

# Advanced Onsite Solutions

*innovative wastewater solutions with sustainable results*



**THE CLEAN SOLUTION™**  
**VERMONT MANUAL**  
**2020**



# **THE CLEAN SOLUTION™**

## **VERMONT MANUAL 2020**

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DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Drinking Water & Groundwater Protection Division

THIS IS SUBJECT TO PROVISIONS  
OR CONDITIONS LISTED IN PERMIT

Permit #: 2008-02-R4

Date: July 2, 2020

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## ADVANCED ONSITE SOLUTIONS LLC

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### THE CLEAN SOLUTION™

Alternative Wastewater Treatment System

Advanced Onsite Solutions, LLC (AOS) thanks you for your interest in **THE CLEAN SOLUTION™** alternative wastewater treatment system. AOS manufactures and distributes **THE CLEAN SOLUTION** system in New Hampshire, Vermont, Maine and Massachusetts.

**THE CLEAN SOLUTION** is an affordable, ecologically sound alternative wastewater treatment system that replaces the conventional leach field currently required with septic systems. Developed more than 20 years ago in Jaffrey, N.H. by wastewater engineer Harold Davis, **THE CLEAN SOLUTION** accomplishes the biological functions of a leach field in an underground tank the size of a septic tank. The discharge is a treated effluent which is cleaner than typical treated municipal sewage. **THE CLEAN SOLUTION** system is widely used in New Hampshire, Maine, Massachusetts and Vermont, with installations ranging in capacity from single-family homes and vacation cottages to large community systems and commercial applications.

The following pages provide you information pertaining to **THE CLEAN SOLUTION** system. This information is provided to give you a clear understanding of the system, as well as your respective responsibilities as a Home Owner, Designer, or Installer. Information is updated as necessary to address technological advances or regulatory updates pertaining to the system approval process. To ensure that you have the most current information, please contact AOS at 1-866-900-2415.

There are four critical steps that need to be followed when using **THE CLEAN SOLUTION** system.

1. The owner must hire a Designer licensed in the state where system will be installed. **THE CLEAN SOLUTION** system must be designed, installed and operated as described in the Innovative/Alternative System approval granted by that state's Department of Environmental Services.
2. Prior to making an application for state or local approval, a copy of the design plan(s) and supporting documentation must be submitted to AOS for review and approval. This is required to ensure the homeowner(s) has been provided with the required documentation outlining the Sales, Maintenance, and Inspection of the system.
3. AOS requires that the components of **THE CLEAN SOLUTION** system be installed by AOS or a vendor trained and approved by AOS.
4. The owner of a property where **THE CLEAN SOLUTION** system has been installed shall have a valid inspection contract with AOS or an approved vendor. The minimum length of any contract shall be for a period of two years.





## Notice to Owners of Innovative and Alternative (IA) Wastewater Treatment Systems

The State of Vermont Drinking Water and Groundwater Protection Division allows the use of Innovative/Alternative (IA) wastewater treatment systems. IA systems are used to: assist in overcoming site limitations that would otherwise not allow for the construction of a wastewater system on the property, to reduce the wastewater strength prior to disposal, or to decrease the size of a wastewater system. As a landowner you should be aware of the required conditions in your Wastewater System and Potable Water Supply Permit. The conditions were deemed necessary to ensure that all persons using or affected by the alternative system or product will be protected from health hazards associated with the use of the system or product.

### **Q. - Am I required to keep a maintenance contract?**

**Yes.** Approved systems have specific permit conditions associated with installation and operation that requires landowners to retain a maintenance contract with a professionally trained and approved service provider. A list of approved Service Providers can be found at:

<http://dec.vermont.gov/sites/dec/files/dwgwp/innovative/pdf/serviceprovidercontacts.pdf>

### **Q. - My IA System is working, can I just call a service provider when I notice a problem?**

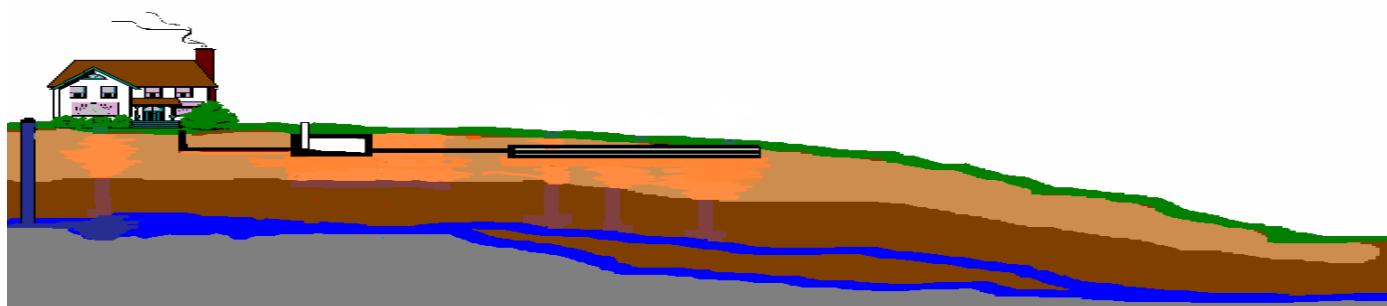
**No.** Proactive maintenance and servicing will ensure that the System is working as intended and avoid repairs or replacement at a major cost to the homeowner. IA systems need servicing just as much as your heating system or your vehicle; without these procedures your system may not run its intended lifetime. Routine servicing can detect problems that you might not even be aware of before major repairs are needed.

### **Q. - What should my service provider be doing if I have a maintenance contract?**

Maintenance activities varies by system type and site conditions, but at a minimum your service provider should: perform annual or more frequent inspection if required, evaluate the site and surrounding landscape for possible problems, and measure tank solid levels to assess if pumping is needed. Depending on the type of system, the service provider may need to: clean or replace the filters, clean pumps, screens, motors and or floats, and advise you on appropriate use and preventative maintenance of the system (i.e. spread the loads of laundry throughout the week).

### **Q. - Why does the State of Vermont care if my wastewater system is properly maintained?**

When an onsite wastewater system fails, it's not just the homeowner who is affected. Improperly treated wastewater contains bacteria, viruses and other pollutants. A failed system can result in untreated wastewater: surfacing, leaching into groundwater that we drink, or it can run off into surface waters. This is a health hazard for the general public and is especially dangerous for children and the elderly and anyone with a compromised immune system.



## **Q. – What is the benefit to maintaining my IA system?**

IA Systems are more complicated than traditional inground systems and may have alarms, filters, pumps, blowers, spray heads, nozzles, floats, tanks, or media. Periodic cleaning, inspection, replacement of components and adjustment keeps the system running properly. Ongoing maintenance may help identify problems that can be fixed before they impact the leachfield. Once damage occurs, repairing or replacing the leachfield or treatment unit can be costly.

## **Q. - What happens if I do not comply with my permit conditions?**

If a system owner is in violation of their permit, the future sale of a property or a request for a permit amendment may be delayed or negatively impacted. A site-specific permit for the use of an IA product may be revoked if the property owner fails to have a valid maintenance contract or if the unit fails to function properly.

## **Q. - What are my IA system requirements?**

Depending on the complexity of your system, annual or semi-annual inspections must be performed by your contracted service provider or licensed designer. You should check the conditions of the IA approval letter. Inspection reports must be submitted to the State of Vermont Department of Environmental Conservation. Check with your service provider to see if they provide a reporting service.

## **Q. - What if I have concerns about my IA Service Provider?**

The State of Vermont requires IA service providers to be approved and trained by the Vendor. If the service provider is not meeting the conditions in your contract, not responding to emergency calls or you are unsatisfied for any other reason the vendor should be made aware of your concerns. A list of Vendor contacts can be found at:  
<http://dec.vermont.gov/sites/dec/files/dwgwp/innovative/pdf/serviceprovidercontacts.pdf>

If you are unsatisfied with the Vendor's response to your concern you may contact:

**Cristin Ashmankas**, Environmental Analyst  
Department of Environmental Conservation  
Drinking Water and Groundwater Protection Division  
[phone] 802-522-3257  
[email] [Cristin.Ashmankas@Vermont.gov](mailto:Cristin.Ashmankas@Vermont.gov)

## **Q. - Where can I find my permit?**

If you were the permit applicant, you would have received a copy of the Permit and IA Approval at the time of approval. If you purchased a property with an existing IA System, you should have received a copy of the permit and IA Approval at the time of closing. If you cannot locate your permit, you may use the on-line permit document search tool <[septic.vt.gov/cfm/wwdocs/index.cfm](http://septic.vt.gov/cfm/wwdocs/index.cfm)> (permit document search) or contact the appropriate Regional Office for assistance at <[septic.vt.gov](http://septic.vt.gov)> (program information). There are some installations that may have been exempt from needing a state permit. There may be records on these systems located in the town clerk's office.

## **Q. - Who do I contact if I have compliance questions?**

**Christina Russo**, Environmental Analyst  
Department of Environmental Conservation  
Drinking Water and Groundwater Protection Division  
[phone] 802-585-4885  
[email] [Chris.Russo@Vermont.gov](mailto:Chris.Russo@Vermont.gov)



**WASTEWATER SYSTEM AND POTABLE WATER SUPPLY  
INNOVATIVE AND ALTERNATIVE (I/A) TECHNOLOGY  
GENERAL USE APPROVAL PERMIT**

**LAWS/REGULATIONS INVOLVED**

10 V.S.A. Chapter 64, Potable Water Supply and Wastewater System Permit  
Wastewater System and Potable Water Supply Rules, Effective April 12, 2019

**Permittee:** Advanced Onsite Solutions LLC  
P.O. Box 248  
Canterbury, NH 03224  
(603) 783-8042  
[www-aosne.com](http://www-aosne.com)

**Permit Number:** 2008-02-R4  
**Date Issued:** 07/02/2020  
**Date Expires:** 05/01/2022

This permit is for the following Aerobic Wastewater Treatment I/A technology models:

Product Name	Model Number(s)	Design Flow (gpd)
The Clean Solution	250-RX	490
The Clean Solution	250ST-R3	420
The Clean Solution	250ST-R4	490
The Clean Solution	1500	1500
The Clean Solution	2500	2500
The Clean Solution	3000	3000
The Clean Solution	4000	4000
The Clean Solution	VT 250PT-Rx_Fralo	490

The technologies listed in this permit are used to treat low-strength effluent to discharge to a soil-based wastewater disposal system. The technologies, consisting of a recirculating tank followed by a settling tank, are hereby approved under the requirements of the regulations named above subject to the following conditions.

## 1. GENERAL

- 1.1 The technologies listed in this permit may be used as part of a soil-based wastewater system permitted under the Rules provided the conditions of this permit are met.
- 1.2 Failure by the Permittee to comply with these conditions is grounds for the Secretary to revoke or not renew the Approval Permit.
- 1.3 The approval shall expire on **May 1, 2022**. Applications for renewal of this Approval Permit shall be submitted to the Division by March 1, 2022, to avoid a lapse in approval. The renewal request shall be submitted on a form prepared by the Secretary and shall include: a description of any changes to the equipment, technical specifications and drawings, installation requirements, and operation and maintenance manuals.
- 1.4 No changes shall be made to the approved technology without prior review and approval by the Secretary.
- 1.5 This Approval Permit is based on the design, operation, and maintenance manuals submitted by the Permittee to the Secretary. Misrepresentation in the application material is grounds for the Secretary to revoke this permit.
- 1.6 If the Rules are revised during the term of this Approval Permit, this permit shall be revised as needed to conform to the revisions.



- 1.7 Site-specific permission for the use of this technology is required in the form of a Wastewater System and Potable Water Supply Permit (WW Permit).
- 1.8 This permit is not a representation or guarantee of the effectiveness, efficiency, or operation of the approved technology.
- 1.9 This General Use Approval Permit is limited to treating septic tank effluent that is characterized as low strength according to §1-805(b) of the Rules.
- 1.10 This approval is based on information submitted by the Permittee indicating that the technology will treat the effluent to reduce the biochemical oxygen demand (BOD<sub>5</sub>) to 30 mg/L or less and total suspended solids (TSS) to 30 mg/L or less.
- 1.11 Each Vermont landowner in interest shall be shown a copy of the Wastewater System and Potable Water Supply Innovative and Alternative System General Use Approval Permit, the Operation and Maintenance manuals, and projected maintenance costs prior to the installation of any permitted unit.
- 1.12 All components of the technology shall be warranted for the first 2 years following commencement of use of technology unit. The permittee shall have an inventory of replacement parts available locally or available for delivery within 24 hours.
- 1.13 All conditions set forth in WW Permits that include the use of the approved technology shall remain in effect and may surpass the conditions set herein.
- 1.14 A WW Permit that approves the use of a technology approved by this permit remains valid for the use of the technology identified in the WW Permit even if this permit expires.

## 2. DOCUMENTS

- 2.1 The approval of the I/A technology is based on the following documents submitted by the permittee:

Title	Submission Date	Revision
The Clean Solution Vermont Manual 2020	01/02/2020	05/26/2020

- 2.2 Use of the I/A technology in ways not depicted or described in the documents, and or identified in this permit, is not allowed without prior approval by the Drinking Water and Groundwater Protection Division.

## 3. SERVICE PROVIDER

- 3.1 The Permittee shall contract with and maintain a minimum of two Service Providers for the State of Vermont (Vermont Service Provider) to perform the inspections, maintenance, and repairs required by this permit and by conditions of the WW Permit. The Vermont Service Providers must be based in Vermont or in a neighboring state or province and be ready and willing to provide service to the technologies in Vermont.
- 3.2 The Permittee shall provide to the Secretary the names, mailing addresses, email addresses, and phone numbers of two or more service providers prior to the Division issuing a WW Permit for use of the technology.
- 3.3 The Permittee shall maintain with the Secretary the names and contact information for all Vermont Service Providers. The Permittee shall notify the Secretary within 30 days of termination of an existing and/or hiring of a new Service Provider. Failure to maintain a minimum of two Vermont Service Providers will result in the Secretary prohibiting the issuance of a WW Permit with the approved technology.
- 3.4 The Permittee shall provide training to each Vermont Service Provider for the proper operation, maintenance, and repair of each approved technology.
- 3.5 Service Providers must follow Permittee and WW Permit conditions for inspection, maintenance, and reporting requirements.

- 3.6 Maintenance and inspections of the approved technology must be performed by a Service Provider trained and authorized by the Permittee. Reports shall be provided to the Permittee, landowner, and Division in a timely manner so that they can ensure conditions of the WW Permits are met.
- 3.7 Maintenance and inspections performed by Service Providers shall be in accordance with the operation and maintenance manual submitted as part of the I/A permit approval application, as provided in trainings by the Permittee, and specified in the WW Permits issued by this Division.

