COMMON WATER CONTAMINANTS

Contaminant	MCL/Action Level	Common Sources/Notes	Conventional Treatment Method(s)
Alkalinity	400 mg/L	Naturally Occurring/Subsequent to Treatment	Reverse Osmosis, Anion Exchange
Aluminum	0.05 to 0.2 mg/L	Natural deposits	Distillation, Reverse Osmosis, PE Cation
Ammonia	Highly Variable	Natural/Industrial Waste/ Disinfection with Chloramines	Distillation, Ion Exchange with Clinoptilolite, Specifically Designed Redundant Series Softening
Antimony	6 ug/L	Natural/Industrial Waste	Coagulation, Reverse Osmosis
Arsenic	10 ug/L	Natural deposits, smelters, glass, electronics wastes, orchards	Reverse Osmosis, NTO, Anion Exchange, Activated Alumina, Manganese Greensand
Barium	2 mg/L	Natural deposits, pigments, epoxy sealants, spent coal Circulatory system effects	Reverse Osmosis, Distillation, Cation Exchange Softening
Boron	1 mg/L	Natural/Boiler Blowdown Pollutant	Reverse Osmosis, Distillation, Selective Anion Exchange, Deionization
Cadmium	0.005 mg/L	Natural deposits, galvanized pipe corrosion, batteries, paints	Reverse Osmosis, Distillation, Submicron Filtration
Calcium	N/A	Natural deposits	See Hardness
Chloramines (as Cl2)	1-4 mg/L	Municipal Disinfection (Total-Free)	Water additive used to control microbes, Catalytic GAC, Fine Mesh GAC, KDF-85, Clinoptilolite for Residual Ammonia Adsorption
Chloride	250 mg/l	Naturally occurring	Reverse Osmosis
Chlorine	1-4 mg/L	Water disinfection (Test as Free Chlorine)	Activated Carbon, KDF
Chromium-6	0.1 mg/L	Natural deposits, mining, electroplating, pigments	Reverse Osmosis, Anion Exchange
Coliform	Zero	Indicated Contamination by Animal Wastes and Possible Pathogens	Redundant Monitored Disinfection. Chlorination, Contact Time, Absolute Filtration, UV
CO_2	N/A	Naturally Occurring/ levels above 50 ppm may need treatment	Aeration, Soda Ash or Caustic Soda Injection, Calcium Carbonate and/or magensium oxide filtration
Color	15 Color Units	Multiple	Reverse Osmosis, pilot testing, Bone Char, Coagulation, Anion Exchange, Ultrafiltration
Copper	1.3 mg/L	Natural / industrial deposits, wood preservatives, plumbing corrosion	Reverse Osmosis, Polyphosphates, Ion Exchange Softening
Cryptosporidium	Zero	Animal or human waste, contaminated food products	Reverse Osmosis, UV, 1 Micron Absolute Filtration
E.coli (Escherichia coli)	Zero	Naturally occurring, human or animal wastes	Ultraviolet, Redundant Monitored Disinfection. Chlorination, Contact Time, Filtration, UV
Fluoride	2 mg/L	Natural deposits, fertilizer, aluminum industries, water additive	Reverse Osmosis, Bone Char, Activated Alumina
Giardia	Zero	Naturally occurring, human or animal wastes	Reverse Osmosis, Carbon Block (0.5 micron), UV, 1 Micron Absolute Filtration
Hardness	≈3 GPG	Naturally Deposits	Ion Exchange Softening and Various Alternates.
Heavy Metals	Varies	Naturally occurring, manufacturing byproduct	KDF, Titanium Oxide, RO, Distillation
Hydrogen Sulfide	N/A .05 mg/L	Natural Rotten egg taste and odor	Iron Reduction Filter, KDF 85, Catalytic GAC, Oxidation or Aeration Followed by Filtration, Replace Magnesium Water Heater Anode with Aluminum or Zinc.

