



November 10, 2023

*Submitted electronically via Washington Ecology
Public Comment Form*

Department of Ecology
State of Washington
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Re: Draft 2024 Stormwater Management Manuals (SWMMs)

On behalf of the member companies of the U.S. Tire Manufacturers Association (USTMA), we thank you for the opportunity to comment on the draft 2024 Stormwater Management Manuals (SWMM) for the Eastern and Western Washington regions. USTMA is the national trade association for tire manufacturers that produce tires in the U.S. and are responsible for more than 291,000 jobs and have an annual economic footprint of \$170.6 billion in the United States. USTMA advances a sustainable tire manufacturing industry through a commitment to science-based public policy advocacy. The tires from our member companies make mobility possible and keep the U.S. economy moving.

We recognize the need to include 6PPD-quinone (N-(1,3-dimethylbutyl)-N'-phenyl-p-phenylenediamine-quinone or "6PPD-q") as a stormwater toxicant in road run-off. We acknowledge the tremendous effort required to propose stormwater management for a new toxicant as well as the numerous considerations when providing guidance for mitigation practices. The primary intent and goal in this letter is to provide comments that will assist in the state's efforts to provide guidance on appropriate and effective mitigation practices for 6PPD-q.

The comments below are being provided for both the Eastern and Western Washington SMWW draft documents.

- **Providing technically sound guidance to support the mitigation of 6PPD-q in stormwater is critical.** While the draft SWMM documents both include 6PPD-q in the discussions of stormwater contaminants and as a source of stormwater toxicity that needs to be addressed, no specific, and actionable guidance is provided to address 6PPD-q.¹ The lack of specific BMP recommendation for 6PPD-q stands in contrast to other stormwater contaminants such as pesticides which are specifically called out in various BMP pollutant source descriptions.

¹ Some specific control measures are given for handling tire wash and bathwater (II-2.9 Element 9: Control Pollutants; Volume II – Chapter 2 – Page 284) or recommending the disposal of old tires used to weight down plastic sheeting (Volume II – Chapter 4 – Page 337). Tire wear residues are again mentioned in S430 BMPs for Urban Streets with street seeping as a recommended BMP (Volume IV – Chapter 3 – Page 563).

While data gaps and research needs remain regarding the mitigation of 6PPD-q, a substantial amount of research has demonstrated that biofiltration-based treatment technologies provide effective removal of 6PPD-q. Studies of both in-place bioretention systems (Hwang et al., 2023; Rodgers et al., 2023) and recent pilot studies (e.g., Ohop Creek Pilot Project, Long Live the Kings, 2023), among others, have shown that biofiltration-based BMPs are effective (Long Live the Kings, 2023; McIntyre et al., 2023). At a minimum, a provision should be made to acknowledge this work and initial guidance added to recommend bioretention based BMPs for 6PPD-q mitigation along with recognition that the current understanding of BMP effectiveness for 6PPD-q mitigation is the subject of ongoing research and subject to change.

- **Section I-1.3 introduces 6PPD-q as a previously unknown stormwater toxicant and provides a high-level description of the issue. This section would benefit from the inclusion of recent scientific publications that provide additional information on 6PPD-q.** For example, with respect to 6PPD-q chemistry, as with other chemicals, the physicochemical properties of are important in determining mitigation options and their behavior in the environment. The work published by Hu et al. (2023) provides some preliminary information on the water solubility of 6PPD-q and results from stability tests in aqueous solutions show that 6PPD-q is not recalcitrant. These findings could have significant implications for long-term performance, operation, and maintenance of stormwater capture and biofiltration BMPs.
- **Refine references to tire-related material by referring to tire and road wear particles (TRWP) instead of tire wear particles (TWP) since tire particles are typically found in the environment agglomerated with road wear particles.** Tire particles (known as tire wear particles or TWP) are referenced in the document. However, particles emitted from the “car habitat” or those captured by street sweeping are tire and road wear particles (TRWP), this distinction is critical as particles emitted from the “car habitat” will likely always contain road debris in addition to TWPs (Kovochich et al., 2021).
- **To the extent possible, lessons learned from other organic contaminants with similar chemical properties should be used to inform and accelerate development of preliminary BMP guidance to address 6PPD-q and provide options for implementation.**

The sub-section entitled, “The Role of Land Use and Lifestyles” provides a listing of the various mitigation practices that would support 6PPD-q mitigation in road runoff:

“Surfaces created to provide “car habitat” comprise the greatest portion of impervious areas in land development. The sheer magnitude of uncontrolled runoff from old infrastructure near streams with sensitive biota is challenging to address in the near term. Approaches that use infiltration, sorption, filtration and or effectively capture tire debris are presumed to provide the necessary treatment from ‘car habitat’. Combinations of approaches that also use source controls will also aid in toxicity prevention for our salmon and trout.”

It is important to acknowledge that while some practices target tire particles (filtration or source control via street sweeping), others provide controls to 6PPD/6PPD-q (e.g., sorption). It should also be noted that these same approaches provide co-benefits by offering mitigation for other road runoff contaminants as well.

- **USTMA recognizes the addition of high performance bioretention soil mix (HPBSM) formulations as a media option for bioretention based BMPs.** Given the studies that are underway or proposed to investigate the effectiveness of HPBSM for 6PPD-q removal this is a beneficial addition. Once again, we want to highlight the rapid pace at which research on 6PPD-q is progressing and that there is a need for providing updated information and guidance for mitigation of 6PPD-q.

Again, USTMA would like to reiterate that providing actionable guidance to support the mitigation of 6PPD-q in stormwater is critical. USTMA is committed to working with federal and state regulatory bodies, material suppliers, academic and government research teams, industry associations and other partners to advance research into 6PPD-q and identify effective mitigation strategies.

Thank you again for the opportunity to comment on the draft 2024 Stormwater Management Manuals (SWMM) for the Eastern and Western Washington regions. Please contact me at tnorberg@ustires.org or (202) 682-4839 should you have any questions.

Respectfully submitted,

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References

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