

THE WATER BIBLE

COLOR PROBLEMS

SYMPTOM

CAUSE

TREATMENT

C1. Reddish precipitate settles to bottom of a glass after standing. (water not clear when drawn from faucet.)

- OR -

Brown-red, rusty stains on fixtures, dishes, and laundry. (water appears clear when first drawn at cold faucet.)

Water turns brown-red upon heating.

IRON WATER

Precipitated iron from rusty pipes, wells or ores.

1. Up to 16 ppm iron removed by **Aquathin RUST SENTRY 2000, Model RSPP** filter; (pH above 6.2) If pH is below 6.2, use Calcite feeder prior to RSPP. **RS35pH[^]** if pH is 3.5 to 5.5.

2. Up to 10 ppm iron removed by **Aquathin RUST SENTRY BIRM** filter. Suggested on chlorinated water supplies only; where H₂S is not present. Same pH requirements.

3. Up to 10 ppm iron removed by **Aquathin RUST SENTRY PYROLOX** filter. Same pH requirements.

4. Up to 5 ppm iron removed by **Aquathin Sodialite Soft & Clean Model ASC40K, ASC45K or ASC60K**. **Sodialite Synchromatic** will also remove iron up to 15 ppm.

C2. Reddish color in water sample after standing 24 hours.

COLLOIDAL IRON

Constant chlorination (**RS35CL**) followed by granular activated carbon (**MegaChar**) filter dechlorination.

SYMPTOM	CAUSE	TREATMENT
C3. Brownish cast does not precipitate. May form "fuzzy balls" in glass	<u>IRON BACTERIA</u>	1. Shock treat well with constant chlorination (RS35CL) followed by Aquathin MegaChar filter for dechlorination.
C4. Green stains on sinks and porcelain fixtures. Bluegreen cast to water.	<u>ACID WATER</u> (pH below 6.8) with high CO ₂ reacts with copper pipes and brass fittings. <u>IMPROPER ELECTRIC GROUNDING</u> Through water lines.	1. Aquathin Neutralizing Calcite Filter (pH below 6.8) 2. Mixed media filter of calcite/magnesia oxide (5:1), for higher flow rate (pH below 5.5) 2a. RS35pH ^ if pH is 3.5 to 5.5. 3. Have electrician inspect.
C5. Blackish cast and staining of fixtures and laundry. Usually found with iron.	CO ₂ or organic matter reacts with manganese bearing soils (above 0.05 ppm Mn causes stains).	1. Aquathin RUST SENTRY 2000, SOFT & CLEAN - RSPX, RSPR.
C6. Blackening and pitting of stainless steel sinks and stainless ware in commercial dishwashers.	Very high chlorides (salts). High temp. drying concentrates chlorides accelerating corrosion.	1. Aquathin Reverse Osmosis (R/O) to reduce total dissolved solids (TDS) including chlorides. Split stream (partial) treatment.

