City of Seattle
Seattle Public Utilities

January 12, 2012
(*via email to* RuleUpdate@ecy.wa.gov)

Chance Asher
Dave Bradley
Toxics Cleanup Program
Washington State Department of Ecology

RE: City of Seattle Comments on the Draft Revisions to the Sediment Management Standards Rule

Dear Chance and Dave:

This letter transmits City of Seattle comments on the November 2011 Draft Revisions to the Sediment Management Standards Rule (SMS; Chapter 173-204 WAC). The City thanks the Department of Ecology for the opportunity to participate on the Sediment Cleanup Advisory Committee and review and provide comments on the Draft Revisions. The proposed revisions and where they appear to lead are an ambitious undertaking that could significantly reshape the SMS and the way sediment cleanup gets done in the State over the next few decades. The Ecology team should be commended for their work and their efforts to obtain input and feedback from the regulated community and stakeholders.

Overall, the proposed new framework has potential to improve the sediment cleanup process although many uncertainties remain about how the framework will be implemented at a real site. In addition, many issues remain including how to establish Regional Background, implement source control, and manage liability at Sediment Cleanup Units. Implementation of the framework will require performance of intense technical work and challenging policy decision-making to be useful.

The City's comments on the Draft Revisions are attached to this letter. Some of the comments are technical in nature while others address concerns about how the proposed new framework will actually work or where more clarity is needed. In addition, we also suggest a change to the proposed approach to managing liability for recontamination and would like the opportunity to discuss Ecology's expectations regarding the overall cleanup process and source control before the next draft of the SMS Rule is developed.

Overall, the City supports Ecology's continued efforts to improve the SMS and looks forward to the opportunity to discuss your responses to our comments. If you have any questions about our comments, please contact me at 206-733-9179 (pete.rude@seattle.gov).

Sincerely,

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Sediment Management Standards Rule
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Sections of Document Reviewed:	SMS sections 173-204-200 and -500 through -590
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9	3	Suggest adding definitions for source control terms including "source", "pathway", and "source control". During the advisory committee meetings, these terms were used in various ways that led to confusion. For example, one way to approach this is to say that the *source* of phthalates is their use in many common plastics and other materials and they can come to impact sediment quality via the atmospheric deposition/stormwater *pathway*. Whatever the choice of words, as attention becomes more focused on recontamination issues, it seems important to become clearer on what source control and related terms mean in the cleanup and recontamination context.
9	6-9	In addition to dredging, capping, and enhanced natural recovery, please include *in situ* sediment amendments/treatment (e.g., granulated activated carbon) in the definition of Active Cleanup Action. Such active cleanup is becoming more important in the region.
10	36-41	Does this definition of the BAZ (and others like it in the document) apply to marine, estuarine, and freshwater sediment? That seems to be the implication but good to be clear. This may be solved by a general statement at the beginning of the definitions section.
11	68-70	To be clearer, suggest adding the words "*in the biologically active zone*" to the end of this sentence.
11	97-98	The mention of human health risk in the context of Minor Adverse Effects seems out of place now with the new Sediment Quality Objective idea.
12	99-103	Natural Recovery definition. Suggest revising to clarify and include mixing and degradation (suggested changes in *italics*): "Natural recovery means physical, chemical or biological processes that act, without human intervention, to reduce the toxicity or concentration *of a contaminant in* sediment. The most common form of natural recovery is the natural deposition of a layer of clean sediment over an area of contaminated sediment resulting in burial of contaminated sediment below the biologically active zone. *Sediment mixing and degradation of some contaminants (e.g., PAHs) can also contribute to natural recovery*."
13	138-158	Regional Background (RB) definition. There are at least three phrases in this definition that lead or point to complex and time-consuming technical (and policy) processes that will need to be implemented to define Regional Background in a particular area. These include (emphasis added): • "…concentrations of any hazardous substances...not **primarily attributable** to identifiable contaminants from specific sources or releases.' [line 140] • "…[RB] must exclude areas with an elevated level of contamination due to the **direct influence** of known or suspected contaminant sources…" [line 147] • "…that portion of an embayment or watershed **outside the areas** with contamination attributable to one or more specific sources." [line 150] Who will develop the RB for a given area? How would the RB process be initiated? Would Ecology take the lead? What technical tools will be acceptable for establishing RB given the constraints documented in the draft rule? Will costs to establish RB be shared by those parties that will use it? Is guidance planned for this huge piece? Given the underlying technical complexity of the process and the intense scrutiny given the overarching importance of identifying RB, reaching a decision on RB for an area (e.g., a RB concentration for PCBs) seems like it could take several years. Is this reasonable/acceptable? How will a small site or site unit cope with this construct? Will they have to wait for the RB process to be completed? Depending on how RB is specifically defined, the size of the "site" may still be unmanageable and tilt the process toward paralysis. Geographic scale is very important and it seems like there is a threshold consideration related to site size and the feasibility of active cleanup measures that needs to be more clearly defined especially within the context of ongoing, ubiquitous sources. In theory, the RB concept definitely has appeal on paper for helping meet the stated goals of the rule revisions but it seems important to think through in detail what sort of process it really leads to and the time, resources, and commitment that will likely be required to establish RB levels that facilitate forward progress on sediment cleanups.
13-14	165-172	Sediment definition. One of the primary purposes of this rulemaking effort is to reconcile/harmonize MTCA and SMS to create a workable system where MTCA and SMS dovetail rather than clash. It