#### 4. REPORTS

- 4.1 The Permittee shall submit electronically by April 1<sup>st</sup> of each year an annual report to the Division containing the following information for the previous 12-month period ending December 31<sup>st</sup>:
  - A. the entities who are distributing the permitted technology in the State of Vermont
  - B. a listing of each permitted technology installed in Vermont during the previous calendar year with the following information:
    - i. assigned WW Permit number;
    - ii. the property's SPAN number;
    - iii. the distributor who sold the installed technology
    - iv. the name of the Vermont-licensed Designer providing the installation certification;
    - v. the name of the contracted and authorized Service Provider inspecting the technology at the time of installation;
    - vi. the date installed, and;
    - vii. the date of initial use of the technology (beginning of 2-year warranty period).
- 4.2 The Permittee shall ensure the Vermont Service Providers for each of the permitted systems utilizing this technology installed in Vermont are submitting to the Division the following reports;
  - A. an initial report of an inspection conducted within 60 days of initial usage;
  - B. inspection reports of the I/A technology conducted every 6 months for the first two years of usage;
  - C. inspection reports of the I/A technology conducted annually following the initial two years of usage.
- 4.3 Maintenance and inspections reports shall be submitted on the Secretary-approved inspection report form and be signed and dated by the Service Provider.
- 4.4 Inspection reports by the Service Provider shall include but not be limited to a summary of all known problems, damages, and/or failures of the technology to comply with this approval and operating requirements for the technology, including:
  - A. a description of any problems, damages, and/or failures;
  - B. potential/known causes of any problems, damages, and/or failures;
  - C. a statement of system operability including whether or not the technology is operating in compliance with this approval and operating specifications following repairs or corrections of any problems, damages, and/or failures;
  - D. a listing of the required repair/remediation;
  - E. identification of changes to the technology specifications; and
  - F. any observed failure of the wastewater system including wastewater exposed to the open air, wastewater pooling on the surface of the ground, wastewater discharging directly to surface water, or wastewater backing up into the building or structure.
- 4.4 Problems, damages, and/or failures of the technology identified during an inspection per condition 4.3 of this permit must be reported by the service provider immediately to the landowner and within 30 days to the Division.

- 4.5 Maintenance and inspections shall be performed in accordance with the permitted operation and maintenance manual that are specified in the WW Permits issued by this Division.

## 5. DESIGN SPECIFICATIONS

- 5.1 The design of a wastewater system using the approved technology shall identify the specific approved -model and shall not be replaced with any other model without an amendment to the WW Permit.
- 5.1 Technologies shall be equipped with anti-flotation devices. The Permittee may specify whether or not the anti-flotation devise are required if a designer demonstrates flotation will not occur or the designer proposes in an application for the use of the technology an alternative method to stabilize the technology that complies with the Permittee's requirements for installation.
- 5.3 Technology model choice and sizing shall be in accord with the Permittee's technical requirements approved by the Secretary. Sizing of each unit shall be based on the calculated design flow per §1-803 of the Rules.

## 6. INSTALLATION SPECIFICATIONS

- 6.1 The approved technology shall be installed under the guidance of a Service Provider and a designer.
- 6.2 The installation of each technology shall be in accordance with the Permittee's technical requirements approved by the Secretary.

Any person aggrieved by this permit may appeal to the Environmental Court within 30 days of the date of issuance of this permit in accordance with 10 V.S.A. Chapter 220 and the Vermont Rules of Environmental Court Proceedings.

Peter Walke, Commissioner  
Department of Environmental Conservation

By Cristin E. Ashmankas Dated July 2, 2020  
Cristin Ashmankas, Environmental Analyst VI  
Regional Office Program  
Drinking Water and Groundwater Protection Division



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### CONVENTIONAL SUBSURFACE DISPOSAL SYSTEMS vs **THE CLEAN SOLUTION**

In a subsurface disposal system there are basically two processes that break down and treat wastewater. The first process is Anaerobic (without oxygen) in the septic tank, and the second process is Aerobic (with oxygen), which often occurs in the leach field of a conventional subsurface disposal system.

#### Function of a Septic Tank

The first component of the subsurface disposal system is the septic tank. The septic tank inlet receives black and gray water from the structure (i.e. house) and allows solids to settle out while lighter matter – like oil and grease – rises to the top. The septic tank is the anaerobic component of a conventional subsurface disposal system, allowing the biological process of breaking down solids into dissolved solids - a necessary step for final aerobic treatment. The septic tank then outlets effluent that has gone through the anaerobic process to a leach field.

#### Function of a Leach Field

Since an anaerobic septic tank provides only partial treatment, further aerobic activity is required for complete treatment. The leach field is the component of the subsurface disposal system that provides this aerobic treatment. There are three major types of leach fields currently being used: Pipe and Stone systems, Chamber systems, and Fabric Based systems. All three types require airflow through the system to begin the aerobic treatment process. Air is introduced into the leach field either by airflow through the soil or by adding vents. Aerobic treatment creates a biomat /clogging layer (sludge) within the leach field. The biomat is a biological growth which filters out solid particles and dissolved pollutants not processed within the septic tank. As the biomat forms, a clogging layer forms on the soil interface between the stone and the sand blanket. On fabric based systems the clogging layer forms on the fabric as well as the soil interface between the fabric material and soil surface. The development of biomat /clogging layer is a function of the organic loading as well as the loading rate (gallons per day). High strength effluent from restaurants is typically 5 to 10 times stronger than residential effluent and will result in the biomat / clogging layer forming at a faster rate. As the biomat / clogging layer becomes thicker the infiltration rate of the system decreases. As the infiltration rate decreases over time the leach field becomes overloaded (flooded). Once flooded, the leach field converts from aerobic treatment to anaerobic treatment. At this point the leach field no longer is able to effectively treat the wastewater, which results in polluting groundwater and nearby surface water. Onsite septic systems are a major concern for property owners in sensitive environmental areas.

#### Function of **THE CLEAN SOLUTION** SYSTEM

**THE CLEAN SOLUTION** performs the same function as the septic tank in a conventional



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subsurface disposal system. However, **THE CLEAN SOLUTION** system differs from a conventional septic system in that the aerobic treatment process occurs within the BioCon™ chamber, instead of in a leach field.

In the BioCon chamber, air is introduced into the effluent stream. The air (oxygen) and effluent stream (food) then prompts the growth of a biofilm (bacteria) on the media stored in the BioCon™ chamber. The biofilm breaks down the wastewater, reducing BOD<sub>5</sub> and TSS levels, as well as nitrogen and phosphorus. The biofilm in the BioCon chamber is equivalent to the biomat in the leach field, creating sludge as a byproduct of the treatment process. The treated effluent from the BioCon chamber then flows into a settling chamber. The settling chamber allows excess sludge to settle out of the effluent.

Treated effluent is dispersed from the settling chamber into the ground through a dispersal field. The advantage of **THE CLEAN SOLUTION** system is the "Biomat" has been trapped in the settling chamber and is pumped out when the septic tank is serviced. **THE CLEAN SOLUTION** system has provided the aerobic treatment, allowing treated effluent to be dispersed into the ground in a much smaller area called a "dispersal field". Because of **THE CLEAN SOLUTION** treatment process the dispersal field does not suffer the same clogging rate as a conventional leach field. The size of the dispersal field varies from State to State and is typically set by a State's Environmental Department. Call AOS for the appropriate sizing information of the dispersal field.

With a conventional soil based septic system, homeowners are not typically aware of problems lurking in the leach field below the lawn. Owners only become aware that the leach field has reached its effective life span when the sewer line backs-up into the house or the lawn becomes too "soggy" to mow. Remote leach fields may go years in failure without anyone noticing the problem. Long before the "soggy" areas are noticed or the sewer backs up into the house, untreated wastewater has entered the groundwater and nearby surface water. When the leach field reaches the "soggy" point the system needs to be replaced, which is very costly and disruptive. Often the replacement results in a major impact to the existing landscaping.

With **THE CLEAN SOLUTION**, the dispersal field is visually inspected as part of the system inspection. The technician is trained in its proper operation and determines if the system is functioning properly. If a problem is encountered, it can often be corrected during the inspection process and long before the "soggy lawn" symptom occurs.

### When to Use **THE CLEAN SOLUTION**

**THE CLEAN SOLUTION** system is well suited for use in any septic system application where the installation of a standard leach field would be expensive or difficult – whether it's a single-family house, multi-unit development, or a commercial operation. Examples include homes on bodies of water, high water tables, lots on ledge, small lots, housing developments, condo units, restaurants, shopping centers, and office complexes. **THE CLEAN SOLUTION** system is an affordable, completely in-ground system that is ideal for all new installations or failed system replacements.



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### ADVANTAGES OF USING *THE CLEAN SOLUTION*

#### Environmentally Friendly

- **THE CLEAN SOLUTION** system, a tank that is installed in line after the septic tank, provides the same aerobic treatment as a leach field. As a result, a smaller field is required to disperse the treated effluent into the ground.
- **THE CLEAN SOLUTION** system helps prevent ground water pollution and protects our natural streams, lakes, and wetlands.
- **THE CLEAN SOLUTION** requires less fill.
- **THE CLEAN SOLUTION** is adaptable for sensitive sites.
- Tests show that **THE CLEAN SOLUTION** is more environmentally safe than conventional systems.
- **THE CLEAN SOLUTION** recharges groundwater with a higher level of treatment than conventional systems.

#### User Friendly

- Simple - the only mechanical device used by **THE CLEAN SOLUTION** system is a small air compressor.
- Accommodates vacations, low flows, and peak loads.
- Landscape friendly - tanks in ground, with no raised covers above ground.
- Low operating cost.
- Does not require a pump for gravity systems.
- Reduces costly repairs in the future.

#### Low Maintenance

- In most applications, simple maintenance is required approximately every 2 to 3 years depending upon system loading rates. Typical maintenance consists of pumping the septic tank and settling tank.
- There are no mechanical or electrical components within the BioCon treatment chamber.
- **THE CLEAN SOLUTION does not require remote operating via phone modem to maintain treatment.**

#### Technical and Installation Support

- AOS provides one-on-one support throughout the design, installation and startup process.
- AOS staff has experience in designing all types of subsurface disposal systems.
- AOS has on-staff Licensed Designers, Installers, Certified Septic System Evaluators and Wetland Scientists.
- AOS staff has been involved in onsite wastewater disposal system designs since 1986.
- AOS can provide you value engineering services on projects for cost comparisons.
- AOS is trained in wastewater sampling and can provide sampling services.



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### Community Developments

- Grouping homes together to utilize larger **CLEAN SOLUTION** systems, in conjunction with the smaller dispersal field, can substantially reduce cost. The larger systems also permit better land use and can result in maximizing the number of units allowed on a piece of land.

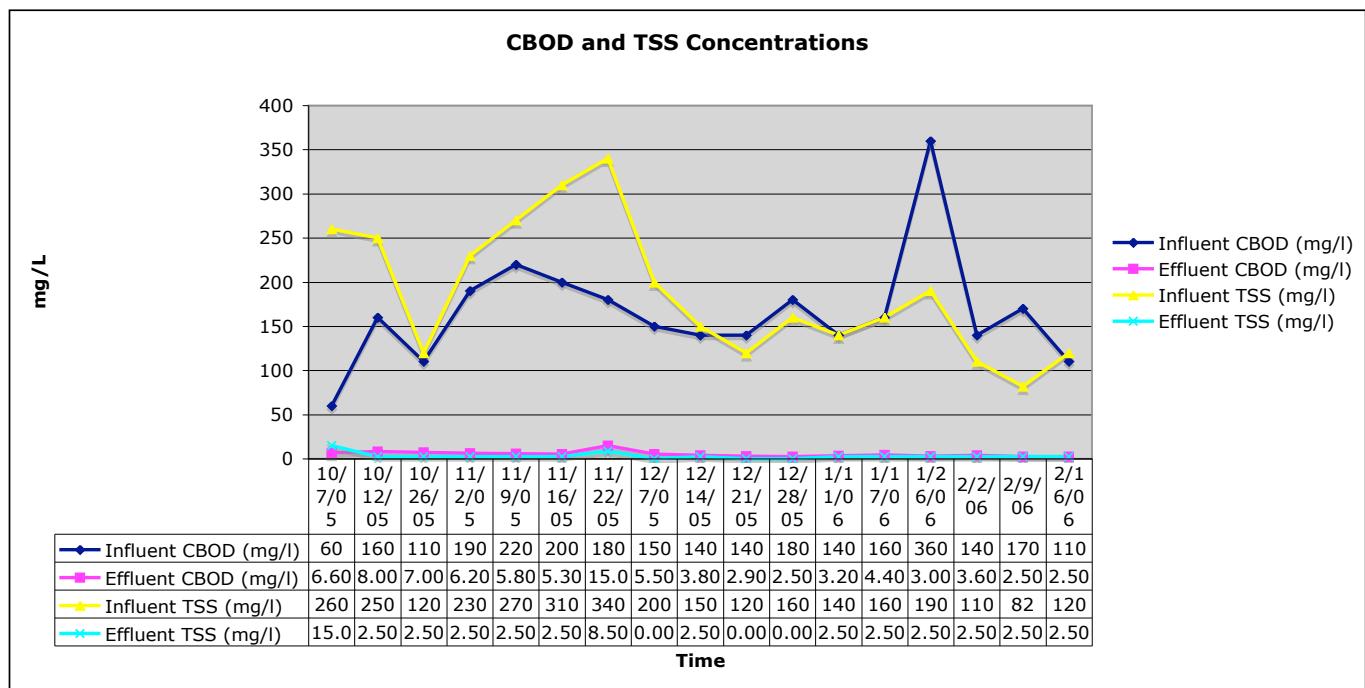
### Restaurants

- **THE CLEAN SOLUTION** system can be used to treat high strength wastewater.
- Improves efficiency of the subsurface disposal system dispersal field.
- Reduces costly repairs in the future.



## INDEPENDENT TEST RESULTS

In addition to the creativity and flexibility that **THE CLEAN SOLUTION** gives designers to fit systems into a natural setting while reducing impact to natural buffers, **THE CLEAN SOLUTION** reduces BOD<sub>5</sub> and TSS below 30 mg/l; and in most residential projects the results are in the single digits. **THE CLEAN SOLUTION** system has been tested at the Massachusetts Alternative Septic Testing Center located at Otis Air National Guard Base on Cape Cod. A measured 550 gal/day from the base facilities are metered into the system each day. Test results average 5.2 mg/l BOD<sub>5</sub>, 3.1 mg/l TSS, levels far superior to municipal plants, typically operating at 30mg/l for both BOD and TSS.



