USING PYROLOX MEDIA

PYROLOX High Purity, high capacity filtration media for hydrogen sulfide, iron and manganese removal. PYROLOX works on the principle of a catalyst reaction, bur itself remains relatively unchanged. This reaction is accompanied with the formation of intermediate compound or compounds, such as higher oxides of manganese, so that by the alternate composition and decomposition of them on the PYROLOX is left unchanged.

PYROLOX works on a principle whereby the hydrogen sulfide, iron and manganese are actually oxidized on the media and simple backwashing cleans the bed. No chemical regeneration is required, nothing is impaired into the drinking water and essentially unlimited capacity for low containment concentrations.

PYROLOX works equally well on three main classes of water. Those waters which begin to precipitate hydrogen sulfide, iron and manganese on exposure to air, usually hard water containing carbonate or sulphates, or both.

Those waters which will hold hydrogen sulfide, iron and manganese in solution indefinitely, even when chlorinated and/or aerated. The elements usually combine with organic acids and appear in the colloidal form.

Those waters which contain hydrogen sulfide, iron and manganese, or all, in each above forms and therefore deposit a part, but not all, of the element after aeration, chlorination or ozone, and cannot be removed entirely by simple filtration.

PYROLOX has also proven to be an excellent compliment to aeration, chlorination and ozone. PYROLOX acts not only as a turbidity filter, but also as a polishing filter for any breakthrough of hydrogen sulfur, iron or manganese with the use of aeration, chlorination, ozone or other pretreatment methods.

POTENTIAL PROBLEMS AND SOLUTIONS

Low pH

PYROLOX will work extremely well between a pH range of 5 to 9 pH, however, the higher the pH the higher the oxidation capabilities. A 6.5 pH or higher is considered ideal. A lower pH than 6.5 may require extra media for contact time. A more logical approach may be a pH neutralizing filter in front of the PYROLOX which will bring any pH up to the 6.5 to 7 ideal pH range.

Iron Bacteria and/or Manganese Bacteria

PYROLOX will not work well with this problem. The iron and/or manganese bacteria keeps the media from its oxidation capabilities. The ideal solution may be super chlorinate the piping system for 24 hours, then establish an on going residual chlorination system of your choice to control the bacteria. Once you have controlled the bacteria there will be no problem removing the hydrogen sulfide, iron or manganese with the PYROLOX media.

Excessive Manganese

While PYROLOX is effective on hydrogen sulfide, iron and manganese, the reaction time on manganese is slower. This does not present a problem in most parts of the United States, but if you should have excessively high levels of manganese, typical in New England, for example, you may need to extend the dwell time of the service flow over the media bed. Generally this has not been a problem up to 8 parts per million of manganese.

Tannins

PYROLOX will not remove tannin. Fortunately, tannins are not common. However tannins, when present, quite often have hydrogen suflur, iron and/or manganese. To remove tannins, you can use heavy chlorination with a large holding tank for extended dwell time, carbon absorption and/or special resins. Tannins will not hurt the PYROLOX media, and once you remove the tannins PYROLOX will remove the hydrogen sulfide, iron and manganese.

Heme Iron - Pink Iron

PYROLOX cannot completely remove organic complexes from biological degradation of vegetable and/or from bacterial metabolism. This problem is often called "pink water" or "heme iron". This problem is not uncommon, but seems to be localized in certain areas of the United States. Heme iron stays in solution rather than selling out due to the iron being complexed and unusable for oxidation. Heme iron may appear clear at first and then turn yellow in color. In other areas water might appear slightly pink.

When well water is untreatable or sporadically treatable at best, by standard methods, for example, chlorination, water softening, ozone, carbon, etc., or when lead samples appear yellow or pink but have little or no settled iron oxide, on should suspect heme iron. Heme or pink iron takes on many different forms depending on the organism available for it to complex with. In most cases PYROLOX can remove all of the free iron. In most cases and greater than 80% of heme iron. The resulting residual of heme iron can be run through a post carbon bed of granulated activated carbon. The carbon will absorb the organic heme iron complex. The unknown life expectancy of the carbon. It should be relatively good with PYROLOX doing most of the work up front. You may also want to consider special water softening resins for organic and tannins that seem to work especially well on removing the remaining heme iron. Heavy chlorination with extended holding tank can also connect the heme iron problem.

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