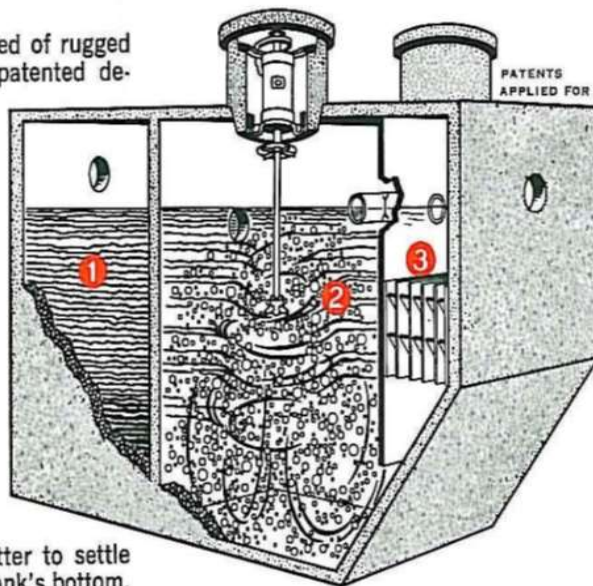


Jet Plant Aeration - Operation and Maintenance

1. Aeration sewage treatment systems are issued an annual permit.
2. A service contract with a registered service contractor or the health department is required.
3. An annual inspection is required by a registered service contractor or a trained homeowner. Submit a copy of the inspection report to the health department within sixty days of the inspection.
4. The permit requires the tank to be pumped every eight years, at a minimum. Some tanks may benefit from more frequent pumping, based on the size of the tank and the number of people.
5. The timer is located in the home or garage. It should be set to cycle 25 minutes "on" 20 minutes "off." Old timers should be set for 18 hours total running time.

The Jet plant is constructed of rugged permanent concrete. Its patented design incorporates three separate compartments, each performing a specific function in the total purification process.



1 The Primary Treatment compartment receives the household sewage and holds it long enough to allow solid matter to settle to the sludge layer at the tank's bottom. Organic solids are here broken down physically and bio-chemically by anaerobic bacteria — those bacteria that live and work without oxygen. Grit and other untreatable materials are settled out and held back. The partially broken down, finely divided material that is passed on to the aeration compartment is much easier to treat than raw sewage. This, of course, is the reason for Jet's primary compartment. It's one of the steps that make it possible for Jet plants to reduce incoming sewage to a clear effluent within the short period of 24 hours.

2 In the Aeration chamber the finely divided, pre-treated material from the primary compartment is mixed with activated sludge and aerated. The patented Jet aerator injects large quantities of fresh air into this compartment to provide oxygen for the aerobic digestion process, and it thoroughly mixes the compartment's entire contents.

The aerator is mounted in a concrete housing that rises to ground level to give it access to fresh outside air. In injecting air into the liquid, the aerator

breaks up the air into tiny bubbles so more air comes in contact with the liquid, thus hastening the aerobic digestion process. Aerobic bacteria, which are bacteria that live and work in the presence of oxygen, then use the oxygen in solution to completely break down the sewage and convert it to odorless liquids and gases.

The Aeration compartment has a 50% greater capacity than is required in the National Academy of Sciences-National Research Council Criteria. This extra capacity gives a Jet plant a more-than-adequate safety factor to handle shock loads from weekend guests, multiple baths, automatic laundries, and dishwashers.

3 The final phase of the operation takes place in the settling/clarifying compartment. In this compartment a tube settler eliminates currents and encourages the settling of any remaining settleable material which is returned, via the tank's sloping end wall, to the aeration compartment for further treatment. A non-mechanical surface skimmer, operated by hydraulics, skims any floating material from the surface of the settling compartment and returns it to the aeration compartment. The remaining odorless, clarified liquid flows into the final discharge line through the baffled outlet.

*"Evolution of the Suburban STP," Stanley E. Kappe, Sanitary Engineer, from Water and Sewage Works, Reference Number, 1963.



