

Effective Removal of Arsenic, Iron and Manganese



Triplex APU26 Skid Mounted System

Designed and built specifically for well head treatment, AD26 systems are engineered as stand alone systems for the removal of iron, manganese, sulfide, and arsenic (if it coexists with high levels of iron).

These systems are ideal for eliminating nuisance parameters and improving overall water quality. Our integrated oxidation and filtration technology utilizes a proprietary, highly active NSF 61 Certified manganese dioxide media packaged in a pre-engineered skid mounted treatment system for simple installation and use. The targeted contaminants are co-precipitated and filtered in the media bed, which is periodically backwashed.

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Whether you need to comply with the secondary contaminant standard or simply want to improve the quality of your water, the AD26 system may be the best solution.

ADVANTAGES

Iron and manganese are common in groundwater environments and can produce unpleasant drinking water and staining of household appliances and clothing. The AdEdge AD26 Systems offer the following advantages for achieving compliance with these contaminants:

- *Much higher filtration rates in (6-10 gpm/sq ft) compared to typical manganese greensand (2-3 gpm/sq ft) resulting in significantly smaller systems and footprint*
- *Smaller systems and smaller footprints save you money on building size and real estate*
- *Low capital costs compared to alternatives such as greensand*
- *More reliable and efficient removal of iron, manganese, and sulfides than conventional approaches using other medias*
- *Superior handling properties, stability, and NSF 61 certification - no permanganate or coagulant addition needed*
- *Custom designed with options to effectively treat your water parameters.*
- *Enhanced kinetics that allow short contact times*
- *Long life typically over 10 years before replacement*
- *Performance over wide range of incoming water quality*
- *Ideal complement to granular ferric oxide (GFO) adsorption systems that results in longer media life and lower operating costs*
- *High catalytic / oxidation activity for co-precipitation*



Q: How does the system remove iron and manganese?

A: Through mechanisms of oxidation and co-precipitation, these contaminants are efficiently removed in the AD26 media beds. Some manganese adsorption is also occurring. Depending on the specific water chemistry, the system can achieve treatment efficiencies for these contaminants to meet the secondary drinking water standards.

Q: How does it differ from other processes such as Manganese Greensand, Pyrolox, or Water Conditioning?

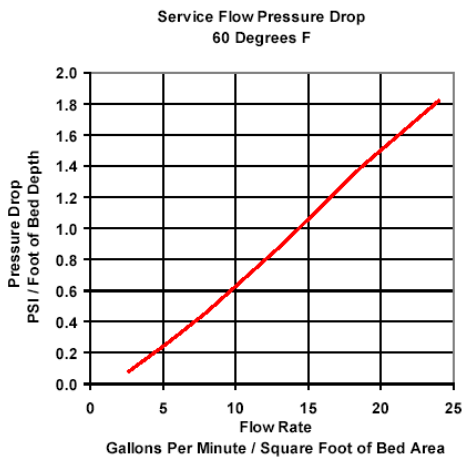
A: The media is a NSF 61 certified solid phase oxidation mineral. The systems have a small footprint compared to other technologies as design flow rates are typically 8-12 gpm / square foot of bed area. The technology does not require a long contact time, coagulants, or permanganate addition /regeneration like greensand and other oxidation processes. No brine or salt is needed and the process does not generate hazardous waste.

Q: Is chlorine needed for the system and does the media need replacement?

A: A low hypochlorite dose is recommended for optimal performance of the AD26 systems. It enhances the removal process, improves longevity, and keeps the surface of the media oxidized to prevent buildup of solids. Media life is typically 10 years before replacement.

Q: How do I determine the best way to achieve my treatment goals for my particular site?

A: Begin first by obtaining a complete site specific water profile from a qualified lab. This information can then be submitted to AdEdge technical support to discuss your application, equipment sizing, and costs.



Operating Conditions	
pH Range	6.5 – 9.0
Treatment Goals	< 0.3 mg/L Fe; < 0.05 mg/L Mn < 0.010 mg/L As
Service Flow Rate	8-12 gpm / Sq Ft
Backwash Flow Rate	20 gpm / Sq Ft
Bed Expansion	20-30% typical
Pressure Drop	2-3 psig @ 9 gpm / sq ft
Oxidant	Hypochlorite feed for best results
Oxidant Contact Time	15 - 30 seconds
Typical Oxidant Dosage	0.5 – 2.0 ppm
Backwash Frequency	Site Specific (1-3X per week typical)
Media Life Expectancy	Site specific; typically 10+ years



Q: What experience has AdEdge had with iron and manganese removal?

A: AdEdge has implemented over 90 full scale AD26 systems for Public Water Systems and multiple industrial and remediation project installations. One of our most notable projects is the WWII Memorial. The water is pumped from the groundwater feed pumps and to the dual vessel AD26 system following in-line hypochlorite (chlorine) injection. Hypochlorite solution is fed in-line through a computer controlled metering and feed system capable of real time chlorine residual measurement and control. Iron and manganese are oxidized and filtered/adsorbed with the proprietary AD26 catalytic media based system. Contact AdEdge to discuss your application.



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