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# Treatment Solutions For Water Systems

Arsenic  
Iron  
Manganese  
Fluoride  
Hydrogen Sulfide  
Uranium Nitrates  
Radium Turbidity

एडएज इण्डिया  
AEDGE INDIA

# intelligent thinking..clean water

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*“We are an organization based on solid, deliverable, scalable, scientifically proven technology and experience for the removal of arsenic, iron, manganese and other contaminants from water.”*

*-Rich Cavagnaro, President*

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Founded in 2002 and headquartered just north of Atlanta, Georgia, USA, AdEdge Water Technologies specializes in the development and supply of innovative technologies, specialty medias, membranes, and integrated water treatment solutions that remove contaminants from process or aqueous streams. Our technology and products enable our customers to manage the elements...in a variety of industries with outstanding results. They include drinking water, industrial process, mining, environmental, chemical, medical, pharmaceutical, and general wastewater industries.

AdEdge has extensive experience in the removal of arsenic, iron, manganese, fluoride and uranium from water, and to date has installed hundreds of water systems for public, municipal, and industrial clients throughout North America as well as some projects in some of the most challenging locations in the world including countries in Latin America and Asia. AdEdge expanded their engineering engineering and manufacturing capabilities and designs and builds all their systems in their manufacturing facility. To date, AdEdge has been awarded 12 USEPA demonstration projects, worked with 75% of the top 12 design firms in the United States, and worked with hundreds of engineering firms throughout the world.

We feel our most important attribute is our dedication to customer service. Making successful water treatment systems takes more than just intelligent engineering, innovative technology, and high performance media. For our customers, it means delivering these essentials plus an exceptional level of customer service.



# *Integrated Treatment Solutions For Water Systems*

AdEdge specializes in the design, development, manufacturing, and supply of innovative technologies, specialty medias, and integrated solutions that remove contaminants from process or aqueous streams. AdEdge offers a full range of conventional and innovative treatment technologies including adsorption, coagulation/filtration, ion exchange, biological filtration, metals precipitation, advanced oxidation, and membrane based solutions.



## Primary Contaminants Treated:

- Arsenic
- Fluoride
- Iron & Manganese
- Uranium
- Radium
- Hydrogen Sulfide
- Nitrates
- Turbidity
- TOCs
- VOCs
- TDS
- Chromium VI

## Industry Applications:

- Groundwater Treatment
- Remediation
- Wastewater Treatment
- Mining
- Industrial Process
- Residential Homes



# Treatment Solutions

## Integrated Systems

With our integrated system approach AdEdge can create a custom treatment solution to meet your needs. Using our APU (Adedge Packaged Unit), Modular, and/or Membrane systems, we integrate pre and post treatment processes to provide a turnkey approach for managing your total treatment need.



## APU Systems


APU (AdEdge Package Unit) systems are designed, packaged and assembled as a turnkey treatment solution for a variety of contaminants. APU systems arrive at your site ready for hook up and operation. With a variety of custom options available, AdEdge APU systems are custom engineered to meet the specific needs of your site.



## Modular Systems

AdEdge Modular Systems provide a treatment solution for small water systems that are simple, affordable, and effective. These systems are designed, pre-packaged, and shipped unassembled to the field for installation by a qualified contractor or installer. AdEdge Modular systems generally require less engineering, space, and infrastructure.



 WaterPOD™ containerized systems are fully integrated, pre-engineered, pre-wired, packaged water treatment solutions that combine system performance with economy resulting in an ideal solution for sites where space, cost, and schedule are critical.



## Media Replacement Services

Regardless of your AdEdge system, AdEdge offers turnkey media replacement services for our systems and others that use media we provide. Let us take the hassle of media replacement. Contact Us today for quote on your media replacement needs:



**AdEdge  
Fact:**

Our engineers are highly trained to design the best solution to your water treatment needs.

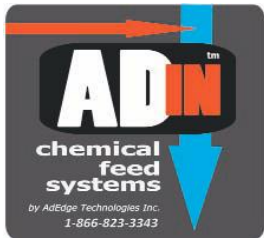
## Backwash/Recycle Systems



H2Zero Backwash Recycle systems conserve water by storing and treating contaminated backwash water from filtration and treatment systems. AdEdge H2Zero systems can be customized and designed for most manufacturers' adsorption, oxidation and filtration systems, whether backwashing is infrequent or performed one or more times per week.



## Chemical Pre/Post Treatment Systems



With certain water parameters, an essential aspect of effective treatment is adequate pretreatment of the raw water before reaching the primary treatment system and or post treatment for applications such as potable water. Pretreatment can be simple mechanical filtration for suspended solids, coagulation or dispersant chemical addition, chlorine or other oxidation chemical addition or removal, and/or removal of organics or other contaminants. With post treatment, the treated effluent may require pH correction or disinfection prior to the distribution.



## Programable Logic Control Systems



AdEdge INGenius™ MCD control panels are skid mounted NEMA 4X stainless steel panel enclosures featuring Allen Bradley PLC controls. It features a Integrated PanelView 600 HMI Color touch screen (optional 10-inch) with operator graphics screens for; system overview, automatic / manual operation of filter control valves, backwash initiation and control, backwash recycle tank and pump settings and control plus flow measurement & totalization. Alarm outputs are included as well.



