



City of Greenleaf

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Memorandum

Date: 26 November 2024
To: Greenleaf Community (inclusion in utility billing, posting on website 'bulletin board' and FaceBook)
cc: Mayor, Council, P&Z, Staff, Request List
From: Lee C. Belt, City Clerk
RE: GENERAL GUIDANCE FOR HOME MANGANESE FILTRATION

Greetings!

The City Council and City Staff are aware of the ongoing water quality issues with the City's potable water system due to high manganese levels, and are investigating options to improve water quality by addressing manganese at a system level.

However, manganese removal at the system level is a large-scale filtration project requiring planning and engineering to identify a long term, cost-effective solution utilizing grant funding to avoid significant increase in the monthly water rates.

Manganese can also be effectively removed at the residential level through the use of whole-house water filters and water softeners.

City Staff have discussed this topic, with conclusion that it is not appropriate for the City to recommend specific brands and model numbers; However, Staff can offer the following general guidance for residents that choose to consult with suppliers for installation of whole-house water filters and water softeners.

- Water filters and water softeners are not typically optimized for manganese removal. Make sure the consultant understands that the City's potable water is very high in manganese. Iron content is relatively low.
- If using both water filter and water softener, then City Staff recommends installation such that incoming water from the water meter pass first through the water filter, and then through the water softener.
- For water filters, City Staff recommends installing two filters in parallel, with shut-off valves before and after each filter. This will allow using the valves to

isolate and replace one filter at a time, so that water distribution to the home is not interrupted when filters are changed. Parallel filters also allow more flow than that provided by a single filter installation. This helps avoid a water restriction that could occur with a single filter. Balanced demand across two filters should also allow both filters to operate more effectively than a single filter, and should also provide more time before filter changes are needed when compared to a single filter installation.

- City Staff recommends selection of a non-proprietary, industry standard water filter housing that can use different brands of filters.
- City Staff recommends use of water filters designed to remove manganese.
- For water softeners, City Staff believes that moderately priced water softeners that can use widely-available non-proprietary salt pellets available from multiple brands provide effective results. Water softeners are designed for calcium and magnesium removal, but also remove other dissolved minerals, including iron and manganese when these are in lower quantities. This is why it is recommended to pass the water through a filter designed for manganese removal first, then through the water softener for secondary filtration.
- City Staff recommends that water softeners be installed with a bypass and valving such that water distribution to the home is not interrupted if the water softener needs to be removed and replaced.

City Staff hopes that this general guidance is helpful. Thank you for your patience and support as we all work together to advance our community.