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		seems that inserting the 6 week wet provision in this definition may make it hard to reconcile with MTCA. In situations where water is only present for a few months, for the rest of the year might the particulate material arguably be considered a soil and the MTCA-type receptors/pathways are then in play? Such an overly inclusive definition of sediment potentially raises conflicting issues within the regulatory programs, which should be avoided. Given this, it would seem best to exclude/delete the reference to 6 weeks wet. In addition, it would also be clearer if it were stated that particulate material present within treatment facilities is not sediment.
14	170-172	Part (c) of Sediment definition. This part of the definition is not clear as written. The exposure by dredging makes sense, but what does "pore water flux, or other hydrological or natural action" relate to in this context? What are Ecology's expectations regarding pore water in the revised rule? How is porewater defined? Depending on the intent of this part of the definition and related clarification by Ecology, the City may have more comments on this part of the definition.
14-15	196-200	Is this what is established during a cleanup that includes natural recovery? If so, seems helpful to make clear that use of this regulatory tool results from natural recovery being part of cleanup decision.
15	200	585 should be 590.
15	202	What does "sediment site designated by the department" mean here? Is the "sediment cleanup unit" designated by the department or is it the site? Where are the administrative procedures for that designation? How is the "sediment site" established given the new paradigm and Regional Background process?
15	209-213	Please see comment on this language provided above for page 14, lines 170-172.
16	19-20	Is the station cluster process as currently conceived still useful/needed given the more specific human health requirements in the rule and the fact that many urban bays will exceed the proposed Sediment Cleanup Objective?
17	42-93	The City has questions and concerns about Ecology's expectations regarding the cleanup process. Below, we describe our concerns and make suggestions on how to frame expectations on the cleanup process and related source control. Nevertheless, we are continuing to evaluate these issues and request the opportunity to discuss with Ecology (potentially both the Toxics Cleanup and Water Quality Programs) SPU's responsibilities as a stormwater utility and permit-holder, how the new cleanup framework interacts with those responsibilities, what are reasonable expectations about how stormwater sources can be controlled, and approaches to management of the potential for sediment recontamination. Part of this conversation requires a clear definition of the term "recontamination" and the implications of that definition (e.g., is any concentration of contaminant X greater than natural background considered "recontamination"?). Ideally, these discussions would occur before the next draft of the SMS rule revisions are completed by Ecology. 1. **Within the current NPDES framework for stormwater, the City is unable to identify and control all sources of contaminants that are entering municipal drains and presenting a potential risk for sediment recontamination.** In Seattle, only a small percentage of facilities within a given municipal storm drain basin have their own NPDES stormwater permit, and such permits don't effectively address sediment recontamination issues. The rest of the facilities within the basin are addressed per the requirements of the City stormwater code and related source control activities (e.g., business inspections, source tracing, spill and other complaint response efforts), which are effective tools to encourage and require that facilities reduce sources of pollution. However, the tools available to the City do not fully address the ubiquitous urban contaminants (e.g., PCBs, dioxin, PAHs, phthalates, and some metals) that pose some of the greatest risks to sediment recontamination. Plus, City access to private property for inspections is voluntary on the part of the property owner, due to restrictions in state law. The City has been denied access at a few locations and does not have authority to enter a facility without the permission of the property owner. Stormwater runoff from every parking lot or roof in the City will contain the contaminants mentioned above and often at concentrations that have the potential to contribute to sediment recontamination given the current risk framework. Other municipalities within the state are

