

## List of Subsurface Wastewater Treatment Systems (SWTS) that are Approved as a Nitrogen-Reducing System

*Updated December 2019*

Pursuant to Administrative Rules of Montana (ARM) 17.30.702(9)(10) and (11), the Department defines three different types of nitrogen-reducing SWTS, level 1a, level 1b and level 2 systems. The definitions from the rule are as follows:

- (9) "Level 1a treatment" means a subsurface wastewater treatment system (SWTS) that:
- (a) removes at least 50%, but less than 60%, of total nitrogen as measured from the raw sewage load to the system; or
  - (b) discharges a total nitrogen effluent concentration of greater than 24 mg/L, but not greater than 30 mg/L. The term does not include treatment systems for industrial waste. A level 1a designation allows the use of 30 mg/L nitrate (as N) as the nitrate effluent concentration for mixing zone calculations.
- (10) "Level 1b treatment" means a SWTS that:
- (a) removes at least 34%, but less than 50%, of total nitrogen as measured from the raw sewage load to the system; or
  - (b) discharges a total nitrogen effluent concentration of greater than 30 mg/L, but not greater than 40 mg/L. The term does not include treatment systems for industrial waste. A level 1b designation allows the use of 40 mg/L nitrate (as N) as the nitrate effluent concentration for mixing zone calculations.
- (11) "Level 2 treatment" means a SWTS that:
- (a) removes at least 60% of total nitrogen as measured from the raw sewage load to the system; or
  - (b) discharges a total nitrogen effluent concentration of 24 mg/L or less. The term does not include treatment systems for industrial waste.

As of the date at the top of this document, the following list shows those SWTS that are designated as level 1a, level 1b or level 2 by the Department. Level 2 systems are approved for 24 mg/L unless otherwise noted in the table:

| Level 2 (date approved)  | Level 1a | Level 1b                            |
|--|----------|-------------------------------------|
| Recirculating Sand Filter (~1993)  |          | Intermittent Sand Filter (5/1/2005) |
| Orenco – AdvanTex (AX model - 8/4/2004) (AXRT model 4/11/2011)   |          |                                     |
| Fluidyne – Eliminite (8/5/2004)  |          |                                     |
| International Wastewater Systems (IWS) model 6000 sequencing batch reactor (7/28/2005)   |          |                                     |
| Santec – Extended Aeration (7/18/2006) <i>[approved for nitrogen reduction to 14 mg/L]</i>   |          |                                     |
| Bio-Microbics – Micro-FAST and Retro-FAST (11/9/2006)  |          |                                     |
| HDR Engineering Activated Sludge / Biological Nutrient Reduction Systems (1/24/2007) <i>[approved for nitrogen reduction to 10 mg/L]</i>   |          |                                     |
| HDR Engineering Activated Sludge / Biological Nutrient Reduction Systems/Membrane Filtration (6/16/2007) <i>[approved for nitrogen reduction to 7.5 mg/L]</i>                                  |          |                                     |
| International Wastewater Systems (IWS) model 6000 sequencing batch reactor with methanol addition, coagulation and filtration (5/21/2007) <i>[approved for nitrogen reduction to 7.5 mg/L]</i> |          |                                     |

| <b>Level 2</b>  | <b>Level 1a</b> | <b>Level 1b</b> |
|---|-----------------|-----------------|
| Norweco - Singulair Model TNT (12/10/2007)  |                 |                 |
| Norweco – Singulair Green TNT (04/29/2014)  |                 |                 |
| Norweco – Hydro-Kinetic Model 600 FEU (04/29/2014)  |                 |                 |
| Fluidyne - ISAM Sequencing Batch Reactor (12/23/2009)   |                 |                 |
| Quanics Bio-COIR and AeroCell (6/7/2010)  |                 |                 |
| SepticNET (2/16/2011) [ <i>approved for nitrogen reduction to 7.5 mg/L</i> ]  |                 |                 |
| Jet – J-500CF (3/25/2011)   |                 |                 |
| Northwest Water Systems (NWS) – model 2400 sequencing batch reactor (6/28/2011)   |                 |                 |
| Northwest Water Systems (NWS) model 7500 sequencing batch reactor with methanol addition, coagulation and filtration (6/28/2011) [ <i>approved for nitrogen reduction to 7.5 mg/L</i> ] |                 |                 |
| SeptiTech - M400D through M3000D models (4/10/2012)   |                 |                 |
| E-Z Treat Models 600 and 1200 (10/3/2017)   |                 |                 |
| Bio-Barrier MBR 1.5, 1.0 and 1.5 (7/23/2019)  |                 |                 |
| ECOPOD-N Series: E50-N, E60-N, E75-N, E100-N and E150-N (9/23/2019)   |                 |                 |

*\* NOTE: As of May 1, 2005 elevated sand mounds (ESM) were removed from the level 2 list. They no longer qualify for any level of nitrogen reduction (the effluent concentration for an ESM in the nitrogen dilution calculations is the same as a septic tank/drainfield system, 50 mg/L).*

This list will be updated on a regular basis as it changes. Systems can be both added and removed from the list at any time, check back frequently to insure you are working off of the current list. If the designation of an SWTS on the above list is modified, the Department will provide advanced notification via the Department’s subdivision mailing list and/or e-mail list of the intention to modify the designation (advanced notification will not be given for an SWTS that is being added to the list for the first time). If you wish to be added to the subdivision mailing list, contact the Department at 444-4400. Advanced notification will allow persons on the mailing list to plan accordingly, particularly with respect to submission of future applications.

If a subdivision application, ground water discharge permit application, or public water supply application with appropriate fees is received by the Department using a specific nitrogen-reducing SWTS, and the designation of that SWTS is changed to a less efficient nutrient reducing system (e.g. changing the designation from level 2 to level 1a) prior to final approval by the Department, the treatment designation of the SWTS will remain the same as it was on the day the application was received by the Department (e.g. the SWTS will be grandfathered under its previous designation for that application).

The rule requirements for classifying an SWTS as a nitrogen-reducing system are listed in ARM 17.30.718. For vendors or manufacturers who are interested in having a SWTS evaluated for nitrogen-reducing designation, the Department has developed a scoring sheet to facilitate the process. Vendors and manufacturers can use the scoring sheet as a preliminary guide to determine if they have sufficient information to submit a request to the Department. The scoring sheet is available on this web site. Please be aware that the scoring sheet is not part of the rule, and is only to be used as a guideline. The Department will make the final determination regarding the nitrogen-reducing

classification in accordance with the rule (ARM 17.30.718).