	13	30	0	3	30	0	3	7	0	1	4	0	0
September	20	0	8	32	1	11	90	0	4	5	0	1	2	0	0	15	0	1
For Year	900	0	11	200	0	8	90	0	2	125	0	2	45	0	2	77	0	1

*Before treatment with chlorine and sodium silicofluoride.

A.M. refers to samples obtained in the morning; P.M. to samples obtained in the afternoon.

TABLE 16

WATER PURIFICATION WORKS

BACTERIOLOGICAL EXAMINATION OF WATER IN PROCESS OF FILTRATION

YEAR ENDED SEPTEMBER 30, 1966

Coliform Bacteria

	Raw-A.M.			Raw-P.M.			Settled			*Effluent-A.M.			*Effluent-P.M.			Tap		
	No. of 10 ml. of Por- tions Tested	No. of Tests Con- firmed	Index per ml.	No. of 10 ml. of Por- tions Tested	No. of Tests Con- firmed	Index per ml.	No. of 10 ml. of Por- tions Tested	No. of Tests Con- firmed	Index per ml.	No. of 10 ml. of Por- tions Tested	No. of Tests Con- firmed	Index per ml.	No. of 10 ml. of Por- tions Tested	No. of Tests Con- firmed	Index per ml.	No. of 10 ml. of Por- tions Tested	No. of Tests Con- firmed	Index per ml.
1965																		
1966																		
October	75	67	0.089	40	39	0.098	50	0	0.000	50	1	0.002	40	1	0.003	125	0	0.000
November	72	67	.093	40	35	.088	48	2	.004	48	0	.000	40	0	.000	120	0	.000
December	78	63	.081	42	37	.088	52	4	.008	52	0	.000	42	0	.000	130	0	.000
January	75	50	.067	42	25	.060	50	3	.006	50	0	.000	42	0	.000	125	0	.000
February	69	3	.004	38	3	.008	46	0	.000	46	0	.000	38	0	.000	115	0	.000
March	81	5	.006	46	1	.002	54	1	.002	54	1	.002	46	0	.000	135	0	.000
April	78	21	.027	40	17	.043	52	0	.000	52	0	.000	40	0	.000	130	0	.000
May	72	4	.006	40	9	.023	48	1	.002	48	0	.000	40	0	.000	120	0	.000
June	78	8	.010	44	3	.007	52	1	.002	52	0	.000	44	0	.000	130	0	.000
July	75	2	.003	40	2	.005	50	1	.002	50	0	.000	40	0	.000	125	0	.000
August	78	11	.014	44	4	.009	52	3	.006	52	1	.002	44	0	.000	130	1	.001
September	75	30	.040	42	16	.038	50	3	.006	50	1	.002	42	0	.000	125	1	.001
For Year	906	331	.037	498	191	.038	604	19	.003	604	4	.001	498	1	.000	1,510	2	.000

*Before treatment with chlorine and sodium silicofluoride.

A.M. refers to samples obtained in the morning, P.M. to samples obtained in the afternoon.

TABLE 17

WATER PURIFICATION WORKS

BACTERIOLOGICAL EXAMINATION OF WATER IN VARIOUS BROOKS AND RESERVOIRS
ON SCITUATE WATERSHED

YEAR ENDED SEPTEMBER 30, 1966

Monthly Analysis	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Avg. for Year
Bacteria per Ml. 48 Hours on Agar at 20° C.													
Ponaganset Reservoir	350	150	500	100	70	130	105	100	120	*	5,400	2,000	820
Coventry Brook	4,000	1,440	350	640	1,150	155	175	270	350	600	1,700	400	936
Wilbur Brook	3,600	750	2,000	180	250	250	1,250	3,700	1,000	750	300	1,800	1,319
Westconnaug Reservoir	650	320	2,300	330	420	650	550	700	1,200	400	400	170	674
Barden Reservoir	500	60	130	55	260	150	150	75	4,400	1,000	1,000	500	690
Cork Brook	1,100	500	450	130	250	200	400	170	850	200	*	105	396
Rush Brook	6,400	2,500	11,000	400	360	360	800	400	650	800	600	1,000	2,106
Huntinghouse Brook	6,000	1,200	1,750	700	270	300	600	480	600	*	*	1,300	1,320
Harrisdale Brook	2,100	600	850	600	450	320	480	600	800	520	250	550	677
Blanchard Brook	1,700	900	900	360	145	200	1,000	800	3,000	850	*	750	964
Moswansicut Pond	900	450	1,900	625	140	180	200	370	250	750	500	200	539
Regulating Reservoir	220	350	4,300	4,400	780	450	100	90	600	900	600	650	1,120
Quonapaug Brook	3,000	1,500	1,400	750	130	340	400	280	1,800	600	1,200	100	958
Hemlock Brook	250	250	3,240	430	390	420	425	200	2,200	1,000	240	100	762
Betty Pond Stream	*	*	3,000	235	2,100	990	500	700	400	600	520	110	916
Spruce Brook	1,200	1,000	550	330	110	330	450	400	1,100	1,300	750	450	664
Brandy Brook	400	450	1,100	1,020	480	750	610	450	300	400	130	280	531
Moswansicut-South	9,700	540	4,300	2,500	1,260	640	560	300	2,200	1,200	*	*	2,320
Windsor Brook	2,100	150	1,300	600	90	180	400	510	2,700	4,500	2,800	600	1,328
Paine Pond	*	*	*	*	800	430	415	500	500	250	1,300	320	564
Unnamed Brook--A	*	*	*	*	450	510	3,200	600	*	*	*	*	1,190
Unnamed Brook--B	*	*	*	*	210	110	220	120	*	*	*	*	165
Bacteria per Ml. 24 Hours on Agar at 35° C.													
Ponaganset Reservoir	70	7	9	5	3	5	15	10	50	*	3,600	920	427
Coventry Brook	580	115	95	35	15	10	25	25	100	175	250	65	124
Wilbur Brook	720	75	450	40	12	30	210	700	170	300	100	450	271
Westconnaug Reservoir	90	20	100	30	55	50	180	100	320	200	150	120	118
Barden Reservoir	100	15	23	5	45	35	45	15	600	600	600	190	189
Cork Brook	440	25	40	15	36	7	35	30	300	70	*	30	93
Rush Brook	1,420	100	210	25	25	40	50	40	175	1,250	200	120	305
Huntinghouse Brook	900	82	160	38	20	15	120	50	140	*	*	170	170
Harrisdale Brook	1,000	45	75	75	72	30	90	105	200	280	300	400	223
Blanchard Brook	260	145	120	80	820	50	250	400	750	450	*	150	316
Moswansicut Pond	160	43	250	40	65	10	65	100	115	200	150	200	117
Regulating Reservoir	45	10	450	140	45	38	25	20	240	800	300	250	197
Quonapaug Brook	960	100	150	75	15	35	55	60	600	150	170	80	204
Hemlock Brook	36	12	185	20	15	30	120	50	120	175	120	30	76
Betty Pond Stream	*	*	170	45	70	135	180	360	420	540	450	115	249
Spruce Brook	150	55	100	40	46	70	100	200	350	250	200	35	133
Brandy Brook	65	20	1,600	85	40	110	130	60	100	80	50	90	203
Moswansicut-South	420	15	660	500	50	130	40	90	500	750	*	*	316
Windsor Brook	150	67	510	40	12	30	25	55	600	1,900	350	60	317
Paine Pond	*	*	*	*	90	18	125	125	400	410	800	350	290
Unnamed Brook--A	*	*	*	*	15	20	250	60	*	*	*	*	86
Unnamed Brook--B	*	*	*	*	16	5	20	20	*	*	*	*	15

*No Sample Obtained--Dry.

NOTE: Unnamed Brook A is just North of Scituate Town Dump. Unnamed Brook B is southwest of the Foster Nike Site.

TABLE 17 (Continued)

WATER PURIFICATION WORKS

BACTERIOLOGICAL EXAMINATION OF WATER IN VARIOUS BROOKS AND RESERVOIRS
ON SCITUATE WATERSHED

YEAR ENDED SEPTEMBER 30, 1966

Monthly Analyses	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Coliform Bacteria Index per 100 Ml.												
Ponaganset Reservoir	6	0	6	0	0	6	25	0	25	*	110+	110+
Coventry Brook	110+	110+	70	25	6	25	0	25	70	70	110+	110+
Wilbur Brook	110+	70	70	110+	110+	25	70	25	110+	70	110+	110+
Westconnaug Reservoir	70	25	70	70	70	70	70	110+	110+	110+	20	110+
Barden Reservoir	6	0	6	0	13	25	6	0	70	110+	110+	110+
Cork Brook	110+	25	25	25	6	5	6	70	70	70	*	110+
Rush Brook	70	25	110+	70	25	25	110+	13	13	70	20	110+
Huntinghouse Brook	110+	25	110+	70	6	70	110+	110+	110+	*	*	70
Harrisdale Brook	110+	6	25	110+	70	0	25	25	70	70	70	70
Blanchard Brook	110+	110+	70	110+	70	110+	110+	110+	110+	70	*	110+
Moswansicut Pond	110+	25	70	25	25	70	110+	70	6	70	70	110+
Regulating Reservoir	0	6	25	25	70	6	0	0	5	110+	70	110+
Quonapaug Brook	110+	110+	70	70	13	25	70	25	110+	110+	110+	110+
Hemlock Brook	13	13	70	25	6	25	6	6	110+	70	70	110+
Betty Pond Stream	*	*	25	0	6	110+	6	25	70	70	10	110+
Spruce Brook	25	25	25	25	6	0	13	6	13	110+	110+	110+
Brandy Brook	70	25	110+	70	6	0	110+	70	25	110+	13	110+
Moswansicut-South	110+	13	110+	110+	70	110+	110+	110+	20	110+	*	*
Windsor Brook	25	70	70	25	70	0	110+	6	70	110+	25	70
Paine Pond	*	*	*	*	36	15	23	43	75	460	150	43
Unnamed Brook--A	*	*	*	*	0	39	150	460	*	*	*	*
Unnamed Brook--B	*	*	*	*	6	6	6	0	*	*	*	*

*No sample obtained--Dry.

NOTE: Unnamed Brook A is just north of Scituate Town Dump. Unnamed Brook B is southwest of the Foster Nike Site.

TABLE 18

WATER PURIFICATION WORKS

BACTERIOLOGICAL EXAMINATION OF WATER IN VARIOUS PARTS
OF THE DISTRIBUTION SYSTEM

YEAR ENDED SEPTEMBER 30, 1966

Monthly Averages	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Avg. for Year
Bacteria per Ml. 48 Hours on Agar at 20° C.													
Neutaconkanut Reservoir	0	1	0	0	7	5	1	2	0	0	0	0	1
Phenix Avenue, Cranston	8	1	0	0	15	17	6	2	2	0	0	0	4
Westminster St., Olneyville	0	0	0	1	10	10	1	1	1	0	0	0	2
*1291 Reservoir Ave., Cranston	4	0	0	0	22	10	5	1	1	0	0	2	4
750 Reservoir Ave., Cranston	4	1	0	0	28	19	6	2	2	0	1	0	5
Biltmore Hotel	4	0	0	0	1	9	5	1	0	0	0	0	2
Dexter Manor	2	1	0	0	2	5	5	1	1	0	0	0	1
State Office Building	4	0	0	0	0	3	5	2	0	1	0	0	1
**Longview Reservoir	0	0	0	0	1	3	7	4	0	0	1	0	1
***Police & Fire Hdqtrs., Prov.	2	2	0	0	1	11	5	2	0	0	0	0	2
Bacteria per Ml. 24 Hours on Agar at 35° C.													
Neutaconkanut Reservoir	4	4	1	0	0	0	1	0	0	0	0	0	1
Phenix Avenue, Cranston	5	3	1	2	0	2	0	0	0	1	0	0	1
Westminster St., Olneyville	0	2	1	1	0	0	0	1	1	0	0	0	1
*1291 Reservoir Ave., Cranston	1	1	1	0	1	0	1	0	1	1	1	0	1
750 Reservoir Ave., Cranston	1	5	1	1	1	0	1	0	0	0	0	0	1
Biltmore Hotel	1	1	1	1	1	0	1	1	1	0	0	0	1
Dexter Manor	3	3	1	1	0	0	1	3	1	1	0	2	1
State Office Building	2	1	1	1	0	0	1	1	1	1	0	1	1
**Longview Reservoir	1	2	1	2	0	1	0	0	1	1	0	1	1
***Police & Fire Hdqtrs., Prov.	0	2	1	1	0	0	0	0	1	1	0	1	1
Coliform Bacteria Index per Ml.													
Neutaconkanut Reservoir	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.003	0.000	0.001
Phenix Avenue, Cranston	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Westminster St., Olneyville	.000	.000	.004	.000	.000	.000	.000	.000	.000	.001	.000	.000	.000
*1291 Reservoir Ave., Cranston	.004	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.004	.001
750 Reservoir Ave., Cranston	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.001	.000
Biltmore Hotel	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Dexter Manor	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
State Office Building	.000	.000	.002	.000	.000	.000	.000	.000	.000	.003	.000	.000	.000
**Longview Reservoir	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.001	.000
***Police & Fire Hdqtrs., Prov.	.003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*Changed to 1275 Reservoir Ave., Cranston on June 30.

