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**Subject:** SMS Rule Revisions  
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Chance –

Sorry for the delay in getting you my comments on the proposed Sediment Management Standards (SMS) rule revisions, and thanks for your offer to still accept late comments given my personal travails. Overall, I think you and others at Ecology have done a good job trying to develop an improved SMS framework to incentivize short-term sediment cleanups that accelerate risk reductions, while navigating through an increasingly complex and uncertain regulatory scheme that has apparently adopted “background” as a long term goal, without regard to whether or not such a goal is achievable or would result in unintended consequences of regulatory gridlock. My comments below are primarily “big picture” suggestions along the lines of what I’ve previously tried to articulate during our workgroup meetings.

- 1. Regional Background** – To be effective as a tool to incentivize sediment cleanup, regional and natural background concentrations need to be significantly different. As demonstrated by the case study examples presented to the workgroup, the approach developed by Ecology in late 2011 does not allow sufficient differentiation between site units and bay-wide sediment conditions to allow the important regional background concept to be useful. The definition and application of regional background needs to be revised so that it is clear that it includes ubiquitous sources of contaminants that are released from diffuse, non-point sources into urban air and stormwater. For example, as Ecology has recognized in recent studies of dioxins and furans (dioxins) and carcinogenic polycyclic aromatic hydrocarbons (cPAHs) in urban and rural area soils throughout the state (e.g., Ecology Publication 11-09-219), home burn barrels, fireplaces, wood stoves, and exhaust from diesel engines release most of the dioxin that currently enters our air, particularly in urban environments. Similarly, most of the cPAHs currently released to the atmosphere in the Puget Sound region is from vehicles and wood stoves. Dioxins, cPAHs, and other contaminants such as polychlorinated biphenyls (PCBs) and phthalates that are released into the atmosphere from such diffuse sources subsequently deposit on the ground, and contribute predominantly to regional stormwater loads of these contaminants. Since many if not all site units located in urban embayments are influenced by local stormwater discharges, it is critically important to incorporate contributions of these ubiquitous sources into the definition of regional background, particularly if we are to overcome the current regulatory gridlock associated with trying to achieve natural background. The current definition in the proposed SMS rule revisions, with its exclusion of contamination from “specific sources,” could be interpreted to exclude non-point inputs from stormwater outfalls in defining regional background. A suggested remedy is to clearly state that “specific sources” and other related terms do not include stormwater outfalls that drain stormwater receiving inputs from diffuse, non-point source areas. There are a number of relatively straightforward data analysis and/or modeling approaches that can be used to define regional background in this context, and the rule needs to be flexible

enough to allow for appropriate site-specific approaches.

2. **Freshwater Standards** – Overall, the proposed freshwater sediment standards are a good step forward. However, organic carbon (OC) normalization of chemical criteria should be better addressed in the final rule. Compared to the dry weight values proposed in the SMS rule, OC-normalization provides a more defensible and consistent set of sediment quality standards for polar organic chemicals such as PCBs, PAHs, phthalates and others, building on the following weight-of-evidence:

- The minor differences in reliability reported in the supporting technical report between dry weight and OC-normalized sediment quality values are not statistically significant and thus should not be used as a basis to select between these approaches;
- The scientific underpinnings supporting use of OC-normalization to assess the potential bioavailability of polar organic chemicals is now firmly established and widely supported in the technical literature and other regulatory programs – e.g., EPA’s current sediment quality benchmarks for PAHs and other polar chemicals are based on OC-normalization for this reason;
- The most recent EPA guidance on sediment bioavailability assessments for polar organics uses a two- or three-phase partitioning model consisting of the bioavailable dissolved phase and a generally non-bioavailable particulate OC phase (the generally non-bioavailable dissolved organic carbon phase can also be added as a further refinement) – consistency with these other regulatory programs should be maintained;
- In addition, Ecology and other state agencies recently collaborated to develop more detailed guidance on how to assess bioavailability of contaminants in sediment – consistency with this guidance can be achieved in part through incorporation of OC-normalization (the web link for this report is: [http://www.js3design2.com/con\\_sed\\_web\\_jws](http://www.js3design2.com/con_sed_web_jws));
- Within a given sediment site, OC-normalization has been demonstrated to strongly improve predictions of bioavailability for polar organics, but the variability in the types organic carbon between sites (e.g., soot versus wood) contributes to the observed variability in region-wide correlation analyses; and
- The promulgated SMS marine chemical criteria for polar organic chemicals are based on OC-normalization - regulatory consistency with the existing marine SMS chemical criteria should be maintained, as there are no clear or compelling reasons not to do so.