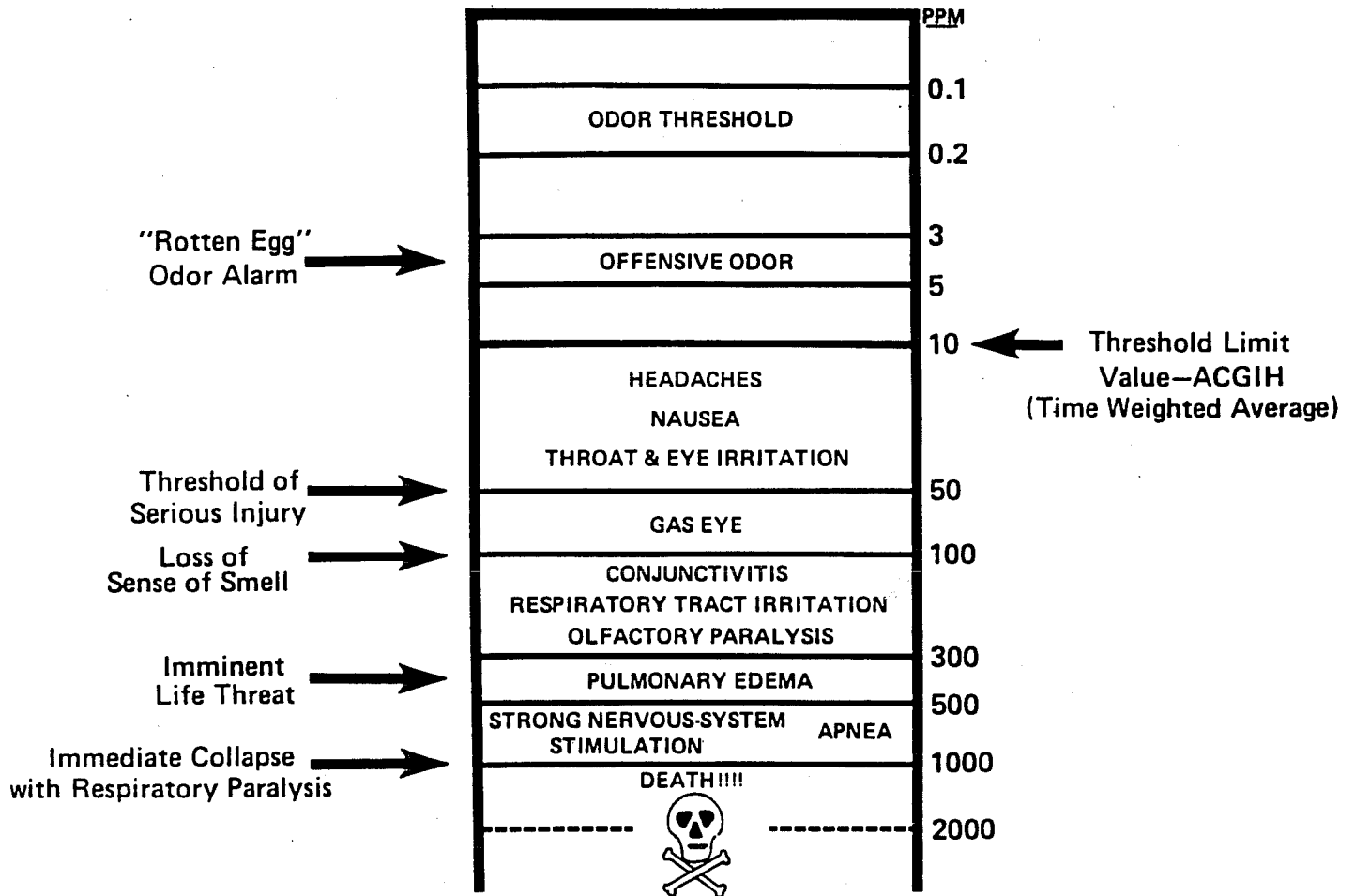
SYMPTOM	CAUSE	TREATMENT
C7. Cloudy water when drawn, disappears quickly.	1. Extra air from poorly functioning pump.	1. Clears quickly upon standing.
	2. Precipitant sludge from heating water.	2. Blow down domestic or commercial hot water tank periodically to remove precipitated calcium sludge. Prescribe Aquathin SodaLite SOFT & CLEAN.
	3. Excess coagulant-feed from filtration plant.	
	4. Colloidal suspension.(May linger)	3. Aquathin Spin Down Filters or P.O.E. filter AG. (40 micron) 4. Aquathin Spin Down Filters or P.O.E. filter AG.
C8. Yellowish cast to water after softening and/or filtering (color over 75 APHA units). Yellow stains on washable fabrics, china and bathroom fixtures.	<u>TANNINS</u> (harmless acids) from water passing through peaty soil and decaying vegetation.	1. Absorption via special macroporous Type II anion exchange resin regenerated with salt (NaCl) (Tannins below 3.0 ppm) (Resin does not tolerate iron) 2. Aquathin MegaChar Model BFF-2 when tannins are .5 ppm or less. 3. Chlorination (RS35CL) with full retention time followed by filtration/dechlorination. Aquathin MegaChar (above 3.0 ppm)

