

Douglas A. Ducey
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY



Misael Cabrera
Director

Notice of Proprietary Treatment Product Listing Pursuant to Arizona Administrative Code R18-9-A309(E) ADEQ LTF #78002

1. Proprietary Treatment Product Name, Model, and Description

Product Name: LandSaver MBR

Models: LandSaver MBR

Description: The LandSaver MBR consists of state-of-the-art treatment processes including equalization of surge flows, a fixed-film moving bed bioreactor, advanced ultrafiltration membranes and ultraviolet light (UV) disinfection. Wastewater flows into the primary tank where physical separation of inert solids, fats, oil and grease occurs. Effluent flows from the Primary Tank into the Equalization Tank where flow surges are absorbed and stored. Effluent is then pumped from the Equalization Tank to the Aerobic/Ultrafilter Chamber where breakdown of organic matter first takes place in the outer Aerobic Chamber. Effluent is then drawn from the Aerobic Chamber through the Ultrafilter Unit which also houses an ultrafilter membrane and a UV module to stop residual solids and bacteria from being discharged to the receiving environment. This listing is applicable for design flows less than 3,000 gallons per day (gpd).

2. Manufacturer Information

Name: Tangent Company LLC
Address: 10175 Queens Way
City/State/Zip: Chagrin Falls, Ohio 44023
Phone: 440-543-2775
Fax: 440-543-2778
Website: www.tangentcompany.com

3. Recognized Treatment Performance

Parameter	Averaging Time	Parameter Value for Averaging Time
5-Day Biochemical Oxygen Demand (BOD ₅), mg/l	30-day arithmetic mean	3
Total Suspended Solids (TSS), mg/l	30-day arithmetic mean	1
Total nitrogen as nitrogen(TN), mg/l	five-month arithmetic mean	53
Total coliform, colony forming units/100ml	95th percentile	0 (Log ₁₀ 0)

4. Product Applicability and Limitations for Use for a Recognized General Permit Technology

Applicability: This listing is only for the LandSaver MBR and is listed as an aerobic treatment technology specified in A.A.C. R18-9-E315.

Limitations:

- A. The product, including the built-in pretreatment tank, is subject to A.A.C. R18-9-A312(F)(2) through (4).
- B. The product shall conform to the following:

Maximum Design Flow (gallons per day) per R18-9-A309(B)(3)	Manufacturer’s Model Number
600	LandSaver MBR

- C. This listing is for the treatment of wastewater that meets the definition of typical sewage in R18-9-101(42).
- D. The manufacturer recommends the LandSaver MBR be serviced every six months by a Tangent-authorized service provider. In addition, the owner is to inspect the area where the tanks are buried on a regular basis. As part of the owner inspection, they are to follow the inspection guidelines given in the Owner’s Manual and in general verify that the system is operating normally according to the sound, sight, and smell tests that are described in the Owner’s Manual.
- E. The requirement of R18-9-A312(B)(4)(e) has been met by providing twenty four hour emergency storage of wastewater within the unit itself.
- F. This listing EXCLUDES appurtenances which are considered to be an alarm, control panel, control, switch, timer, wiring, other electrical devices, and installation components; which are subject to both the manufacturer specifications and any more restrictive requirement in 18 A.A.C. 9, Article 3.
- G. ADEQ does not approve design or operation manuals for proprietary products. However, “if manufactured components are used, an applicant shall design, install, and operate the on-site wastewater treatment facility following the manufacturer’s specifications” as per R18-9-A312(F)(2) unless a conflict arises as specified in R18-9-A312(F)(4).
- H. This listing approval is only for the Landsaver MBR technology that meets the requirements of R18-9-E315 of the AAC and excludes the use of the Type 4.20 permit – Disinfection Device permit for the UV disinfection system. The UV disinfection system of the Landsaver MBR does not meet all the requirements of R18-9-E320 of the AAC and therefore, is not approved for use under the Type 4.20 General Permit.
- I. The Tangent LandSaver MBR must include the UV disinfection system as part of the product installation and cannot be altered, removed, shut-off, or otherwise modified. The manufacturer’s operation and maintenance requirements for the UV disinfection system must also be followed.

5. Alternative Criteria and Exceptions for Use under the Recognized General Permit Technology

Alternative:	None
Exception:	

	<p>a. When the wastewater does not meet the definition of typical sewage as defined in R18-9-101(42), a Manufacturer’s Design Review Report shall be submitted for review and approval along with the Notice of Intent to Discharge. This Design Review Report shall specify component capacities, control settings, and supplemental installation & operational practices.</p>
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6. Documents Used as the Basis for this Proprietary Treatment Product Listing Notice


Application for Treatment Product Listing:	8/15/19
3 rd Party Test data:	Hess & Associates Engineering Field Tests – 7/26/19
Installation Instructions:	Installation Manual – 8/15/19
Manufacturer’s Warranty:	Limited Product Warranty – 8/15/19
Manufacturer’s Specifications:	Specifications and Key Components – 8/15/19
Manufacturer’s Design Calculations & Drawings:	LandSaver MBR Drawings for Concrete Tanks and Polyethylene Tanks – 8/15/19
Operation & Maintenance Manual:	Operation & Maintenance – 8/15/19

7. Terms and Conditions for this Proprietary Treatment Product Listing Notice

<p>A. This Notice of Proprietary Treatment Product Listing shall remain in effect until any of the following occurs:</p> <ol style="list-style-type: none"> 1. Applicable provisions of the Arizona Administrative Code, Title 18, Chapter 9, Article 3 are revised; 2. Documents used for the basis of this listing are altered or modified; 3. Manufacturer claims which are relied upon for this listing are later determined to contain an error or omission; 4. The manufacturer requests termination of this listing; 5. A listing error or omission is identified; or 6. The manufacturer and ADEQ mutually agree to reissue this notification to incorporate correction or update for any reason. <p>B. This Notice of Proprietary Treatment Product Listing does not apply when the:</p> <ol style="list-style-type: none"> 1. Listed proprietary treatment product is modified or operated in a manner that conflicts with Arizona law or the documents used for the basis of this listing action in Section 6. 2. Listed proprietary treatment products are used in a manner that cannot achieve the performance in Section 3 above. <p>C. This Notice of Proprietary Treatment Product Listing applies solely to the product specified in Section 1 above.</p> <p>D. The manufacturer is responsible for notifying ADEQ of changes to the contact information at the following address: Attention: Product Listing Supervisor Engineering Review Desk,</p>
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1110 West Washington Street
Phoenix, AZ 85007.

E. The listing by ADEQ of any proprietary product or service is not an endorsement by ADEQ or the State of Arizona. ADEQ does not endorse, represent, guarantee, warranty or defend the use of any product which is authorized for use pursuant to A.A.C. R18-9-A309(E). Product providers are a direct source unrelated to ADEQ or the State of Arizona. Use of any listed product is at the user's risk and the State assumes no liability.

Signature:		Date Signed:	4-22-20
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Title:	Water Quality Division Director
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ADEQ LTF # - 78002

Reviewer: Lopez, L., Morgan, R.,

Assistance from: Litt, K., Kumarasamy, K.