AUGLAIZE COUNTY
HEALTH DEPARTMENT

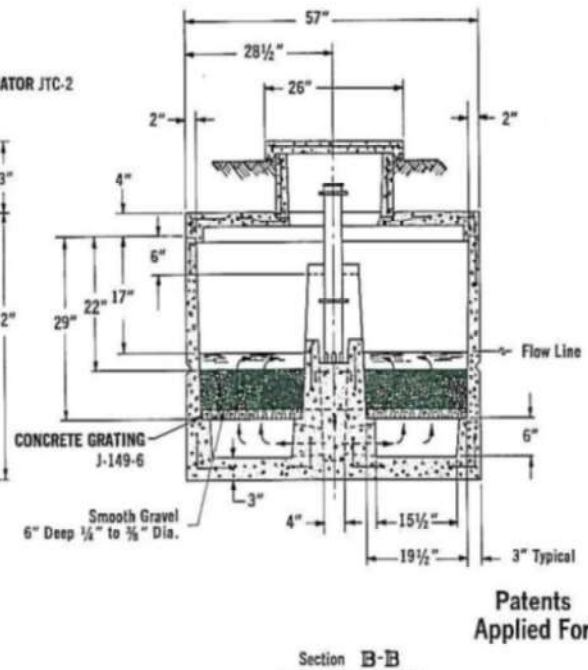
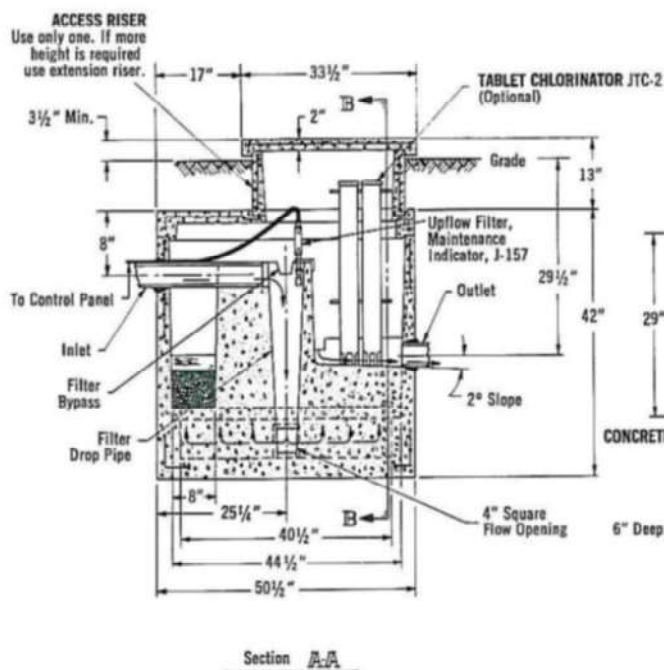
prevent. promote. protect.

Maintaining The Filter

Because household sewage treatment installations must operate economically and generally unattended, Jet designed its filter to cut maintenance and maintenance cost to the bone. The filter does not lose efficiency because of the accumulation or entrapment of solids in the filtering medium. Filter treatment decreases only when biological growth in the medium seals off the voids in the medium that allow fluid passage. Consequently, routine backwashing of the medium every six months is recommended. This is the only maintenance normally required. If the filter is maintained as recom-

mended, this job takes only minutes and requires no excavation or inconvenience to the homeowner. It is performed through the concrete access riser on top of the tank by qualified service personnel of the licensed Jet distributor, usually during a routine inspection of the home plant. Since the backwash from the filter is pumped into the treatment plant's aeration chamber, no tank trucks or other heavy equipment are needed. An inspection/service policy is available from Jet distributors to cover filter backwashing.

Specifications



Patents
Applied For

GENERAL

Furnish and install (1) Jet Upflow Filter, as manufactured under license and specifications of Jet Aeration Company, Cleveland, Ohio, U.S.A., to provide tertiary treatment for the effluent from the Jet Home Sewage Treatment Plant.

TANK

The filter tank shall be manufactured of precast reinforced concrete and shall be equipped with concrete cover, necessary riser(s), concrete grating to support filter medium, as shown on Drawing #J-149. Tank shall have a 110-gallon capacity and 12 square feet of filter area. It shall be equipped with removable access cover at grade. An internal outlet channel, suitable for use with the optional Jet Tablet Chlorinator, shall be provided.

FILTERING MEDIUM

The filtering medium shall be $\frac{1}{4}$ " to $\frac{3}{8}$ " diameter smooth pea gravel, or approved alternate, to a depth of 6".

INSTALLATION

The filter shall be mounted inline after the clarifying compartment of the Jet Home Plant.

OPTIONAL CHLORINATOR

The filter shall be equipped with a Jet Tablet Chlorinator, as specified in the brochure "Jet Home Effluent Chlorination."

OPTIONAL MAINTENANCE INDICATOR*

The filter shall be equipped with a maintenance indicator which activates a warning light in the home to notify the owner that the filter needs backwashing.

OPTIONAL GRATING

The filter tank shall be covered with hinged, padlocked steel bar grating in lieu of the standard concrete cover.

*This option must be included on all installations requiring N.S.F. approval.

