

Innovative/Alternative (I/A) System Approval

General Use per §1-1001 of the
Wastewater System and Potable Water Supply Rules, effective September 29, 2007

AdvanTex® Series Wastewater Treatment System

Original Approval Date: September 15, 2001

Approval Number: 2001-01-R6

Renewal Date: October 8, 2013

Expiration Date: October 7, 2015

Vendor Information

Orenco Systems, Inc.
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Contact

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Technology Name

AdvanTex® Treatment System
Models AX20, AX20-RT, AX-25-RT (All
Mode 1), AX-100, and AX-Max Series (Models
AX-MAX075-14, AX-MAX100-14, AX-
MAX125-21, AX-MAX-150-21, AX-MAX15
21, AX-MAX175-28, AX-MAX200-28, AX
MAX225-35, AX-MAX250-35, AX-MAX275-
42, AND AX-MAX300-42

Technology Type

Textile Based Recirculating Packed
Bed Filter

1.0 Approval Conditions

The technologies listed in this approval may be used as part of a subsurface wastewater disposal system approved under the Wastewater System and Potable Water Supply Rules, effective September 29, 2007 (Rules), under the conditions that follow. Please note failure by the vendor to comply with this approval letter will be grounds for the Agency to not renew this approval letter.

- 1.1 The treatment units must be installed and operated as described in the Innovative/Alternative System application package filed with the Agency of Natural Resources (Agency) and as listed on the vendor's website.

- 1.2 Unit sizing must be in accord with the technical information submitted with the Innovative/Alternative System application package. The sizing shall be based on the calculated design flow per §1-808 of the Rules.
- 1.3 The system may be used for both new and replacement wastewater disposal systems.
- 1.4 All effluent from the Wastewater Treatment System shall discharge to a filtrate disposal system that conforms to the requirements of §1-916 of the Rules. If the rules are revised during the term of this approval, this approval may be revised as needed to conform to the revisions.
- 1.5 This approval is based on information submitted by the Vendor indicating that the specified models will routinely provide effluent with no more than 30 mg/l of BOD₅ and no more than 30 mg/l of TSS.
- 1.6 When a project is subject to the Rules, site-specific permission for the use of this product is required in the form of a Wastewater System and Potable Water Supply Permit.
- 1.7 This approval is not a representation or guarantee of the effectiveness, efficiency or operation of the Wastewater Treatment System.
- 1.8 This approval is based on treatment only of domestic wastewater of low and moderate strength as specified in §1-915(a)(1)(C) & (D) of the Rules. Systems to treat higher strength wastewater may be approved on a case by case basis and may require more frequent maintenance.

2.0 Responsible Parties, Requirements and Conditions

2.1 Landowner

- 2.1.1 The landowner must comply with all conditions of their Wastewater System and Potable Water Supply permit in addition to the conditions in this approval letter.
- 2.1.2 The landowner shall have a valid maintenance contract with annual inspections in force at all times. Cluster (community) and more complex systems may require additional maintenance as recommended by the Vendor. The minimum length of any contract shall be a period of two years.
- 2.1.3 Maintenance shall be performed by a licensed designer or service provider trained and approved by the Vendor. (See Section 2.3)
- 2.1.4 A copy of the initial and each succeeding contract shall be submitted to the appropriate Regional Office of the Agency and to the Vendor. A copy of the inspection reports shall be submitted to the appropriate Regional Office of the

Agency. The landowner may authorize the licensed designer or the service provider to file the Contracts and Reports on their behalf.

- 2.1.5 The landowner shall keep the system in good operating condition and report any deficiencies to the Regional Office in a timely manner.
- 2.1.6 The landowner shall provide a copy of this approval letter, the site-specific permit, and operating instructions provided by the Vendor to any person who is a prospective purchaser of a property prior to the sale of the property.
- 2.1.7 Within 30 days of the transfer of the property, the new owner of the property shall inform the Regional Office that issued the permit and the Vendor of the change in ownership, including the name and mailing address of the new owner.
- 2.1.8 A site-specific permit for the use of this product may be revoked if the unit fails to function properly or if the property owner fails to have a valid contract for the required maintenance and inspection of the unit. In the case of the unit failing to function properly, revocation of the permit will require that the use of the building be discontinued unless another wastewater disposal system is installed based on prior written approval by the Agency.