It is important to note the difference between the influent and effluent CBOD, which is a measure of the strength of the wastewater. The influent test BOD is very typical of that from the septic tank in a residential dwelling.

High strength wastewater from a restaurant typically has BOD and TSS levels four to ten times or more higher than residential wastewater. In wastewater sampling completed by AOS, we have seen wastewater strength as high as 4900 mg/l for BOD, 4000 mg/l for TSS and FOG (Fats-oil-grease) at 930 mg/l. Conventional leach field sizing is based on residential strength wastewater. The organic loading on a conventional soil or fabric based leach field from high strength wastewater increases the rate that the Biomat forms resulting in early failures. **THE CLEAN SOLUTION** system reduces high strength wastewater down to levels typical of treated residential wastewater.



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### WHY USE **THE CLEAN SOLUTION SYSTEM**

#### Cost Effective – Reduced Field Size

- With the increased cost of materials and the difficulty of obtaining quality septic sand and washed stone, designers, installers and developers are seeing **THE CLEAN SOLUTION** system as the best alternative. With a dispersal area 50 to 90% smaller than a conventional field, money is saved on land clearing, grubbing, transporting fill material, and labor to construct a leach field that meets the State's square foot requirements. These savings offset the cost of **THE CLEAN SOLUTION** system, often reducing the overall cost of the septic system to the homeowner.

#### Use Any Field Design

- THE CLEAN SOLUTION** dispersal field can be constructed using any of the approved field technologies, both proprietary and conventional pipe and stone.

#### Environmentally Friendly

- Local and State Land Use Boards are becoming more aware and concerned with the impacts that developments have on our natural resources, including groundwater and sensitive areas. **THE CLEAN SOLUTION** system produces an effluent quality well above what is considered the acceptable standard, while reducing the overall landscape impacts.
- With a dispersal field smaller than a conventional field, designers, engineers, and site evaluators have increased options for a design that fits into the natural settings of each lot. The reduced size allows the designer to keep trees, rocks and other natural features undisturbed.

#### Developments

- In a cluster development, **THE CLEAN SOLUTION** can reduce the overall project cost by connecting multiple homes to one system. To maximize the cost efficiency, the engineer must weigh the costs of the additional infrastructure required for effluent collection with the savings from using a larger **CLEAN SOLUTION** system to determine the appropriate size of each clustered system.
- THE CLEAN SOLUTION** is also very effective in new developments where land costs are high. Minimizing the area needed for the leach field may result in the creation of additional building sites.

**THE CLEAN SOLUTION** system is the best alternative when proposing a new development where land costs are high and minimizing the area needed for leach fields may result in additional building sites. It is equally effective in environmentally sensitive areas such as wetlands and water bodies. **THE CLEAN SOLUTION** will help to offset rising field and land costs. The entire AOS staff has experience in all phases of development from conceptual layout through permitting and construction. Please call and have one of our staff members work with you to see how your client can benefit from using **THE CLEAN SOLUTION** system.



## ADVANCED ONSITE SOLUTIONS LLC

PO Box 248  
Canterbury, NH 03224  
(603)-783-8042  
Toll Free: (866) 900-2415

## RESPONSIBILITIES

The responsibilities for a **CLEAN SOLUTION** installation rest in the partnership between the owner, designer, installer, and AOS. Below is an outline of responsibilities.

### The Owner

1. Retains a Licensed Designer to prepare a plan.
2. Reviews plans prepared by Licensed Designer.
3. Reads the conditions outlined in the AOS's *Sales and Inspection Agreement*.
4. Obtains all necessary permits and approvals required at both the State and Local levels.
5. Executes a sales agreement with AOS at least 3 weeks prior to installation.
6. Executes an Inspection Agreement with AOS.
7. Hires a contractor to install the septic tank(s), pump chamber, pump components and complete all earthwork.
8. Coordinates with AOS Technician to determine location of compressor.
9. Hires a licensed electrician for all required electrical work.
10. Retains Licensed Installer to complete construction.

### The Licensed Designer

1. Provides owner with a copy of AOS's *Sales and Inspection Agreement*.
2. Explains to the owner the difference between **THE CLEAN SOLUTION** system and a conventional wastewater disposal system.
3. Completes all fieldwork required by the State to obtain the necessary construction approvals.
4. Prepares design plans.
5. Contacts AOS to discuss system design parameters.
6. Reviews final design plan with owner for owner sign-off.
7. Provides AOS with a copy of the design plan(s) and supporting documentation for final review and AOS files.
8. If a pump is required for single-family residence, designer provides contractor with pump operating parameters (gpm, TDH, diameter of discharge line and volume of dose).
9. Submits final design for local approval if applicable to the State Agency
10. Provides plans "Approved for Construction" to homeowner and homeowner's licensed installer.

### Advanced Onsite Solutions

1. Reviews system design parameters with Designer.
2. Prepares standard *Sales and Inspection* agreement for Owner with system design schematic.



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3. Provides Contractor with Purchase Order for tanks provided by AOS outlined in Sales agreement as part of contract price.
4. Coordinates project schedule with Contractor for installation.
5. Installs the following components onsite:
  - a. BioCon Media
  - b. Air transfer System
  - c. Setup Air Compressor
  - d. Internal BioCon plumbing
6. Completes installation checklist with swing ties to access stacks, with copy of report to Owner
7. After installation and approval for use, AOS reviews system, operation, and maintenance schedule with Owner.

### The Installer

1. Contracts with owner for all work outside of AOS's responsibilities.
2. Contacts AOS at least 3 weeks prior to installation to discuss installation schedules.
3. Provides all subsurface system components and materials outside of AOS's responsibilities. See Sales Agreement and system schematics.
4. Excavates for the septic tank and all AOS tanks to design elevations as shown on approved for construction plans.
5. Calls AOS tank supplier with Purchase Order Number to arrange delivery and setting of the AOS tank(s).
6. Constructs the dispersal field in accordance with the approved design.
7. Installs all piping to and from all tanks.
8. Installs the piping from **THE CLEAN SOLUTION** system or pump chamber to dispersal field.
9. **Seals all pipe penetrations and knockouts with a watertight non-shrink mortar.**
10. Digs necessary trenches for the electrical conduits and airlines.
11. **Brings risers to grade. Contractor ensures that all sections of risers are watertight.**
12. Completes 24-hour leakage test on tank.
13. Backfills system components, loam, seed and mulch disturbed areas as required by approved design plans.
14. Calls the regional inspector and local inspector when applicable.
15. Obtains Operations Approval for system and provides it to homeowner when applicable.

The above list of responsibilities is a general outline. Additional responsibilities may be required based on specific site conditions or type of use. AOS is not responsible for work completed by licensed designer or licensed installer. It is the owner's responsibility to contract directly with designer and installer.



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### MAINTENANCE and OPERATION OF SINGLE FAMILY RESIDENTIAL SYSTEMS

*It is the owner's responsibility to see that the following required maintenance is performed. The owner must maintain an Inspection Agreement with AOS or a service provider trained and approved by AOS.*

#### Residential Use (Single Family Home)

If the ISDS (Individual Subsurface Disposal System) is a gravity system, **THE CLEAN SOLUTION** system shall be inspected as outlined in the Inspection Agreement.

1. If the ISDS is utilizing the settling chamber as a pump chamber AOS recommends that **THE CLEAN SOLUTION** system be inspected yearly by AOS or a service provider trained and approved by AOS.
2. AOS or a service provider trained and approved by AOS may adjust the above inspection frequency based on use. Seasonal uses will be modified based on use after first inspection.
3. Use a local pumper to pump out the septic and settling/pump tanks every 2-3 years. More or less frequent pumping may be required depending on system use and number of occupants. AOS and the pumper can determine the required frequency. Owner must retain records of pumping.
4. Compressor must run continuously. It should be checked for operation monthly.
5. BioCon™ chamber may require pumping between 6 and 8 years. AOS Technician will determine if pumping is necessary during inspection.
6. Compressor Air Filter to be cleaned or replaced yearly.
7. Compressor may be disconnected during the off-season for seasonal uses (less than 6 months)

#### Additional Maintenance Suggestions:

There is ongoing concern with pharmaceuticals, medical treatments, and personal care products and how these products affect septic system functions. Although there is not yet enough data to clearly understand the impacts of these products on septic systems, it is known that without the proper balance of bacteria in the septic tank, waste cannot break down efficiently. AOS recommends that unused pharmaceuticals not be disposed of in the septic system.

Inspection Contracts are available from AOS. The service will include a detailed inspection of the system and replacement of any failed items within the BioCon Chamber, subject to the limits of the warranty. Tank pumping is not included in the price and must be arranged by the property owner. Failure to have an inspection agreement with AOS or an approved vendor will void the warranty outlined in the **Sales Agreement**.

**Maintenance and operation of *THE CLEAN SOLUTION* is further detailed in the Sales Agreement based on individual state requirements.**

**Contact AOS for all requirements for commercial systems**





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### LIMITED WARRANTY FOR RESIDENTIAL SINGLE FAMILY SYSTEMS

*For a period of 5 years from the date of installation, AOS warrants to the original purchaser and to successor owners within the warranty period that the components within the BioCon chamber will be free from defects in material and workmanship. If a defect exists, AOS will repair or replace any of these components, including parts and labor by AOS, at no cost to the owner. This limited warranty does not cover pumping the system to make necessary repairs, or the cost for excavation to replace or make repairs, or replacement of landscaping features. This limited warranty does not cover failure of the dispersal field(s) (i.e. fabric style leaching component, pipe and stone, chambers).*

*For compressors that have been maintained and used under normal operating conditions, AOS extends 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) supplied by AOS is limited to the pump/floats/alarm manufacturer's terms and conditions. Labor to replace effluent pump/floats/alarms will be billed out at AOS standard hourly rates.*

*It is the owner's responsibility to perform the required maintenance and to have an inspection contract with AOS or an approved vendor in effect at all times. It is the owner's responsibility to ensure that inspections have been performed by AOS or an approved vendor. Failure to perform the required maintenance, have an inspection contract, and maintain records of pumping or to notify AOS of any problems will void this limited warranty. This limited warranty also does not cover damage caused by improper use, poor construction or design practices, high groundwater, flooding, or acts of God.*

**THIS LIMITED WARRANTY IS IN LIEU OF AND SUPERSEDES ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.**

**ADVANCED ONSITE SOLUTIONS, LLC SHALL NOT BE LIABLE FOR ANY DIRECT OR INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, NOR SHALL ADVANCED ONSITE SOLUTIONS LLC'S LIABILITY UNDER THIS WARRANTY EXCEED THE PRICE PAID BY THE BUYER TO ADVANCED ONSITE SOLUTIONS LLC FOR THE CLEAN SOLUTION SYSTEM.**



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### Performance Specifications

This system has been designed based on estimated residential wastewater influent strength from the primary treatment tank(s) of 180 mg/l BOD<sub>5</sub>, 140 mg/l TSS and <5 mg/l FOG. The system is warranted to discharge treated effluent to the dispersal field equivalent to or better than 30mg/l BOD<sub>5</sub>, 30mg/l TSS.

### Rights to Data and Access to the System

AOS reserves the right of reasonable access to collect data, modify, maintain and repair **THE CLEAN SOLUTION** and its subsystems. AOS will retain all data collected and the rights to it.



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### FREQUENTLY ASKED QUESTIONS ABOUT THE *CLEAN SOLUTION* SYSTEMS

#### **Does the system need a real leach field?**

The dispersal field is constructed the same as a conventional field; the only difference is the size. Since ***THE CLEAN SOLUTION*** BioCon and settling chambers perform the same biological functions as a leach field there is no need to have a large leach field to provide aerobic treatment.

#### **Can I use other proprietary devices in place of a pipe and stone field?**

Yes. Any approved stone and pipe replacement system is acceptable; however, there are some that would not prove cost effective.

#### **How do you size chambers or tubes?**

The number of tubes is based on the total footprint of the field and then judging how many tubes or chambers would be used for that space.

#### **How do you vent the field of *THE CLEAN SOLUTION*?**

Typically, ***THE CLEAN SOLUTION*** is vented through the house's existing roof vent. Therefore, a field vent is unnecessary. When using the system on an application without a roof vent, a vent must be installed at or near the tank (i.e. a trailer park or campground must be vented at the tank). Certain proprietary leachfield devices require venting.

#### **Are there any additives in the system?**

No, the only thing that ***THE CLEAN SOLUTION*** system needs to run is air, which comes from the small mechanical air compressor.

#### **Where does the air compressor go?**

The air compressor can go anywhere above the snow line, but the ideal place for it is in a garage or basement.

#### **How much noise does the air compressor make?**

The air compressor makes less noise than a refrigerator.

#### **How much electricity does the air compressor require to run?**

The air compressor requires approximately 80 watts and 2.5 amps, which can be thought of as the power required for a typical light bulb.

#### **How often do I need to maintain the system?**

The system maintenance is done at the same time the septic tank is pumped.



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### **What does the system inspection consist of?**

AOS or a service provider trained and approved by AOS inspects the media, effluent quality, dissolved O<sub>2</sub> levels, sludge levels in the BioCon and settling chambers, performs a pressure test on the air transfer system, and cleans or replaces the air filter.

### **What if I need to order replacement parts?**

Contact AOS for replacement parts. We can also handle any maintenance or repairs.

### **Is the system exempt from certain setback rules or to ground water tables?**

**THE CLEAN SOLUTION** system has received variances to State regulations on replacement systems. Variances are applied for by the designer.

### **Do I need an effluent pump?**

An effluent pump is only needed if the dispersal field is higher than the outlet of the tank.

**Please call AOS to discuss your specific project needs and information for *THE CLEAN SOLUTION* system model that best fits your needs**

**1-866-900-2415**

**or**

**Email : [info@aosne.com](mailto:info@aosne.com)**



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## **APPENDIX A**

## **STANDARD DESIGN NOTES**

## **JANUARY 2016**





## ADVANCED ONSITE SOLUTIONS LLC

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### STANDARD DESIGN NOTES JANUARY 1, 2016

The General Notes listed below are to be shown on design plans when using **THE CLEAN SOLUTION™** system. Additional notes may be required to cover specific uses, site conditions or to meet State and Local regulations. These notes are not meant to replace Standard Design Notes and information that is provided by the designer.