Free Chlorine, = Available Chlorine
Total Chlorine, = Free + Combined Chlorine
Combined Chlorine, = Total - Free Chlorine
Combined Chlorine = Available Chloramine

2101 E. Francis Street, Ontario, CA USA 91761 • 909-939-8008 • www.ImpactWaterProducts.com

Contaminant	MCL/Action Level	Common Sources/Notes	Conventional Treatment Method(s)
Iron	0.3 mg/L	Natural deposits	Iron Reduction Filter Oxidation or Aeration, Followed by Physical Filtration, Ion Exchange, Special Media (e.g. FerriLite) Filtration.
Langelier Index	>0.0	Natural and Human Impact	Used to predict corrosivity of water. -2 to 0.0= Moderately Aggressive, <-2.0= Highly Aggressive.
Lead	0-15 ug/L	Pollution, corrosion	Micro-D, Reverse Osmosis, DI, Special Design Ion Exchange Softener, Special Design GAC Cartridge., KDF
Log Reduction	N/A	N/A	Logarithim or Exponent of 10. 1 Log = 90%. 2 Log = 99%. 3 Log = 99.9%...
Magnesium	N/A	Natural deposits	See Hardness
Manganese	0.05 mg/L	Natural deposits	Iron Reduction Filter Oxidation or Aeration, Followed by Physical Filtration, Ion Exchange, Special Media (e.g. FerriLite) Filtration.
Mercury	0.002 mg/L	Crop runoff, natural deposits, batteries, electrical switches	Reverse Osmosis, Activated Carbon
Methyl Tertiary-Butyl Ether (MTBE)	20-40 ug/L	Leaking underground gasoline storage tanks.	High Capacity GAC, Air Stripping above ≈100 ug/L.
Nitrate	10 mg/L	Animal waste, fertilizer, natural deposits, septic tanks, sewage	Reverse Osmosis, Ion Exchange
Nitrite	1 mg/L	Animal waste, fertilizer, natural deposits, septic tanks, sewage	Reverse Osmosis, Ion Exchange
Perchlorate	≈4 ug/L	Industrial Wastes	Reverse Osmosis, Anion Exchange
pH	≈ <6.5 or >8.5	Natural and Human Causes	Low pH: Calcium Carbonate, Magnesium Oxide, Soda Ash. High pH: Acidify e.g. White Vinegar.
Radium	5 pCi/L	Natural deposits	Reverse Osmosis, Special Designed Ion Exchange Softening
Radon	3000 pCi/L	Natural deposits	Aeration/Venting, Activated Carbon,
SAR (Sodium Adsorption Ratio)	<3.0 acceptable for most irrigation.	Measure of the suitability of water for agricultural irrigation as determined by the solids dissolved in water.	High sodium levels in water can replace calcium and magnesium in the soil causing poor infiltration of water and air. The use of water with a SAR above 3.0 for irrigation needs to be carefully considered or soil/crop damage may result. $S.A.R. = \frac{Na^{+}}{\sqrt{\frac{1}{2}(Ca^{2+} + Mg^{2+})}}$
Selenium	0.05 mg/L	Natural deposits, mining, smelting, coal/oil combustion	Reverse Osmosis
Silica	N/A	Natural deposits	Reverse Osmosis in conjunction with deionization to remove up to 90%, low levels can mimic hardness.
Silt Density Index (SDI)	≈4 at 15 Minutes	Suspended Matter, used primarily to predict membrane fouling potential	Physical filtration, coagulant, settling tank. No correlation to NTU.
Sodium	N/A	Natural and Human Causes	Reverse Osmosis
Sulfate	250 mg/L	Naturally-occurring	Reverse Osmosis, ion exchange
Tannin	≈50 APHA Units	Naturally-occurring	Anion Exchange, Bone Char, Chlorination, Reverse Osmosis
Total Dissolved Solids	500 mg/L	Erosion of naturally occurring mineral deposits	Reverse Osmosis
Trihalomethanes (THMs)	0.08 mg/L	By-product of chlorination in drinking water	Activated Carbon, KDF
Turbidity	N/A (1 NTU max. recommended)	Soil runoff, Natural	Whole-House Sediment Filter, Reverse Osmosis, Coagulant
Uranium	0.03 mg/L	Natural occurring	Reverse Osmosis, Anion exchange
Volatile Organic Compounds (VOCs)	Varies	Industrial Wastes	Activated Carbon, Aeration