

Another Period Comparing Aerated and Non-Aerated Septic Action.

	Nitrogen as free ammonia.	Nitrogen as albuminoid, N.H ₃ .	Oxygen consumed.
Influent	27.5	12.7	62.0
16 hours before aeration.	33.8	3.31	33.25
Immediately after.....	31.4	3.92	27.2
16 hours after = 32 hours (aerated)	35.5	2.4	25.9
32 hours storage, no aeration (non-aerated)	57.0	2.42	25.6

Sprinkling Filters.—The results of analyses of consecutive samples of effluent from the sprinkling filters

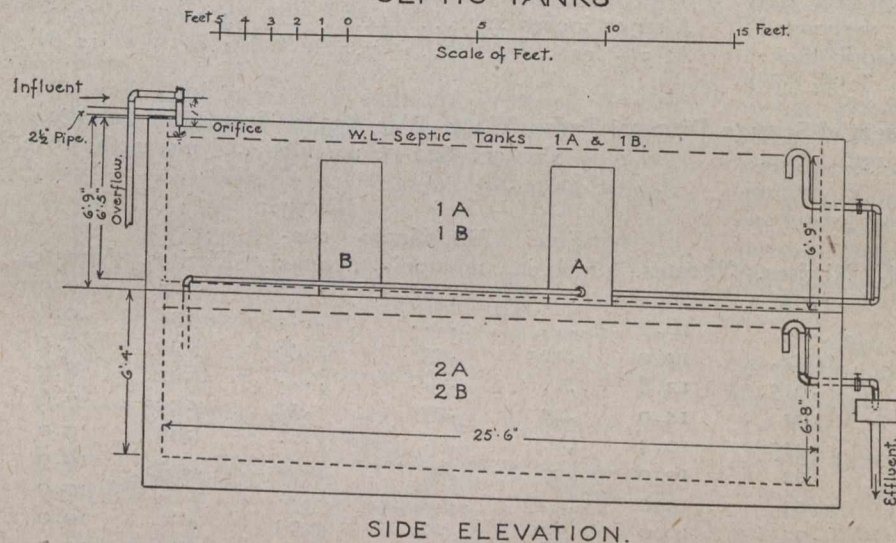
of a large number of analyses of samples taken at short intervals and extending over a considerable period.

Average Analyses of Sprinkling Filter (Crushed Stone).

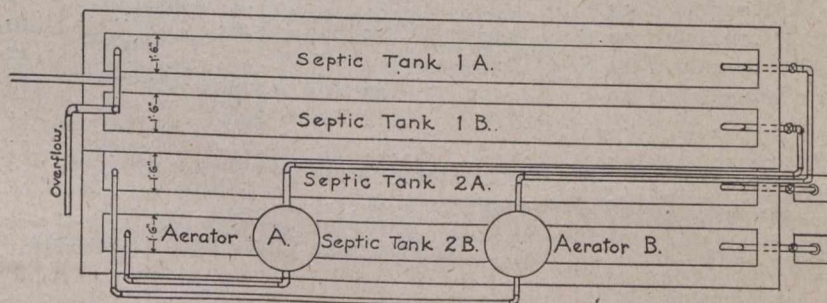
	Nitrogen as free ammonia.	Nitrogen as albuminoid ammonia.	Oxygen consumed in five minutes.
Influent	19.17	11.5	64.0
Effluent when working well	10.16	4.6	24.7
Effluent when working badly	24.04	5.6	47.4

NOTE—Both albuminoid ammonia and oxygen consumed are effected by humus in the effluent.

EXPERIMENTAL PLANT SEPTIC TANKS



SIDE ELEVATION.

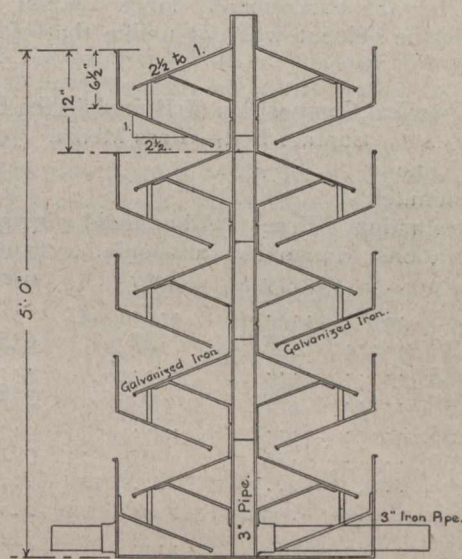


PLAN.
Fig. 2.

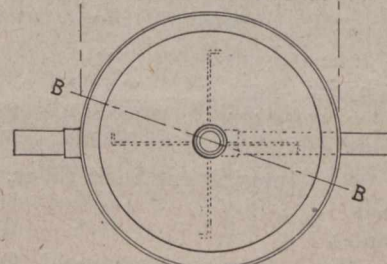
showed surprising variation, particularly in the amount of oxygen consumed in 5 minutes. This was found to be due entirely to the suspended matter in the effluent. Some samples seemed to be entirely different when analyzed immediately after shaking, but on analysis after settling showed no practical difference. The amount of flocculent and easily settled matter in the effluent made large differences due to the rapidity with which it takes oxygen from potassium permanganate and also partly to every variation or error being multiplied by 10; thus, a comparatively slight variation in the amount of permanganate used assumed large proportions when multiplied by 10—one drop would become nearly 0.5 cc. These factors must be taken into consideration, and in order to know what work a unit is doing it is necessary to have a true average

SEWAGE AERATOR

Scale of Feet.



SECTION B. B.



PLAN.
Fig. 3.

An examination of the surface of the sprinkling filter under normal conditions showed each separate piece of stone to have a thin covering of organic growth. Periodically, however, the surface of the filter became practically covered with fungal growths, usually *Beggiatoa Alba*. Then it became necessary to stop the filter and allow it to rest and dry for a couple of days. This treatment seemed all-sufficient and no trouble would be experienced from this cause for a considerable period. The sewage used on this bed was an effluent from an Imhoff tank. The tank containing fresh sewage quite possibly assisted inoculation with the organism, one cycle growing at the edge of the Imhoff tank which varied 3 inches in level between each throw in of the pump, and this with the ideal condition for the growth existing on the surface of