Advanced Onsite Solutions LLC
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Canterbury, NH 03224
(603)-369-4777
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PERFORMANCE SPECIFICATIONS:

THE CLEAN SOLUTION system has been designed based on the following standard residential wastewater influent strength from primary septic tank(s) - BOD_5[(1)] of <180 mg/l, TSS[(2)] <100 mg/l and FOG[(3)] <10 mg/l. Leach fields are designed based on a peak design flow measured in gallons per day (GPD). Leach fields are not designed to be loaded at the peak design flow every day. The peak factor is typically twice the average household water consumption over a 30 day period. Leach fields that are loaded at the peak design flow on a daily basis may experience premature failure. It is important to repair leaking water fixtures promptly and to spread out laundry through the week rather than doing several loads in one day.

LIMITED WARRANTY

For a period of three years from the date of installation, AOS warrants that the components within the BioCon chamber will be free from defects. If a defect exists, AOS will repair or replace the defective components at no cost to the owner. This limited warranty does not cover the cost of pumping the system to make necessary repairs, or the cost for excavation to replace/make repair. Replacement of vegetation or other landscaping features is not covered under this warranty. This limited warranty does not cover failure of the dispersal field/ EDA(s). AOS does not warranty THE CLEAN SOLUTION system or EDA components installed by others.

For compressors that have been maintained and used under normal operating conditions, AOS will extend the compressor manufacturer's warranty from one year to two years. Labor to replace compressors will be billed out at AOS standard hourly rates.

EXCLUSIONS AND LIMITATIONS -*This limited warranty for pump chamber components (pump, floats, alarms, etc.) if supplied by AOS is limited to the manufacturer's terms and conditions. Labor to replace effluent pump/floats/alarms covered under the manufacturer's warranty will be billed out based on AOS's current standard hourly rates.*

It is the owner's responsibility to ensure that inspections are performed by AOS or an AOS-approved vendor. Failure to perform inspections, perform the required maintenance, and maintain records of pumping or to notify AOS of any problems will void this limited warranty. This limited warranty does not cover damage caused by improper use by the occupants, poor construction or design practices, high groundwater, flooding, or acts of God.

Owner shall defend, indemnify, and hold harmless AOS and its employees and subcontractors, from and against any and all claims, demands, causes of action, damages, liabilities, losses, and expenses arising from the project and/or the contract to the extent caused by the fault of Owner and/or its consultants, design professionals, or agents.

THIS LIMITED WARRANTY IS IN LIEU OF AND SUPERSEDES ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. AOS SHALL NOT BE LIABLE FOR ANY DIRECT OR INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, NOR SHALL AOS LIABILITY UNDER THIS WARRANTY EXCEED THE AMOUNT PAID TO AOS FOR ***THE CLEAN SOLUTION SYSTEM****. This limited warranty is based on plans submitted to AOS for review. Failure to follow recommendations from AOS will void warranty.*

1) *Biochemical Oxygen Demand (BOD)-determines the approximate quantity of oxygen required to treat wastewater. Also used to judge the performance of a treatment unit.*
2) *Total Suspended Solids (TSS) – determines the amount of solids that do not settle out in the tank and can pass through to the leach field. Also used to judge the performance of a treatment unit.*
3) *Oil Grease (OG) – interferes with the biological action of the treatment process and cause maintenance issues and clogging of the leach field.*

ADVANCED ONSITE SOLUTIONS LLC
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THEORY of *THE CLEAN SOLUTION™*

Conventional decentralized septic systems whether used for individual homes, commercial applications or a community septic system a septic tank(s) are used to first provide anaerobic (without air) treatment of the waste which is then followed by a leach field to provide aerobic (with air) treatment of the effluent.