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		likely to face a similar problem. As Ecology has identified, this problem will take many years to resolve on a basin-wide scale. In setting expectations for the cleanup process, we recommend that this currently intractable problem be clearly understood and identified as it will help to establish expectations, roles, and responsibilities for source control. 2. **The City is concerned that there is no consensus or clear guidance on the acceptable technical approach (or approaches) for evaluating potential sources of sediment recontamination and the risk of sediment recontamination.** Site-specific source tracing and source evaluation tools and approaches are being used at some sites in the region (e.g., the Lower Duwamish Waterway) and have led to identification and remediation of a few significant sources. But, these approaches are not designed to evaluate the ubiquitous and, currently, uncontrollable sources of contamination in runoff. In addition, recontamination modeling of numerous private and public discharges (including potentially fate and transport modeling) leads to expenditure of significant resources and years of study, which although likely necessary in some cases can greatly slow the advance of bay-wide cleanups 3. **The source control expectations and framework needs to acknowledge (or remedy) a potential for a disconnect with MTCA.** Although MTCA states that cleanup levels developed in an upland site context shall be established at concentrations that do not directly or indirectly cause violations of sediment cleanup standards, cleanups that have already occurred would not be protective and could contribute to recontamination problems under the new standards. In some cases, it is these types of sites that discharge runoff to municipal storm drains that could contribute to sediment recontamination. Further, in this context, there could be upland sites that don't require active cleanup for some upland exposure pathways, but conditions could create sediment risks via various pathways. How do MTCA and the SMS work together in such situations? Where are the multiple source cleanups and source control measures mentioned in subsections (ii) and (iii) [lines 53-55] expected to be authorized? In the SMS? Or are they expected to be addressed under another regulatory authority (e.g., MTCA or Water Quality)? Finally, cross-media pathways from upland sites to sediments need to be evaluated within a consistent yet realistic framework. Overly conservative cross-media assumptions combined with natural background sediment goals could result in unrealistically and unnecessarily low cleanup standards for upland sites, which could delay cleanup progress at real problem areas and create an unprecedented scale of liability in vast upland areas. 4. **Potential delays in cleanup due to source control and recontamination potential uncertainties**. For example, the design for cleanup of Slip 4 of the Duwamish Waterway was complete in 2007, but because of ongoing source control problems the cleanup was postponed until the fall of 2011. In this case, although some specific sources were addressed between 2007 and 2011, a number of sources are still uncontrolled and stormwater treatment was required to allow the cleanup to move forward while source control work continued. Ultimately, the cleanup of Slip 4 is happening and the recontamination risk has been managed, but it took four years for the source control and sediment cleanup processes to line up. This was a situation with comparatively clear source data showing a known problem, and historically "normal" cleanup standards for sediments (i.e., achieving the SQS and not natural background). In larger areas and with the even lower cleanup levels related to human health, resolution of source control issues will likely take even longer, sources may never be controlled to natural background standards, and construction of completed plans for the in-water sediment cleanup may be delayed for many years. ********** We are still thinking these issues through and would like to have additional discussions with Ecology on the topic. In any case, we recommend that Ecology add additional detail regarding