The following notes can be provided either in a Vector Works, ACAD, Word or PDF format. Please call Advanced Onsite Solutions for a CD.

#### ADVANCED ONSITE SOLUTIONS LLC DESIGN NOTES

1. Subsurface disposal system is based on **THE CLEAN SOLUTION™** manufactured by Advanced Onsite Solutions, LLC (AOS).
2. **THE CLEAN SOLUTION™** to be supplied by AOS (866-900-2415).
3. **THE CLEAN SOLUTION™** provided by AOS to include:
  - a) Biocon™ and settling tanks standard duty (cover less than 3-feet). If cover over the top of tank exceeds 3-feet notify AOS.
  - b) Air compressor(s)
  - c) Media
  - d) Plastic risers and covers. Maximum height provided by AOS is 18". For depths greater than 18" of cover installer to supply additional risers.
  - e) AOS and their representatives shall perform all internal piping in the BioCon™ chamber and system startup.
4. Installer shall follow manufacturer's guidelines to prepare site for installation of **THE CLEAN SOLUTION™** system and provide the following:
  - a) Contractor shall follow approved design plans and Vermont's wastewater system-environmental protection rules effective September 29, 2007
  - b) Contractor to supply necessary septic tanks and grease traps as required by designer.
  - c) Excavation of all tanks including tanks supplied by AOS to grades established by designer.
  - d) Setting and leveling of all tanks, including tanks supplied by AOS.
  - e) Service connections from building to septic tank, septic tank to BioCon™ tank, BioCon™ tank to settling tank, settling tank to dispersal field.
  - f) Contractor shall excavate for all air conduit lines from compressor housing to biocon™ tank.
  - g) Contractor shall water plug all tank penetrations to prevent groundwater leaks.
  - h) Contractor shall water plug all inlet(s) and outlet(s) not used.



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- i) Contractor shall set all risers to grades established by designer. Contractor shall ensure that rubber gasket o-ring is in place prior to securing sections. All screw holes to be used to secure sections to each other. Contractor shall ensure that all risers are watertight to prevent infiltration from groundwater and surface runoff.
  - j) Contractor to build/modify dispersal field as required by designer.
  - k) Contractor to provide owner with swing ties from two permanent fixed points to access covers.
  - l) Contractor shall call system designer for system inspection.
  - m) Contractor shall ensure that tank(s) invert are set according to elevations shown on plans. Failure to install systems at correct elevations or preventing equal flow to BioCon™ tank(s) will void system warranty and performance specifications. Contractor to ensure that all system components, both upstream and downstream of **THE CLEAN SOLUTION™** system are watertight.
5. The owner/contractor shall provide the following:
- a. Necessary electrical outlets capable of 2.5 amp – 115 volts for each compressor. There shall be two or more separate circuits provided when more than two compressors are needed. Circuits **shall not** be gfi protected.
  - b. Compressor housing
    - i. Compressor(s) location to be mutually determined by owner / representative and AOS.
    - ii. Maximum distance from compressor(s) to BioCon™ chamber is 50'. For distances greater than 50' contact AOS.
6. Required maintenance by Owner:
- a) Signed system inspection agreement for **THE CLEAN SOLUTION™** system. Inspection agreement is provided by AOS.
  - b) Septic tank(s) and settling tank to be pumped out every two years or sooner if deemed necessary at annual system inspection.
  - c) Biocon™ tank to be inspected as required by state or local ITA approvals by an approved AOS technician.
  - d) Owner shall keep all pumping records.
  - e) Failure to comply with "a" – "d" above will void warranty of **THE CLEAN SOLUTION™** system.



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## APPENDIX B

### **VERMONT SYSTEM DESIGN SCHEMATICS**

**THE CLEAN SOLUTION** SYSTEM MODEL 250-RX

Design Flow up to 490 gpd

**THE CLEAN SOLUTION** SYSTEM MODEL 250ST-R3

Design Flow up to 420 gpd

**THE CLEAN SOLUTION** SYSTEM MODEL 250ST-R4

Design Flow up to 490 gpd

**THE CLEAN SOLUTION** SYSTEM MODEL 1500

Design Flow up to 1,500 gpd

**THE CLEAN SOLUTION** SYSTEM MODEL 2500

Design Flow up to 2,500 gpd

**THE CLEAN SOLUTION** SYSTEM MODEL 3000

Design Flow up to 3,000 gpd

**THE CLEAN SOLUTION** SYSTEM MODEL 4000

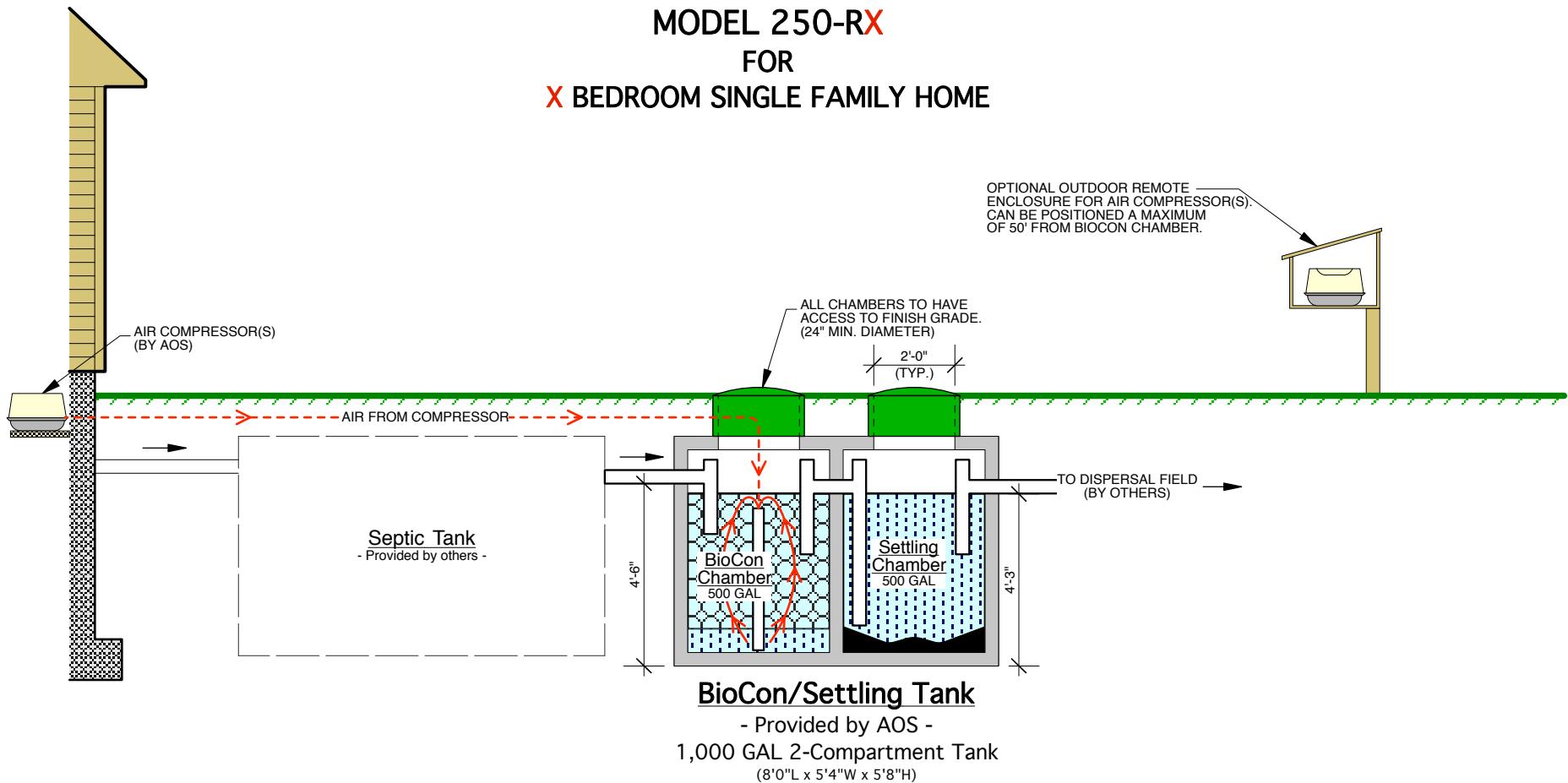
Design Flow up to 4,000 gpd

**THE CLEAN SOLUTION** SYSTEM MODEL VT 250PT-Rx\_Fralo

Design Flow up to 490 gpd



**THE CLEAN SOLUTION™ ALTERNATIVE SEPTIC SYSTEM  
MODEL 250-RX  
FOR  
X BEDROOM SINGLE FAMILY HOME**



**NOTES:**

1. Septic and settling tank must be pumped every 2 years.
2. Tanks are not suitable for drive on installation unless designed w/ H-20 tanks
3. Risers are plastic- height will be specified by installer to suit site - concrete risers can be provided if preferred. All risers must be level to finish grade.
4. Compressor plugs into regular household outlets, but requires its own circuit. Compressor is weatherproof, but should be housed in garages, basements, or specially designed outdoor compartments. The maximum distance it can be from the system is 50ft. Model 250-RX requires one SL-44 (3-SCFM) compressor. Control panel and alarm must be located near compressor and accessible by O & M operator.
5. Primary septic tank should be sized based on State regulations.
6. If there is a pump chamber, it will be vented separately.
7. Media in Bio-Con tank is plastic and free-flowing (installed by **AOS**).
8. The Clean Solution system is a gravity flow system not requiring a sump pump, therefore no alarms are present. However, if the site plan calls for sump pump, the specifications of the alarm will depend on the designer and installer.

TITLE: **CLEAN SOLUTION SYSTEM MODEL 250ST-R(X)**  
(Up to four bedrooms)  
Vermont Design Flow: 490 gpd

Date	Jan 2014
Rev.	



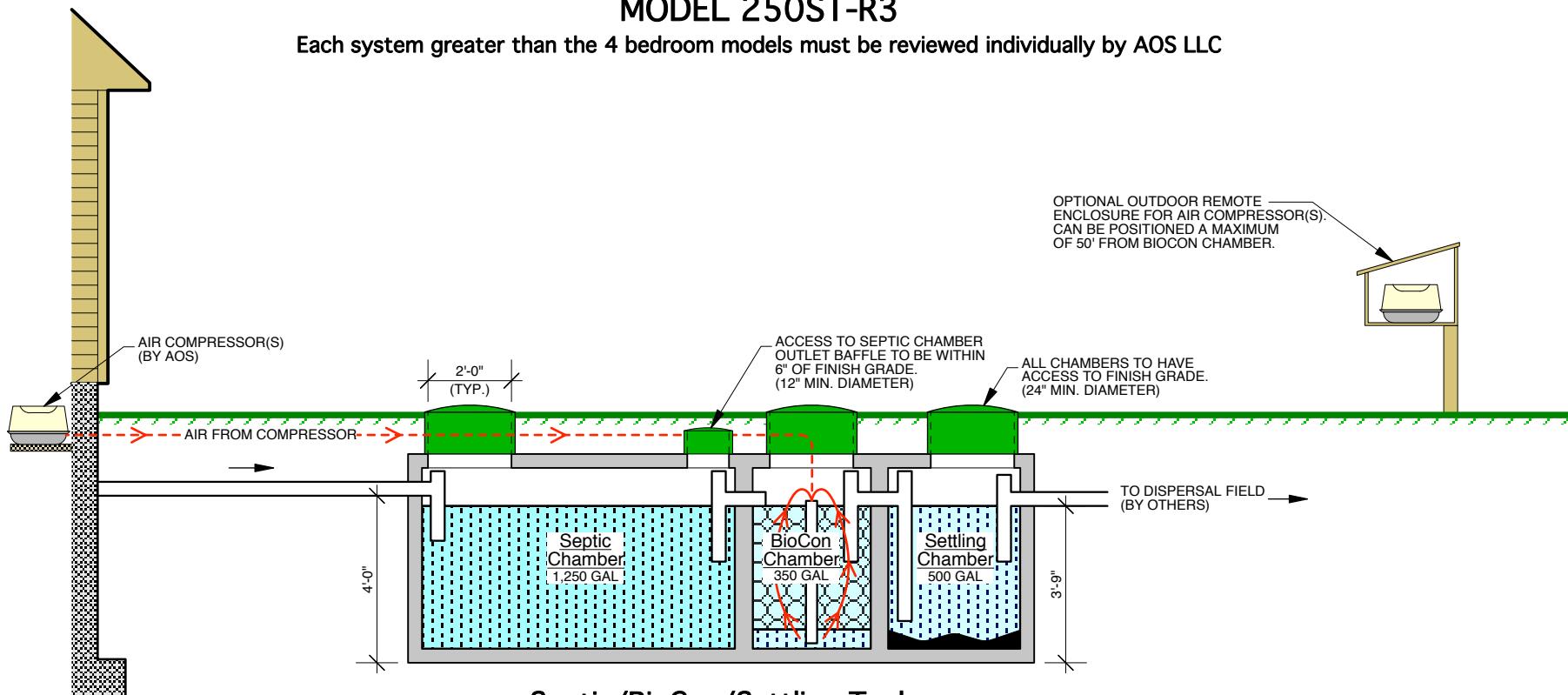
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# THE CLEAN SOLUTION™ ALTERNATIVE SEPTIC SYSTEM

## MODEL 250ST-R3

Each system greater than the 4 bedroom models must be reviewed individually by AOS LLC



### Septic/BioCon/Settling Tank

- Provided by AOS -

2,100 GAL 3-Compartment Tank  
(15'0"L x 6'6"W x 5'0"H)

### NOTES:

1. Septic and settling tank must be pumped every 2 years.
2. Tanks are not suitable for drive on installation unless designed w/ H-20 tanks
3. Risers are plastic- height will be specified by installer to suit site - concrete risers can be provided if preferred. All risers must be level to finish grade.
4. Compressor plugs into regular household outlets, but requires its own circuit. Compressor is weatherproof, but should be housed in garages, basements, or specially designed outdoor compartments. The maximum distance it can be from the system is 50ft. Model 250ST-R3 requires one SL-44 (3-SCFM) compressor. Control panel and alarm must be located near compressor and accessible by O & M operator.
5. Primary septic tank should be sized based on State regulations.
6. If there is a pump chamber, it will be vented separately.
7. Media in Bio-Con tank is plastic and free-flowing (installed by AOS).
8. The Clean Solution system is a gravity flow system not requiring a sump pump, therefore no alarms are present. However, if the site plan calls for sump pump, the specifications of the alarm will depend on the designer and installer.