**Sample obtained at Our Lady of Fatima Hospital, North Providence.

***Changed to Crown Hotel on October 13.

TABLE 19
WATER PURIFICATION WORKS
MINERAL ANALYSIS OF WATER - YEAR ENDED SEPTEMBER 30, 1966

Parts per Million	Raw Water*					Tap Water				
	1965 Oct.- Dec.	Jan.- Mar.	1966 Apr.- June	July- Sept.	Avg.	1965 Oct.- Dec.	Jan.- Mar.	1966 Apr.- June	July- Sept.	Avg.
Aluminum	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Arsenic		0.00		0.00	0.00		0.00		0.00	0.00
Calcium	3.1	3.4	3.5	4.2	3.6	11.1	10.2	10.4	11.6	10.8
Chloride	6.0	6.0	5.8	5.1	5.7	6.0	6.0	5.9	5.2	5.8
Copper	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Fluoride	0.15	0.15	0.15	0.15	0.15	0.99	1.00	0.99	1.00	1.00
Hardness	11	12	11	12	12	27	29	28	30	29
Iron	0.09	0.11	0.06	0.17	0.11	0.02	0.02	0.02	0.02	0.02
Lead	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Magnesium	0.25	0.25	0.70	0.30	0.38	0.15	0.15	0.50	0.25	0.26
Manganese	0.04	0.03	0.04	0.15	0.06	0.00	0.00	0.00	0.00	0.00
Phenolic Compounds		0.000		0.000	0.000		0.000		0.000	0.000
Selenium		0.00		0.00	0.00		0.00		0.00	0.00
Silica	3.6	3.6	4.5	4.2	4.0	3.6	3.6	4.5	4.3	4.0
Sulphate	8.8	9.0	10.0	6.9	8.7	14.4	14.8	15.5	12.4	14.3
Total Solids	40	35	36	46	39	49	46	57	57	52
Loss on Ignition	16	18	14	18	17	16	16	22	20	18
Total Alkalinity	4.5	4.1	3.8	4.0	4.1	12.4	11.9	12.0	14.8	12.8
Phenolphthalein Alkalinity	0.0	0.0	0.0	0.0	0.0	6.3	6.0	6.0	7.3	6.4
Zinc		0.0		0.0	0.0		0.0		0.0	0.0

*Water from bottom of Scituate Reservoir as received at Purification Works.

TABLE 20

WATER PURIFICATION WORKS

SANITARY CHEMICAL ANALYSIS (P.P.M.) - YEAR ENDED SEPTEMBER 30, 1966

	Raw Water*										Tap Water									
	Ammonia						Dissolved Oxygen		Loss on Igni-		Ammonia				Dissolved Oxygen		Loss on			
	Free	Alb.	Ni- trites	Ni- trates	Chlo- rides	P.P.M.	% Sat.	Total Solids			Free	Alb.	Ni- trites	Ni- trates	Chlo- rides	P.P.M.	% Sat.	Total Solids		
1965																				
1966																				
October	0.015	0.080	0.000	0.01	6.0	10.4	93.0	41	15	0.000	0.039	0.000	0.01	6.0	---	--	62	17		
November	.007	.065	.000	.02	6.0	11.7	90.0	42	20	.003	.033	.000	.02	6.0	---	--	46	19		
December	.010	.074	.000	.02	6.0	12.8	94.8	36	14	.010	.048	.000	.03	6.0	---	--	39	12		
January	.023	.074	.000	.02	6.0	13.3	93.6	35	12	.017	.039	.000	.02	6.0	---	--	41	11		
February	.030	.072	.001	.02	6.0	12.7	91.4	26	21	.014	.036	.000	.02	6.0	---	--	39	15		
March	.029	.066	.000	.02	6.0	12.4	91.8	44	21	.011	.033	.000	.02	6.0	---	--	59	21		
April	.026	.074	.000	.03	6.0	12.6	97.9	32	16	.009	.085	.000	.03	6.0	---	--	44	19		
May	.028	.079	.000	.04	6.0	10.8	94.1	36	6	.037	.071	.000	.03	6.0	---	--	58	18		
June	.023	.068	.001	.05	5.5	9.2	82.1	40	21	.016	.044	.000	.07	5.8	---	--	68	29		
July	.026	.066	.000	.06	5.0	7.3	65.7	43	19	.009	.044	.000	.06	5.0	---	--	65	25		
August	.048	.097	.000	.08	5.1	5.5	51.9	42	17	.020	.063	.000	.09	5.1	---	--	53	18		
September	.074	.080	.000	.03	5.3	4.8	45.5	53	19	.017	.047	.000	.08	5.6	---	--	52	17		
Averages	0.028	0.075	0.000	0.03	5.7	10.3	82.7	39	17	0.014	0.049	0.000	0.04	5.8	---	--	52	18		

*Water from bottom of Scituate Reservoir as received at Purification Works.

TABLE 21

WATER PURIFICATION WORKS

LABORATORY EXAMINATIONS MADE DURING THE FISCAL YEAR ENDED SEPTEMBER 30, 1966

Source of Water Tested	Frequency of Test or Examination	Number of Tests or Analyses Made During the Fiscal Year						Total
		Chemical	Bacteri- ological	Micro- scopical	Sanitary Chemical	Mineral	Miscel- laneous	
I Brooks and Streams on Watershed Fourteen Brooks, Two Streams and One Pond	Monthly	1,484	2,230		128			3,842
II Smaller Storage Reservoirs on Watershed								
Regulating Reservoir	Monthly	84	96					180
Westconnaug Reservoir	Monthly	84	112					196
Barden Reservoir	Monthly	84	96					180
Moswansicut Pond	Monthly	84	108					192
Ponaganset Reservoir	Monthly	77	81					158
III Scituate Reservoir								
Surface Water	Bi-Weekly	208	326	26	154			714
Subsurface Water (See Purif. Wks.--Raw Water)								
IV Pawtuxet River--Below Gainer Dam								
Gainer Dam Meter Chamber	Bi-Weekly	182			154			336
Fiskeville, R. I.	Bi-Weekly	182			154			336
Twelve other locations on Pawtuxet River	Bi-Weekly	2,340	1,838		2,176			6,354
V Water Purification Works								
Raw Water (from Bottom of Scituate Reservoir)	Daily	2,976	3,780		1,436		359	8,551
Raw Water (from Bottom of Scituate Reservoir)	Bi-Weekly			26	26			52
Raw Water (from Bottom of Scituate Reservoir)	Monthly				72			72
*Raw Water (from Bottom of Scituate Reservoir)	Every 13 weeks					36		36
Aerated Influent	Daily	718						718
Mixer	Daily	1,824						1,824
Settled	Daily	2,456	1,231				359	4,046
Settled	Bi-Weekly			26	26			52
Settled	Monthly				48			48
Filtered	Daily	1,077						1,077
Filtered	Monthly				48			48
Unchlorinated Effluent	Daily	3,174	1,214		1,436			5,824
Unchlorinated Effluent	Bi-Weekly			26	26			52
Unchlorinated Effluent	Monthly				24			24
Chlorinated Effluent	Daily	1,512	1,764		1,260			4,536
Raw Water (from Bottom of Scituate Reservoir)	Daily at 3:00 P.M.	996	1,202		996			3,194
Unchlorinated Effluent	Daily at 3:00 P.M.	996	1,002		996			2,994

*Composite of 13 Weekly Samples.

TABLE 21 (Continued)

WATER PURIFICATION WORKS

LABORATORY EXAMINATIONS MADE DURING THE FISCAL YEAR ENDED SEPTEMBER 30, 1966

Source of Water Tested	Frequency of Test or Examination	Number of Tests or Analyses Made During the Fiscal Year						Total
		Chemical	Bacteri- ological	Micro- scopical	Sanitary Chemical	Mineral	Miscel- laneous	
VI Neutaconkanut Distribution Reservoir								
Sample from nearby Tap	Daily	1,512	1,772		1,008			4,292
Sample from nearby Tap	Bi-Weekly			26				26
VII Longview Distribution Reservoir								
Sample from nearby Tap	Daily	1,512	1,766		1,008			4,286
Sample from nearby Tap	Bi-Weekly			26				26
VIII Distribution System								
Providence Journal Bldg. Tap Water	Daily	2,416	2,116		1,510		302	6,344
Providence Journal Bldg. Tap Water	Bi-Weekly			26				26
Providence Journal Bldg. Tap Water	Monthly				60			60
*Providence Journal Bldg. Tap Water	Every 13 Weeks					32		32
**Sectional Tests	Monthly	768	480		360			1,608
Consumers' Complaints (36 during the year)		802	305		253			1,360
Disinfection of Newly Laid Mains			891		93			984
***Sectional Tests	Daily	10,458	12,221		6,972			29,651
IX Miscellaneous Tests								
Coagulation Tests to Determine Chemical Dosages								
Analysis of Ferri-Floc used for Treatment		57					19	76
Analysis of Quicklime used for Treatment		18					36	54
Analysis of Sod. Silicofluoride used for Treatment		4						4
Water, Filter Sand and Other Materials		1,680	3,969		687		172	6,508
Totals		39,765	38,600	182	21,111	68	1,247	100,973

*Composite of 13 Weekly Samples.

**Samples from 10 Random Dwellings (location changed monthly).

***Samples from seven fixed locations.

TABLE 22
WATER DISTRIBUTION SYSTEM
NEUTACONKANUT HIGH SERVICE PUMPING STATION
OPERATING STATISTICS - YEAR ENDED SEPTEMBER 30, 1966

	Electrically-Driven Pumps								Gasoline Engine-Driven Pump			
	No. 1 10" Pump 2700 GPM. TDH 90'		No. 2 12" Pump 3800 GPM. TDH 104'		No. 3 16" Pump 7000 GPM. TDH 96'		Power Used*		No. 4 16" Pump 7000 GPM. TDH 96'			
1965	Operated		Operated		Operated				**Operated		Gas.	Oil
1966	Hours and		Hours and		Hours and				Hours and		Used	Used
	Days	Minutes	Days	Minutes	Days	Minutes	KWH	Cost	Days	Minutes	Gals.	Qts.
October	7	105-30	30	630-30	0	0-00	80,000	\$1,190.25	4	4-00	110	0
November	0	0-00	30	704-05	0	0-00	76,500	1,150.14	3	3-00	100	0
December	1	2-30	31	735-00	0	0-00	77,000	1,154.15	5	5-00	152	0
January	0	0-00	31	740-00	0	0-00	89,000	1,259.95	4	4-00	108	0
February	0	0-00	28	668-00	0	0-00	79,000	1,162.85	4	4-00	230	0
March	0	0-00	31	739-00	0	0-00	79,000	1,162.85	5	5-00	50	0
April	0	0-00	30	715-00	0	0-00	85,000	1,228.72	4	4-00	110	0
May	2	1-50	31	736-30	0	0-00	79,000	1,155.73	4	4-00	110	0
June	0	0-00	28	551-30	10	160-30	90,000	1,370.45	5	5-00	155	0
July	1	8-00	28	518-30	16	211-30	95,000	1,439.34	4	4-00	109	0
August	4	24-30	31	604-00	12	108-00	85,000	1,336.63	5	5-00	146	0
September	3	15-30	30	697-00	0	0-00	81,500	1,276.52	4	4-00	90	0
Totals	18	157-50	359	8,039-05	38	480-00	996,000	\$14,887.58	51	51-00	1,470	0***

*Narragansett Electric Co. Power Rate G.

**Engine Test Run.

***112 Qts. required for oil change.

TABLE 22 (Continued)

WATER DISTRIBUTION SYSTEM

NEUTACONKANUT HIGH SERVICE PUMPING STATION

OPERATING STATISTICS - YEAR ENDED SEPTEMBER 30, 1966

	Electrically-Driven Pumps			Gasoline Engine-Driven Pump		Total Water Pumped Mil. Gals. Avg. per Day
	No. 1 10" Pump 2700 GPM. TDH 90'	No. 2 12" Pump 3800 GPM. TDH 104'	No. 3 16" Pump 7000 GPM. TDH 96'	No. 4 16" Pump 7000 GPM. TDH 96'	For Month	
	Water Pumped Mil. Gals.	Water Pumped Mil. Gals.	Water Pumped Mil. Gals.	Water Pumped Mil. Gals.		
1965-1966						
October	19.54	179.45	0	1.83	200.82	6.48
November	0	201.98	0	1.30	203.28	6.78
December	0.52	210.97	0	2.31	213.80	6.90
January	0	212.53	0	1.81	214.34	6.91
February	0	192.10	0	1.85	193.95	6.93
March	0	212.19	0	2.26	214.45	6.92
April	0	205.34	0	1.81	207.15	6.91
May	3.16	208.10	0	1.80	213.06	6.87
June	0	157.75	68.64	2.24	228.63	7.62
July	1.56	145.61	92.22	1.80	241.19	7.78
August	7.44	167.03	46.08	2.20	222.75	7.19
September	3.13	198.52	0	1.70	203.35	6.78
Totals	35.35	2,291.57	206.94	22.91	2,556.77	7.00

TABLE 23

WATER DISTRIBUTION SYSTEM

BATH STREET HIGH SERVICE PUMPING STATION

OPERATING STATISTICS - YEAR ENDED SEPTEMBER 30, 1966

1965-1966	Electrically-Driven Pumps						Gasoline Engine-Driven Pump		
	Pump No. 1 2500 GPM. TDH 100'		Pump No. 2 2500 GPM. TDH 100'		Power Used*		Pump No. 3 5000 GPM. TDH 100'; 150 HP Climax Engine		Gas. Used Gals.
	Operated Hours and Minutes		Operated Hours and Minutes				**Operated Hours and Minutes		
	Days	Minutes	Days	Minutes	KWH	Cost	Days	Minutes	
October	25	208-15	25	222-45	28,980	\$605.35	1	1-00	
November	23	145-00	22	171-30	20,160	490.44	5	5-00	88
December	21	162-15	13	67-40	14,980	409.68	4	4-00	64
January	18	133-30	12	109-00	15,540	413.66	4	4-00	82
February	14	112-30	14	114-30	15,960	390.56	4	4-00	130
March	21	195-30	10	89-00	16,380	396.92	5	5-00	10
April	17	179-00	14	132-30	20,860	497.19	4	4-00	64
May	22	196-30	23	223-00	22,960	523.85	5	5-00	63
June	26	300-30	26	323-45	36,260	666.08	3	3-00	66
July	31	409-45	31	376-00	47,600	800.28	1	1-00	10
August	29	349-15	26	323-45	38,500	690.61	3	3-00	55
September	26	238-00	23	211-00	29,960	596.84	3	3-00	42
Totals	273	2,630-00	239	2,364-25	308,140	\$6481.46	42	42-00	692

*Narragansett Electric Co. Power Rate G.

