

## INTEGRATED WATER SYSTEM SOLUTIONS

### AdEdge Packaged Units & Modular Systems for Arsenic Reduction

Compliance with the United States EPA and the World Health Organization's maximum contaminant level of 10 parts per billion for arsenic impacts thousands of water systems throughout the United States and other countries around the globe.

The dangers of arsenic are masked by its colorless, odorless appearance. It is a carcinogen that occurs naturally in groundwater and is known for leading to dangerous health conditions such as cancer, neurodevelopmental disorders, and heart failure.

AdEdge offers a multiple water treatment solutions rated from 5 gpm to over 12 MGD to meet your treatment needs. Choosing the right option is variable upon flow rates, arsenic concentration, the presence of co-contaminants, and site specific conditions or limitations. Upon receiving a complete water quality analysis, AdEdge determines the best treatment option suitable to your needs based on years of experience and an accurate predictive model.

These options include:

- Adsorption using Bayoxide E33 granular ferric oxide media
- Coagulation/Filtration with iron augmentation
- Oxidation/Filtration

AdEdge's line of packaged, pre-engineered APU (AdEdge Packaged Units) systems are the ideal solution for public water systems, schools, subdivisions, and more. We also have a line of modular treatment systems that arrive to site unassembled, ready for hook-up when they arrive on-site. These solutions can incorporate the absorption, oxidation/filtration, and/or coagulation/filtration treatment processes with pre-and-post treatment for a complete integrated system.



2.7 MGD arsenic removal system in Santiago, Chile using AdEdge's Bayoxide E33 adsorption media.

#### WHY CHOOSE ADEGE FOR YOUR ARSENIC REMOVAL NEEDS

- AdEdge participated in 12 successful USEPA arsenic demonstration projects.
- AdEdge has over 400 arsenic treatment systems throughout the world.
- AdEdge offers a range of treatment options to meet your treatment needs and goals.
- Independent studies have proven AdEdge's E33 adsorption media to be the highest performing technology for arsenic removal.
- All treatment technologies are NSF 61 certified.

### FEATURES & BENEFITS OF ADEGE ARSENIC REMOVAL SOLUTIONS

- Removal of up to 99% of total arsenic in water, including As (III) & As (V), with no wasting of water
- NSF 61 product listing (see AdEdge for listing site/product details)
- Effective over broad water chemistry
- Spent media discarded as non-hazardous solid waste
- Simple commercial applications for arsenic removal
- Reliable performance and low maintenance
- Adaptable add-on to water softening or other existing equipment

### ADSORPTION

In the adsorption process, contaminants break their bond with water molecules and chemically adhere to a filter media. This is accomplished by directing water flow through pressure vessels that contain the adsorptive media, at a specific rate that allows just the right contact time for adsorption

to occur. AdEdge Water Technologies' Bayoxide E33 adsorption media is the industry standard for arsenic removal. This granular ferric oxide media reduces up to 99 percent total arsenic, including arsenic (III) and arsenic (V).



### OXIDATION/FILTRATION

Oxidation/filtration is a precipitative process that removes naturally occurring arsenic — if it coexists with high levels of iron) — iron, manganese and hydrogen sulfides from water. The process oxidizes the insoluble forms of these contaminants into their soluble forms and then removes them via filtration. Oxidation/filtration media has a high catalytic and oxidation capacity, superior handling properties, NSF 61-certification, does not require permanganate or coagulant addition, and has low operating and capital 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 that allows for lower operating and capital costs. This process involves a chemical addition, automated processes, which decreases operator involvement and expense, and does not generate hazardous waste.