Tank dimensions may vary by manufacturer

TITLE: CLEAN SOLUTION SYSTEM MODEL 250ST-R3  
(Three Bedroom w/integral septic tank)  
Vermont Design Flow: 420 gpd

Date  
Jan 2014  
Rev.



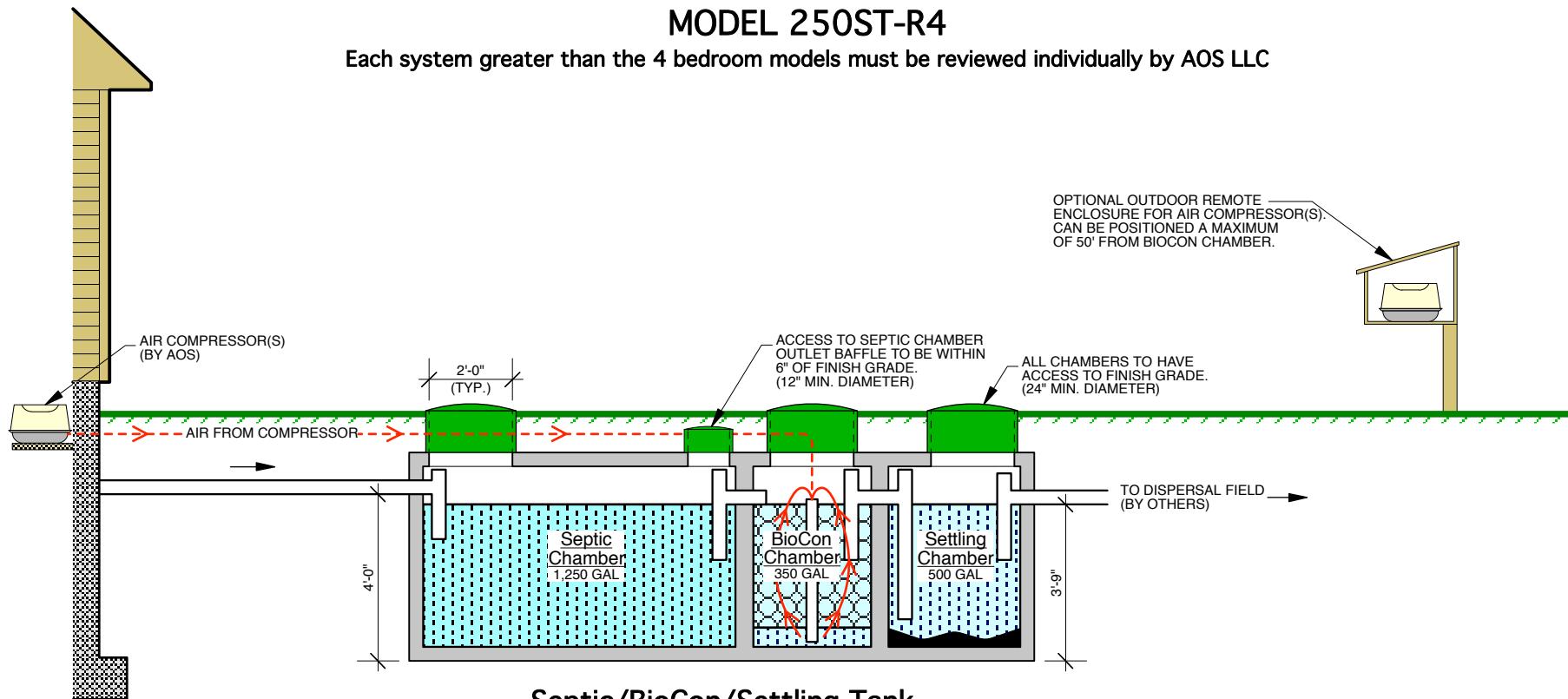
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# THE CLEAN SOLUTION™ ALTERNATIVE SEPTIC SYSTEM

## MODEL 250ST-R4

Each system greater than the 4 bedroom models must be reviewed individually by AOS LLC



### Septic/BioCon/Settling Tank

- Provided by AOS-  
2,100 GAL 3-Compartment Tank  
(15'0"L x 6'6"W x 5'0"H)

### NOTES:

1. Septic and settling tank must be pumped every 2 years.
2. Tanks are not suitable for drive on installation unless designed w/ H-20 tanks
3. Risers are plastic- height will be specified by installer to suit site - concrete risers can be provided if preferred. All risers must be level to finish grade.
4. Compressor plugs into regular household outlets, but requires its own circuit. Compressor is weatherproof, but should be housed in garages, basements, or specially designed outdoor compartments. The maximum distance it can be from the system is 50ft. Model 250ST-R4 requires one SL-44 (3-SCFM) compressor. Control panel and alarm must be located near compressor and accessible by O & M operator.
5. Primary septic tank should be sized based on State regulations.
6. If there is a pump chamber, it will be vented separately.
7. Media in Bio-Con tank is plastic and free-flowing (installed by AOS).
8. The Clean Solution system is a gravity flow system not requiring a sump pump, therefore no alarms are present. However, if the site plan calls for sump pump, the specifications of the alarm will depend on the designer and installer.

Tank dimensions may vary by manufacturer

TITLE: **CLEAN SOLUTION SYSTEM MODEL 250ST-R4**  
(Four Bedroom w/integral septic tank)  
Vermont Design Flow: 490 gpd

Date	Jan 2014
Rev.	



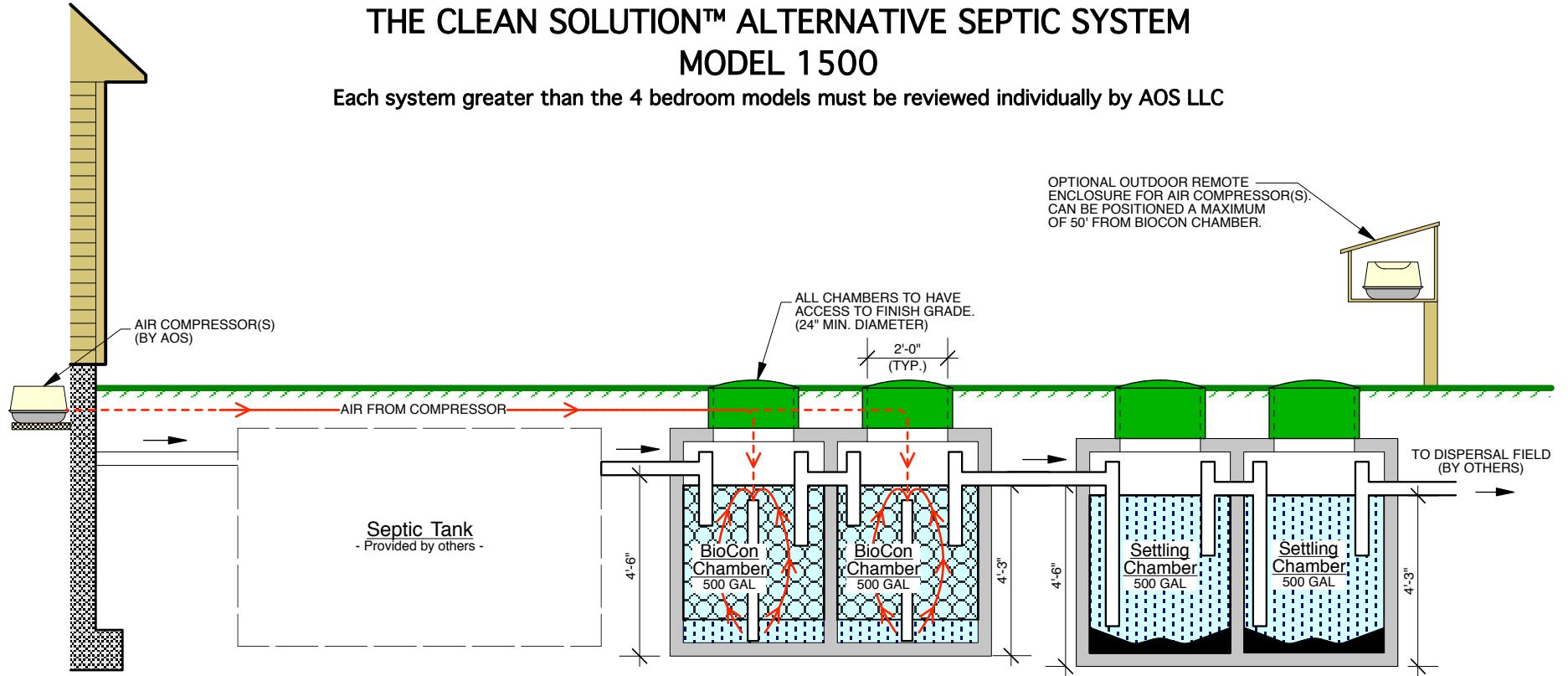
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# THE CLEAN SOLUTION™ ALTERNATIVE SEPTIC SYSTEM

## MODEL 1500

Each system greater than the 4 bedroom models must be reviewed individually by AOS LLC



### NOTES:

1. Septic and settling tank must be pumped every 2 years
2. Tanks are not suitable for drive on installation unless designed w/ H-20 tanks
3. Risers are plastic- height will be specified by installer to suit site - concrete risers can be provided if preferred. All risers must be level to finish grade
4. Compressor plugs into regular household outlets, but requires its own circuit. Compressor is weatherproof, but should be housed in garages, basements, or specially designed outdoor compartments. The maximum distance it can be from the system is 50ft. Model 1500 requires two or more 3-SCFM compressors, which are specified according to the application/design. Control panel and alarm must be located near compressor and accessible by O & M operator.
5. Primary septic tank should be sized based on State regulation.
6. If there is a pump chamber, it will be vented separately.
7. Media in Bio-Con tank is plastic and free-floating (installed by **AOS**).
8. The Clean Solution system is a gravity flow system not requiring a sump pump, therefore no alarms are present. However, if the site plan calls for a sump pump, the specifications of the alarm will depend on the designer and installer.

Tank dimensions may vary by manufacturer

**TITLE:** CLEAN SOLUTION SYSTEM MODEL 1500  
**Vermont Design Flow:** 1,500 gpd  
 (requires review by AOS before submitting State)

Date	Jan 2014
Rev.	

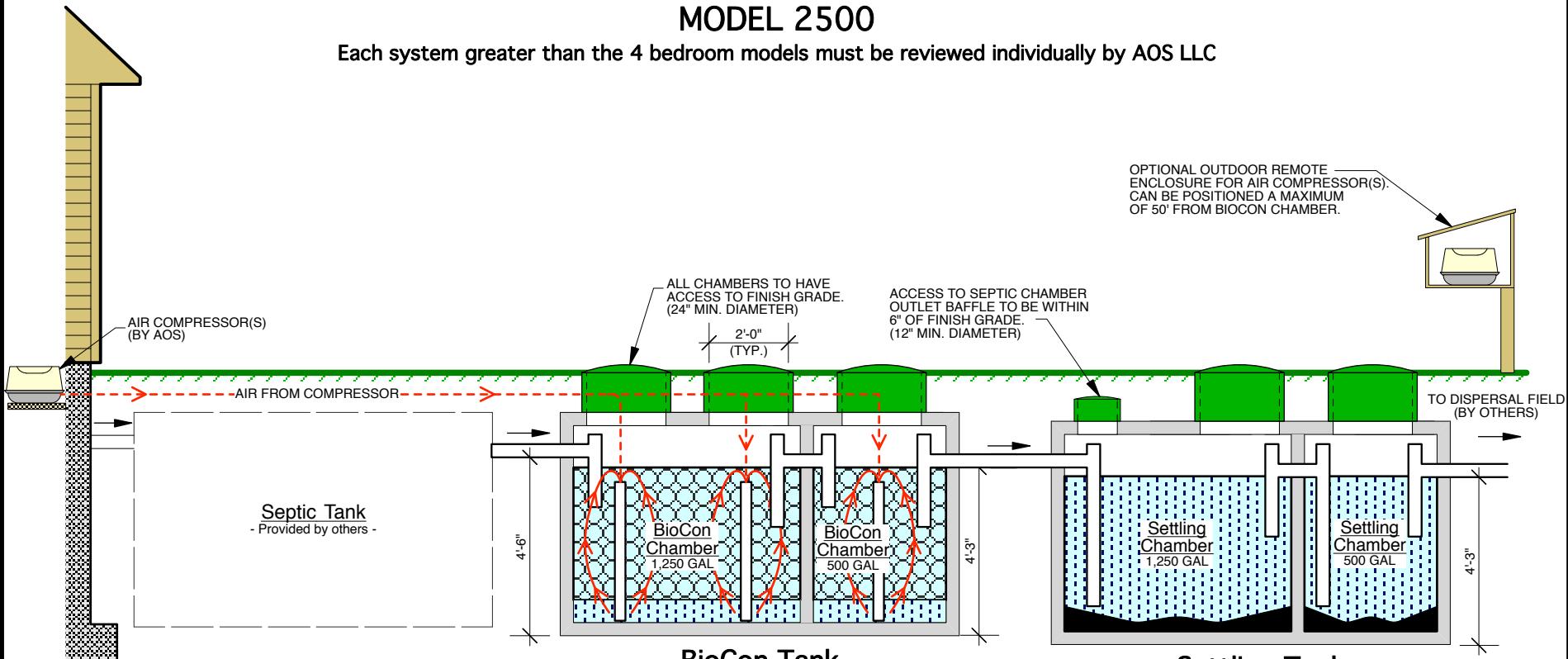


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# THE CLEAN SOLUTION™ ALTERNATIVE SEPTIC SYSTEM MODEL 2500

Each system greater than the 4 bedroom models must be reviewed individually by AOS LLC



## NOTES:

1. Septic and settling tank must be pumped every 2 years
2. Tanks are not suitable for drive on installation unless designed w/ H-20 tanks
3. Risers are plastic- height will be specified by installer to suit site - concrete risers can be provided if preferred. All risers must be level to finish grade.
4. Compressor plugs into regular household outlets, but requires its own circuit. Compressor is weatherproof, but should be housed in garages, basements, or specially designed outdoor compartments. The maximum distance it can be from the system is 50ft. Model 2500 requires at least three SL-88 (5-SCFM) compressors. Control panel and alarm must be located near compressor and accessible by O & M operator.
5. Primary septic tank should be sized based on State regulation.
6. If there is a pump chamber, it will be vented separately.
7. Media in Bio-Con tank is plastic and free-flowing (installed by **AOS**).
8. The Clean Solution system is a gravity flow system not requiring a sump pump, therefore no alarms are present. However, if the site plan calls for a sump pump, the specifications of the alarm will depend on the designer and installer.
9. Tank dimensions may vary by tank manufacturer

Tank dimensions may vary by manufacturer

TITLE: **CLEAN SOLUTION SYSTEM MODEL 2500**  
Vermont Design Flow: 2,500 gpd  
(requires review by AOS before submitting State)

Date  
Jan 2014  
Rev.