HARDNESS & SEDIMENT PROBLEMS

SYMPTOM	CAUSE	TREATMENT
H1. Soap curd and lime scum in wash basins & bathtub. Whitish scale deposits in tea kettles, water heater and pipes.	<u>HARD WATER</u> Calcium and magnesium salts above 3.0 grains per gallon (as CaCO ₃).	All calcium and magnesium salts removed with Aquathin SodaLite SOFT & CLEAN Series . General limit 100 grains per gallon, compensated hardness.
H2. Sediment (clay, silt, fine sand) settles in glass after standing. Abrasive texture water.	Very fine sand or silt passing through well screen or from coagulation treatment.	Aquathin Spin Down filters followed by AG system if necessary.
H3. Rusty sediment (See also reddish precipitates, rusty stains) C1 & C3.	Acid water Picks up iron from piping. Repair of water system.	1. Aquathin Calcite Neutralizing Filter to correct low pH acidity and to remove iron precipitates. 1a. Aquathin Spin Down Filter. Clears quickly.

SYMPTOM	CAUSE	TREATMENT
H4. Grey stringlike fibers	Organic matter (algae, etc) usually from surface water sources.	Constant chlorination (RS35CL) followed by Aquathin MegaChar to dechlorinate.

H₂S TOXICITY SPECTRUM



ODOR & TASTE PROBLEMS

SYMPTOM	CAUSE	TREATMENT
O1. Earthy, musty or woody smell.	Generally, harmless organic matter, often in surface sources.	1. Aquathin MegaChar Filter. 2. Aeration. 3. RS35CL.
O2. Rotten egg odor, tarnished silverware, yellow, black stains on bathroom fixtures. Discolors coffee, tea and other beverages. Distorts appearance and taste of cooked foods. Test at source since H ₂ S quickly escapes.	<u>SULFUR WATER</u> 1. (Dissolved hydrogen sulfide {H ₂ S} gas, often present. 2. Rare sulfate reducing bacteria in raw water creating trace H ₂ S quantities, usually on hot water side. 3*. Magnesium anode rod in electric or gas hot water heater reacts with soft water.	1. Aquathin Rust Sentry 2000 Filter (RSPP) up to 5 ppm H ₂ S, (pH above 6.2) 1a. Aquathin Rust Sentry Pyrolox (RSPX). (pH above 6.2) 2. Shock treat plumbing with household bleach and pre-treat supply by chlorination (RS35CL) feed, follow with Aquathin MegaChar filter. 3. Remove magnesium rod from heater. Use alternate anode such as aluminum
O3. Septic or sewage odor. Detergent odor. Water foams when drawn.	1. Seepage of septic system discharge into underground water supply. 2. Detergent accidentally put in water supply systems or well.	1. Locate and eliminate pollution. Heavily chlorinate well for 24 hours. RS35CL followed by Aquathin MegaChar filters adsorbs limited amounts of detergent. 2. Aquathin RO-DI.

SYMPTOM	CAUSE	TREATMENT
O4. Chlorine smell, "city water"	Excess chlorination or chloramines of public or private well sources.	Dechlorinate with Aquathin MegaChar or YES filter .
O5. Gasoline or Oil smell.	Leak in fuel oil or gasoline tank seeps into water supply or aquifer.	Locate and eliminate seepage. Aquathin MegaChar activated carbon will adsorb oil and gasoline, phenol (most hydrocarbons) for short terms.
Phenol or Benzene odor.	Industrial waste seepage.	
O6. Methane gas (odorless, volatile, flammable, and explosive). Sometimes may resemble H ₂ S odor.	Naturally occurring from decaying organics in swampland, dump-sites, natural gas or oil well fields.	Residential/Commercial aeration system with proper venting of methane and repump water. NOTE: <i>Methane is a very volatile gas.</i>
O7. Salty or brackish flavor of water. Laxative effect in some situations.	1. High sodium or magnesium content. {i.e. NaCl, NaSO₄ or MgSO₄.} 2. Mal-function of water softener leaving brine in water lines.	1. Aquathin RO-DI Series or Aquathin 100+ Series for larger volumes. 2. Service and repair softener.
O8. Alkali acrid harsh taste. Stained aluminum cookware.	High (T.D.S.) dissolved mineral content and high alkalinity in raw water. {i.e. SO ₄ , Cl, or HCO ₃ .}	1. Aquathin RO-DI Series. 2. Aquathin SYN-N also removes sulfates and dealkalinizes.