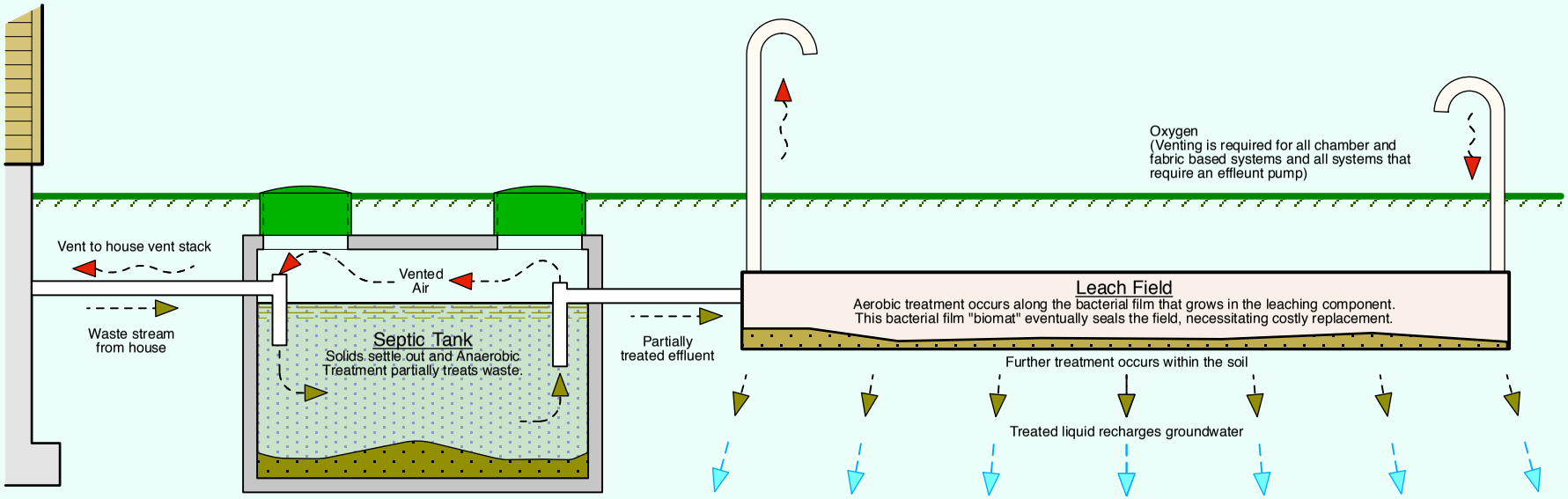
Septic tanks work well for capturing and digesting the solids, which are anaerobically fermented over a long period of time, dissolving the solids into liquid waste. However, a septic tank is not designed to treat the contaminants that dissolve in the liquids. These are treated aerobically in the leach field. Municipal systems, which handle very large volumes of wastewater, use different equipment to accomplish the same biological functions as a septic system: primary sedimentation tanks remove solids, and a subsequent aerobic system treats the contaminants dissolved in the liquids. Settled solids are removed from municipal primary and secondary facilities for further treatment.

Every aerobic treatment system, whether a conventional leach field, municipal treatment plant, or ***THE CLEAN SOLUTION***, depends on bacteria to treat the effluent from a solids settling system. In order for the bacteria to reproduce, they require energy (food) and air. By using the contaminants in the effluent as food and atmospheric air, the bacteria metabolize the dissolved solids to carbon dioxide, water, and sludge (colonies of bacteria). The aerobic bacteria also convert ammonia compounds to nitrates.

A large number of bacteria need to come in contact with the food source in order to purify an effluent. Treatment systems utilize different methods to provide the necessary bacteria population. A municipal system mechanically stirs up the bacteria in the secondary treatment process so that they will contact their food and not settle out of the effluent. In a leach field, the sludge (biomat) that forms at the ground interface is a large colony of bacteria through which the dissolved solid stream flows. In ***THE CLEAN SOLUTION*** the bacteria collect in a thin film on the plastic media in the BioCon chamber, and the effluent circulates through the plastic media.