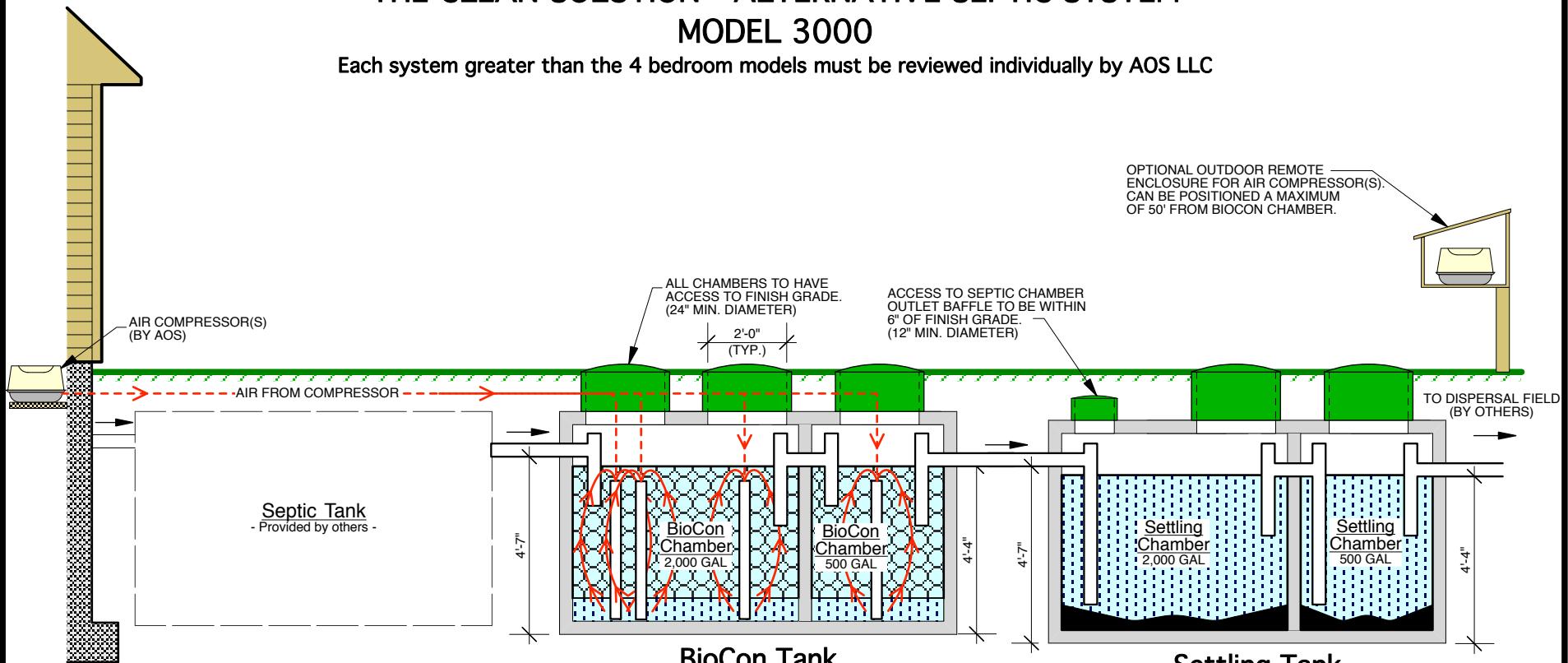
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# THE CLEAN SOLUTION™ ALTERNATIVE SEPTIC SYSTEM

## MODEL 3000

Each system greater than the 4 bedroom models must be reviewed individually by AOS LLC



### NOTES:

1. Septic and settling tank must be pumped every 2 years
2. Tanks are not suitable for drive on installation unless designed w/ H-20 tanks
3. Risers are plastic- height will be specified by installer to suit site - concrete risers can be provided if preferred. All risers must be level to finish grade.
4. Compressor plugs into regular household outlets, but requires its own circuit. Compressor is weatherproof, but should be housed in garages, basements, or specially designed outdoor compartments. The maximum distance it can be from the system is 50ft. Model 3000 requires at least three SL-88 (5-SCFM) compressors. Control panel and alarm must be located near compressor and accessible by O & M operator.
5. Primary septic tank should be sized based on State regulation.
6. If there is a pump chamber, it will be vented separately.
7. Media in Bio-Con tank is plastic and free-flowing (installed by **AOS**).
8. The Clean Solution system is a gravity flow system not requiring a sump pump, therefore no alarms are present. However, if the site plan calls for a sump pump, the specifications of the alarm will depend on the designer and installer.
9. Tank dimensions may vary by tank manufacturer

**Tank dimensions may vary by manufacturer**

TITLE: **CLEAN SOLUTION SYSTEM MODEL 3000**  
 Vermont Design Flow: 3,000 gpd  
 (requires review by AOS before submitting State)

Date  
 Jan 2014  
 Rev.



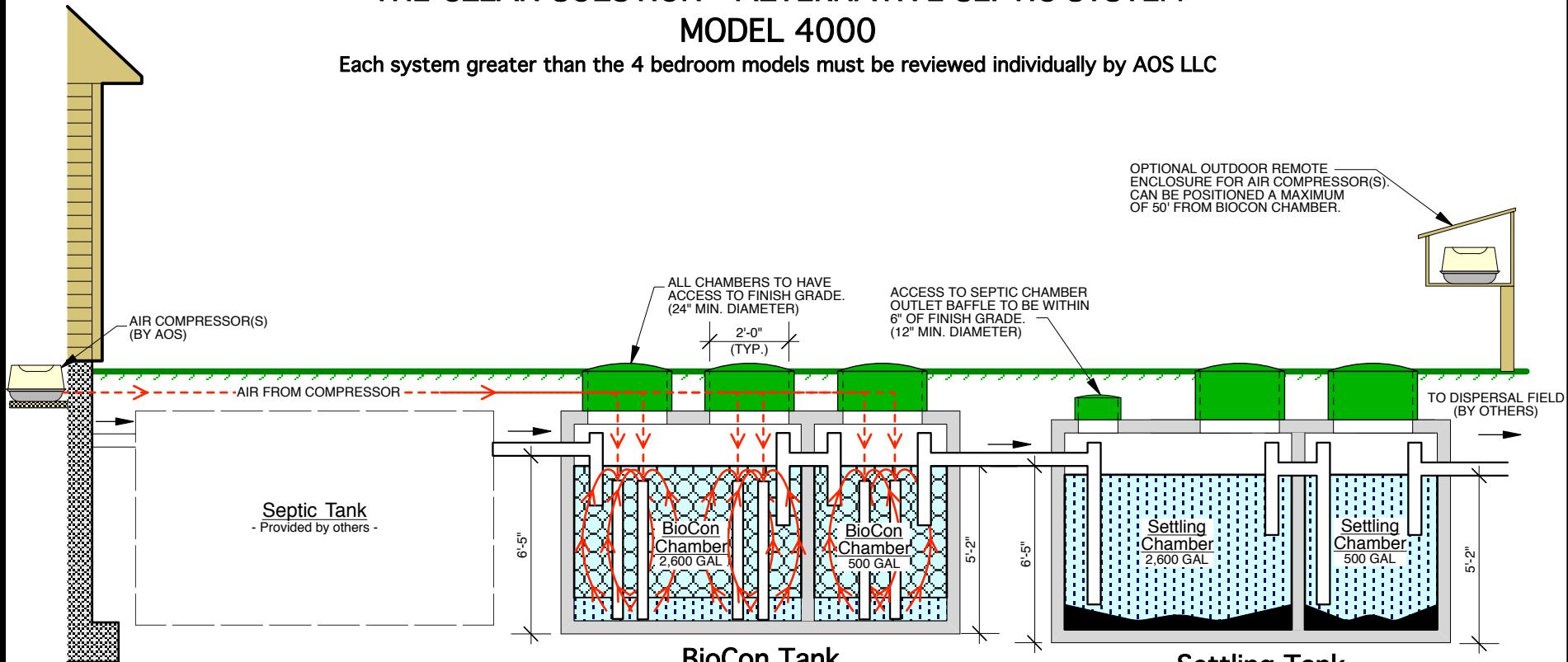
**Advanced Onsite Solutions LLC**  
*innovative wastewater solutions with sustainable results*  
 P.O.Box 248  
 Canterbury, NH 03224  
 Phone 603.783.8042



# THE CLEAN SOLUTION™ ALTERNATIVE SEPTIC SYSTEM

## MODEL 4000

Each system greater than the 4 bedroom models must be reviewed individually by AOS LLC



### NOTES:

1. Septic and settling tank must be pumped every 2 years
2. Tanks are not suitable for drive on installation unless designed w/ H-20 tanks
3. Risers are plastic- height will be specified by installer to suit site - concrete risers can be provided if preferred. All risers must be level to finish grade.
4. Compressor plugs into regular household outlets, but requires its own circuit. Compressor is weatherproof, but should be housed in garages, basements, or specially designed outdoor compartments. The maximum distance it can be from the system is 50ft. Model 4000 requires at least four SL-88 (5-SCFM) compressors. Control panel and alarm must be located near compressor and accessible by O & M operator.
5. Primary septic tank should be sized based on State regulation.
6. If there is a pump chamber, it will be vented separately.
7. Media in Bio-Con tank is plastic and free-flowing (installed by **AOS**).
8. The Clean Solution system is a gravity flow system not requiring a sump pump, therefore no alarms are present. However, if the site plan calls for a sump pump, the specifications of the alarm will depend on the designer and installer.
9. Tank dimensions may vary by tank manufacturer

Tank dimensions may vary by manufacturer

TITLE: **CLEAN SOLUTION SYSTEM MODEL 4000**  
 Vermont Design Flow: 4,000 gpd  
 (requires review by AOS before submitting State)

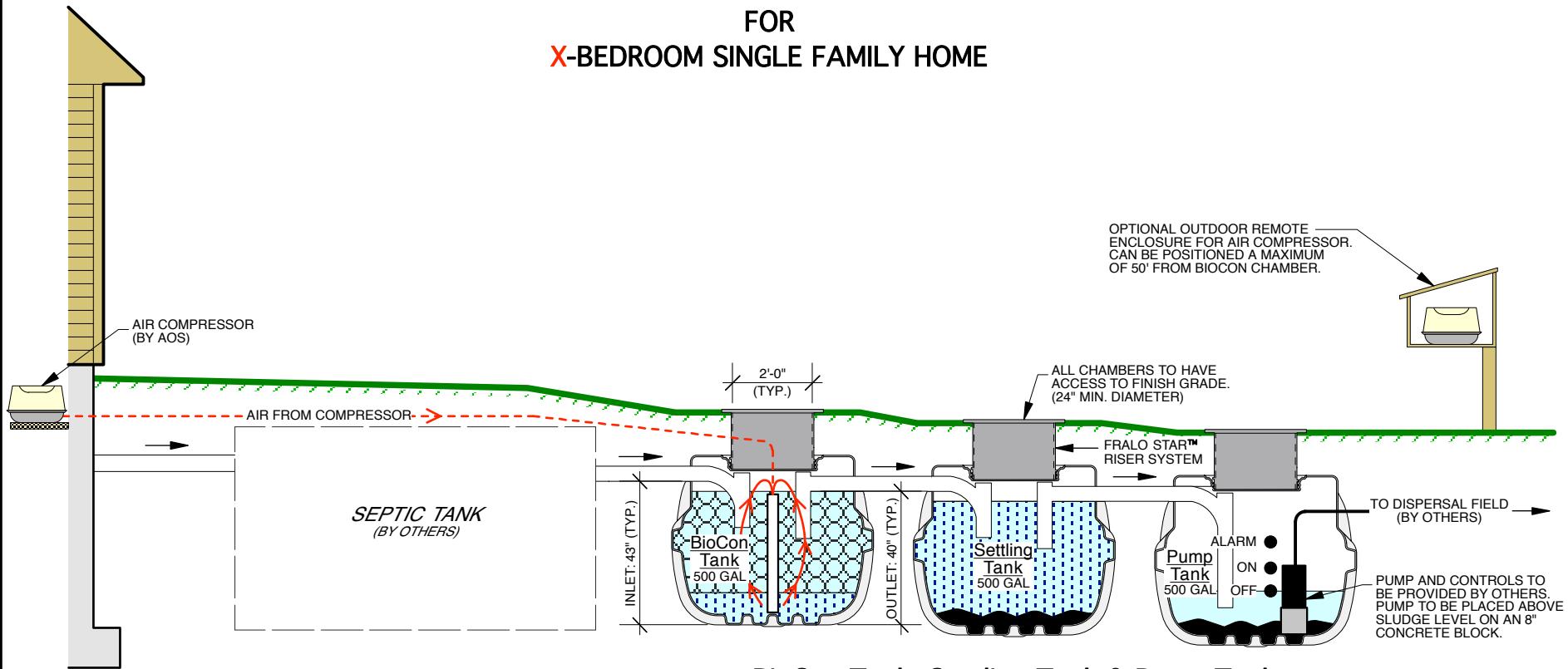
Date  
 Jan 2014  
 Rev.



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*innovative wastewater solutions with sustainable results*  
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 Phone 603.783.8042



**THE CLEAN SOLUTION™ ALTERNATIVE SEPTIC SYSTEM**  
**MODEL 250PT-RX**  
**FOR**  
**X-BEDROOM SINGLE FAMILY HOME**



**BioCon Tank, Settling Tank & Pump Tank**

- Provided by AOS -

(1)- each Fralo Septech™ Model ST-500  
 (60" L x 62" W x 51" H)

**NOTES:**

1. Septic and settling tank must be pumped every 2 years.
2. Tanks are not suitable for drive on installation unless designed w/ H-20 tanks
3. Risers are plastic- height will be specified by installer to suit site - concrete risers can be provided if preferred. All risers must be level to finish grade.
4. Compressor plugs into regular household outlets, but requires its own circuit. Compressor is weatherproof, but should be housed in garages, basements, or specially designed outdoor compartments. The maximum distance it can be from the system is 50ft. Model 250-RX requires one SL-44 (3-SCFM) compressor. Control panel and alarm must be located near compressor and accessible by O & M operator.
5. Primary septic tank should be sized based on State regulations.
6. If there is a pump chamber, it will be vented separately.
7. Media in Bio-Con tank is plastic and free-flowing (installed by **AOS**).
8. The Clean Solution system is a gravity flow system not requiring a sump pump, therefore no alarms are present. However, if the site plan calls for sump pump, the specifications of the alarm will depend on the designer and installer.