**Engine Test Run.

TABLE 23 (Continued)

WATER DISTRIBUTION SYSTEM

BATH STREET HIGH SERVICE PUMPING STATION

OPERATING STATISTICS - YEAR ENDED SEPTEMBER 30, 1966

	Electrically-Driven Pumps		Gasoline Engine-Driven Pump	Total Water Pumped	
	Pump No. 1 2500 GPM. TDH 100'	Pump No. 2 2500 GPM. TDH 100'	Pump No. 3 5000 GPM. TDH 100' 150 HP Climax Engine	Mil.Gals.	
	Water Pumped Mil. Gals.	Water Pumped Mil. Gals.	Water Pumped Mil. Gals.	For Month	Avg. per Day
1965-1966					
October	31.45	33.79	0.16	65.40	2.11
November	21.89	25.99	1.40	49.28	1.64
December	26.03	10.91	1.08	38.02	1.23
January	21.48	17.36	1.08	39.92	1.29
February	18.20	18.35	1.17	37.72	1.35
March	31.40	14.29	1.45	47.14	1.52
April	28.71	20.96	1.13	50.80	1.69
May	29.55	33.78	1.41	64.74	2.09
June	41.60	46.50	0.84	88.94	2.96
July	57.06	52.03	0.26	109.35	3.53
August	48.96	45.03	0.83	94.82	3.06
September	34.97	30.47	0.86	66.30	2.21
Totals	391.30	349.46	11.67	752.43	2.06

TABLE 24

WATER DISTRIBUTION SYSTEM

AQUEDUCT DISTRIBUTION RESERVOIR*

OPERATING STATISTICS - YEAR ENDED SEPTEMBER 30, 1966

1965 1966	7 A.M. Statistics on First Day of Month		Water Level			Operating Characteristics During Month						Daily Storage Fluctuation--M.G.		
	Water Level	Storage Mil.Gals.	Max.	Min.	Avg.**	Storage--Mil.Gals.			Daily Water Level Fluctuation--Ft.			Max.	Min.	Avg.
						Max.	Min.	Avg.**	Max.	Min.	Avg.			
October	229.59	41.04	230.32	226.93	229.52	42.27	36.48	40.92	3.37	1.21	2.08	5.76	2.07	3.47
November	229.58	41.02	230.29	226.89	229.71	42.22	36.41	41.25	3.05	1.30	2.05	5.22	2.23	3.51
December	229.10	40.20	230.15	225.30	229.35	41.99	33.68	40.63	3.47	1.34	2.14	5.95	2.30	3.67
January	228.50	39.18	230.29	226.44	229.44	42.22	35.64	40.78	2.71	1.11	2.01	4.64	1.91	3.45
February	229.46	40.82	230.19	226.65	229.63	42.06	36.00	41.11	3.33	1.14	1.94	5.71	1.93	3.29
March	229.54	40.96	230.35	226.56	229.42	42.32	35.85	40.75	2.62	0.94	1.84	4.51	1.61	3.18
April	229.59	41.04	230.16	226.95	229.48	42.00	36.52	40.85	2.74	0.83	1.94	4.69	1.43	3.32
May	229.46	40.82	230.29	226.58	229.52	42.22	35.88	40.92	3.00	1.48	2.12	5.14	2.54	3.63
June	229.91	41.59	230.51	226.37	229.73	42.59	35.52	41.28	3.75	1.68	2.43	6.41	2.88	4.16
July	229.95	41.66	230.43	226.33	229.91	42.45	35.45	41.59	4.10	1.36	2.64	7.00	2.33	4.52
August	229.93	41.62	230.35	226.34	229.42	42.32	35.47	40.75	3.76	1.39	2.35	6.43	2.39	4.02
September	230.09	41.89	230.20	226.50	229.32	42.07	35.74	40.58	3.51	1.41	2.11	6.01	2.42	3.62
For Year			230.51	225.30	229.54	42.59	33.68	40.95	4.10	0.83	2.14	7.00	1.43	3.66

*Storage capacity at overflow elevation of 231.00=43,400,000 gallons. **Average of 7 A.M. statistics.
 NOTE: Water levels are elevations in feet above mean high water in Providence harbor.

TABLE 25

WATER DISTRIBUTION SYSTEM

NEUTACONKANUT DISTRIBUTION RESERVOIR*

OPERATING STATISTICS - YEAR ENDED SEPTEMBER 30, 1966

1965 1966	7 A.M. Statistics on First Day of Month		Operating Characteristics During Month											
	Water Level	Storage Mil.Gals.	Water Level			Storage--Mil.Gals.			Daily Water Level Fluctuation--Ft.			Daily Storage Fluctuation--M.G.		
			Max.	Min.	Avg.**	Max.	Min.	Avg.**	Max.	Min.	Avg.	Max.	Min.	Avg.
October	226.39	41.02	226.83	224.11	226.38	41.81	37.01	41.00	2.39	0.41	1.47	4.20	0.71	2.58
November	226.56	41.32	226.89	223.85	226.44	41.91	36.56	41.11	2.21	0.24	1.28	3.88	0.42	2.23
December	226.22	40.72	227.02	223.09	226.37	42.12	35.22	40.98	2.55	0.10	1.16	5.01	0.18	2.01
January	226.28	40.83	226.98	224.40	226.47	42.05	37.52	41.16	2.58	0.15	1.20	4.53	0.26	2.10
February	226.23	40.74	226.92	224.55	226.51	41.97	37.79	41.23	2.37	0.33	1.06	4.18	0.59	1.83
March	226.41	41.05	227.05	224.48	226.47	42.17	37.66	41.16	2.30	0.35	1.17	4.03	0.61	2.03
April	226.56	41.32	226.87	224.62	226.47	41.88	37.91	41.16	2.21	0.35	1.24	3.90	0.61	2.17
May	226.53	41.27	226.73	224.21	226.45	41.63	37.19	41.12	2.21	0.63	1.48	3.88	1.11	2.61
June	226.39	41.02	226.74	221.35	226.22	41.64	32.16	40.72	4.63	0.66	2.35	8.32	1.16	4.13
July	225.08	38.72	226.67	221.90	226.24	41.52	33.12	40.76	4.67	1.51	2.70	8.21	2.65	4.86
August	226.43	41.09	226.67	221.93	226.14	41.52	33.18	40.58	4.50	1.02	2.61	7.91	1.78	4.60
September	226.42	41.07	226.79	223.00	226.32	41.73	35.06	40.90	3.23	0.53	1.82	5.68	0.94	3.32
For Year			227.05	221.35	226.37	42.17	32.16	40.99	4.67	0.10	1.63	8.32	0.18	2.87

*Storage capacity at overflow elevation of 227.00=42,090,000 gallons. **Average of 7 A.M. statistics.

NOTE: Water levels are elevations in feet above mean high water in Providence harbor.

TABLE 26

WATER DISTRIBUTION SYSTEM

LONGVIEW DISTRIBUTION RESERVOIR*

OPERATING STATISTICS - YEAR ENDED SEPTEMBER 30, 1966

1965 1966	7 A.M. Statistics on First Day of Month		Water Level			Storage--Mil.Gals.			Daily Water Level Fluctuation-Ft.			Daily Storage Fluctuation-M.G.		
	Water Level	Storage Mil. Gals.	Max.	Min.	Avg.**	Max.	Min.	Avg.**	Max.	Min.	Avg.	Max.	Min.	Avg.
October	304.67	11.78	305.37	301.90	304.49	12.11	10.50	11.70	2.44	0.87	1.70	1.14	0.40	0.79
November	303.90	11.42	305.52	302.47	304.46	12.18	10.77	11.69	3.77	1.25	1.87	1.22	0.57	0.84
December	304.39	11.65	305.05	302.55	304.62	11.96	10.80	11.76	2.29	1.24	1.77	1.07	0.57	0.82
January	304.60	11.75	305.02	301.40	304.55	11.95	10.27	11.73	3.35	1.37	1.85	1.55	0.63	0.86
February	304.64	11.77	305.10	302.65	304.61	11.99	10.85	11.76	2.41	1.35	1.71	1.12	0.63	0.80
March	304.58	11.74	304.98	302.72	304.55	11.93	10.88	11.73	2.26	1.42	1.65	1.05	0.66	0.77
April	304.40	11.66	305.15	301.39	304.45	12.01	10.26	11.68	3.22	1.35	1.77	1.50	0.58	0.82
May	304.40	11.66	305.39	302.56	304.55	12.12	10.81	11.73	2.48	1.17	1.62	1.15	0.54	0.75
June	304.36	11.64	305.39	299.78	304.59	12.12	9.52	11.75	4.85	1.20	2.70	2.25	0.56	1.25
July	304.88	11.88	305.75	298.56	304.33	12.28	8.95	11.63	5.95	1.17	2.43	2.76	0.53	1.12
August	304.82	11.86	305.35	301.11	304.56	12.10	10.13	11.73	3.70	1.05	1.84	1.72	0.49	0.85
September	303.70	11.33	306.31	302.02	304.51	12.53	10.56	11.71	3.71	0.52	1.63	1.70	0.24	0.76
For Year			306.31	298.56	304.52	12.53	8.95	11.72	5.95	0.52	1.88	2.76	0.24	0.87

*Storage capacity at overflow elevation of 306.00=12,400,000 gallons. **Average of 7 A.M. statistics.
 NOTE: Water levels are elevations in feet above mean high water in Providence harbor.

TABLE 27
WATER PIPE LAID, REMOVED AND ADDED
YEAR ENDED SEPTEMBER 30, 1966

Pipe Laid in Feet									
City or Town	6"	8"	10"	12"	16"	20"	24"	30"	Total
Providence	2,085.04	2,447.80	0	657.35	0	0	0	6,212.72	11,402.91
Cranston	4,426.67	7,394.95	0	270.90	0	0	0	0	12,092.52
Johnston	582.05	7,242.13	0	2,693.90	0	0	0	0	10,518.08
North Providence	3,699.55	3,680.95	0	0	0	0	0	0	7,380.50
Totals	10,793.31	20,765.83	0	3,622.15	0	0	0	6,212.72	41,394.01

Pipe Removed in Feet									
	6"	8"	10"	12"	16"	20"	24"	30"	Total
Providence	8,263.69	294.32	47.00	521.81	0	0	0	0	9,126.82
Cranston	1,798.68	134.05	0	50.00	0	0	0	0	1,982.73
Johnston	0	0	0	0	0	0	0	0	0
North Providence	244.00	0	0	0	0	0	0	0	244.00
Totals	10,306.37	428.37	47.00	571.81	0	0	0	0	11,353.55

Net Length Added to Distribution System									
	6"	8"	10"	12"	16"	20"	24"	30"	Total
Providence	-6,178.65	2,153.48	-47.00	135.54	0	0	0	6,212.72	2,276.09
Cranston	2,627.99	7,260.90	0	220.90	0	0	0	0	10,109.79
Johnston	582.05	7,242.13	0	2,693.90	0	0	0	0	10,518.08
North Providence	3,455.55	3,680.95	0	0	0	0	0	0	7,136.50
Totals	486.94	20,337.46	-47.00	3,050.34	0	0	0	6,212.72	30,040.46

TABLE 28

PUBLIC WATER MAINS IN USE ON SEPTEMBER 30, 1966

	Providence		Cranston		Johnston		North Providence		Total*		Special High Pressure Fire Service Providence	
	Feet	Miles	Feet	Miles	Feet	Miles	Feet	Miles	Feet	Miles	Feet	Miles
6-inch	1,474,370.40	279.24	626,470.49	118.65	118,672.03	22.48	161,787.61	30.64	2,381,300.53	451.00	82.06	0.02
8-inch	338,510.36	64.11	347,690.21	65.85	169,358.69	32.08	122,976.11	23.29	978,535.37	185.33	1,233.44	0.23
10-inch	12,125.78	2.30	0	0	0	0	0	0	12,125.78	2.30	0	0
12-inch	241,084.60	45.66	105,276.79	19.94	13,549.61	2.57	32,633.90	6.18	392,544.90	74.35	6,783.92	1.28
16-inch	145,029.20	27.47	3,512.31	0.67	6,393.63	1.21	0	0	154,935.14	29.34	55,726.64	10.56
20-inch	20,172.24	3.82	0	0	0	0	0	0	20,172.24	3.82	0	0
24-inch	56,375.11	10.68	6,301.43	1.19	32,749.23	6.20	9,269.26	1.76	104,695.03	19.83	4,299.44	0.81
30-inch	50,205.19	9.51	31,894.62	6.04	0	0	4,009.29	0.76	86,109.10	16.31	0	0
36-inch	4,555.68	0.86	5,511.13	1.04	0	0	0	0	10,066.81	1.91	0	0
42-inch	2,893.25	0.55	22,607.49	4.28	0	0	0	0	25,500.74	4.83	0	0
48-inch	14,918.00	2.83	1,710.97	0.32	394.00	0.07	0	0	17,022.97	3.22	0	0
60-inch	5,559.00	1.05	12,910.89	2.45	4,340.00	0.82	0	0	22,809.89	4.32	0	0
66-inch	0	0	8,448.00	1.60	0	0	0	0	8,448.00	1.60	0	0
Totals	2,365,798.81	448.07	1,172,334.33	222.03	345,457.19	65.43	330,676.17	62.63	4,214,266.50	798.16	68,125.50	12.90

*Special High Pressure Fire Service Included

The length of 6-inch mains tabulated for Providence includes 691.45 feet in Pawtucket.

" " " 12-inch mains " " " " 44.47 " " "

" " " 12-inch mains " " Johnston " 146.00 " " Smithfield.

" " " 6-inch mains " " North Providence " 179.30 " " Pawtucket.

TABLE 29
GATES IN USE ON SEPTEMBER 30, 1966

Stop Gates												Gates on Public Fire Hydrants			Gates on Unwatering Hydrants			Gates on Blow-offs				Total Number of Gates	
6"	8"	10"	12"	16"	20"	24"	30"	36"	42"	48"	60"	Total	6"	8"	Total	6"	8"	Total	6"	8"	12"	Total	
PROVIDENCE																							
4,490	964	16	639	273	28	72	36	6	3	10	0	6,537	1,481	1,517	2,998	5	14	19	1	2	1	4	9,558
CRANSTON																							
1,730	850	0	214	9	0	11	16	13	13	4	1	2,861	1,052	5	1,057	3	5	8	0	2	3	5	3,931
JOHNSTON																							
326	362	1	30	12	6	5	0	0	0	2	0	744	274	11	285	3	0	3	0	0	2	2	1,034
NORTH PROVIDENCE																							
445	258	0	73	0	0	5	1	1	0	0	0	783	308	0	308	0	3	3	0	0	0	0	1,094
TOTALS																							
6,991	2,434	17	956	294	34	93	53	20	16	16	1	10,925	3,115	1,533	4,648	11	22	33	1	4	6	11	15,617

NOTE: The above table includes all gates in the special high pressure fire system in Providence and gates on Neutaconkanut Conduit and Scituate Aqueduct east of the Siphon Chamber.

