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October 29, 2012

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Toxics Cleanup Program  
PO Box 47600  
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Email: RuleUpdate@ecy.wa.gov

**Subject: Comments on Proposed Sediment Management Standard (SMS) Rule Revisions  
for managing contaminated sediments in Washington State**

Dear Ms Dorrah:

BP is providing comments on the proposed Sediment Management Standards (SMS) rule revisions, Chapter 173-204 Washington Administrative Code (WAC), released for public comment on August 15, 2012. We appreciate the level of effort Ecology has put into this process and the opportunity to comment on the proposed revisions. We look forward to a final revised SMS rule that provides a clear, efficient, and achievable process for implementing sediment cleanup actions within our waterways.

Though the goal of the new rule-making is to clarify the rule, add a process for human health evaluations, and to facilitate getting to cleanup faster, we are concerned that the effects of these changes may be to lengthen and complicate investigations and delay actions. Some of our key issues include:

**1) Two-Tier Screening Process for Selecting a Sediment Cleanup Level**

We support the concept of a two-tiered evaluation for the protection of both ecological and human health. The lower end of the range (sediment cleanup objective) is a worthy goal but one that may take years to reach or may never be attainable. The upper end of the range (cleanup screening level) needs to be implementable and practicably achievable, and should consider cost and technical practicability. It should represent the limit of technical feasibility (the best we can do). By putting forth a larger range in which to select a site-specific cleanup standard, it ensures an achievable endpoint in the near term, provides incentive for early cleanup actions, and allows for progression toward the Sediment Cleanup Objective (SCO) over the longer term. In summary, we recommend the following changes to the Cleanup Screening Level (CSL) (WAC 173-204-560 and -561):

- **Fish Consumption Rates and Cancer Risk Thresholds.** Human Health (HH) seafood consumption criteria will be based on tribal subsistence-level fish consumption rates of fish and shellfish and will likely be below background (WAC 173-204-561). Using these rates, achieving a total site risk of  $10^{-5}$  for individual cancer risks may be impractical regardless of the remedial action taken for many HH contaminants. The human health risk endpoints should incorporate other risk scenarios (such as the Model Toxics Control Act (MTCA) scenario, recreational scenario, number of meals per week) especially for certain chemicals, or at least allow some flexibility for alternate chemical- or site-specific evaluations.

- **Non-Cancer Risk Thresholds.** The draft rule revisions recommend a Hazard Quotient (HQ) of 1 for non-cancer risks. This effectively eliminates the usefulness of a tiered approach, because the SCO is the same risk level (WAC 173-204-561). We recommend a CSL that has a HQ >1 or incorporates a range of risk levels and scenarios, otherwise there is no difference between the CSL and the Sediment Cleanup Objective for non-cancer risks. Effectively, the two-tiered screening process would collapse to a single screening value.
- **Selecting a Cleanup Standard.** We appreciate the efforts to streamline the SMS cleanup selection process, but the proposed rule changes have made the process less flexible (WAC 173-204-560). The proposed rule change to "*the sediment cleanup level may be adjusted upward from the SCO based on whether it is technically possible and whether it will have adverse environmental impacts*" does not acknowledge the complexities and uncertainties of working in a water environment. The net environmental benefit of the cleanup should be considered. We strongly encourage Ecology to modify the language and incorporate technical practicability and net environmental benefit into the selection process. The original selection criteria of cost, technical feasibility and net environmental benefit seemed more supportive of a sustainable process that allowed for site-specific evaluation based on risk reduction and best available technologies.
- **Human Health Contaminants.** The rule is unclear here leading the reader to believe that the list of 47 SMS chemicals, derived for the protection of benthic toxicity, also applies to human health. The human health criteria only apply to a subset of bioaccumulative contaminants and the SMS rule revisions should clarify this. This is consistent with MTCA, which allows for selection of key indicator hazardous substances when defining cleanup requirements. Perhaps the rule could pre-select a list of 4 or 5 contaminants that are of primary concern in Washington state and should be the focus of evaluation. Additional contaminants could be added on a site-specific basis.