**Tank dimensions may vary by manufacturer**





**ADVANCED ONSITE SOLUTIONS LLC**

PO Box 248  
Canterbury, NH 03224  
(603)-783-8042  
Toll Free: (866) 900-2415

## **APPENDIX C**

# **Sample Residential Sales And Inspection Agreement and Purchase Order**



## ADVANCED ONSITE SOLUTIONS LLC – PROJECT SHEET

### PROJECT NAME:

CODE –

- R (Residential)
- C (Commercial Systems)
- CC (Commercial Campgrounds)

RC (Residential Commercial)

CR (Commercial Restaurants)

NH COUNTY –

- Belknap
- Carroll
- Cheshire
- Coos
- Grafton
- Hillsborough
- Merrimack
- Rockingham
- Strafford
- Sullivan

COUNTY –

VT  \_\_\_\_\_

ME  \_\_\_\_\_

MA  \_\_\_\_\_

### PROPERTY OWNER:

Name:

Address:

City, State, Zip:

Phone:

Cell:

Email:

### PROPERTY INFORMATION:

Property ID:

Address:

City, State Zip:

Waterbody:

Peak Design Flow: gpd (measured in gallons per day)

30-Day average Flow: gpd

### USE:

#### TCS Model No.

Influent Wastewater Strength:  Estimated  From Grab Sample

BOD<sub>5</sub> = <180 mg/l TSS = < 150mg/l OG = <15 mg/L

### DESIGNER:

Designer:

Company:

Address:

City, State Zip:

Phone:

Cell:

Email:

### CONTRACTOR

Site Super:

Company Name:

Address:

City, State Zip:

Phone:

Cell:

Email:



Advanced Onsite Solutions LLC  
PO Box 248  
Canterbury, NH 03224  
(603)-369-4777  
Toll Free: (866) 900-2415  
[www-aosne.com](http://www-aosne.com)

## SALES AGREEMENT

Date

### **PROPERTY OWNER:**

Name:

Address:

City, State, Zip:

Phone:

Cell:

Email:

### **PROPERTY INFORMATION:**

Property ID:

Address:

City, State Zip:

Waterbody:

Peak Design Flow: gpd (measured in gallons per day)  
30-Day average Flow: gpd

### **USE:**

#### **TCS Model No.**

Influent Wastewater Strength:  Estimated  From Grab Sample  
BOD<sub>5</sub> = <180 mg/l TSS = < 150mg/l OG = <15 mg/L

### **AOS TO PROVIDE SYSTEM COMPONENTS MARKED BY ☐:**

#### **Tank Type:**

Concrete

Plastic

H-20 Duty

#### **Loading Requirements:**

Standard Duty

Heavy Duty

1/2" dia.

3/4" dia.

#### **Air Line**

Plastic Risers to 6"

Plastic Risers to 12"

Plastic Risers to 18"

Plastic Risers to 24"

Concrete Risers by AOS

24" SMH Covers by AOS

#### **Access Risers:**

Compressor Shelf

Compressor Outdoor Enclosure

Compressor Alarm

STF-100 Pressure Filter

Tank Coating

Tank Seam Wrap

Septic Tank Filter

Other:

#### **Additional Components:**



## SALES AGREEMENT

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Canterbury, NH 03224  
(603)-369-4777  
Toll Free: (866) 900-2415  
[www-aosne.com](http://www-aosne.com)

### PROJECT NAME:

Name:

Please sign and return with the initial payment to AOS four weeks or more prior to the system being installed.

This time is needed to prepare the PO documents for the contractor and check the system components ordered and manufactured. Please call with questions.

The agreed upon price for <b>THE CLEAN SOLUTION</b> system is:	<b>\$ 0.00</b>
<i>H-20 Loaded upgrade of tanks and access covers</i>	<i>na</i>
Additional Components / Upgrades: <i>xxxxxxxx</i>	<b>\$ 0.00</b>
State Sales Tax if applicable: (VT, MA, ME):	<b>\$ 0.00</b>
Delivery	<b>\$ 100.00</b>
<b>Total Due:</b>	<b>\$ 0.00</b>

**Payment schedule is as follows:**

<b>FIRST PAYMENT</b> required to place order for materials and manufacturer the tank- once the materials are ordered the payment is nonrefundable	<b>\$ 0.00</b>
<b>FINAL PAYMENT</b> payable on the day of installation	<b>\$ 0.00</b>
At the time of installation if site conditions require that an outdoor compressor enclosure is needed the compressor enclosure will be billed at	<b>\$ 350.00</b>

If the AOS technician has to return to complete the scheduled installation because the site is not properly prepared, Buyer agrees to pay AOS \$80.00/man hour for subsequent visit(s).

Failure to pay in full will void all warranties. Buyer agrees to pay all costs and expenses incurred by AOS, including all attorney fees, and all collection charges (including a percentage of the outstanding balance of this Contract) should the account be referred to a collection agency. **Payment to be made by check, cash, or direct deposit to account.**

This sales agreement is valid for 60 days from the date of this document. All system components must be installed within 60 days of initial deposit. The above price is based on plans provided by the owner's representative. If additional materials or time are needed additional charges may apply. By signing below, the owner or owner's representative certifies that s/he has read the SALES AGREEMENT and the attached INSPECTION AGREEMENT

Accepted by Signature: \_\_\_\_\_ Date: \_\_\_\_\_.

**BELOW:**

NAME:

Mailing Address:

City, State Zip:

Phone:

Cell:

Email:

**PLEASE PROVIDE ALL INFORMATION REQUESTED ABOVE**

**THE PURCHASE ORDER CANNOT BE PROCESSED UNTIL ALL INFORMATION HAS BEEN PROVIDED**



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Advanced Onsite Solutions LLC (AOS) will supply **THE CLEAN SOLUTION™** System for the above site based on design parameters provided by owner and subsurface disposal plan(s) submitted to AOS for review by the designer. Change of use that results in an increase in daily flow or change in the wastewater strength will impact the performance of **THE CLEAN SOLUTION**. The owner(s) or the owner(s) representative(s) is responsible for obtaining all required state and local approvals.

#### **ELECTRICAL REQUIREMENTS:**

Owner shall be responsible for hiring a licensed electrician. A 120-volt outlet, **non-ground fault interrupted circuit**, supplying 5 amps per compressor. Location of the outlet(s) shall be within 50' of **THE CLEAN SOLUTION** system and within 4' of the compressor.

#### **FOLLOWING / REQUIREMENTS TO BE PROVIDED BY OTHERS:**

- Septic tanks if required
- Pump Chamber if required
- Effluent pump, all pump controls and electrical disconnect switch
- A remote exterior vent for the BioCon chamber is required for older homes
- Exterior remote venting is required for the BioCon chamber when effluent is pumped to the **THE CLEAN SOLUTION** system or from a pump chamber to the Effluent Disposal Field. (EDA)
- Excavation for installing system components
- Construction of the dispersal field
- Piping to and from **THE CLEAN SOLUTION** system

#### **OWNER HAS THE FOLLOWING UNDERSTANDING:**

- Failure to install the subsurface disposal system according to the approved plan will void system warranty and performance specifications.
- The owner(s) and the owner(s) contractor shall ensure that all risers are watertight and all system components, both upstream and downstream of **THE CLEAN SOLUTION** system, are watertight to prevent infiltration from groundwater and surface runoff before contractor leaves site **Modifications to the tank(s) provided by AOS will void the system warranty.**
- **THE CLEAN SOLUTION** system has not been designed to handle backwash discharge from water softeners or other high water use fixtures such as hot tubs or spa style showers. Discharge water from high water use fixtures to be discharged into an approved drywell.
- If the subsurface disposal system requires an effluent pump, the pump chamber shall be inspected annually for sludge buildup and pumped as necessary.

#### **MAINTENANCE REQUIREMENTS:**

There is ongoing concern that pharmaceuticals, medical treatments, and personal care products impact how a septic system functions. Studies have shown that these products can disrupt the balance of bacteria in the septic tank, reducing the septic tank's efficiency to break down waste.

The following is recommended:

1. The EPA suggests that unused pharmaceuticals, either prescription or over the counter medicines, not be disposed of in the septic system. Check with your local pharmacy to see if it has a program to dispose of unused medicines.
2. If a resident of the home is undergoing medical treatment with high strength antibiotics, the system should be inspected annually to determine a proper maintenance schedule.

If your system has a septic tank effluent filter or an effluent pump filter, the filters should be checked and cleaned annually. More frequent cleaning maybe required depending on use.



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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<sub>5</sub><sup>(1)</sup> of <180 mg/l, TSS<sup>(2)</sup> <100 mg/l and FOG<sup>(3)</sup> <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.



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## RESIDENTIAL INSPECTION AGREEMENT **DATE**

### **PROPERTY OWNER:**

Name:

Address:

City, State, Zip

### **PROPERTY INFORMATION:**

Property ID:

Address:

City, State Zip:

Waterbody:

Peak Design Flow

30-Day Average Flow:

### **USE:**

The following inspection and maintenance is required. It is the owner's responsibility to see that this maintenance is performed.

#### **Residential Use (Single Family Home)**

1. **State of New Hampshire -THE CLEAN SOLUTION** system shall be inspected every 2 years by a certified AOS Technician.
2. **State of Maine - THE CLEAN SOLUTION** system shall be inspected every 2 years by a certified AOS Technician.
3. **State of Vermont -THE CLEAN SOLUTION must be inspected according to the following schedule:**
  - At time in installation,
  - Six months from the date of operation,
  - One year after the date of operation, and
  - Annually thereafter.

*Inspection must be performed by a licensed designer or service provider approved by AOS.*

4. **State of Massachusetts -THE CLEAN SOLUTION must be inspected according to the following schedule:**
  - Six months from the date of operation,
  - One year after the date of operation, and



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- *Annually thereafter.*

**Inspection must be performed by a licensed designer or service provider approved by AOS**

5. If the Septic System utilizes a pump between the BioCon chamber and the dispersal field, AOS requires either a) a separate pump chamber after the settling chamber (preferred), or b) installation of a Sim/Tech pressure filter or approved equivalent on the outlet side of the pump.
6. After the inspection, you may need to contact your septic pumper to pump out the septic and settling/pump tanks. Maximum time between pumping should not exceed 2 years. More frequent pumping may be required depending on system use and number of occupants. Owner must retain records of pumping.
7. Compressor must run continuously. It should be checked for operation at least once a month unless a compressor alarm has been installed. Compressor Air Filter to be cleaned or replaced yearly. If the Compressor is located in a dusty environment the filter will need to be cleaned more frequently
8. Typical residential use requires the BioCon Chamber to be pumped and cleaned every 5 to 7 years.
9. Compressor may be disconnected for seasonal homes that have been winterized.
10. Leach fields are designed based on a peak design flow measured in gallons per day. 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.



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### **Additional Maintenance Suggestions:**

There is ongoing concern that pharmaceuticals, medical treatments, and personal care products impact how a septic system functions. Studies have shown that these products can disrupt the balance of bacteria in the septic tank, reducing the septic tank's efficiency to break down waste.

The following is recommended:

1. The EPA suggests that unused pharmaceuticals, either prescription or over the counter medicines, not be disposed of in the septic system. Check with your local pharmacy to see if it has a program to dispose of unused medicines.
2. If a resident of the home is undergoing medical treatment with high strength antibiotics, the system should be inspected annually to determine the proper maintenance schedule.

If your system has a septic tank effluent filter or an effluent pump filter, the filters should be checked and cleaned annually. More frequent cleaning maybe required depending on use.

The inspection fee does not cover routine maintenance of the BioCon Chamber (pumping and cleaning) or replacement of components not covered under the warranty. See Sales Agreement for warranty information. Compressor's under warranty will be replaced at no cost if installed during an inspection. Compressor's not providing enough pressure to ensure the system is working efficiently will be replaced. The owner will be invoiced to replace a compressor(s) not covered under warranty.

### **INSPECTION FEE SCHEDULE**

New Hampshire - Single Family Residential Homes – The current fee is \$XXX.XX per inspection plus the cost of replacement parts not covered by warranty. AOS may adjust the Inspection fees as needed to cover increase in cost of service and goods (i.e. Fuel).

(Vermont-Maine-Mass) Single Family Residential Homes – The current fee is \$XXX.XX per inspection plus the cost of replacement parts not covered by warranty. AOS may adjust the Inspection fees as needed to cover increase in cost of service and goods (i.e. Fuel).

Inspection fees are payable at time of service.

**By signing below, the owner or owner's representative warrants that s/he has read and agrees to the terms of the SALES and INSPECTION AGREEMENTS, and agrees to perform the necessary inspections and maintenance outlined.**

**Accepted by Signature:**

**Date:**

**Print Below:**

Name:

Mailing Address:

City, State Zip:



Vermont Department of Environmental Conservation  
Agency of Natural Resources  
Drinking Water and Groundwater Protection Division

---

## Notice to Owners of Innovative and Alternative (IA) Wastewater Treatment Systems

The State of Vermont Drinking Water and Groundwater Protection Division allows the use of Innovative/Alternative (IA) wastewater treatment systems. IA systems are used to: assist in overcoming site limitations that would otherwise not allow for the construction of a wastewater system on the property, to reduce the wastewater strength prior to disposal, or to decrease the size of a wastewater system. As a landowner you should be aware of the required conditions in your Wastewater System and Potable Water Supply Permit. The conditions were deemed necessary to ensure that all persons using or affected by the alternative system or product will be protected from health hazards associated with the use of the system or product.