TABLE 30

SERVICE PIPES INSTALLED AND REMOVED--YEAR ENDED SEPTEMBER 30, 1966

City or Town	INSTALLED				REMOVED			
	General		Fire Supply		General		Fire Supply	
	Copper 3/4"-2"	Cast Iron 4"-12"	Cast Iron 4"-12"	Total	Lead or Copper 1/2"-2"	Cast Iron 4"-12"	Cast Iron 4"-12"	Total
Providence	228	14	15	257	207	9	7	223
Cranston	366	7	5	378	54	0	1	55
Johnston	137	0	3	140	5	0	0	5
North Providence	177	0	0	177	11	0	0	11
Totals	908	21	23	952	277	9	8	294

TABLE 31

NUMBER AND SIZE OF ACTIVE SERVICES--YEAR ENDED SEPTEMBER 30, 1966

	1/2"	5/8"	3/4"	1"	1 1/4"	1 1/2"	2"	3"	4"	6"	8"	10"	12"	16"	24"	30"	Totals
Providence	226	25,133	7,394	1,672	524	359	522	6	991	879	76	4	8	2	0	0	37,796
Cranston	5	6,964	7,840	1,602	41	334	300	0	88	81	27	0	4	0	1	1	17,288
Johnston	0	766	2,196	701	9	143	54	0	8	11	2	0	0	0	0	0	3,890
North Providence	0	1,075	2,304	704	6	194	67	0	18	8	4	0	2	0	0	0	4,382
Totals	231	33,938	19,734	4,679	580	1,030	943	6	1,105	979	109	4	14	2	1	1	63,356

TABLE 32

PUBLIC FIRE HYDRANTS

HYDRANT ACTIVITIES DURING YEAR ENDED SEPTEMBER 30, 1966

	Providence	Cranston	Johnston	North Providence	Totals
Post Hydrants Installed	211	10	8	13	242
Post Hydrants Removed	15	2	4	2	23
Flush Hydrants Removed	209	0	0	0	209

HYDRANTS IN DISTRIBUTION SYSTEM ON SEPTEMBER 30, 1966

Post Hydrants	2,585	1,057	299	311	4,252
Flush Hydrants	553	0	0	0	553
Totals	3,138	1,057	299	311	*4,805

*Includes Post Hydrants and Flush Hydrants in Special High Pressure Fire Service in Providence.

TABLE 33

NUMBER, MAKE AND SIZE OF METERS ON ACTIVE SERVICES

YEAR ENDED SEPTEMBER 30, 1966

Size	5/8"	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"	16"	24"	Total
PROVIDENCE														
Make														
Trident	26,404	2,837	840	1,103	1,424	87	67	60	16	5	-	-	-	32,843
Thomson	3,995	361	232	47	115	2	4	-	-	-	-	-	-	4,756
Empire	39	-	8	35	15	1	-	-	-	-	-	-	-	98
Crown	15	5	3	3	-	-	-	-	-	-	-	-	-	26
Hersey	-	-	-	2	3	2	13	68	6	-	-	-	-	94
Venturi	-	-	-	-	-	-	-	-	-	-	-	2	-	2
Totals	30,453	3,203	1,083	1,190	1,557	92	84	128	22	5	-	2	-	37,819

*CRANSTON

Make														
Trident	14,354	996	386	248	281	2	6	13	4	-	1	-	-	16,291
Thomson	833	28	18	8	11	-	-	-	-	-	-	-	-	898
Hersey	-	-	-	-	1	-	-	3	4	-	-	-	-	8
Venturi	-	-	-	-	-	-	-	-	-	-	2	-	-	2
Dallsert	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Totals	15,187	1,024	404	256	293	2	6	16	8	-	3	-	1	17,200

*Includes 1-6" Trident Compound Meter supplying City of Warwick.
 2-6" Trident Protectus Meters supplying City of Warwick.
 1-12" Trident Crest Meter supplying Kent County Water Authority.
 1-12" Venturi Meter supplying Kent County Water Authority at Water Purification Works
 1-24" Dallsert Flow Tube Meter supplying City of Warwick.

*JOHNSTON

Make														
Trident	3,053	474	94	37	44	-	-	-	1	-	-	-	-	3,703
Thomson	172	8	3	-	-	-	-	-	-	-	-	-	-	183
Totals	3,225	482	97	37	44	-	-	-	1	-	-	-	-	3,886

*Includes 1-8" Trident Crest Meter supplying East Smithfield Water Co.

*NORTH PROVIDENCE

Make														
Trident	3,369	453	195	51	31	1	2	3	-	-	1	-	-	4,106
Thomson	254	7	5	1	1	-	-	-	-	-	-	-	-	268
Empire	-	-	-	1	-	-	-	-	-	-	-	-	-	1
Hersey	-	-	-	-	-	-	-	5	-	-	-	-	-	5
Venturi	-	-	-	-	-	-	-	-	-	-	1	-	-	1
Totals	3,623	460	200	53	32	1	2	8	-	-	2	-	-	4,381

*Includes 1-12" Trident Crest Meter supplying East Smithfield Water Co.
 1-12" Venturi Meter supplying Town of Smithfield.

TABLE 34
CAPACITY AND CONSUMPTION

Year Ended Sept. 30	Purification Works Capacity M.G.D.	Total During Year M.G.	Average M.G.D.	Consumption			Rate in M.G.D.	Maximum Hour	
				Total M.G.	Maximum Day Percent of Plant Capacity	Percent of Average Day		Percent of Plant Capacity	Percent of Average Day
1941	61.6	11,020.9	30.2	40.8	66.2	135.1	66.7	108.3	220.9
1942	61.6	11,409.3	31.3	38.3	62.2	122.4	54.7	88.8	174.8
1943	61.6	11,586.8	31.7	46.7	75.8	147.3	77.0	125.0	242.9
1944	61.6	12,538.9	34.3	49.5	80.4	144.3	69.8	113.3	203.5
1945	61.6	12,528.9	34.3	43.6	70.8	127.1	71.3	115.7	207.9
1946	61.6	12,685.3	34.8	50.5	82.0	145.1	82.1	133.3	235.9
1947	61.6	13,169.0	36.1	49.8	80.8	138.0	71.8	116.6	198.7
1948	61.6	13,644.7	37.3	54.7	88.8	146.6	82.3	133.6	220.6
1949	61.6	13,510.3	37.0	60.2	97.7	162.7	89.3	145.0	241.4
1950	61.6	13,373.8	36.6	62.0	100.6	169.4	98.4	159.7	268.9
1951	61.6	13,721.6	37.6	56.4	91.6	150.0	91.2	148.1	242.6
1952	61.6	13,829.3	37.8	70.0	113.6	185.2	110.4	179.2	292.1
1953	61.6	14,182.8	38.9	66.4	107.8	170.7	100.8	163.6	259.1
1954	105.0	13,840.6	37.9	68.6	65.3	181.0	118.1	112.5	311.6
1955	105.0	14,933.0	40.9	70.2	66.9	171.6	117.1	111.5	286.3
1956	105.0	15,145.2	41.4	68.8	65.5	166.2	103.6	98.7	250.2
1957	105.0	15,963.8	43.7	84.7	80.7	193.8	131.0	124.8	299.8
1958	105.0	14,761.0	40.4	68.5	65.2	169.6	108.7	103.5	269.1
1959	105.0	15,430.0	42.3	71.1	67.7	168.1	111.5	106.2	263.6
1960	105.0	15,859.0	43.3	77.4	73.7	178.8	120.3	114.6	277.8
1961	105.0	16,495.9	45.2	69.3	66.0	153.3	112.3	107.0	248.5
1962	105.0	16,687.5	45.7	73.8	70.3	161.5	112.5	107.1	246.2
1963	105.0	17,488.8	47.9	87.2	83.0	182.0	129.3	123.1	269.9
1964	105.0	18,383.0	50.2	86.0	81.9	171.3	139.6	133.0	278.1
1965	105.0	19,470.6	53.3	88.5	84.3	166.0	134.1	127.7	251.6
1966	105.0	18,425.5	50.5	82.3	78.4	163.0	118.9	113.2	235.4

TABLE 35
CONSUMPTION OF WATER - MILLION GALLONS
YEAR ENDED SEPTEMBER 30, 1966

1965 1966	Low Service (1)				High Service (2)				Total Service (1,2)			
	Max. Day	Min. Day	Avg. Day	Total	Max. Day	Min. Day	Avg. Day	Total	Max. Day	Min. Day	Avg. Day	Total
October	48.66	31.08	41.51	1,286.85	11.20	7.47	8.60	266.58	57.97	38.55	50.11	1,553.43
November	45.17	28.78	38.76	1,162.89	8.95	7.36	8.41	252.33	53.95	36.14	47.17	1,415.22
December	42.29	24.74	36.55	1,133.16	8.61	6.70	8.12	251.72	50.89	31.44	44.67	1,384.88
January	41.68	22.69	36.53	1,132.38	9.12	6.93	8.20	254.24	50.21	29.71	44.73	1,386.62
February	41.81	28.73	36.66	1,026.48	8.77	7.33	8.28	231.70	50.25	36.12	44.94	1,258.18
March	41.55	28.04	37.33	1,157.29	8.89	7.54	8.44	261.67	50.37	35.58	45.77	1,418.96
April	44.22	27.84	38.22	1,146.66	9.76	7.37	8.60	257.95	53.57	35.44	46.82	1,404.61
May	47.25	28.59	39.51	1,224.85	10.38	7.39	8.96	277.82	57.47	35.97	48.47	1,502.67
June	67.29	30.74	48.74	1,462.20	14.87	7.59	10.58	317.33	82.29	38.61	59.32	1,779.53
July	62.72	38.09	50.43	1,563.44	15.31	8.89	11.31	350.56	75.82	47.16	61.74	1,914.00
August	63.56	31.37	49.62	1,538.17	12.44	7.37	10.26	318.10	76.00	38.74	59.88	1,856.27
September	54.96	28.30	42.73	1,282.00	11.20	6.66	8.97	269.11	66.16	34.95	51.70	1,551.11
For Year	67.29(a)	22.69(b)	41.41	15,116.37	15.31(c)	6.66(d)	9.07	3,309.11	82.29(e)	29.71(f)	50.48	18,425.48

(a) June 28; (b) Jan. 1

(c) July 2; (d) Sept. 4

(e) June 28; (f) Jan. 1

(1) Includes water supplied to City of Warwick, Kent County Water Authority and to State Institutions.

(2) Includes water supplied to East Smithfield Water Co. and Smithfield Water Department.

TABLE 36

WATER SOLD TO STATE INSTITUTIONS AND CITY OF WARWICK

YEAR ENDED SEPTEMBER 30, 1966

	STATE INSTITUTIONS				CITY OF WARWICK					
	S.S. 50,767 Sockanosset Rd. Cranston 12"x5.50" Venturi Meter	S.S. 24,215A East St. Cranston 8" Tri-Prot. Meter			S.S. 47,269 Petta- consett Cranston 10" Tri- Protectus Meter	S.S. 47,475 Pawtuxet Bridge Cranston 6" Tri-Comp. Meter	S.S. 61,515 Oaklawn Avenue Cranston 6" Tri- Protectus Meter	S.S. 61,780 Dresden Street Cranston 6" Tri- Protectus Meter		
	Gallons per Month	Gallons per Month	Total Gallons per Month	Average Gallons per Day	Gallons per Month	Gallons per Month	Gallons per Month	Gallons per Month	Total Gallons per Month	Average Gallons per Day
1965										
1966										
October	34,580,333	975	34,581,308	1,115,526	100,359,000	1,608,750	4,050,150	6,947,475	112,965,375	3,644,044
November	38,606,667	3,300	38,609,967	1,286,999	98,092,725	224,250	4,574,400	9,079,200	111,970,575	3,732,353
December	35,029,000	2,625	35,031,625	1,130,052	89,983,875	Closed 11/12	4,823,400	9,971,250	104,778,525	3,379,952
January	36,142,000	900	36,142,900	1,165,900	96,157,875	0	5,135,100	9,445,575	110,738,550	3,572,211
February	30,587,333	825	30,588,158	1,092,434	84,985,275	0	4,658,700	7,791,375	97,435,350	3,479,834
March	33,634,000	225	33,634,225	1,084,975	95,719,500	0	5,275,950	7,977,975	108,973,425	3,515,272
April	31,152,000	900	31,152,900	1,038,430	94,093,650	0	5,836,275	9,854,325	109,784,250	3,659,475
May	36,582,000	2,925	36,584,925	1,180,159	108,307,050	Opened 6/6	7,076,025	14,440,500	129,823,575	4,187,857
June	35,268,000	123,600	35,391,600	1,179,720	177,622,148	1,502,475	12,761,475	24,917,550	216,803,648	7,226,788
July	37,517,000	2,775	37,519,775	1,210,315	152,272,575	2,399,250	18,125,625	39,095,625	211,893,075	6,835,260
August	43,254,000	24,675	43,278,675	1,396,086	152,272,575	2,399,250	14,514,900	28,479,450	197,666,175	6,376,328
September	36,407,000	11,625	36,418,625	1,213,954	152,272,575	2,399,250	17,102,700	28,694,250	200,468,775	6,682,293
For Year	428,759,333	175,350	428,934,683	1,175,164	1,402,138,823	10,533,225	103,934,700	196,694,550	1,713,301,298	4,693,976