## 2) Natural and Regional Background Determination

Ecology should assume the responsibility of determining background concentrations for many of the larger embayments in Puget Sound in order to ensure consistency between projects, sites, and site units. However, the determination process, including sampling locations and any filtering of the datasets, should be transparent, collaborative, and peer-reviewed. Regional background should include contributions from non-point sources and diffuse sources, even if situated in an urban setting. Without these contributions, it will be difficult if not impossible for sites to reach finality and liability closure.

In addition, background values should be applied on an area-weighted basis. They are being derived to ensure the protection of human health (direct contact and seafood consumption) and should match the exposure area of concern. Exposure areas are typically much larger than areas considered for benthic toxicity (these are point concentrations). The SMS rule should clarify that HH values are not applied on a point-basis.

## 3) Final Cleanup under the SMS, Compliance Monitoring, and Site Delisting

- Setting the sediment cleanup objective to natural background is major change in the SMS rule revision. There is no clear understanding how a sediment cleanup objective can be met over time when the SCO is natural background, and there are no mechanisms in place to get a final remedy without meeting the SCO. The SMS rule should contain mechanisms to allow for achievable cleanup action. We also believe that Institutional Controls (ICs), when combined with active remedies, should be acceptable for meeting cleanup standards derived for the protection of human health.
- WAC 173-204-500 (5)(a)(i)(A) of the proposed rule says "*sediment cleanup objectives... goal is expected to be achieved through a combination of cleanup actions and source control*". It was pointed out to Ecology during SMS rule revision meetings that this may

have the effect of making cleanup efforts take more than 30 years, which is counter to the goal of the revised rule making. The SCO may never be achievable at specific sites, especially in urban environments with diffuse non-point sources. The rule and guidance needs to include a workable solution that also is protective of human health. Please add "institutional controls" to the statement so that it reads "sediment cleanup objectives...goal is expected to be achieved through a combination of cleanup actions, source control, and institutional controls."

- WAC 173-204-500 (4)(b) We are encouraged by the proposed rule revisions regarding recontamination after remediation which state that further cleanup will not be the responsibility of the entity that conducted the initial cleanup if recontamination is from another source. This type of revision will encourage faster cleanups. However, demonstrating that the recontamination is from other sources may be burdensome to prove with confidence. The process of determining source, extent, and persistence of recontamination if observed (plus any real effects it may have on the community) could prove to be a lengthy and costly endeavor.

Remediated sediments could also rebound and equilibrate with surrounding sediments that do not have an identifiable source, especially when the cleanup standard is set close to natural background. Managing this uncertainty could require years of data collection and analysis, and has the potential to undo efforts towards faster site cleanups. The burden-of-proof to ensure that any recontamination observed in surface sediment after remediation has been completed could be significant and not in a potentially responsible party's (PRP) control. How will recontamination of a site by anthropogenic background outside of the control of the PRP be handled in cleanup decisions? Consideration of urban background and equilibration to ambient concentrations would be helpful; incremental concentrations above the SCO should not be defined as recontamination.

- WAC 173-204-530 (6)(a)(i) & (ii) states that for site delisting "*all cleanup actions, including confirmational monitoring and all other actions required in the cleanup action plan.... have been completed and all sediment cleanup standard(s) have been achieved; or the listing of the site was erroneous.*" If the cleanup standard is close to background levels, this achievement may be extremely difficult. In particular, many contaminants have urban signatures that may be transient or persistent in nature and difficult to manage. How will compliance monitoring be used to determine achievement of the cleanup level, and is Ecology planning to develop statistical methodology for these determinations?

#### **4) Coordination with Other Programs and Source Controls**

WAC 173-204-500 (4)(a)(iii) the proposed rule states that a cleanup may include "use of source control measures to minimize future contamination".

Does Ecology anticipate changing other environmental regulations to bring them into support and compliance with the new rules?

How might it affect or interact with other compliance regulations?

Will the new rules impact NPDES permitting and compliance? If not, how can PRPs know their sites will not be re-contaminated by other point source dischargers?