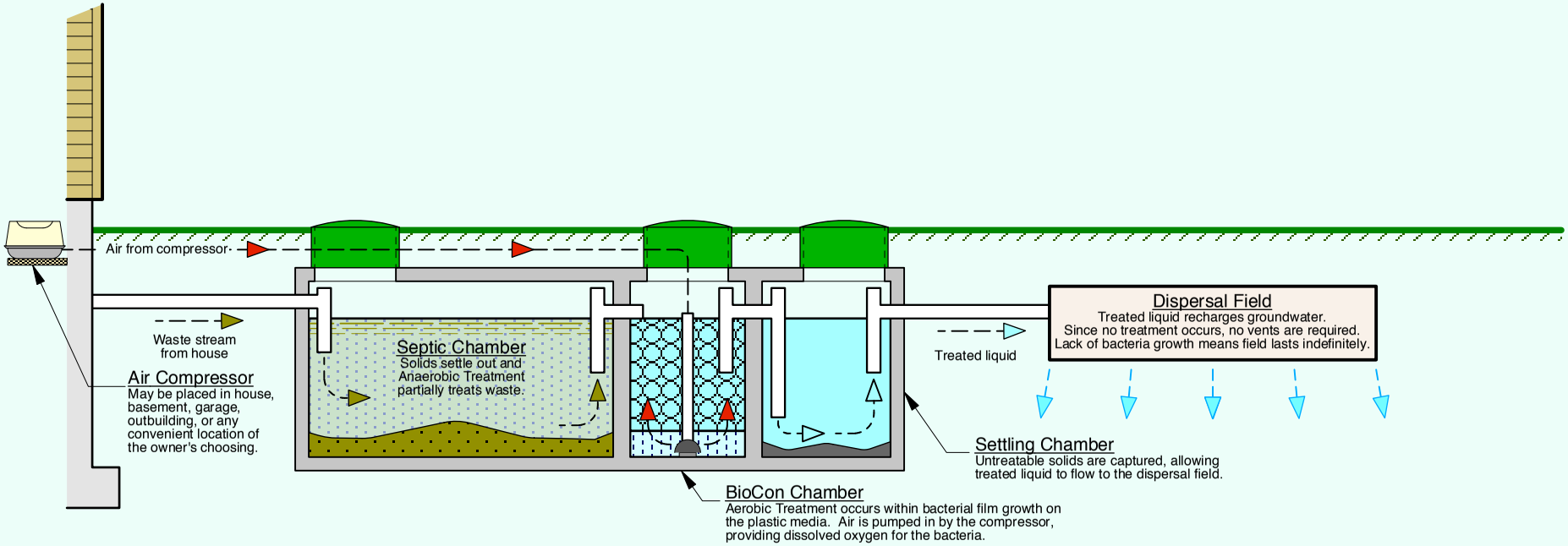
THE CLEAN SOLUTION uses the same biological process as a municipal secondary treatment plant, utilizing the activated sludge process. Solids are settled out and air is added for bacteria respiration in the BioCon. This allows the bacteria to convert the carbonaceous dissolved solids to carbon dioxide, water, and sludge. In addition, the urea and ammonia converts to nitrates and sludge. The sludge created is settled for periodic removal from the system, and a clean, odorless effluent is discharged to the dispersal field.

The major difference between a conventional septic system and ***THE CLEAN SOLUTION*** is where the bacteria (sludge) collect. In a conventional system, the sludge forms in the bottom of the leach field and restricts the effluent flow enough so that the bacteria has time to act. This flow rate through the sludge determines the required field size. In ***THE CLEAN SOLUTION*** system the sludge is formed in the BioCon chamber, resulting in treated, clear effluent discharging to the dispersal field. This field can be greatly reduced in size because there is no further treatment required to reduce BOD and TSS.



CONVENTIONAL LEACH FIELD SEPTIC SYSTEM

Treatment occurs within the leach field components, whether fabric wrapped pipes or mats, concrete or plastic chambers or traditional pipe & stone.



THE CLEAN SOLUTION™ ALTERNATIVE SEPTIC SYSTEM

Treatment occurs within the BioCon™ Aerobic treatment chamber, allowing for a dispersal area smaller than a leach field.

Advanced **O**nsite **S**olutions LLC
innovative wastewater solutions with sustainable results
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