Thus, OC-normalized benchmarks for polar organic chemicals should be used as the more appropriate basis for sediment quality standard (SQS) and cleanup screening level (CSL) chemical criteria for polar organic chemicals, similar to the promulgated marine criteria. Alternatively (or in addition), another suggested remedy is to add a narrative provision to the rule to clarify that further evaluations of bioavailability can be performed as necessary on a case-by-case basis (e.g., using current high resolution sediment porewater sampling and analysis methods) to provide a more direct assessment of bioavailability.

3. **Restoration Time Frame** – Consistent with the current SMS rule, the restoration time frame needs to start when remedial construction is complete, not when cleanup starts.

Moreover, given the slow rate of recovery of most regional sediment systems and continuing non-point source stormwater inputs as summarized above, a time period longer than the current 10 years in the rule is needed to attain regional and/or natural background standards and avoid regulatory gridlock. A suggested remedy is to modify the rule language to clarify the expectation of achieving “*restoration as close as practicable to 10 years following the completion of remedial construction*”.

4. **Source Control** – The preliminary source control concepts floated in the workgroup appear workable, as they appear to build on source control programs that have been successfully implemented in Puget Sound over the past two decades that allow the evaluation to be appropriately tailored to site-specific needs. However as with many other aspects of the rule revision, the devil is in the details. For example, the relevant spatial scales of sediment mixing (e.g., around an outfall) need to be incorporated into the source control assessment, and general rule language to this effect is needed. Ecology needs to make sure that source control requirements at even a small sediment cleanup unit cleanup are not so onerous as to be a disincentive to signing on to do cleanup.
5. **Sediment Recovery Zones** – Because of their highly onerous requirements, sediment recovery zones need to be the exception, not the norm. A suggested remedy may be to modify the language in the rule to clarify that the standards applicable to sediment recovery zones only apply when the selected cleanup action leaves sediments that exceed the sediment cleanup standard. It will also be important to clarify and limit the circumstances in which sediment recovery zones will be used to be more consistent with the expectation detailed in -500(4)(d). However, prior to making any modification to the sediment recovery zone section, it would be far more prudent for Ecology to work further with the regulated community and the water quality program to ensure that any discharge limitations are implementable and consistent with other regulatory programs.
6. **Liability Settlements** – If cleanup work is going to proceed, it is vital that Ecology be flexible regarding site units. Ecology needs to continue to consider practical incentives to encourage potentially liable parties (PLPs) to take action regarding problems they can control and facilitate potential cash-out settlements for larger bay-wide problems. While the option for Ecology to settle liability for site units currently exists under MTCA, further clarifications as currently proposed in the SMS rule revisions will help facilitate such progress. The key here is to ensure that the necessary flexibility in determining site units for liability settlements is made abundantly clear in the rule.
7. **Grandfather Clause** – Finally, it is important that current MTCA/SMS sites proceed to completion without getting stalled (again). The “grandfather” clause needs to be further clarified as an essential component of the SMS rule revision. A suggested remedy is to state in the rule that the grandfather clause applies to sites where a Consent Decree or Agreed Order (for an ongoing RI/FS) is in place as of the effective date of the rule revision.

Thanks again for your flexibility in receiving these late comments – I really appreciate it! As always, please let me know if you have any questions.

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