

4.8 Extended Treatment Package System

Revision: June 8, 2017

Installer registration permit: Complex

Licensed professional engineer required: No

4.8.1 Description

Manufactured and *packaged* mechanical treatment devices that provide additional biological treatment to septic tank effluent. Such units may use extended aeration, contact stabilization, rotating biological contact, trickling filters, or other approved methods to achieve enhanced treatment after primary clarification occurs in an appropriately sized septic tank. These systems provide secondary wastewater treatment capable of yielding high-quality effluent suitable for discharge in environmentally sensitive areas.

Property owners that install an ETPS unit must choose a service provider capable of meeting their OMM requirements. Verification of the chosen service provider shall be submitted with the subsurface sewage disposal permit application ensuring that the OMM (effluent quality testing) will occur (IDAPA 58.01.03.005.04.k). Property owners that do not want to meet the OMM requirements must meet the requirements of section 4.8.2(2) or choose another alternative system that will meet the conditions required for subsurface sewage disposal permit issuance.

4.8.2 Approval Conditions

1. A service provider will be available to provide managed system OMM as described in section 1.9.1 and 1.9.2 (IDAPA 58.01.03.005.14). The OMM is to be performed by an approved service provider (IDAPA 58.01.03.006.06). Approval of the service provider will be made by the Director before permit issuance. Approvable entities may include, but are not limited to, the following:
 - a. Municipal wastewater treatment departments
 - b. Water or sewer districts
 - c. Licensed complex installer with a service provider certificationA service provider contract should be entered into between the property owner and the service provider, as a necessary condition for issuing an installation permit (IDAPA 58.01.03.005.04.k).
2. ETPSs may be used for properties without an approved service provider **only under all of the following conditions:**
 - a. The site is acceptable for a standard system. All separation distances from ground water, surface water, and limiting layers shall be met.
 - b. Enough land is available, and suitable, for two full-size drainfields. One complete full-size drainfield shall be installed.
3. Final effluent disposal through subsurface discharge will meet the following criteria:
 - a. If an 85% reduction or better in CBOD₅ and TSS can be achieved, the effluent may be discharged to a drainfield satisfying Section 4.21.5 “Drainfield Trenches” application rate criteria and vertical setback requirements.

- 1) Otherwise, the effluent must be discharged to a standard drainfield, sized as directed in IDAPA 58.01.03.008 (section 7.1), and meet the required effective soil depth for standard drainfields as directed in IDAPA 58.01.03.008.02.
- 2) Additional drainfield-sizing reduction granted for use of gravelless trench products is not allowed.
- b. The 85% reduction will be accepted as being met if the effluent exhibits a quantitative value obtained from laboratory analysis not to exceed 40 mg/L (40 ppm) CBOD₅ and 45 mg/L (45 ppm) TSS.
- c. TN reduction may be required for ETPS units located in an area of concern as determined through an NP evaluation. Permit-specific TN reduction levels will be determined through the NP evaluation. Results for TN are determined through the addition of TKN and nitrate-nitrite nitrogen ($TN = TKN + [NO_3 + NO_2 - N]$). TN reduction will be accepted as being met if the effluent exhibits a quantitative value obtained from laboratory analysis not to exceed the TN level stipulated on the subsurface sewage disposal permit.
4. Annual effluent monitoring and reporting is required for all ETPS units that discharge to a reduced size drainfield, to a drainfield with a reduced separation distance to limiting layers, and/or to a drainfield located in an environmentally sensitive area (area of concern). Monitoring shall meet the requirements of section 1.9.2. Reporting shall meet the requirements of section 1.9.3.
5. The ETPS will be preceded by an appropriately sized septic tank.
 - a. The septic tank may be either a separate septic tank, a volume integral with the system's package, or a combination of internal clarifier volume coupled with an external tank.
 - b. The septic tank shall provide the minimum tank capacity for residential facilities as specified in IDAPA 58.01.03.007.07.a, or for nonresidential facilities, a minimum of 2 days of hydraulic residence time (HRT) as stipulated in IDAPA 58.01.03.007.07.b.
 - c. Timed dosing from the clarifier to the aerobic treatment unit is preferred and highly recommended to maintain a constant source of nutrients for the system's aerobic microbes.

4.8.3 ETPS Unit Design

Procedures relating to design are required by IDAPA 53.01.03 (section 7.1) or may be required as permit conditions, as appropriate, to ensure protection of public health and the environment.

1. All materials will be durable, corrosion resistant, and designed for the intended use.
2. All electrical connections completed on site shall comply with the National Fire Protection Association (NFPA) Standard NFPA 70, National Electrical Code, as required by the Idaho Division of Building Safety, Electrical Division.
3. Design for each specific application should be provided by a PE licensed in Idaho.
4. Manufactured and *packaged* mechanical treatment devices will be required to prove that the specified equipment model meets the ETPS product approval policy outlined in section 1.4.2.2.

4.8.4 Construction

Procedures relating to construction are required by IDAPA 58.01.03 (section 7.1) or may be required as permit conditions, as appropriate, to ensure the protection of public health and the environment.