2.2 Vendor

- 2.2.1 The Vendor shall provide the Central Office of the Agency with the names of the Vermont distributor(s) and maintenance provider(s) within 45 days of this approval and within 30 days of termination and/or hiring a new firm during the term of this approval.
- 2.2.2 The vendor shall provide training for and maintain a list of designers, installers, and maintenance providers authorized to work on these systems. This information shall be included in the Annual Report.
- 2.2.3 Prior to selling equipment, the vendor shall provide information to the Central Office on who is authorized and trained to sell and service the equipment in Vermont.
- 2.2.4 The Vendor shall have an inventory of replacement parts available locally or available for delivery within 24 hours.
- 2.2.5 Prior to system start-up, detailed operating instructions shall be provided in writing by the Vendor to the owner.
- 2.2.6 The Vendor shall submit an annual report electronically to the Central Office (Attention Innovative/Alternative Program Manager) by April 1 of each year

for the 12 month period ending December 31 of the previous year that includes the following information:

2.2.6.1 New permitted systems installed in Vermont during the previous calendar year including:

- Assigned Vermont Wastewater System and Potable Water Supply Permit Number
- Name of current landowner
- Physical and mailing addresses
- Name of designer providing the installation certification
- Name of installer
- Name of service provider

2.2.6.2 Existing systems with known changes in ownership including:

- All information outlined in Section 2.2.6.1
- Existing systems currently not under contract with a service provider

2.2.6.3 A summary of all known system problems, damages and/or failures including:

- Description of issues
- Potential/known causes of problems
- System operability
- Recommended repair/remediation
- Date(s) of repair/remediation
- System effectiveness
- Changes in technology specifications

Note: Repairs that are not defined by the Rules as a “minor repair” require approval by the Division prior to making the repair.

2.2.6.4 The names of designers and installers trained by the Vendor and/or the Vendor’s representative.

2.2.6.5 The names and contact information for trained and authorized service providers.

2.3 Service Provider

2.3.1 Maintenance and inspections shall be performed in accordance with the manufacturers Operation and Maintenance Manual submitted as part of the Innovative/Alternative System application package.

2.3.2 Maintenance and inspections must be performed by a service provider or Licensed Designer trained and approved by the Vendor. Problems

encountered that are associated with the site design must be reported and a Licensed Designer will be required to review the system design.

2.3.3 Maintenance and Inspection Contracts and Schedules:

2.3.3.1 The maintenance contract must be a minimum of two years in duration and copies of the current contract must be submitted to the approving Regional Office and must include the Wastewater Permit reference number.

2.3.3.2 The start-up and six month maintenance and inspection shall be performed by or supervised by a Licensed Designer trained and approved by the Vendor.

2.3.3.3 Within 60 days of start-up of the system, the Licensed Designer shall submit a report to the owner, the Vendor, and the Regional Office that issued the permit indicating any problems encountered, their resolution, and affirmation that the system is operating as intended. A copy of the startup report may be submitted electronically to the approving Regional Office.

2.3.3.4 Inspections shall be performed thereafter by the service provider.

2.3.4 Maintenance and Inspection

2.3.4.1 Inspection shall include a visual check of the system, including the pretreatment tank, recirculation tank, textile filter and effluent quality.

2.3.4.2 Accurate recordkeeping shall be maintained.

2.3.4.3 If at any inspection the effluent is cloudy or pungent smelling a sample shall be collected and tested for BOD and TSS and corrective actions taken if limits in Section 1.5 are exceeded.