If natural background is the goal for each embayment, how will pollutant loadings for surface runoff and point source dischargers be set to support that?

What about other compliance regulations?

#### **5) Other Miscellaneous Issues**

- WAC 173-204-560 (4): the rule should discuss the concept of spatially-weighted average concentrations (SWACs) that are determined over the exposure area of interest. This is particularly important for human health and some ecological endpoints.
- WAC 173-204-560 (4) Sediment Cleanup Standards: the old rule stating “*the cleanup level will be selected within the allowable range between the SQS and CSL and be as close as practicable to the cleanup objective*” should be left as written.
- WAC 173-204-500 (4)(c): the proposed rule requires that “*the sediment component of sites and sediment cleanup units with limited contamination will be restored within a single construction season using active cleanup actions such as dredging or capping. However, the department recognizes that longer restoration time frames may be necessary at sites with more extensive or widespread contamination, including sites with ubiquitous chemicals from numerous point and non-point sources.*” This is a design issue and should be removed from the rule. Because of our limited 3.5 month in-water work windows in Puget Sound, it may be difficult to implement cleanup work in one work season. In addition, this statement favors faster cleanups instead of better, more protective cleanups that minimize short-term risks.
- WAC 173-204-570 (3)(e): the old rule stated that the minimum cleanup level, or the CSL, was the maximum chemical concentration allowed at the cleanup site by year ten after completion of the active cleanup action. This text has been deleted and replaced with the cleanup standard (likely the SCO or natural background) which must be met within ten years from the START of construction. If not met, then a sediment recovery zone will be applied for an initial duration of up to 10 years.

First, if natural recovery is part of a selected remedy, then the restoration time frame should be 10 years AFTER active construction. Remediation activities such as dredging and capping will likely disrupt the natural recovery processes during the construction phase. Recovery time will be needed after construction is complete before monitored natural recovery (MNR) will be optimized for effectiveness. Second, it is unclear from the rule revisions if a sediment recovery zone will be applied to a smaller site or site unit with a single PRP, or if it is intended to be applied over a broad bay-wide scale to monitor low levels of contamination over time.

- WAC 173-204-560, Table IV and Table VII: What is the purpose of listing numerical criteria when site-specific evaluations are needed? Perhaps to be used in screening assessment (cluster analysis) to determine if a site is a site? Or perhaps delineate a smaller site unit within a larger site? What is the point of allowing toxicity test overrides of the chemistry results (we assume this is still allowable), if the cleanup drivers will be human health?
- WAC 173-204-500 (5)(b)(i), WAC 173-204-570 (4), WAC 173-204-580 (3) Selection of Cleanup Actions: the remedy should be permanent to the maximum extent practicable. However, the bias towards dredging should be removed from the evaluation when selecting a remedy. The selection of a remedy should balance short-term impacts, long-term benefits, cost, and technical practicability based on site-specific goals and conditions. There is no preferred technology for the remediation of contaminated sediment.
- The cost-benefit analysis prepared by Ecology for SEPA compliance evaluated the potential effects of rule changes on sediment cleanup projects in Washington state. However this evaluation only compared differences between the SCO and CSL cleanup levels. The evaluation should include a baseline scenario before the HH criteria are added to the SMS. The analysis should compare the cost burden of incorporating HH criteria into the rule revision to the existing SMS rule and numeric benthic toxicity criteria.

Lastly, the rule as proposed may put a burdensome level of cost and complexity into the risk evaluation of small sites. How can we also incorporate a more streamlined process for small sites?

We appreciate the level of effort Ecology has put into the rule revisions and efforts to streamline the process. Please do not hesitate to call or contact me at 360-371-1869 or [Lesli.higginson@bp.com](mailto:Lesli.higginson@bp.com) for additional clarification with these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Lesli M. Higginson". The signature is fluid and cursive, with the first name "Lesli" and last name "Higginson" clearly distinguishable.

Lesli M. Higginson  
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cc: Elizabeth Daly, BP Cherry Point  
Jeff Chalfant, BP Cherry Point  
Anne Fitzpatrick, AECOM