SYMPTOM	CAUSE	TREATMENT
O9. Metallic taste. (See Green Stains) (See Reddish Precipitates, Rusty Stains){C1 & C3}	1. Acid water (3.0 - 5.5 pH) 2. Heavy iron concentration.	1. Correct with Aquathin MegaCal or Calcite Feeder . 1a. RS35pH[^] 2. (See Iron Water) {C3}
O10. Sharp chemical taste or odor in water (can be semi-toxic). {TEST FOR NITRATES}	1. Excess pesticides or herbicide spraying (DDT, Chlordane, etc...) 2. Nitrates. 3. Animal Feces	1. Aquathin MegaChar filter adsorbs limited amounts of organics. Must continue to closely monitor treated water. 2. Aquathin SYN-N for P.O.E. and Aquathin RO-DI for P.O.U. 3. RS35CL + MegaChar.
O11. Alka-Seltzer Taste.	High Alkalinity.	Aquathin RO-DI Series - also see "SKIN IRRITATIONS"
O12. No symptom. Death.	Radon -- Naturally occurring in ground water.	1. Aquathin MegaChar Filter. 2. Ventilation.

SKIN IRRITATIONS

SYMPTOM	CAUSE	TREATMENT
S1. Rash, itchiness, red eyes.	1. Excessive chlorine or chloramines*. 2. Low pH*. 3. High Alkalinity*.	1. Aquathin MegaChar for P.O.E. Reduction. 2. Aquathin Calcite Feeder to correct. 2a. RS35pH^ 3. Aquathin SodaLite Soft & Clean Series with alkaline reducing resin added to cation bed. Normal NaCl regeneration. 3a. Aquathin MegaChar - Model BFF-2

* Levels difficult to state as the problem varies from personal tolerances.

FOOTNOTES:

1. National Water Quality Association Educational Series
2. TREATMENT OF PROBLEM WATERS IN THE NORTHEAST
3. American Water Works Journals
4. 70 years of accumulated field experience of **Mr. Albert Jaspersen**, TECHNICAL DIRECTOR, P.O.E. DEPARTMENT; **Mr. Mitchell Lipshultz**, SENIOR ACCOUNT EXECUTIVE; **Mr. Alfred Lipshultz**, PRESIDENT, CEO.
5. Continuous Research & Development by **Aquathin Corporation U.S.A.** and its Dealer Family Network.

Good Water

HARDNESS & CONDITIONER

SODIALITE 2000

Ca, Mg cause hardness and can handle Fe = 5 ppm
(1 ppm Fe = 4 Grain/Gal Hardness)

MEGACHAR & MINIMEG

Chlorine Remover

Test Cl if present change the resin

IRON (Fe) Treatment

Rust Sentry (Potassium Permanganate) pH > 6.2, Fe = 15 ppm Can handle Mn & H₂S

RSPX (PYROLOX) pH > 6.2, Fe = 10 ppm Can handle Mg & H₂S

BIRM pH > 6.2, Fe = 10 ppm ** Careful for H₂S **

Used when pH is < 5.5 (Inject NaOH)

Pressure Require = 25 to 150 psi

Used when pH is < 6.8 (Calcium Carbonate = Calcite)
or combined with Magnesium Oxide dependent on acid levels
(Consume 5% per year refill every 5 yrs. left 15" to the top of the container)

* Used Bleaching Chlorine 0.05 to 0.0525% Cl (Chlorox) only

For Lawn or Out Door Usage only

*Use RS500 to clean Rust Stain

*Use RS100 for Rust Sequester

Check Cl end of pipe = 1.0ppm