TABLE 37

WATER SOLD TO EAST SMITHFIELD WATER COMPANY, SMITHFIELD WATER DEPARTMENT
AND KENT COUNTY WATER AUTHORITY

YEAR ENDED SEPTEMBER 30, 1966

	EAST SMITHFIELD WATER COMPANY				SMITHFIELD WATER DEPT.		KENT COUNTY WATER AUTHORITY			
	S.S. 51,198 Waterman Street No. Prov. 12" Tri-Crest Meter	S.S. 52,403 Dean Avenue Smithfield 8" Tri-Crest Meter	Total Gallons per Month	Average Gallons per Day	S.S. 71,980 Smithfield Road North Providence 12" Flow Meter	Average Gallons per Day	S.S. 58,985 Oaklawn Avenue Cranston 12" Tri-Crest Meter	S.S. 60,757 Purification Works Scituate 12" Venturi Meter	Total Gallons per Month	Average Gallons per Day
1965-1966										
October	11,695,500	5,107,500	16,803,000	542,032	772,500	24,919	5,769,000	16,700,000	22,469,000	724,806
November	13,304,250	5,954,250	19,258,500	641,950	1,130,600	37,687	6,867,750	18,188,000	25,055,750	835,192
December	11,384,250	4,642,500	16,026,750	516,992	793,600	25,600	6,606,000	21,895,000	28,501,000	919,387
January	13,539,750	5,541,000	19,080,750	615,508	875,800	28,252	7,917,750	24,190,000	32,107,750	1,035,734
February	9,618,000	4,786,500	14,404,500	514,446	701,910	25,068	6,686,250	20,013,000	26,699,250	953,545
March	10,364,250	5,326,500	15,690,750	506,153	811,800	26,187	6,108,000	21,821,000	27,929,000	900,935
April	11,964,000	4,823,250	16,787,250	559,575	692,800	23,093	5,319,750	20,419,000	25,738,750	857,958
May	13,905,750	5,757,750	19,663,500	634,306	800,600	25,826	7,086,750	19,457,000	26,543,750	856,250
June	14,613,750	6,081,000	20,694,750	689,825	774,000	25,800	8,775,000	23,662,000	32,437,000	1,081,233
July	14,512,500	6,120,000	20,632,500	665,565	1,009,100	32,552	11,836,500	19,069,000	30,905,500	996,952
August	15,727,500	6,412,500	22,140,000	714,194	897,700	28,958	9,972,750	14,164,000	24,136,750	778,605
September	13,509,000	5,471,250	18,980,250	632,675	743,400	24,780	6,814,500	10,669,000	17,483,500	582,783
For Year	154,138,500	66,024,000	220,162,500	603,185	10,003,810	27,408	89,760,000	230,247,000	320,007,000	876,732

TABLE 38

AVERAGE DAILY CONSUMPTION OF WATER PER MONTH IN MILLION GALLONS

Year Ending Sept. 30	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Avg. for Year
1877				2.27	2.26	1.84	2.25	2.53	2.94	2.91	2.76	3.01	2.53*
1878	2.61	2.22	2.30	2.16	2.15	2.20	2.32	2.85	2.89	3.88	3.12	3.17	2.66
1879	2.84	2.39	2.38	2.82	2.93	2.59	2.38	3.22	3.48	3.78	3.52	3.32	2.97
1880	3.38	2.89	2.97	2.94	2.86	2.90	2.96	3.68	5.05	4.18	3.92	3.82	3.46
1881	3.67	3.35	3.22	3.54	4.07	3.13	2.98	3.54	3.81	4.05	4.46	4.16	3.66
1882	3.92	3.60	3.38	3.30	3.27	3.06	3.05	3.24	4.02	4.69	5.09	3.84	3.70
1883	3.40	3.33	3.65	3.94	3.74	3.91	3.43	3.82	4.64	5.24	5.18	4.70	4.08
1884	3.81	3.67	3.58	4.24	3.87	3.90	3.43	3.79	4.70	4.38	4.06	4.82	4.02
1885	4.24	3.67	3.99	4.48	4.73	4.80	4.10	4.10	5.44	5.56	5.01	4.92	4.59
1886	4.37	4.20	4.71	4.82	4.75	4.83	4.33	4.53	4.93	6.02	4.88	4.94	4.78
1887	4.62	4.24	4.94	5.06	4.90	4.84	4.41	4.90	5.16	5.58	5.00	5.08	4.89
1888	4.80	4.40	5.10	5.44	5.79	5.39	4.86	4.84	6.17	6.51	5.87	5.32	5.37
1889	5.34	5.18	5.51	5.72	7.34	5.80	5.27	5.75	6.14	5.69	5.59	5.52	5.74
1890	5.41	5.17	6.14	6.34	6.79	6.28	6.84	6.60	6.90	8.11	7.13	6.72	6.54
1891	6.28	6.08	6.83	6.35	6.53	6.72	6.67	7.55	7.75	7.73	7.78	7.57	6.99
1892	7.53	7.32	7.69	7.65	7.83	7.62	7.27	6.77	8.37	9.30	9.11	8.63	7.92
1893	8.00	7.65	8.48	9.30	8.85	8.74	8.07	8.58	9.92	10.78	10.50	9.48	9.03
1894	8.79	7.85	8.61	9.11	9.07	9.09	8.73	9.97	11.28	12.39	10.76	10.22	9.66
1895	10.20	8.86	9.08	9.02	9.82	8.60	7.70	8.78	9.49	8.99	9.50	9.10	9.10
1896	8.15	8.19	9.56	10.19	8.79	8.74	8.60	9.26	9.64	9.93	9.70	8.83	9.13
1897	8.49	8.05	8.98	8.83	8.52	8.44	8.06	8.27	8.90	9.13	8.70	9.07	8.62
1898	8.76	8.29	8.63	8.56	9.09	8.68	8.38	8.35	10.04	10.10	9.44	9.84	9.01
1899	8.94	8.75	9.64	9.45	9.53	8.91	8.52	9.18	11.18	10.21	10.12	9.70	9.51
1900	9.15	9.27	9.53	9.81	9.49	9.66	9.23	8.59	10.48	12.11	10.95	11.71	10.00
1901	9.99	9.54	9.95	10.09	10.52	10.20	8.92	10.05	11.50	12.02	11.69	11.15	10.47
1902	10.91	10.70	11.02	11.65	11.00	10.92	10.52	10.48	11.85	12.09	11.97	11.66	11.23
1903	11.89	11.81	12.85	12.84	12.62	11.92	12.33	13.92	13.02	13.54	12.91	13.76	12.78
1904	13.09	13.89	13.49	14.29	14.58	13.42	12.07	12.72	13.94	14.21	13.18	13.85	13.56
1905	14.57	14.88	14.60	14.20	14.65	13.88	13.85	14.77	15.06	16.34	14.30	13.99	14.59
1906	13.73	14.96	14.63	15.00	15.07	14.77	14.49	15.01	15.69	15.08	15.74	16.06	15.02
1907	15.02	14.37	14.25	15.74	16.24	16.26	15.62	16.29	17.18	18.50	18.00	15.02	16.04
1908	15.34	15.13	15.34	15.46	16.07	15.21	14.53	14.67	16.63	16.77	15.42	15.62	15.52
1909	15.83	15.80	15.44	15.16	14.87	14.88	13.94	14.04	15.54	17.71	16.15	14.80	15.35
1910	14.76	14.66	15.28	15.62	15.65	15.22	14.74	14.72	15.53	17.13	15.95	15.61	15.40
1911	15.56	14.98	16.11	16.39	16.27	16.00	15.30	16.19	17.09	19.36	17.09	16.08	16.37
1912	16.29	16.49	16.44	18.12	18.14	17.16	16.39	16.70	17.32	20.54	17.62	17.06	17.36
1913	17.36	16.72	17.17	17.49	17.98	17.59	17.06	17.12	18.95	19.55	18.40	17.12	17.71
1914	16.76	16.87	17.27	17.83	18.52	17.60	16.99	17.43	20.24	17.62	17.09	18.51	17.73
1915	17.29	16.43	17.27	17.07	17.60	17.44	16.80	16.68	18.04	16.49	16.76	17.80	17.14
1916	16.90	17.03	17.79	18.16	18.47	18.57	17.43	17.57	17.82	17.90	16.58	18.76	17.75
1917	18.51	18.08	18.50	19.73	20.62	19.31	18.09	17.67	18.28	19.61	20.03	18.76	18.93
1918	18.62	18.71	20.64	23.82	22.98	23.07	22.43	22.31	21.85	22.23	21.50	20.63	21.56
1919	20.42	20.31	21.04	21.72	20.94	19.35	19.45	19.60	21.77	20.70	20.40	20.68	20.53
1920	20.62	20.18	21.64	23.80	23.16	23.03	20.67	20.45	20.98	21.06	21.58	21.89	21.59

*Average for 9 months.

TABLE 38 (Continued)

AVERAGE DAILY CONSUMPTION OF WATER PER MONTH IN MILLION GALLONS

Year Ending Sept. 30	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Avg. for Year
1921	21.41	20.46	20.97	21.64	21.43	20.77	20.21	20.92	22.84	21.18	21.63	22.86	21.36
1922	22.84	22.16	22.18	24.14	23.64	22.01	21.64	21.49	22.18	21.91	22.11	22.53	22.40
1923	22.78	23.23	23.08	23.66	24.96	23.84	22.95	24.12	24.49	23.90	24.08	24.31	23.78
1924	24.68	24.09	23.33	24.19	24.58	23.44	23.51	23.28	24.10	25.11	22.48	22.51	23.78
1925	22.84	23.70	23.76	24.22	23.61	22.70	23.13	23.03	24.82	23.54	23.20	23.81	23.53
1926	23.41	22.47	23.29	23.95	24.12	24.25	23.36	22.80	24.16	24.80	23.94	23.53	23.67
1927	21.76	22.60	23.24	22.92	22.41	22.57	22.32	22.68	23.62	23.27	22.27	23.27	22.74
1928	23.37	22.99	22.39	23.04	22.80	23.21	22.79	23.83	23.05	24.31	26.69	25.38	23.65
1929	26.82	25.54	26.17	26.84	27.01	25.42	23.05	22.91	25.73	26.53	24.94	24.24	25.43
1930	23.83	24.24	24.29	23.85	24.88	23.34	23.38	25.15	26.85	26.81	25.95	27.45	25.00
1931	26.30	24.04	23.80	23.71	24.36	23.64	23.11	23.76	25.35	26.20	26.22	26.31	24.73
1932	25.36	23.42	23.82	23.20	23.23	22.99	22.72	23.47	25.27	25.34	25.16	24.59	24.05
1933	24.15	23.65	23.51	24.00	24.25	24.01	23.41	25.32	26.92	28.77	27.65	26.00	25.14
1934	24.89	24.43	25.04	25.55	28.05	26.38	24.78	25.78	27.95	31.00	28.77	26.39	26.58
1935	26.50	25.39	25.16	26.35	27.06	26.31	25.71	27.02	27.47	29.47	31.14	28.23	27.15
1936	29.45	28.03	27.42	27.97	28.73	26.44	25.75	27.02	30.27	30.23	30.79	29.23	28.44
1937	27.94	26.72	27.06	25.77	26.13	27.16	25.73	25.93	28.45	31.43	31.85	29.18	29.79
1938	27.84	26.42	25.57	25.11	24.67	24.38	23.56	24.56	27.13	26.34	28.82	28.34	26.07
1939	27.90	27.21	26.85	27.07	27.62	27.16	26.25	27.48	30.84	32.81	33.62	30.31	28.77
1940	30.12	28.96	28.26	28.74	28.06	27.23	25.77	26.15	28.49	30.10	31.57	28.96	28.54
1941	29.55	27.86	28.36	28.67	29.02	28.78	29.07	29.91	31.74	32.87	32.66	33.78	30.19
1942	32.74	31.44	31.84	31.34	31.21	29.84	29.18	29.76	31.34	32.13	32.14	32.11	31.26
1943	29.88	29.27	30.40	29.93	30.67	30.35	30.05	29.65	35.13	36.35	35.47	33.71	31.74
1944	31.87	31.25	32.35	32.29	32.52	32.95	31.51	34.27	36.80	39.10	40.60	35.43	34.26
1945	33.77	32.77	33.33	34.89	34.57	33.78	33.37	33.23	35.44	35.73	36.34	34.67	34.32
1946	32.74	32.27	33.21	34.01	33.69	33.80	33.64	33.59	36.70	40.70	35.92	36.69	34.75
1947	36.37	35.34	35.58	35.95	35.83	35.01	33.27	33.94	35.72	37.35	39.34	39.21	36.08
1948	38.91	36.19	35.55	34.84	37.31	36.92	36.15	33.95	36.90	39.33	41.55	39.76	37.28
1949	36.27	35.34	35.11	33.98	34.00	33.88	33.12	35.12	46.65	44.56	40.18	35.77	37.01
1950	34.61	35.94	34.51	33.92	34.34	34.71	33.39	34.90	40.27	43.27	41.40	38.24	36.64
1951	39.96	36.91	34.80	36.10	35.92	34.81	34.21	37.21	39.31	43.49	39.98	38.20	37.59
1952	36.92	34.79	33.63	34.20	34.59	33.98	33.98	34.33	41.21	54.79	40.66	40.11	37.78
1953	37.09	35.75	35.27	34.59	33.95	34.20	34.61	35.63	50.68	46.76	43.63	43.95	38.86
1954	38.20	35.43	35.03	34.85	35.63	35.31	35.10	35.05	45.09	45.27	40.72	39.22	37.92
1955	39.84	37.82	37.17	37.24	38.42	37.85	37.00	41.54	44.52	49.90	47.08	42.25	40.91
1956	40.29	38.30	38.18	38.42	39.31	38.37	38.55	40.08	49.50	44.93	48.86	41.70	41.38
1957	40.78	38.65	36.74	39.14	38.43	36.98	38.50	44.48	60.45	57.12	48.16	45.16	43.74
1958	42.22	38.27	38.42	39.09	38.20	37.40	40.03	38.60	42.57	45.05	43.60	41.63	40.44
1959	40.35	38.01	39.35	39.34	39.46	38.65	39.04	44.02	45.05	45.16	51.33	47.28	42.27
1960	41.93	40.00	39.63	39.48	40.19	39.72	40.34	42.06	51.75	49.75	49.49	45.57	43.33
1961	42.22	42.53	40.99	41.24	43.54	42.26	41.00	42.96	51.71	51.06	52.80	50.01	45.19
1962	43.66	41.94	40.90	42.42	41.91	42.38	42.74	46.45	53.07	51.39	54.38	47.10	45.72
1963	45.66	44.44	43.38	44.26	44.81	44.80	45.77	47.96	55.81	55.87	54.40	47.58	47.91
1964	46.77	42.66	43.07	45.45	45.81	46.23	46.54	56.23	63.98	57.44	53.33	55.16	50.23
1965	51.52	49.17	47.99	47.66	47.94	46.33	46.89	53.98	65.25	63.33	63.37	56.32	53.34
1966	50.11	47.17	44.67	44.73	44.94	45.77	46.82	48.47	59.32	61.74	59.88	51.70	50.48