2.3.4.4 Measurements of sludge and scum levels and any pumping required shall be noted.

2.3.4.5 Inspect effluent filter if applicable.

2.3.5 Inspection and Maintenance Reports shall include:

- Current landowners name, physical and mailing address
- Wastewater (WW) permit number and lot number(s) if applicable
- The date of inspection
- I/A technology
- Year installed

- Maintenance contract status
- Validation that the system is operational and meets vendor requirements
- Comments or outstanding corrective actions and recommended due dates
- Any site/system modification
- Results of all testing

2.3.6 Repairs that are not defined by Rule as “minor repair” require approval by the Division prior to making the repair.

2.3.7 All reports shall be filed with the appropriate Regional Office, the Vendor, and the landowner within 60 days of the inspection.

2.4 Designer

2.4.1 Design

2.4.1.1 The design shall include only the wastewater equipment identified in this approval.

2.4.1.2 The treatment unit shall be designed by a Licensed Class 1 Designer or a Licensed Class B Designer in accordance with the manufacturer’s recommendations. The designer shall assure that the system will properly function in all seasons.

2.4.1.3 The designer must assess the structural needs of the unit for the specific application site and place the requirements on the design plans.

2.4.1.4 The designer must determine the type of backfill required and any necessary placement specifications.

2.4.1.5 The designer must assess the ventilation path for the particular application and make any necessary provisions to assure proper flow and control of odor emissions.

2.4.1.6 The designer shall consult with the Vendor for proper sizing of the system.

2.4.1.7 The designer must assure routine access to each compartment of the unit (access to grade) as well as the control panel, any pumps, and distribution boxes (for sampling). The designer must address flotation issues if the seasonal high groundwater table will be above the bottom of any of the tanks. All treatment modules shall be equipped with anti-

flotation methods unless there is a demonstration that flotation is not a problem on a particular site or that an alternative system has been approved by the Agency.

2.4.1.8 Per the Vendor's Installation Manual, "AdvanTex AX100 pods can be bermed, but the bottom of each pod shall not be more than 9 inches below the natural grade."

2.4.2 Installation Inspection

2.4.2.1 The treatment unit shall be set up under the instruction and guidance of an installer/inspector trained by the Vendor.

2.4.2.2 The treatment unit shall be inspected by a Licensed Class 1 Designer or a Licensed Class B Designer, approved by the Vendor, after construction of the unit and installation of the tanks before backfilling, and after backfilling and grading is complete. The inspection shall include checking for an adequate structural foundation to support the unit, checking for levelness of the tanks, and inspecting for damage and proper assembly.

2.4.2.3 Before backfilling, the unit and tankage shall be tested for watertightness by filling the unit or tank with water to a point that is above all below grade openings and holding it at a constant level for 24 hours; there shall be no measurable leakage. During the test the entire unit and tanks shall be inspected for visible leaks. Should the unit or tanks fail the test they may be repaired and retested. The testing and repairs shall be conducted under the direction and in the presence of the inspecting Licensed Designer.

2.4.2.4 The Licensed Designer shall inspect all piping for proper installation and watertightness before backfilling.

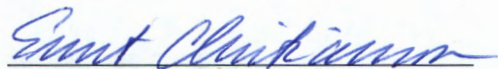
2.4.2.5 The Licensed Class 1 or Class B Designer, approved by the Vendor to conduct the inspections, shall provide a letter certifying that the system is correctly installed as well as the results of watertightness testing. This letter shall be submitted electronically to the Vendor and the Regional Office that permitted the Innovative/Alternative system.

2.4.2.6 The start-up and six month maintenance and inspection shall be performed by or supervised by a Licensed Designer trained and approved by the Vendor.

3.0 Permitting

- 3.1 The permit shall specify the technology name and model and approval number.
- 3.2 The Project must meet the conditions within *Section 1.0 Approval Conditions*.
- 3.3 Installation and design conditions in the Innovative/Alternative System approval shall be met.
- 3.4 A copy of the most recent revision of the Innovative/Alternative System approval shall be appended to all permits.
- 3.5 For systems $\geq 6,500$ gpd, permitting will be through the Indirect Discharge Program and not the Regional Offices.

Effective Date: 10-08-2013

By: 
Ernest Christianson
Regional Office Program Manager