## Residential Systems

The AdVantEdge Series from AdEdge includes Point-of-Entry and Point-of-Use systems and replacement cartridges. AdVantEdge systems for arsenic removal feature Granular Ferric Oxide media that is NSF 61 certified and effective over a wide range of water quality without the need for regeneration chemicals, salt or additives.



**AdEdge  
 Fact:**

100% of treatment systems are built in-house and hydrotested to prevent start-up delays.

# Treatment Processes

## Adsorption

In the adsorption process, contaminants break their bond with the water molecules and chemically adhere to a filter media. This is accomplished by directing the water flow through pressure vessels containing the filter media at a rate that allows enough contact time for adsorption to occur. AdEdge Water Technologies' Bayoxide E33 adsorption media is the industry standard for arsenic removal. This granular ferric oxide based media reduces up to 99% total arsenic, including both Arsenic (III) and Arsenic (V).



## Ion Exchange

Ion exchange (IX) is a method of removing undesirable metallic salt ions dissolved in an aqueous stream by exchanging them with other ions attached to a media, such as a synthetic resin. AdEdge Water Technologies has systems for uranium reduction using AD92 IX resin. This resin has a very high capacity for uranium removal and is not as susceptible to organic fouling as other resins. It is easily and effectively regenerated with sodium chloride on site which provides a cost-effective way to extend the effective life of the media, reducing operating costs.



## Coagulation/Filtration

Coagulation filtration is a process that introduces a coagulant, typically an iron or aluminum salt, to pretreat water contaminated with arsenic, iron, manganese, and/or sulfides. The process allows for significantly higher flow rates per square foot of media, creates less backwash water than other conventional treatment approaches, and has a smaller footprint which allows for lower operating and capital costs. This process involves a chemical addition, automated processes which decrease operator involvement and expense, and does not generate a hazardous waste.



**AdEdge  
Fact:**

AdEdge has been awarded 12 EPA arsenic removal demonstration projects...more than any other company.

## Oxidation Filtration

Oxidation/Filtration is a precipitative process that removes naturally occurring iron, manganese, hydrogen sulfides, and arsenic (if it coexists with high levels of iron) from water. The process oxidizes the soluble forms of these contaminants into their insoluble forms and then they are removed via filtration. Oxidation/Filtration media has a high catalytic and oxidation capacity, superior handling properties, NSF 61 certification, does not require any permanganate or coagulant addition, and has low operating and capital costs.



## Membrane Systems

Reverse Osmosis (RO) membrane solutions from AdEdge Water Technologies use advanced membrane technology coupled with our other treatment modules to create a complete integrated solution. Whether your water treatment application is for the reduction of total dissolved solids (TDS), total suspended solids (TSS), pathogens, or other contaminants, AdEdge can design a custom treatment solution to meet your needs.



## General Filtration

Filtration is a physical method of removing suspended solids from a solution. In water treatment applications, these solids may range from dirt, plant material, and debris washed into the water supply during heavy run-off to bacteria, viruses, and other microscopic particles that occur naturally. The removal of the larger-sized solids, down to approximately 10-20 microns, can be done in gravity beds or pressure vessels containing media such as sand, zeolite, anthracite, or multiple layers of these media.



## biottta™ Biological Filtration

biottta™ leverages nature to offer an affordable and sustainable solution for wellhead treatment of organic and inorganic contaminants. The fixed-bed, dual stage biotreatment cultivates a robust environment for microbiological organisms to destroy contaminants or reduce elements to simple non-harmful forms.



**AdEdge  
Fact:**

Our project management team consists of noted and published experts in the water treatment industry.

# Experience / Case Studies

## U.S. EPA Projects

AdEdge Water Technologies, LLC was selected by USEPA for 12 arsenic treatment demonstration projects through an expert peer review process in cooperation with the individual host sites to conduct full scale arsenic treatment demonstrations using its Granular Ferric Oxide adsorption and AD26 oxidation/filtration technologies. The program gathers extensive cost and performance data on commercially available, proven technologies which are candidates to become Best Available Technology (BAT) for arsenic removal.

- Rimrock, Arizona APU-40LL system
- Rollinsford, New Hampshire APU-160 system
- Nambe Pueblo, New Mexico APU-160 system
- Goffstown, New Hampshire APU-20LL system
- Springfield, Ohio APU-250CS / AD26-250CS systems
- Stewart, Minnesota APU-300 / Iron treatment systems
- Bruni, Texas APU-50LL system
- Wellman, Texas APU-100 system
- Sells, Arizona APU-100 system
- Geneseo Hills, Illinois APU-200 system
- Clinton School, Indiana APU-25 / AD26 system
- Conneaut Lake Park, PA AD26-250 system



Arsenic Removal - Rimrock, AZ

## Indian Health Service Projects

Working closely with Indian Health Services officials, Tribal representatives and contracted engineering firms, AdEdge Water Technologies has installed treatment systems in many Native American locations throughout the west and midwest. From permitting to start-up and post evaluation, AdEdge is committed to providing the most effective treatment solutions available today backed by unprecedented customer service. AdEdge has more than 14 system installations on Native American locations.



Uranium Removal - Barona, CA

**AdEdge  
Fact:**

Our principal business philosophy is exemplary customer service.