



**Muscatine Power and
Water**

3205 Cedar Street
Muscatine, IA 52761-2204
563-263-2631
mpw.org

Brian Rath, P.E.
Environmental Engineer Senior
Solid Waste and Contaminated Sites Section
Iowa Department of Natural Resources
6200 Park Ave, Suite 200
Des Moines, IA 50321

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VIA EMAIL

Dear Mr. Rath,

We received your email, dated Monday July 27, 2026, with comments on the Muscatine Power and Water (MPW) 2025 Annual Water Quality Report (AWQR). This e-mail is to address your first requested response regarding bracketing of boron. A separate e-mail will follow for the second requested response.

Specifically, your first request is shown below (*italicized*):

Please provide a discussion in the forthcoming and future AWQRs as to whether or not the associated assessment monitoring wells continue to adequately bracket the impact for which they were installed. For example, multiple points continue to show Boron exceedances; however, the overall trend for Boron indicates stable or decreasing trends, but there is no discussion on whether or not these are adequately bracketed.

MPW understands that, although the AWQR addressed the adequacy of the monitoring network, boron was not addressed with more explanatory detail. Applicable extra details are provided in this email. A figure showing groundwater results relative to published standards is attached to this e-mail. It shows boron concentrations exceeded the health advisory level (HAL) in April and September at MW-14A and in April at MW-15A. These two wells have a history of exhibiting boron concentrations above the HAL and both are located adjacent to fill areas but are not at the most downgradient location.

For bracketing purposes, downgradient monitoring locations MW-4B, MW-5B, MW-6A, MW-26, and MW-27, all consistently exhibit boron concentrations below the HAL. Monitoring location MW-21 exhibits a long-term decrease in boron concentrations dating back to 2019 and in general results at MW-14A and MW-15A also show declining concentrations. The wells adjacent to the fill also exhibited exceedances in 2025 for aluminum (MW-14A) and sulfate. Aluminum and sulfate concentrations exceeded the secondary drinking water regulation (SDWR) guidelines. These guidelines are based on aesthetics. Aluminum concentrations also exceeded the SDWR guideline at upgradient locations.

At downgradient locations (MW-4B, MW-5B, MW-6A, MW-21, MW-26, and MW-27), there were no exceedances of a maximum contaminant level and the only exceedances of a HAL are tied to manganese. Most manganese concentrations are below 0.2 mg/L with only concentrations at MW-4B and MW-5B consistently exceeding 0.2 mg/L. Importantly, manganese is known to be naturally occurring in area groundwater.

For the 2025 data evaluation, the only increasing trend (at a 99% confidence level) at a downgradient well was for magnesium at MW-14A. Decreasing trends were noted at multiple downgradient locations including boron and magnesium at MW-15A.

The downgradient delineation monitoring locations MW-26 and MW-27 are appropriate locations to remain in the monitoring plan and support evaluation of site data. The network provides adequate bracketing of site data including boron. MPW will include this explanatory detail for boron and other parameters as applicable in future AWQR submittals.

Please reach out with any follow-up questions to jbrewster@mpw.org.

Regards,

Jean Brewxter
Manager, Environmental Affairs
Muscatine Power and Water