TABLE 39

FUEL OIL CONSUMPTION

YEAR ENDED SEPTEMBER 30, 1966

1965-1966	Administration and Operations Building	Water Purification Plant		Forestry and Maintenance Building	Neutaconkanut Pumping Station	Bath Street Pumping Station	Total	
	Gallons Used No. 6	Gallons Used No. 2	No. 6	Gallons Used No. 2	Gallons Used No. 2	Gallons Used No. 2	Gallons Used No. 2	No. 6
October	3,237	11	4,280	1,042	212	0	1,265	7,517
November	3,902	140	5,156	1,698	377	220	2,435	10,058
December	4,429	0	8,538	2,325	430	280	3,035	12,967
January	5,875	10	9,385	2,818	755	408	3,991	15,260
February	5,989	0	8,774	2,332	524	375	3,231	14,763
March	4,466	0	7,493	1,904	427	265	2,596	11,959
April	3,678	20	6,056	1,680	309	245	2,254	9,734
May	2,447	282	3,773	266	95	140	783	6,220
June	843	1,338	0	300	50	0	1,688	843
July	396	1,252	0	31	31	0	1,314	396
August	475	1,504	0	45	5	0	1,554	475
September	1,119	1,044	1,248	249	62	0	1,355	2,367
Totals	36,856	5,601	55,703	14,690	3,277	1,933	25,501	92,559

TABLE 40
FINANCIAL STATEMENT OF THE PROVIDENCE WATER SUPPLY BOARD
YEAR ENDED SEPTEMBER 30, 1966

REVENUE

Water Rents	\$3,149,078.53
Hydrant Rental	106,656.59
Electric Power	0.00
Setting Meters	5,422.50
Repairing Meters	1,564.25
Rents from Non-Operating Property	653.48
Repairs to Water Services	934.69
Repairs to Distribution Mains	1,334.76
Repairs to Hydrants	5,199.20
Repairs to Gates and Valves	189.25
Installation of New Fire Supplies	8,249.00
Installation of New Water Services	94,954.00
Installation of New Water Mains	119,505.76
Revolving Fund - Water Meters	4,447.12
Sale of Scrap Iron, Brass, Lead, Etc.	10,572.47
Sale of Pulpwood, Logs and Miscellaneous Timber Products	2,316.08
Sale of Materials	207.25
Sale of Abandoned Mains	9,679.66
Sundries	1,421.51
Total Revenue	\$3,522,386.10

DISBURSEMENTS

OPERATING EXPENSE:

Salaries	\$892,864.90
Services Other Than Personal	145,786.14
Materials and Supplies	289,801.48
Special Items	34,802.70
Capital Outlay	54,397.02
Other Structures and Improvements (Water Main Extensions)	209,236.25
Taxes	476,465.35
Employees' Retirement System	72,723.00
Social Security F.O.A.S.I.	32,968.97

Total Operating Expense

*\$2,209,045.81

Interest on Floating Debt	4,673.81
Interest on Bonded Debt	157,093.75
Retirement - Serial Bonds	65,000.00
Retirement - Floating Debt	59,350.00
Depreciation and Extension Fund	500,000.00
Payable to Sinking Fund	**527,222.73

Total Disbursements

\$3,522,386.10

Gross Water Rents	\$3,241,810.31
Minus Refunds (Current Year)	92,694.82
Minus Refunds (Prior Year)	36.96
Net Water Rents	\$3,149,078.53

*See Table 41 for detailed account of Operating Expense.

**Subject to change due to anticipated discounts on Outstanding Commitments.

TABLE 41

WATER SUPPLY BOARD OPERATING EXPENSES

YEAR ENDED SEPTEMBER 30, 1966

ADMINISTRATIVE

Salaries:

001 Officials	\$31,060.21
Clerical-Chief Engineer's Office	5,037.43
Clerical-Accounting	42,851.34
Engineering	69,291.56
Labor-General	12,191.10
008 Sick Leave Payrolls	4,458.24
009 Vacation Payrolls	6,873.50
034 Holiday Payrolls	656.14
Total	\$172,419.52

Services Other Than Personal:

102 Expert Consultant and Other Service Fees	\$ 15.00
106 Examining Titles	878.30
109 Fees Not Otherwise Classified	508.00
111 Telephone & Telegraph	2,238.97
112 Postage, Freight & Express	168.45
115 Transportation of Persons-Conventions	297.77
116 Transportation of Persons-Other	135.00
117 Travel Subsistence-Conventions	330.00
118 Travel Subsistence-Other	275.84
119 Special Subsistence	9.47
121 Printing, Binding & Reproduction Services	200.97
122 Advertising	804.80
131 Light and Power	1,795.61
141 Repairs-Office Machinery	1,432.41
142 Repairs-Automobiles	436.26
146 Repairs-Plant Equipment	94.00
149 Repairs-Other Equipment	120.15
150 Repairs-Structures & Improvements	425.00
151 Maintenance and Servicing	73.90
181 Laundry and Cleaning	135.00
183 Dues and Subscriptions	218.03
199 Miscellaneous Services	19,297.76
Total	\$ 29,890.69

Materials and Supplies:

201 Stationery and Office Supplies	\$ 1,823.31
211 Motor Fuel	831.40
213 Tires and Tubes	248.50
214 Repair Parts and Supplies-Trucks and Autos	201.63
222 Repair Parts and Supplies-Plant Equipment	3.54
231 Medical, Chemical and Laboratory Supplies	21.51
241 Fuel	1,048.29
244 Housekeeping Supplies and Minor Equipment	253.68
252 Seeds, Fertilizer, Trees and Shrubs	20.09
259 Other Agricultural and Landscaping Supplies	7.80
266 Lumber and Hardware	15.63
268 Plumbing and Electrical Supplies	8.25
271 Pipe	3.67
299 Miscellaneous Materials and Supplies	201.65
Total	\$ 4,688.95

Special Items:			
350	Blue Cross and Physicians Service	\$ 5,819.90	
	Total		\$ 5,819.90
Capital Outlay:			
501	Office Furniture, Machinery and Equipment	\$ 250.75	
502	Books, Maps and Charts	209.70	
591	Equipment Not Otherwise Classified	1,414.22	
	Total		\$ 1,874.67
	Outstanding Commitments-Services Other Than Personal		140.00
	Total-Administrative		\$214,833.73

SOURCE OF SUPPLY

Hydro-Electric Station:			
Salaries:			
001	Labor-Operation	\$ 8,554.13	
	Repairs-Structures and Improvements	99.82	
	Repairs-Machinery and Equipment	302.38	
	Total		\$ 8,956.33
Services Other Than Personal:			
111	Telephone and Telegraph	\$ 173.61	
146	Repairs-Plant Equipment	339.08	
151	Maintenance and Servicing	576.72	
	Total		\$ 1,089.41
Materials and Supplies:			
201	Stationery and Office Supplies	\$ 4.95	
202	Small Tools and Shop Supplies	8.67	
212	Lubricants	87.38	
222	Repair Parts and Supplies-Plant Equipment	10.90	
	Total		\$ 111.90
Capital Outlay:			
561	Shop and Plant Equipment	\$ 1,750.00	
	Total		\$ 1,750.00
Water Purification Plant:			
Salaries:			
001	Supervision	\$20,586.74	
	Labor-Operation	50,150.13	
	Technical	24,243.37	
	Clerical	4,763.61	
	Repairs-Structures and Improvements	14.88	
	Repairs-Machinery and Equipment	86.39	
	Repairs-Care of Grounds and Buildings	3,991.26	
	Total		\$103,836.38
Services Other Than Personal:			
102	Expert Consultant and Other Service Fees	\$ 5.00	
111	Telephone and Telegraph	1,028.01	
112	Postage, Freight and Express	23.42	
115	Transportations of Persons-Conventions	70.00	

117	Travel Subsistence-Conventions	\$	115.00
131	Heat, Light and Power (Gas)		88.25
141	Repairs-Office Machinery		52.80
142	Repairs-Trucks and Autos		826.89
146	Repairs-Plant Equipment		1,105.05
151	Maintenance and Servicing		1,629.15
162	Rental-Automotive and Construction Equipment		334.53
181	Laundry and Cleaning		1,335.86
183	Dues and Subscriptions		55.38
199	Miscellaneous Services		222.00
Total			\$ 6,891.34
Materials and Supplies:			
201	Stationery and Office Supplies	\$	520.00
202	Small Tools and Shop Supplies		110.32
204	Wearing Apparel and Personal Supplies		90.55
211	Motor Fuel		196.10
212	Lubricants		40.20
213	Tires and Tubes		170.72
214	Repair Parts and Supplies-Trucks and Autos		1,543.00
222	Repair Parts and Supplies-Plant Equipment		1,720.37
229	Repair Parts and Supplies-Other Equipment		16.00
231	Ferric Sulphate		47,020.33
231	Lime		16,250.98
231	Chlorine		2,259.61
231	Sodium Silicofluoride		19,371.50
231	Miscellaneous Laboratory Supplies		1,415.10
241	Fuel		4,038.39
244	Housekeeping Supplies		572.01
252	Seeds, Fertilizer, Trees and Shrubs		780.29
259	Other Agricultural and Landscaping Supplies		25.00
266	Lumber and Hardware		92.27
267	Paint and Painters' Supplies		216.76
268	Plumbing and Electrical Supplies		59.96
272	Valves and Fittings		35.28
299	Miscellaneous Materials and Supplies		40.00
Total			\$ 96,584.74
Special Items:			
302	Liability Insurance	\$	125.00
Total			\$ 125.00
Capital Outlay:			
501	Office Furniture, Machinery and Equipment	\$	179.25
502	Books, Maps and Charts		18.00
541	Medical and Laboratory Equipment		302.00
Total			\$ 499.25
Scituate Reservoir:			
Salaries:			
001	Labor-Operation	\$	4,952.86
	Repairs-Care of Grounds		7,062.45
	Repairs-Structures and Improvements		25.84
	Repairs-Machinery and Equipment		63.28
Total			\$ 12,104.43
Services Other Than Personal:			
109	Fees Not Otherwise Classified	\$	1.50
111	Telephone and Telegraph		121.43
142	Repairs-Trucks and Autos		304.90
Total			\$ 427.83

Materials and Supplies:		
213	Tires and Tubes	\$ 104.30
214	Repair Parts and Supplies-Automotive Equipment	26.51
252	Seeds, Fertilizer, Trees and Shrubs	1,115.28
265	Fabricated Metal Products	25.00
Total		\$ 1,271.09
Capital Outlay:		
511	Automobiles	\$ 1,282.00
Total		\$ 1,282.00
Other Reservoirs:		
Salaries:		
001	Labor-Operation	\$ 4,891.19
	Repairs-Care of Grounds	1,079.98
	Repairs-Structures and Improvements	122.32
Total		\$ 6,093.49
Services Other Than Personal:		
142	Repairs-Trucks and Autos	\$ 123.02
149	Repairs-Other Equipment	28.42
Total		\$ 151.44
Materials and Supplies:		
213	Tires and Tubes	\$ 36.80
214	Repair Parts and Supplies-Trucks and Autos	7.05
Total		\$ 43.85
Forestry and Maintenance:		
Salaries:		
001	Supervision	\$13,214.66
	Labor-Operation	778.32
	Repairs-Care of Grounds	6,986.01
Total		\$ 20,978.99
Services Other Than Personal:		
102	Expert Consultant and Other Service Fees	\$ 86.00
109	Fees Not Otherwise Classified	2.00
111	Telephone and Telegraph	196.20
115	Transportation of Persons-Conventions	5.40
117	Travel Subsistence-Conventions	70.45
142	Repairs-Trucks and Autos	315.52
143	Repairs-Construction and Other Automotive Equipment	174.69
149	Repairs-Other Equipment	34.70
150	Repairs-Buildings	240.00
183	Dues and Subscriptions	9.00
184	Hospitalization	6.00
199	Miscellaneous Services	57.00
Total		\$ 1,196.96
Materials and Supplies:		
201	Stationery and Office Supplies	\$ 20.02
202	Small Tools and Shop Supplies	273.72
204	Wearing Apparel and Personal Supplies	95.04
212	Lubricants	84.88
213	Tires and Tubes	620.66

