

SOUTH ESSEX WATERWORKS COMPANY

SHORT DESCRIPTION OF SOURCES AND GENERAL SUPPLY

The South Essex Waterworks Company has been in existence since 1861 when it was incorporated by the South Essex Waterworks Company Act of that date.

The Company's area of supply, extending to 156 square miles, includes the London Boroughs of Barking, Havering and Redbridge (that part which was formerly Ilford) and the urban districts of Brentwood and Thurrock, the main source of supply being the River Stour (Essex and Suffolk) which supplies about half the demand in the area.

There are also seven wells in the chalk formation within the area of supply and these, formerly the only supply, are now used to supplement that from river sources.

The River Stour flows into the sea near Harwich, the catchment area being 330 square miles. The water is pumped from the River Stour through two pumping stations; one at Langham supplies a sedimentation reservoir, holding about 32 million gallons, where the water is allowed to settle for about three days. From this reservoir it flows by gravity to the Langham treatment works where it passes through what we call our primary filters which consist of a bottom layer of coarse gravel on top of which there is a layer of sand about 2 ft. thick. The effect of the water passing through these filters is that it is considerably clarified. Thereafter the water passes to the secondary sand filters which are similar in construction to the primary filters but of a much greater surface area, with a corresponding lower rate of filtration, and the effect of the water passing through these filters is that the water is further clarified and all the suspended impurities, etc., are taken out in the course of filtration.

There is a large storage reservoir at Abberton, four miles south of Colchester, the capacity being 5,700 million gallons and the associated filtration treatment is similar to that given above. These works are our Layer-de-la-Haye works. The second pumping station on the Stour at Stratford St. Mary supplies the Abberton Reservoir.

After the water has been filtered twice, as mentioned above, chlorine is added in order to sterilise it and make it safe for drinking. It is then pumped from these treatment works for a distance of about 45 miles through large steel pipes varying from 36" diameter to 32" diameter, and is received at covered storage reservoirs near Brentwood, holding about 25 million gallons, and from there it is delivered throughout the Company's area of supply.

A further source of supply is now afforded from the 6,000 million gallon Hanningfield Reservoir, which is situated some 5 miles south-east of Chelmsford. This water is pumped into the aqueducts from the River Stour source so that a mixture of the two waters is received at the covered storage reservoirs near Brentwood. The Hanningfield Reservoir gets its water from the Rivers Chelmer, Blackwater and Ter, water being pumped at Langford into 48" mains to the reservoirs. The works are jointly owned by the South Essex and the Southend Waterworks Companies. A different form of treatment is used involving softening, upward flow tanks and rapid gravity filtration followed by chlorination.