1. Installation

- a. A licensed complex system installer shall be required to install an ETPS unit and all other portions of the septic system connected to the ETPS unit or that the ETPS unit discharges to (IDAPA 58.01.03.006.01.b).
- b. A public works contractor may install an ETPS unit if they are under the direct supervision of a PE licensed in Idaho.
- c. Licensed plumbers and electricians will be required to install specific devices and components for proper system operation. If the device requires any on-site fabrication or component assembly, a public works contractor should be used.
- d. A sample port will be installed in the effluent line after the aerobic treatment unit. Figure 4-13 shows the placement of a sampling port after the ETPS unit, and Figure 4-14 shows the sample port and drainfield after the septic and treatment tank.

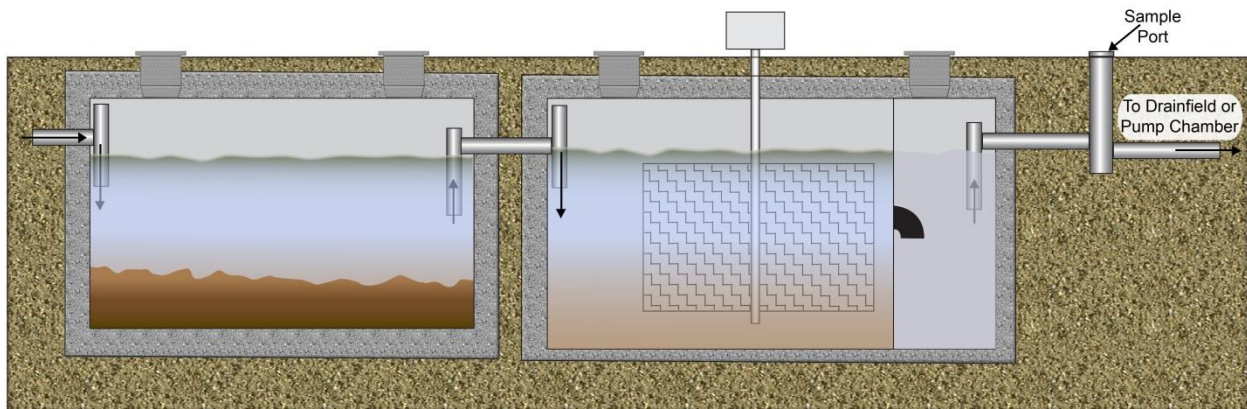


Figure 4-13. Sampling port example.

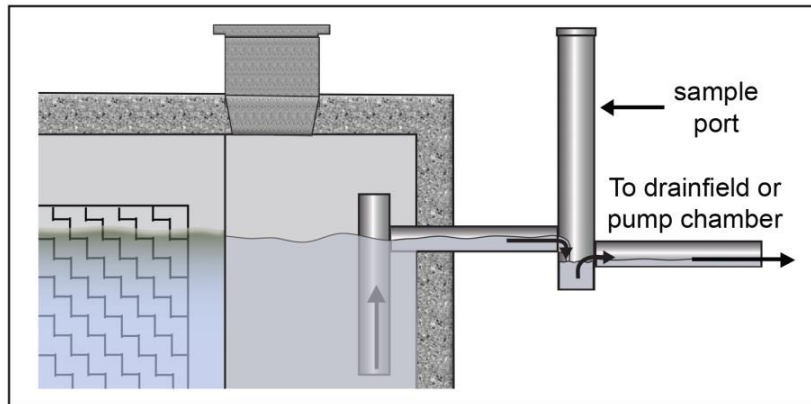
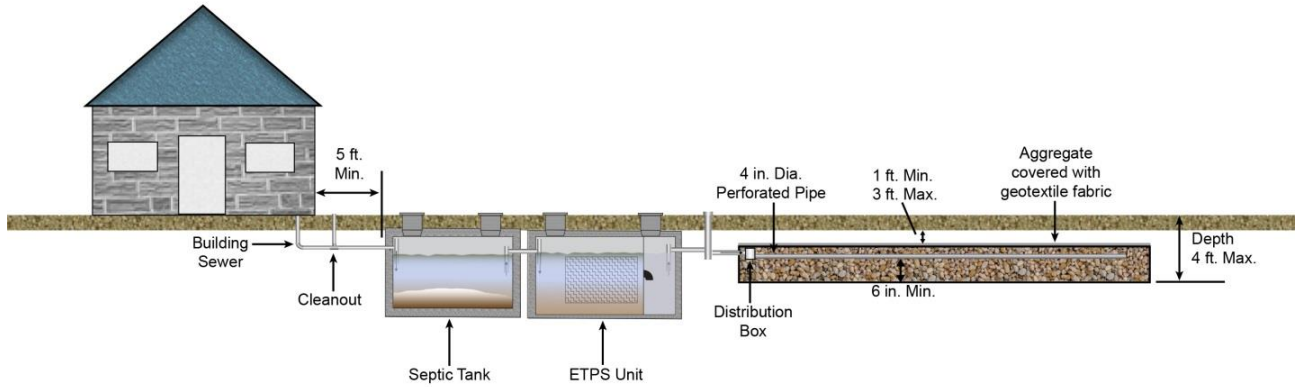


Figure 4-14. Sampling port and drainfield.

2. Within 30 days of completing the installation, the property owner shall provide certification to the regulatory authority, from their manufacturer's representative, that the system has been installed and is operating in accordance with the manufacturer's recommendations (IDAPA 58.01.03.005.15).
 - a. A statement requiring the submission of the installation verification form described above shall be written on the face of the subsurface sewage disposal permit.
 - b. The regulatory authority shall not finalize the subsurface sewage disposal permit until the certification of proper installation and operation is received and includes information on the manufacturer, product, model number, and serial number of the ETPS unit installed.