214	Repair Parts and Supplies-Trucks and Autos	\$	465.39
229	Repair Parts and Supplies-Other Equipment		79.46
231	Medical, Chemical and Laboratory Supplies		56.46
241	Fuel		1,224.00
252	Seeds, Fertilizer, Trees and Shrubs		300.00
259	Other Agricultural, Horticultural and Landscaping Supplies		1,553.40
260	Loam		180.00
266	Lumber and Hardware		205.47
267	Paint and Painters' Supplies		195.64
299	Miscellaneous Materials and Supplies		26.11
Total			\$ 5,380.25
Capital Outlay:			
502	Books, Maps and Charts	\$	27.00
512	Trucks and Tractors		20,930.00
571	Agricultural and Landscaping Equipment		1,381.76
591	Equipment Not Otherwise Classified		3,497.11
Total			\$ 25,835.87
General:			
Salaries:			
001	Clerical	\$	1,873.92
	Labor-Operation		8,432.37
	Repairs-Structures and Improvements		18.64
	Repairs-Machinery and Equipment		40.92
	Repairs-Care of Grounds		7,897.34
	Repairs-Care of Grounds-Rockland Cemetery		357.46
008	Sick Leave Payrolls		4,090.86
009	Vacation Payrolls		6,781.92
025	Injured Payrolls		344.96
034	Holiday Payrolls		3,044.29
Total			\$ 32,882.68
Services Other Than Personal:			
109	Fees Not Otherwise Classified	\$	255.50
121	Printing and Binding		51.00
142	Repairs-Trucks and Autos		285.39
151	Maintenance and Servicing		1,208.49
Total			\$ 1,800.38
Materials and Supplies:			
201	Stationery and Office Supplies	\$	57.55
204	Wearing Apparel and Personal Supplies		32.05
211	Motor Fuel		2,301.58
212	Lubricants		40.20
213	Tires and Tubes		282.10
214	Repair Parts and Supplies-Trucks and Autos		266.67
244	Housekeeping Supplies and Minor Equipment		209.11
252	Seeds, Fertilizer, Trees and Shrubs		30.38
Total			\$ 3,219.64
Special Items:			
350	Blue Cross and Physicians Service	\$	6,707.50
Total			\$ 6,707.50
Outstanding Commitments-Services Other Than Personal			62.45
Outstanding Commitments-Materials and Supplies			11,609.31
Total-Source of Supply			\$350,892.51

TRANSMISSION AND DISTRIBUTION

Pumping Station:

Salaries:

001 Labor-Operation	\$21,081.59	
Total		\$ 21,081.59

Services Other Than Personal:

109 Fees Not Otherwise Classified	\$ 92.87	
111 Telephone and Telegraph	646.80	
131 Light and Power	22,334.08	
146 Repairs-Plant Equipment	90.00	
150 Repairs-Buildings	52.80	
151 Maintenance and Servicing	1,161.21	
159 Repairs-Other Structures	1,144.00	
181 Laundry and Cleaning	48.00	
199 Miscellaneous Services	113.00	
Total		\$ 25,682.76

Materials and Supplies:

201 Stationery and Office Supplies	\$ 170.48	
211 Motor Fuel	372.59	
212 Lubricants	38.00	
222 Repair Parts and Supplies-Plant Equipment	15.87	
241 Fuel	491.11	
252 Seeds, Fertilizer, Trees and Shrubs	389.32	
Total		\$ 1,477.37

Pipe Lines:

Salaries:

001 Supervision	\$ 9,281.22	
Clerical	8,237.10	
Labor-Operation	104,214.24	
Repairs-Trucks and Autos	7,643.85	
Repairs-Care of Grounds and Buildings	9,786.20	
Repairs-Transmission Mains	1,519.16	
Repairs-Distribution Mains	11,190.91	
Repairs-Gates and Valves	18,263.41	
Repairs-Hydrants	15,481.86	
Repairs-Services	12,590.70	
New Work-Distribution Mains	2,845.76	
New Work-Gates and Valves	9,041.42	
New Work-Hydrants	28,828.17	
New Work-Services	44,868.78	
New Work-Meters (Emergency)	30.46	
Retirement Work-Distribution Mains	1,235.87	
Retirement Work-Gates and Valves	33.55	
Retirement Work-Hydrants	201.57	
Retirement Work-Services	4,705.09	
Total		\$289,999.32

Services Other Than Personal:

102 Expert Consultant and Other Service Fees	\$ 274.00	
109 Fees Not Otherwise Classified	52.00	
111 Telephone and Telegraph	402.16	
112 Postage, Freight and Express	60.34	
131 Light and Power	478.71	
141 Repairs - Office Machinery	36.37	
142 Repairs - Trucks and Autos	1,298.31	
143 Repairs - Construction and Other Automotive Equipment	2,942.64	
150 Repairs - Buildings	507.50	
151 Maintenance and Servicing	1,168.55	

153	Repairs - Street Openings	\$29,734.69	
163	Rental - Other Equipment	1,102.00	
165	Rental of Land	273.00	
181	Laundry and Cleaning	349.42	
184	Hospitalization	99.65	
199	Miscellaneous Services	546.79	
Total			\$ 39,326.13
Materials and Supplies:			
201	Stationery and Office Supplies	\$ 208.85	
202	Small Tools and Shop Supplies	1,048.97	
204	Wearing Apparel and Personal Supplies	196.61	
211	Motor Fuel	5,637.35	
212	Lubricants	431.72	
213	Tires and Tubes	789.36	
214	Repair Parts and Supplies-Trucks and Autos	2,418.29	
231	Medical, Chemical and Laboratory Supplies	388.99	
241	Fuel-Kerosene Oil	302.88	
244	Housekeeping Supplies and Minor Equipment	130.08	
261	Gravel, Sand and Stone	510.64	
262	Cement, Plaster and Related Products	601.72	
264	Fabricated Cement Products	240.10	
266	Lumber and Hardware	834.13	
267	Paint and Painters' Supplies	838.21	
268	Plumbing and Electrical Supplies	5,845.74	
269	Construction and Maintenance Materials and Supplies		
	Not Classified	213.68	
271	Pipe-Cast Iron	2,946.92	
271	Pipe-Service	12,463.83	
271	Pipe-Asbestos Cement	2,785.38	
271	Pipe-Other	41.16	
272	Hydrants, Valves and Fittings	91,100.54	
272	Gates and Valves	15,582.23	
279	Water System Materials and Supplies Not Otherwise Classified	5.80	
299	Miscellaneous Materials and Supplies	150.00	
Total			\$145,713.18
Special Items:			
331	Payment of Claims and Damages	\$ 220.00	
Total			\$ 220.00
Capital Outlay:			
512	Trucks and Tractors	\$ 5,250.00	
521	Construction and Engineering Equipment	1,082.02	
591	Equipment Not Otherwise Classified	3,295.55	
Total			\$ 9,627.57
Other Structures and Improvements:			
721	New Main Extensions	\$152,758.43	
Total			\$152,758.43
Distribution Reservoirs:			
Services Other Than Personal:			
111	Telephone and Telegraph	\$ 120.00	
131	Light and Power	128.81	
150	Repairs-Structures and Improvements	93.85	
159	Repairs-Other Structures	65.00	
Total			\$ 407.66
Materials and Supplies:			
201	Stationery and Office Supplies	\$ 26.10	
252	Seeds, Fertilizer, Trees and Shrubs	1,080.04	
Total			\$ 1,106.14

General:

Salaries:

001 Labor-Operation	\$ 1,018.48	
Repairs-Trucks and Autos	2,953.68	
008 Sick Leave Payrolls	7,232.13	
009 Vacation Payrolls	12,882.76	
025 Injured Employees' Payrolls	2,371.52	
034 Holiday Payrolls	6,876.50	
Total		\$ 33,335.07

Services Other Than Personal:

141 Repairs-Office Machinery	\$ 28.00	
146 Repairs-Plant Equipment	49.50	
151 Maintenance and Servicing	313.08	
169 Rentals Not Otherwise Classified	38.60	
181 Laundry and Cleaning	81.00	
199 Miscellaneous Services	18.00	
Total		\$ 528.18

Materials and Supplies:

201 Stationery and Office Supplies	\$ 101.62	
241 Fuel	526.16	
244 Housekeeping Supplies and Minor Equipment	88.05	
268 Plumbing and Electrical Supplies	3.53	
Total		\$ 719.36

Special Items:

350 Blue Cross and Physicians Service	\$12,951.50	
361 Expenses for Various Ceremonies	899.95	
Total		\$ 13,851.45

Outstanding Commitments-Materials and Supplies	1,508.20
Outstanding Commitments-New Main Extensions	56,477.82
Outstanding Commitments-Capital Outlay	1,648.00

Total-Transmission and Distribution	\$795,468.23
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METERING

Salaries:

001 Supervision	\$15,558.82	
Clerical	58,962.59	
Labor-Operation	43,024.59	
Repairing Meters	10,439.97	
Removing and Setting Meters	20,512.36	
Testing Meters	4,594.89	
Inspection-Services	4,184.89	
General-Operation	17,189.86	
008 Sick Leave Payrolls	6,679.83	
009 Vacation Payrolls	8,043.18	
025 Injured Employees' Payroll	996.05	
034 Holiday Payrolls	990.07	
Total		\$191,177.10

Services Other Than Personal:

102 Expert Consultant and Other Service Fees	\$ 135.00	
109 Fees Not Otherwise Classified	24.00	
111 Telephone and Telegraph	2,000.00	
112 Postage, Freight and Express	1,421.25	
116 Transportation of Persons-Carfares	1,041.20	
121 Printing and Binding	161.16	
131 Light and Power	1,700.00	
141 Repairs-Office Machinery, Furniture and Furnishings	897.60	

142	Repairs-Trucks and Autos	\$ 921.69	
146	Repairs-Plant Equipment	75.00	
150	Repairs-Structures and Improvements	163.25	
151	Maintenance and Servicing	725.30	
181	Laundry and Cleaning	1,795.44	
184	Hospitalization	38.65	
199	Miscellaneous Services	27,091.37	
	Total		\$ 38,190.91
Materials and Supplies:			
201	Stationery and Office Supplies	\$ 2,806.52	
202	Small Tools and Shop Supplies	167.48	
204	Wearing Apparel and Personal Supplies	122.30	
211	Motor Fuel	1,501.24	
212	Lubricants	60.40	
213	Tires and Tubes	524.86	
214	Repair Parts and Supplies-Trucks and Autos	492.17	
221	Repair Parts and Supplies-Office Machinery and Equipment	11.48	
229	Repair Parts and Supplies-Other Equipment	13.53	
231	Medical, Chemical and Laboratory Supplies	50.58	
241	Fuel	789.07	
244	Housekeeping Supplies and Minor Equipment	176.92	
259	Other Agricultural and Landscaping Supplies	10.58	
266	Lumber and Hardware	27.00	
267	Paint and Painters' Supplies	26.36	
268	Plumbing and Electrical Supplies	1,421.73	
271	Pipe	495.00	
274	Meter Parts	5,087.52	
299	Miscellaneous Materials and Supplies	64.55	
	Total		\$ 13,849.29
Special Items:			
350	Blue Cross and Physicians Service	\$ 8,078.85	
	Total		\$ 8,078.85
Capital Outlay:			
501	Office Furniture, Machinery and Equipment	\$11,052.73	
591	Equipment Not Otherwise Classified	707.11	
	Total		\$ 11,759.84
	Outstanding Commitments-Materials and Supplies	2,518.21	
	Outstanding Commitments-Capital Outlay	119.82	
	Total-Metering		\$265,694.02
	Taxes	476,465.35	
	Employees' Retirement System	72,723.00	
	Social Security F.O.A.S.I.	32,968.97	
	TOTAL OPERATING EXPENSE		\$2,209,045.81

TABLE 42
STATEMENT OF REVENUE - ESTIMATED AND ACTUAL
YEAR ENDED SEPTEMBER 30, 1966

Account	Estimated Revenue	Actual Revenue
Water Rents	\$3,043,400.00	\$3,149,078.53
Hydrant Rental	101,500.00	106,656.59
Electricity	0.00	0.00
Stores Account (Meters)	12,000.00	4,447.12
Repairing and Setting Meters	7,000.00	6,986.75
Fire Supplies and Miscellaneous Repairs	14,000.00	15,906.90
New Service Installations	90,000.00	94,954.00
New Main Extensions	125,000.00	119,505.76
Rentals	600.00	653.48
Other Miscellaneous Receipts	17,500.00	24,196.97
Total	\$3,411,000.00	\$3,522,386.10

TABLE 43
SUMMARY OF ANNUAL WATER WORKS REVENUES 1930-1966

Fiscal Years Ended September 30	Receipts from Sale of Water	Miscellaneous Receipts	Total
1930	\$1,384,369.54	\$218,844.87	\$1,603,214.41
1931	1,414,836.00	237,172.64	1,652,008.64
1932	1,375,450.77	223,058.31	1,598,509.08
1933	1,345,444.69	212,066.79	1,557,511.48
1934	1,387,876.73	184,133.47	1,572,010.20
1935	1,409,269.47	237,518.68	1,646,788.15
1936	1,427,881.10	265,357.71	1,693,238.81
1937	1,429,107.08	229,317.39	1,721,424.47
1938	1,426,986.49	106,359.70	1,533,346.19
1939	1,491,918.63	124,901.37	1,616,820.00
1940	1,551,917.24	115,540.98	1,667,458.22
1941	1,615,351.79	114,960.58	1,730,312.37
1942	1,679,058.50	103,368.22	1,782,426.72
1943	1,629,268.35	86,580.98	1,715,849.33
1944	1,761,016.12	87,946.71	1,848,962.83
1945	1,812,311.82	99,271.44	1,911,583.26
1946	1,808,993.17	123,247.90	1,932,241.07
1947	1,877,471.18	124,372.47	2,001,843.65
1948	2,005,242.58	222,419.41	2,227,661.99
1949	2,031,633.37	229,317.72	2,260,951.09
1950	2,082,814.82	199,061.80	2,281,876.62
1951	2,078,209.84	214,868.70	2,293,078.54
1952	2,053,427.76	322,761.07	2,376,188.83
1953	2,093,625.85	343,477.23	2,437,103.08
1954	2,146,947.18	302,707.38	2,449,654.56
1955	2,166,180.84	379,010.13	2,545,190.97
1956	2,236,331.86	371,715.61	2,608,047.47
1957	2,262,879.80	322,948.62	2,585,828.42
1958	2,273,583.77	318,752.87	2,592,336.64
1959	2,255,865.23	374,493.67	2,630,358.90
1960	2,528,805.97	330,120.32	2,858,926.29
1961	2,758,603.26	351,179.65	3,109,782.91
1962	2,794,556.45	440,769.75	3,235,326.20
1963	2,947,872.00	366,756.30	3,314,628.30
1964	2,986,556.95	441,238.98	3,427,795.93
1965	3,113,868.26	362,201.67	3,476,069.93
1966	3,149,078.53	373,307.57	3,522,386.10

TABLE 44
STATEMENT OF WATER WORKS DEPRECIATION AND EXTENSION FUND
YEAR ENDED SEPTEMBER 30, 1966

	Investment	Cash	Due from Other Funds	Total
Balance September 30, 1965	\$200,000.00	\$395,191.70	\$750,000.00	\$1,345,191.70
Increase During Year Ended September 30, 1966		1,204,345.21		
Disbursements During Year Ended September 30, 1966		1,147,000.00	750,000.00	
Accounts Receivable Year Ended September 30, 1966			500,000.00	
Balance September 30, 1966	\$200,000.00	\$452,536.91	\$500,000.00	\$1,152,536.91

TABLE 45

STATEMENT OF WATER SUPPLY BOARD BONDS OUTSTANDING AND
SINKING FUND REQUIREMENTS ON A 3% BASIS

YEAR ENDED SEPTEMBER 30, 1966

Bonds Payable from Sinking Fund	Rate of Interest %	Year of Issue	Year of Maturity	Issued	Outstanding	Sinking Fund Requirements on a 3% Basis
Water Supply	4	1928	1968	\$1,500,000.00	\$1,500,000.00	\$1,406,548.14
Total Water Supply Debt and Sinking Fund Requirements					\$1,500,000.00	\$1,406,548.14
Sinking Fund Assets Allocated to Water Supply Debt per City Controller's Report on Sinking Fund September 30, 1966 (Includes \$527,222.73 *Water Operating Balance for Year Ended September 30, 1966, plus Prior Year Adjustments of \$13,495.14 or a total of \$540,717.87)						\$2,856,361.38
Amount of Surplus of Requirements on 3% Basis						\$1,449,813.24

*Subject to change due to anticipated discounts on Outstanding Commitments,
see Table No. 41.