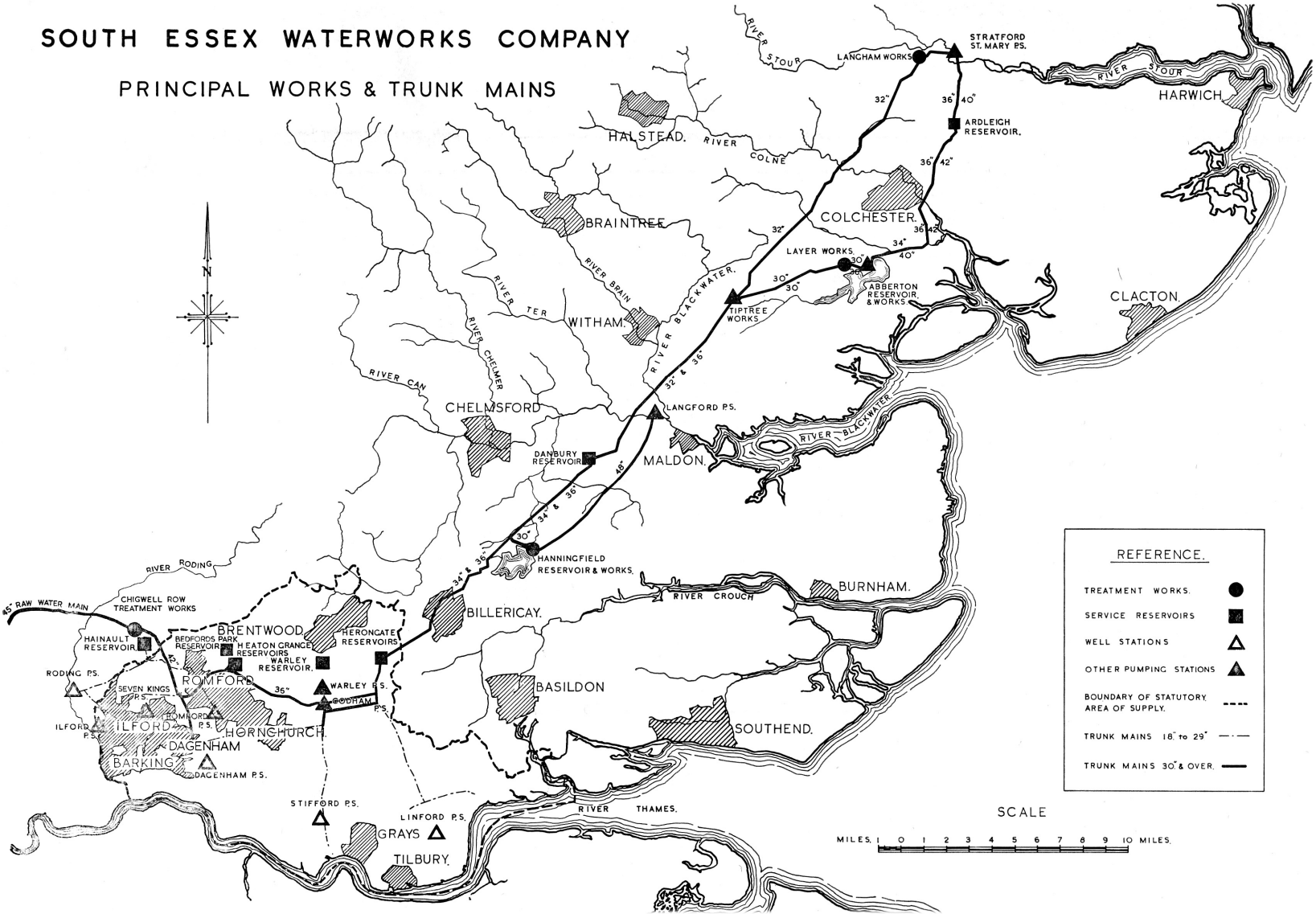
More recently the Company have constructed a large treatment works at Chigwell Row. The form of filtration there is similar to that of the Stour water, i.e., primary filtration and secondary filtration. In addition to filtration, upward flow tanks are available for pre-treating the water. The high degree of flexibility in treatment processes is necessary since the untreated water being brought from the Thames via the Metropolitan Water Board can be stored river water or water direct from the river without storage. In connection with this latter scheme the treated water storage at Heaton Grange has been increased to 35 million gallons.

Several small schemes have been or are being carried out to augment the yield of Abberton Reservoir. At present the Company is involved in extending the Layer-de-la-Haye Works to twice their present size and together with the Southend Waterworks Company doubling the size of the of the Hanningfield Treatment Works. The additional water which will be treated will be brought into the Essex Rivers by the Essex River Authority from the Ely Ouse near Denver Sluices through 100" diameter tunnels and 66" diameter pipes. The Company will extract up to 70 m.g.d. from the Stour and this will make available a further 12 m.g.d. from Abberton Reservoir. Similarly there will be a further 12 m.g.d. available to South Essex and Southend Waterworks Companies from Hanningfield.

The River Authority, with the support of the water undertakers, anticipate that the Ely Ouse Scheme will be extended in due course up to a yield in excess of 50/60 m.g.d.

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PRINCIPAL WORKS & TRUNK MAINS



REFERENCE.

- TREATMENT WORKS. ●
- SERVICE RESERVOIRS. ■
- WELL STATIONS. ▲
- OTHER PUMPING STATIONS. ▲
- BOUNDARY OF STATUTORY AREA OF SUPPLY. - - - -
- TRUNK MAINS 18" to 29" - - - -
- TRUNK MAINS 30" & OVER. ———

SCALE

