

Overview

The Integrated Water Services, Inc. (IWS) Denitrification Upflow Filter is a patent pending, engineered solution that meets low Total Nitrogen (TN) requirements (<10 mg/l) for a variety of wastewater applications. IWS has developed, tested, and operated our proprietary Denitrification Upflow Filter to meet our client's need for an economical and environmentally sustainable denitrification solution. The benefits of our Denitrification Upflow filter include:

- Chemical free - No Chemical Additives Required
- Economical – Low Capital and Life Cycle Cost
- Passive System – No moving parts, minimal energy and maintenance requirements
- Guaranteed Performance – IWS will guarantee the system will meet your discharge requirements

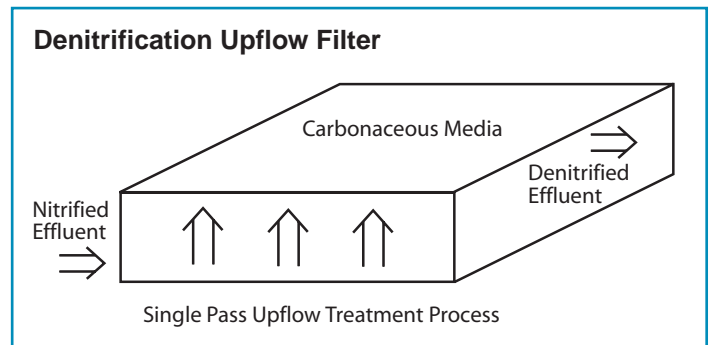
IWS experience with (and acceptance from) the regulatory community makes the IWS Denitrification Upflow Filter a win/win solution for Owners and their engineers looking to meet low TN levels.

Technology/Process

The IWS Denitrification Upflow Filter is designed to receive nitrified effluent from an advanced treatment system such as a packed-media filtration system (Orenco Advantex AX-100), sand filter, or other nitrifying treatment process. By integrating the IWS Denitrification Upflow Filter into an advanced treatment system where ammonia has been nitrified, the overall treatment train reduces average TN by over 90% depending on influent characteristics. Results are dependent on BOD reductions required to maximize nitrification of ammonia in the wastewater stream.

Site Configuration

The IWS Denitrification Upflow Filter can be installed at grade (shallow walled structure) or below grade (fiberglass tank), depending upon site requirements and layout. The choice in configuration provides the Owner with options for integrating the solution into their existing or future operations.



At Grade Configuration



Below Grade Configuration

Performance Data

Sampling data from certified analytical laboratories clearly demonstrates the efficacy of the process and the ability to consistently produce effluent below 10 mg/l from start-up through steady state operation.

Cost Savings

The cost of the IWS Denitrification Up-flow Filter is a function of influent conditions including: biological loading (BOD, TSS, TN), water chemistry, hydraulic loading, discharge and site requirements, and other factors. IWS will provide a comprehensive price quotation for a system to meet your project needs. The IWS Denitrification Up-flow Filter has up to a 60% lower projected life-cycle-cost than other industry standard denitrification technologies. Some of the factors that give the IWS Denitrification Upflow Filter a cost advantage include:

- No chemical additives or consumables
- No independent control system
- No instrumentation
- Minimal energy requirements
- No maintenance costs
- No licensing fees

Warranty

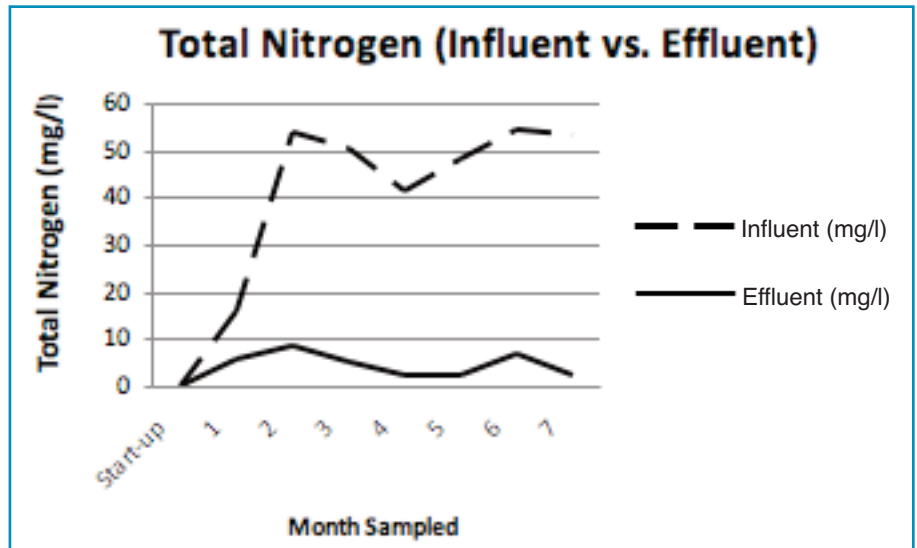
IWS provides a limited, multi-year warranty on all materials and workmanship. Length of warranty varies by region, but is at least three years.

Next Steps

To facilitate receiving a price quotation from IWS, please be prepared to provide the following information: average and peak flow rates; influent BOD, TSS, and TN; water chemistry data (alkalinity/pH); discharge requirements; site requirements and configuration; and proposed treatment system to nitrify the effluent (if any). IWS can assist in developing system influent parameters if required.

About Integrated Water Services, Inc.

Integrated Water Services, Inc. (IWS) provides services to municipalities, developers, communities, and businesses to address their water and wastewater needs. IWS leverages its extensive experience to provide a solution that meets all the stakeholders' needs. IWS teams with engineering firms, consultants, suppliers, and other contractors to provide the client best value for their specific project needs.



For technical information or a quotation please contact:

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