ATEC
A Cadiz Solution

BROCHURE

Leading Iron & Manganese Treatment Solutions

PROTECTING COMMUNITIES WITH PROVEN TECHNOLOGY

ATEC Water Systems delivers innovative, scalable solutions for the removal of iron and manganese from groundwater. With over 500 system installations across North America, we set the standard for performance and reliability in groundwater treatment.

Why Iron & Manganese Matters

Iron and manganese are naturally occurring groundwater contaminants that, while not regulated as primary health standards, cause serious aesthetic and operational problems.

- **Staining & Discoloration –** Red, brown, or black deposits that damage pipes, fixtures, and laundry.
- **Taste & Odor –** Metallic taste and sulfur-like odors affect consumer satisfaction.
- **Scaling & Fouling –** Equipment damage and reduced efficiency in distribution systems.
- **Secondary Standards –** U.S. EPA recommends maximum contaminant levels of 0.3 mg/L for iron and 0.05 mg/L for manganese. Many states have enforceable standards.

ATEC's systems are purpose-built to tackle these issues, providing reliable compliance and community confidence.

Why Water Systems Choose ATEC

- **500+ Installations Across North America –** Trusted experience across diverse groundwater conditions.
- **Regulatory Confidence –** Solutions designed to meet state and federal secondary MCLs.
- **Pilot-Validated Performance –** Proven effectiveness under challenging source waters.
- **Tailored Solutions –** Modular, scalable, and custom engineered for each site.

Custom Design & Engineering

ATEC systems are modular, scalable, and automation-ready, with capacities ranging from **20 GPM to over 100 MGD**. Each system is customized to local water chemistry, flow, and site conditions to maximize performance while minimizing operational complexity.

ATEC
A Cadiz Solution

Our Solution: High-Rate Adsorption Technology

ATEC's iron and manganese treatment systems are built around a proven adsorption process that minimizes oxidation while maximizing removal efficiency. Instead of converting dissolved iron and manganese into particulates that require heavy chemical dosing and intensive filtration, our systems leverage engineered media surfaces to directly adsorb contaminants. This approach simplifies operation, reduces chemical use, and extends the life of the treatment system.

The result is what we call "**high-rate iron and manganese removal**"—a process capable of handling higher loading rates in a smaller footprint while maintaining excellent effluent quality. With optimized adsorption as the foundation, ATEC designs are adaptable to diverse groundwater chemistries, providing utilities with a cost-effective, scalable, and low-maintenance solution for long-term reliability.

Key Advantages

- **High-Rate Performance:** Proven "high-rate iron and manganese removal" design supports greater throughput in a smaller footprint.
- **Optimized Adsorption:** Dissolved iron and manganese are effectively adsorbed without relying on aggressive oxidation.
- **Multi-Contaminant Treatment:** Configurable to also remove other groundwater constituents.
- **Scalable Design:** Flexible from small community wells to large municipal systems (20 GPM to 100 MGD+).
- **Low Maintenance:** Extended media life and automated controls reduce operator demand.
- **Retrofit-Friendly:** Easily integrated into existing wellhead or treatment plant infrastructure.

Beyond Iron & Manganese: Full-Spectrum Groundwater Treatment

ATEC systems are engineered to address a wide range of groundwater contaminants commonly found alongside or independent of iron & manganese. Our treatment platforms can be tailored to meet site-specific requirements for both primary and secondary contaminants.

Hexavalent Chromium (Cr(VI)) – A naturally occurring contaminant linked to serious health concerns, Cr(VI) is now regulated in California at a maximum contaminant level (MCL) of 10 ppb. ATEC's Reduction-Coagulation-Filtration (RCF) technology provides proven compliance by reducing Cr(VI) to Cr(III), forming stable solids, and filtering with manganese dioxide media to ensure reliable, long-term removal.

Arsenic – A naturally occurring toxic element regulated at a maximum contaminant level (MCL) of 10 ppb by the U.S. EPA. ATEC's technologies are designed to remove both arsenic (III) and arsenic (V), with pre-oxidation and filtration configurations available depending on water chemistry.

Boron – Found in agricultural regions and some groundwater basins, boron can affect crop irrigation suitability and human health at elevated levels. ATEC offers specialized solutions for boron removal, including ion exchange and selective adsorption systems.

Nitrates – A widespread contaminant in agricultural and rural areas, nitrate poses significant health risks, especially for infants. ATEC systems can incorporate ion exchange or biological denitrification modules to bring nitrate levels within compliance.

PFAS (Per- and Polyfluoroalkyl Substances) – Now officially regulated at the federal level, PFAS compounds are a top priority for water systems nationwide. ATEC's approach includes modular PFAS treatment options—such as high-efficiency adsorption media, ion exchange resin or granular activated carbon systems—integrated into full-system designs for long-term effectiveness and regulatory alignment.

CASE STUDY

Success Story: Kitsap County, WA

Client:	Kitsap Public Utility District
Location:	Kitsap County, WA
Flow Rate:	150–500 GPM (multiple sites)
Contaminants Treated:	Iron, Manganese, Arsenic
Technology Provider:	ATEC Water Systems (a Cadiz Company)

Kitsap County operates multiple ATEC groundwater treatment systems designed to resolve persistent iron and manganese issues in community wells. These systems:

- **Achieved Full Compliance** – Delivered consistent water quality below secondary MCLs.
- **Improved Consumer Satisfaction** – Eliminated staining and taste complaints.
- **Reduced O&M Costs** – Long-lasting media and automated operation minimized maintenance.
- **Provided Long-Term Reliability** – Systems have operated successfully for over a decade.

This success highlights ATEC's ability to deliver practical, cost-effective treatment for secondary contaminants that directly affect community trust.

Partner With ATEC

Whether you're facing new secondary standards or replacing aging infrastructure, ATEC provides the expertise, technology, and support to deliver safe, high-quality water—today and into the future.

CONTACT US

www.atecwater.com
831.637.9264

Let ATEC design a system that delivers results for your water system.

ATEC
A Cadiz Solution