### Q. - Am I actually required to keep a maintenance contract?

Yes. Approved systems have specific permit conditions associated with installation and operation that requires landowners to retain a maintenance contract with a professionally trained and approved service provider. A list of approved Service Providers can be found at: <http://dec.vermont.gov/sites/dec/files/dwgwp/innovative/pdf/serviceprovidercontacts.pdf>

### Q. - My System is working fine, why can't I just call a service provider when I notice a problem?

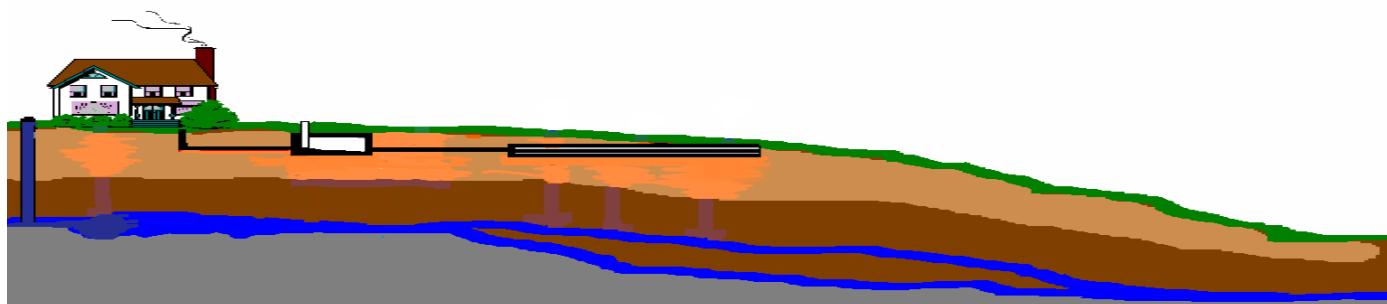
Proactive maintenance and servicing will ensure that the System is working as intended and avoid repairs or replacement at a major cost to the homeowner. IA systems need servicing just as much as your heating system or your vehicle; without these procedures your system may not run its intended lifetime. Routine servicing can detect problems that you might not even be aware of before major repairs are needed.

### Q. - What should my service provider be doing if I have a maintenance contract?

Maintenance activities varies by system type and site conditions, but at the very least your service provider should: perform annual or more frequent inspection if required, evaluate the site and surrounding landscape for possible problems, and measure tank solid levels to assess if pumping is needed. Depending on the type of system, the service provider may need to: clean or replace the filters, clean pumps, screens, motors and or floats, and advise you on appropriate use and preventative maintenance of the system (i.e. spread the loads of laundry throughout the week).

### Q. - It's my system, my property, and my drinking water. Why does the State of Vermont care if my system fails?

When an onsite wastewater system fails, it's not just the homeowner who is affected. Improperly treated wastewater contains bacteria, viruses and other pollutants. A failed system can result in untreated wastewater: surfacing, leaching into groundwater that we drink, or it can run off into surface waters. This is a health hazard for the general public and is especially dangerous for children and the elderly and anyone with a compromised immune system.



## **Q. - How can I justify the expense?**

IA Systems are more complicated than traditional in-ground systems and may have alarms, filters, pumps, blowers, spray heads, nozzles, floats, tanks, or media. Periodic cleaning, inspection, replacement of components and adjustment keeps the system running properly. Ongoing maintenance may help identify problems that can be fixed before they impact the leachfield. Once damage occurs, repairing or replacing the leachfield or treatment unit can cost thousands to tens of thousands of dollars.

## **Q. - What happens if I do not comply with my permit conditions?**

If a system owner is in violation of their permit, the future sale of a property or a request for a permit amendment may be delayed or negatively impacted. A site-specific permit for the use of an IA product may be revoked if the property owner fails to have a valid maintenance contract or if the unit fails to function properly.

## **Q. - What requirements should I be aware of?**

Depending on the complexity of your system, annual or semi-annual inspections must be performed by your contracted service provider or licensed designer. You should check the conditions of the IA approval letter. Inspection reports must be submitted to the State of Vermont Department of Environmental Conservation. Check with your service provider to see if they provide a reporting service.

## **Q. - What if I am not happy with my Service Provider?**

The State of Vermont requires IA service providers to be approved and trained by the Vendor. If the service provider is not meeting the conditions in your contract, not responding to emergency calls or you are unsatisfied for any other reason the vendor should be made aware of your concerns. A list of Vendor contacts can be found at:

<http://dec.vermont.gov/sites/dec/files/dwgwp/innovative/pdf/serviceprovidercontacts.pdf>

If you are unsatisfied with the Vendor's response to your concern you may contact:

**Cristin Ashmankas**, Environmental Analyst  
Department of Environmental Conservation  
Drinking Water and Groundwater Protection Division  
[phone] 802-522-3257  
[email] [cristin.ashman@vermont.gov](mailto:cristin.ashman@vermont.gov)

## **Q. - Where can I find my permit?**

If you were the permit applicant, you would have received a copy of the Permit and IA Approval at the time of approval. If you purchased a property with an existing IA System, you should have received a copy of the permit and IA Approval at the time of closing. If you cannot locate your permit, you may use the on-line permit document search tool [septic.vt.gov/cfm/wwdocs/index.cfm](http://septic.vt.gov/cfm/wwdocs/index.cfm) (permit document search) or contact the appropriate Regional Office for assistance at [septic.vt.gov](http://septic.vt.gov) (program information). There are some installations that may have been exempt from needing a state permit. There may be records on these systems located in the town clerk's office.

## **Q. - Who do I contact if I have compliance questions?**

**Christina Russo**, Environmental Analyst  
Department of Environmental Conservation  
Drinking Water and Groundwater Protection Division  
[phone] 802-585-4885  
[email] [chris.russo@vermont.gov](mailto:chris.russo@vermont.gov)



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PO Box 248  
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Toll Free: (866) 900-2415  
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Purchase Order No:

Date:

**CONTRACTOR:**

Site Super:  
Company Name:  
Address:  
City,  
State, Zip:  
Phone:  
Cell:  
Email:

**PROPERTY INFORMATION:**

Owners Name:  
Property ID:  
Address:  
City, State Zip:

**Instructions:**

Attached is the purchase order for **THE CLEAN SOLUTION™** system for the above site. Please call the tank manufacturer to set up the delivery date and time. See attached PO for phone number. **CONTRACTOR IS RESPONSIBLE FOR CONFIRMING ALL TANK DIMENSIONS AND INVERT HEIGHTS.**

- Contractor shall verify all tank dimensions prior to setting.
- AOS provides all interior baffles. AOS is only responsible for interior plumbing of **THE CLEAN SOLUTION.**
- SEE CUT SHEETS PROVIDED FOR INFORMATION AND REQUIREMENTS FOR SETTING AND BACKFILLING THE CLEAN SOLUTION SYSTEM.** All tanks are to be set level and according to approved plans.
- Installer shall install all piping to and from **THE CLEAN SOLUTION.** All piping must be level when entering the tank.
- Exterior remote venting is required for the BioCon chamber when effluent is pumped to **THE CLEAN SOLUTION** system or when a pump is installed to pump to the Effluent Disposal Area (EDA).
- For Standard Duty Tanks - plastic risers and covers are provided by AOS based on original design plans provided by designer. Access covers are required to finish grade. Contractor to provide additional risers to finish grade if needed.
- For H-20 loaded installs AOS ONLY PROVIDES bolted and gasketed SMH covers. All concrete risers to be provided by Contractor unless noted otherwise in Sales Agreement. H-20 loaded covers and risers to be installed by Contractor.**
- Airline Sleeves to be provided and installed by site contractor, unless noted otherwise. Contact AOS for sizing requirements.
- Contractor is responsible for securing all Safety Lids and covers after Inspection by the Town or State. All screws **MUST BE** installed in the cover
- Contractor is responsible to ensure that there is no ground or surface water infiltration.
- Contractor to provide owner(s) with "as-built" swing ties from fixed locations for all access covers.
- Contractor/owner to determine location of compressor prior to AOS being on site to complete the installation of the system.
- Contractor to insulate top of tank when 12" of cover or less and under all parking areas with 2" rigid insulation. See tank cut sheet.

**Please contact us 5 days prior to the tanks being set so we can schedule a time to install the system components.**

**AOS IS NOT RESPONSIBLE FOR ELECTRICAL WORK**



Advanced Onsite Solutions LLC  
PO Box 248  
Canterbury, NH 03224  
(603)-369-4777  
Toll Free: (866) 900-2415  
[www-aosne.com](http://www-aosne.com)

**Purchase Order No:**

**Date:**

**COMPANY:**

Phoenix Precast Products  
77 Regional Drive  
Concord, NH 03301

Phone: 603-225-5169  
Toll Free: 1-800-639-2199

QUANTITY	DESCRIPTION	NOTES
x	xxxx-gallon xxx-compartment tank (xxx/xxx/xxx). See attached drawing	Xxxx Duty
x	Tank to be Coated with water sealant	
x	24" dia. plastic covers	
x	24" dia. x 6" plastic risers	
x	24" dia. x 12" plastic risers	
x	24" dia. safety pan	
x	24" dia. safety lid	
x	12" dia. plastic covers	
x	12" dia. Plastic risers (6" height)	
x	12" dia. Plastic risers (12" height)	
x	3/8" butyl seal for risers (1 roll per two joints)	
1	Screws to secure all risers sections and covers	

**Delivery Notes:**

1. The installer will call to arrange delivery and provide directions to site.
2. Only Items on this PO to be billed to Advanced Onsite Solutions LLC.

**CONTRACTOR:**

Site Super:  
Company Name:  
Address:  
City, State, Zip:  
Phone:  
Cell:  
Email:

**PROPERTY INFORMATION:**

Property ID:  
Address:  
City, State Zip:  
Waterbody:

**Invoice:**

Gary Spaulding  
Advanced Onsite Solutions LLC  
P.O. Box 248  
Canterbury, NH 03224  
Tel No. 603.369.4777  
Cell No. 603.496.9797



Advanced Onsite Solutions LLC  
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Toll Free: (866) 900-2415  
[www-aosne.com](http://www-aosne.com)

**Purchase Order No:****Date:****COMPANY:**

L.E. Weed & Son LLC  
1133 Route 14  
White River Jct. VT 05001

**NH No.** 1-800-499-1540  
**VT No.** 1-866-795-2220

QUANTITY	DESCRIPTION	NOTES
x	xxxx-gallon xxx-compartment tank (xxx/xxx/xxx). See attached drawing	Xxxx Duty
x	Tank to be the Coated with water sealant	
x	24" dia. plastic covers	
x	24" dia. x 6" plastic risers	
x	24" dia. x 12" plastic risers	
x	24" dia. safety pan	
x	12" dia. plastic covers	
x	12" dia. Plastic risers (6" height)	
x	12" dia. Plastic risers (12" height)	
x	3/8" butyl seal for risers (1 roll per two joints)	
1	Screws to secure all risers sections and covers	

**Contractor**

Site Super:  
Company Name:  
Address:  
City, State, Zip:  
Phone:  
Cell:  
Email:

**Property Information:**

Property ID:  
Address:  
City, State Zip:  
Waterbody:

**Delivery Notes:**

1. The installer will call to arrange delivery and provide directions to site.
2. Only Items on this PO to be billed to Advanced Onsite Solutions LLC.

**Invoice:**

Gary Spaulding  
Advanced Onsite Solutions LLC  
P.O. Box 248  
Canterbury, NH 03224  
Tel No. 603.369.4777  
Cell No. 603.496.9797



Advanced Onsite Solutions LLC  
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Canterbury, NH 03224  
(603)-369-4777  
Toll Free: (866) 900-2415  
[www-aosne.com](http://www-aosne.com)

**Purchase Order No:****Date:****COMPANY:**

EJ Prescott Inc.  
210 Sheep Davis Road  
Concord, NH 03301-8515

Phone: 603-224-9545  
Toll Free: 1-800-678-9545

QUANTITY	DESCRIPTION	NOTES
x	500-gallon Fralo Tank Model STXXXX See attached drawing Model	Standard Duty
x	1250-gallon Fralo Tank Model STXXXX See attached drawing Model	
x	24" dia. plastic covers	
x	24" dia. x 6" plastic risers	
x	24" dia. x 12" plastic risers	
x	Rubber seal for risers (1 roll per joint)	
x	Baffles (set for each Tank)	

**Contractor**

Site Super:  
Company Name:  
Address:  
City, State, Zip:  
Phone:  
Cell:  
Email:

**Property Information:**

Property ID:  
Address:  
City, State Zip:  
Waterbody:

**Delivery Notes:**

1. The installer will call to arrange delivery and provide directions to site.
2. Only Items on this PO to be billed to Advanced Onsite Solutions LLC.

**Invoice:**

Gary Spaulding  
Advanced Onsite Solutions LLC  
P.O. Box 248  
Canterbury, NH 03224  
Tel No. 603.369.4777  
Cell No. 603.496.9797



**ADVANCED ONSITE SOLUTIONS LLC**

PO Box 248  
Canterbury, NH 03224  
(603)-783-8042  
Toll Free: (866) 900-2415

## **APPENDIX G**

# **INSPECTION REPORT COVER SHEET**

To be submitted to the State of Vermont

Revision 3 (12-30-2013)



**Innovative/Alternative Maintenance and Inspection Report Coversheet\***

**\*Field Inspection Report must be attached.**

Permit Number (WW# or EC#) <input type="checkbox"/> No Permit Number(exempt)	Lot ID	SPAN (if available)
Landowner		
Town		
Address (Site)		
Address (Mailing)		
I/A Technology	Model Number	
Date Inspected (mm-dd-yy)	<input type="checkbox"/> Start-up <input type="checkbox"/> 6 month <input type="checkbox"/> Annual <input type="checkbox"/> Other	
<input type="checkbox"/> Unit operational and meets vendor requirements. <input type="checkbox"/> Unit operational recommended work is preventative maintenance and is not urgent. <input type="checkbox"/> Unit operational but needs minor repairs. <input type="checkbox"/> Unit does not meet vendor requirements. <input type="checkbox"/> Unknown		
Explain "Unknown" status, issues and corrective actions below or <input type="checkbox"/> See attached report <input type="checkbox"/> Effluent cloudy /pungent (check if applicable) <input type="checkbox"/> Effluent samples taken (check if applicable)		Recommended Due Date(s)

Vendor Approved     Licensed Designer     Service Provider

(Name) \_\_\_\_\_ Date \_\_\_\_\_

**DWGWP Use Only:** Annual inspection condition(s) satisfied: Year \_\_\_\_\_  6 month     Yes     No

Action needed by: Check all that apply

<input type="checkbox"/> Landowner	<input type="checkbox"/> Vendor	<input type="checkbox"/> Service Provider	<input type="checkbox"/> Regional Office
<input type="checkbox"/> IA Manager	<input type="checkbox"/> Licensed Designer	<input type="checkbox"/> Compliance	<input type="checkbox"/> Enforcement

Comments:

DWGWP Reviewer: \_\_\_\_\_ Date \_\_\_\_\_