TABLE 46

STATEMENT OF SERIAL BONDS OUTSTANDING

YEAR ENDED SEPTEMBER 30, 1966

Description	Rate of Interest %	Year of Issue	Year of Maturity	Serial Requirement	Bonds Issued	Bonds Outstanding
Additions, Alterations and Improvements to the Water Purification Works	3 $\frac{1}{4}$	1962	1992	\$20,000.00	\$1,100,000.00	\$1,040,000.00
New 40 Million Gallon Distribution Reservoir	3 $\frac{1}{4}$	1962	1992	45,000.00	2,050,000.00	1,915,000.00
Total Serial Bonds and Requirements				\$65,000.00	\$3,150,000.00	\$2,955,000.00

TABLE 47

STATEMENT OF FLOATING DEBT OUTSTANDING

YEAR ENDED SEPTEMBER 30, 1966

	Issued	Interest	Principal	Outstanding
Water Purification Improvements II Note No. 9977	\$273,000.00	\$4,299.75	\$54,600.00	\$109,200.00
Water Purification Improvements II Note No. 10023	19,000.00	374.06	4,750.00	9,500.00
Totals Floating Debt	\$292,000.00	\$4,673.81	\$59,350.00	\$118,700.00

TABLE 48

A SUMMARY OF INVENTORIES OF PERSONAL PROPERTY

YEAR ENDED SEPTEMBER 30, 1966

REMOVABLE PROPERTY INVENTORY		\$159,466.17
SOURCE OF SUPPLY:		
Purification Works	\$28,893.72	
Laboratory	2,531.89	
General & Reforestation	8,570.34	39,995.95
TRANSMISSION AND DISTRIBUTION:		
Pipe Lines	\$127,391.36	
Pumping Stations	219.26	
Garage	6,766.87	134,377.49
METERING		39,425.98
SUPPLIES		3,677.76
Total Personal Property Inventory		\$376,943.35

TABLE 49

STATEMENT OF STORES REVOLVING FUND

YEAR ENDED SEPTEMBER 30, 1966

Cash Balance September 30, 1965		\$10,000.00
Outstanding Commitments September 30, 1965		32,873.28
Receipts--October 1, 1965 to September 30, 1966		86,181.47
Total Available		\$129,054.75
Disbursements September 30, 1966	\$103,041.73	
Outstanding Commitments September 30, 1966	11,565.90	
Transferred as Income to General Fund September 30, 1966	4,447.12	
Total Disbursements		\$119,054.75
Cash Balance September 30, 1966		\$ 10,000.00

TABLE 50

STATEMENT OF THE MISCELLANEOUS WATER MAIN EXTENSIONS ACCOUNT

YEAR ENDED SEPTEMBER 30, 1966

Transferred from Depreciation and Extension Fund-July 29, 1957		\$ 15,000.00
Transferred from Depreciation and Extension Fund-July 15, 1958		50,000.00
Transferred from Depreciation and Extension Fund-May 21, 1959		60,000.00
Transferred from Depreciation and Extension Fund-July 7, 1961		35,000.00
Transferred from Depreciation and Extension Fund-July 24, 1962		75,000.00
Transferred from Depreciation and Extension Fund-January 11, 1963		60,000.00
Transferred from Depreciation and Extension Fund-September 13, 1963		15,000.00
Transferred to Acc't. 3-91 Purification Works-December 26, 1963		-1,014.57
Total Available		\$308,985.43
Disbursements September 30, 1966	\$307,108.83	
Outstanding Commitments September 30, 1966	NIL	
Total Disbursements		\$307,108.83
Cash Balance September 30, 1966		\$ 1,876.60

TABLE 51

STATEMENT - ACCOUNT FOR INSERTING NEW VALVES

Transferred from Depreciation and Extension Fund-May 12, 1958		\$ 10,000.00
Transferred from Depreciation and Extension Fund-May 13, 1959		30,000.00
Transferred from Depreciation and Extension Fund-July 7, 1961		65,000.00
Transferred from Depreciation and Extension Fund-May 25, 1962		60,000.00
Total Available		\$165,000.00
Disbursements September 30, 1966	\$141,211.87	
Outstanding Commitments September 30, 1966	13,940.60	
Total Disbursements		\$155,152.47
Cash Balance September 30, 1966		\$ 9,847.53

TABLE 52

SOUTHEASTERLY TRUNK MAIN REINFORCEMENT ACCOUNT

Transferred from Depreciation and Extension Fund-Res. No. 261		\$372,000.00
Disbursements September 30, 1966	\$324,672.42	
Transferred to Depreciation & Extension Fund-September 30, 1966	47,327.58	
Total Disbursements		\$372,000.00
Cash Balance September 30, 1966 (Account Closed)		NIL

TABLE 53

RAW WATER BOOSTER PUMPING STATION

Transferred from Depreciation and Extension Fund-Res. No. 742-December 8, 1965		\$750,000.00
Disbursements September 30, 1966	\$ 29,677.26	
Outstanding Commitments September 30, 1966	317,345.60	
Total Disbursements		\$347,022.86
Unexpended Balance September 30, 1966		\$402,977.14

TABLE 54

CONSTRUCTION OF MAJOR IMPROVEMENTS TO WATER SUPPLY SYSTEM

SUPPLEMENTAL TUNNEL AND AQUEDUCT

Authorized Bond Issue (Chapter 46 P.L. of R.I.) Approved April 26, 1965		\$13,000,000.00
Minus Adjustment to Land Condemnation and Easement Account Res. No. 742		171,000.00
		<hr/>
Corrected Authorized Bond Issue		\$12,829,000.00
Disbursements September 30, 1966	\$651,877.36	
Outstanding Commitments September 30, 1966	1,735,197.10	
	<hr/>	
Total Disbursements		\$ 2,387,074.46
Unexpended Balance of Authorized Bond Issue September 30, 1966		<hr/> \$10,441,925.54

TABLE 55

AQUEDUCT AND TUNNEL LAND CONDEMNATION AND EASEMENTS

Transferred from Supplemental Tunnel and Aqueduct Account		\$ 171,000.00
Disbursements September 30, 1966	\$ 27,354.56	
Outstanding Commitments September 30, 1966	NIL	
	<hr/>	
Total Disbursements		\$ 27,354.56
Unexpended Balance September 30, 1966		<hr/> \$ 143,645.44

TABLE 56

TAXES PAID TO VARIOUS CITIES AND TOWNS

(OCTOBER 1, 1965 TO SEPTEMBER 30, 1966)

Location of Property	ASSESSED VALUATIONS				TAX	
	Land Area (Acres)	Land	Buildings and Improvements	Total	Rate per \$100	Amount Paid
City of Warwick	0.060	\$ 160.00	\$ 0	\$ 160.00	\$3.30	\$ 5.28
City of Cranston	113.007	31,560.00	942,340.00	973,900.00	3.90	37,902.59***
Town of Foster	1,994.280	198,924.00	3,000.00	201,924.00	4.65	9,389.47
Town of Glocester	73.300	14,980.00	0	14,980.00	4.24	623.28
Town of Johnston	103.130	42,163.00	321,937.00	364,100.00	3.80	13,835.80
Town of North Providence	8.529	30,900.00	185,100.00	216,000.00	3.80	8,208.00
Town of Scituate	13,149.552	1,112,500.00	9,262,500.00	10,375,000.00*	----	406,440.63***
Town of West Warwick	8.950	29,645.00	280.00	29,925.00	----	----
Total Real Estate	15,450.808			\$12,175,989.00		\$476,405.05**

*Includes \$12,500.00 Tangible Personal

**In addition to this amount, \$52.80 was paid to the West Glocester Fire District and \$7.50 to the Harmony Fire District.

***Does not include taxes for properties acquired under Chapter 40 of the Public Laws of Rhode Island 1965 for the Supplemental Tunnel and Aqueduct.

Notes: Cranston was paid three installments totalling \$28,406.97 @ \$3.90 per \$100 tax rate and one payment of \$9,495.62 @ \$3.90 per \$100 tax rate.

Scituate was paid three equal installments of \$99,600.00 @ \$4.80 per \$100 tax rate and one payment of \$107,640.63 @ \$4.15 per \$100 tax rate.

Land Areas Changed as Follows:

Cranston

Supplemental Tunnel and Aqueduct Condemnation - Acquired 2.25 acres
 Parcels: 1538, 1612, 1633, 1668, 1669, 1670, 1674,
 1678, 1679, 1681 and 1682.

Scituate

Supplemental Tunnel and Aqueduct Condemnation - Acquired 0.81 acres
 Parcels 1519, 1532 and 1538.
 Plainfield Pike Condemnation, Plat 1269 Reduced 1.228 acres
 Parcels 188 & 189
 Total Reduced by 0.418 acres

West Warwick

Supplemental Tunnel and Aqueduct Condemnation - Acquired 8.95 acres
 Parcels 1557, 1559, 1562, 1563, 1564, 1565, 1567,
 1568, 1569, 1570, 1571, 1572, 1573, 1574,
 1576, 1577, 1579, 1580, 1581, 1587, 1592,
 1594, 1595, 1598, 1603, 1608 and 1598S.

TABLE 57
SUMMARY OF STATISTICS
PROVIDENCE WATER SUPPLY BOARD
YEAR ENDED SEPTEMBER 30, 1966

PROVIDENCE*
(City or Town)

PROVIDENCE
(County)

RHODE ISLAND
(State)

GENERAL STATISTICS

Estimated population of Providence (1966)	185,832
Estimated population supplied in suburbs (1966)	200,055
Total population supplied	385,887
Date of construction	1870-76; 1915-28; 1935; 1938-40; 1954; 1960-62
By whom owned	City of Providence
Source of Supply	Surface water collected in Scituate Reservoir and five smaller reservoirs on north branch of Pawtuxet River.
Available storage capacity of six impounding reservoirs	39,746 m.g.
Mode of supply	82.0% by gravity; 18.0% by pumping

STATISTICS OF CONSUMPTION OF WATER

1. Estimated population supplied	385,887
2. Total raw water influent for the year, gallons	18,763,282,000
3. Average daily raw water influent, gallons	51,406,000
4. Raw water consumption per capita, gallons daily	133.2
5. Total consumption for the year, gallons	18,425,480,000
6. Total registration on customers' meters, gallons	17,535,080,250
7. Percentage of consumption accounted for on customers' meters	95.2%
8. Average daily consumption, gallons	50,480,000
9. Per capita consumption, gallons daily	130.8
10. Gallons per day to each tap	797

*Supplying Providence, Cranston, and portions of Johnston, North Providence, Warwick, Smithfield, Coventry, West Warwick and Scituate.

TABLE 57 (Continued)
SUMMARY OF STATISTICS
PROVIDENCE WATER SUPPLY BOARD
YEAR ENDED SEPTEMBER 30, 1966

FILTRATION

1. Type of filters	Rapid Sand
2. Number of filter units	14
3. Capacity of filter plant	14 units @ 7.5=105 m.g.d.
4. Chemicals used	Ferri-Floc, Quicklime, Chlorine and Sodium Silicofluoride
5. Total water filtered during year, gallons	18,587,913,000
6. Average quantity filtered per day, gallons	50,926,000
7. Total filtered water delivered to the distribution system during the year, gallons	18,424,621,000

STATISTICS RELATING TO THE DISTRIBUTION SYSTEM

1. Kind of pipe	Asbestos-Cement, Cast Iron, Steel and Concrete
2. Sizes	From 6 to 66 inches
3. Installed	41,394.01 feet
4. Removed	11,353.55 feet
5. Net increase	30,040.46 feet
6. Total now in use	798.16 miles
7. Number of leaks per mile	0.07
8. Range of pressure on mains	14 to 95 pounds
9. Range of pressure on mains (special high pressure fire service)	94 to 130 pounds
10. Number of hydrants installed	242
11. Number removed	232
12. Net increase	10
13. Number of hydrants now in use	4,805
14. Number of stop gates installed	146
15. Number removed	74
16. Net increase	72
17. Number of stop gates now in use	10,925

TABLE 57 (Continued)

SUMMARY OF STATISTICS

PROVIDENCE WATER SUPPLY BOARD

YEAR ENDED SEPTEMBER 30, 1966

STATISTICS RELATING TO THE DISTRIBUTION SYSTEM
(Continued)

18. Kind of services	Lead, Copper and Cast Iron
19. Sizes	$\frac{1}{2}$ -inch to 30 inches
20. Number of service taps installed	952
21. Number removed	294
22. Net increase	658
23. Number of services now in use	63,356
24. Number of meters installed	2,082
25. Number removed or condemned	1,296
26. Net increase	786
27. Number of meters now in use	63,286
28. Per cent of services metered	99.93