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		expectations for source evaluation taking into account the technical challenges, resource needs, the length of time necessary to assess source control and the potential for recontamination, and the nexus/relationship of the SMS to MTCA and the Water Quality regulations.
17	56-61	Proposed section -500(4)(b) places an unfair burden on PLPs who have <u>not</u> created a "hot spot" of contamination. It is unfair because the PLP that settles its liability for the hot spot (or sediment cleanup unit) will be released from liability if that unit becomes recontaminated by sources outside the PLP's control. <u>The other PLPs would continue to be liable even if *they also have no control* over the sources of the recontamination</u>. The release of liability for <u>future</u> contamination is a paradigm shift from joint and several liability based on status (owners or operators) to liability that appears to be based on fault, but actually shifts the burden from some PLPs that cannot control the recontamination to other PLPs that also cannot control the recontamination. A hypothetical example illustrates the problem: • Sediments throughout a section of a river are contaminated from many sources, including urban runoff and air deposition. Party X owns a marina in the contaminated section of the river. The sediments under and around the marina are highly contaminated with products from marine antifouling paints. • Party X settles with Ecology by cleaning up the contaminated area (sediment cleanup unit) within and around the marina and controlling the sources of paint. • The site becomes recontaminated with ubiquitous urban contaminants largely due to river currents redistributing contaminated sediments already present in the riverbed, runoff from other sites, upstream sources, and air deposition. • With Ecology's proposed approach, Party X was released from liability for future contamination from sources outside of Party X's control; therefore Ecology cannot force Party X to clean up the sediment cleanup unit again. • Party Y owns most of the river bed and Party Z operates a municipal stormwater system that discharges into the river. They are each, therefore, jointly and severally liable for all contamination in the river. Ecology requires Y and Z to do a second cleanup of the sediment cleanup unit (as well as the rest of the broader, river-wide site); even though the ubiquitous urban contaminants are largely coming from sources that Y and Z do not have the authority to control. Why should the PLPs that have not created the hot spot have to clean up the unit a second time due to recontamination they do not control while the owner or operator has no liability for the recontamination? Further, "recontamination" is poorly defined, and, if interpreted as any concentration above natural background, is to be expected at nearly every site and nearly every cleanup unit. Much of the "recontamination" may be uncontrollable by any party (e.g., sediment redistribution from broad urban areas). Additional "recontamination" increments may be contributed by a variety of parties and pathways but the increments may be difficult to quantify or allocate. It would be difficult for any party to show they do not contribute any increment. For example, any party with any storm drain discharge to a site may contribute some amount of storm drain solids (however small) with contaminant concentrations greater than natural background. We suggest that section -500(4)(b) be revised to indicate that it is the department's expectation that an additional cleanup in the sediment cleanup unit is not expected unless the sources of the recontamination are controllable. Sources that are currently ubiquitous and not controllable may become controllable over time through product bans, advances in treatment technology, and other actions. Exceptions to this expectation would be if Party X was responsible for the recontamination or if another party is shown to be substantially responsible for recontamination that is above some as-of-yet determined threshold for

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		additional action at the sediment cleanup unit. Based on the above, we suggest a proposed revised subsection -500(4)(b): ALTERNATE APPROACH: b) Recontamination. Recontamination of sediment at remediated sites or sediment cleanup units may occur via point and/or non-point sources and numerous pathways including stormwater discharges, atmospheric deposition, and the dispersal of contaminants from other contaminated sediments in the bay or watershed. In many cases, such sources of sediment recontamination are ubiquitous and/or uncontrollable within the current regulatory framework. It is the department's expectation that further cleanup of this recontamination will not be required unless the recontamination leads to sediment contaminant levels above a department-identified threshold indicating unacceptable and controllable recontamination. In situations where this threshold is exceeded, at the department's discretion, additional action may be required. Liability for any such additional cleanup activities required by the department would remain joint and several as described (reference the existing MTCA language on this). We also suggest some expectations or definitions be provided as to what constitutes "recontamination" These expectations would guide development of the language that goes into the document that settles the sediment cleanup unit. Realistically, that settlement document (much like a typical Consent Decree for a whole site) is unlikely to ever give Party X a complete release from future site unit cleanup liability because of new information that could come to light, remedy failure (e.g., a cap doesn't perform as designed), etc. Nevertheless, the proposed revised expectation should provide enough of a basis for Ecology to release Party X with respect to the liability for the contamination that they do cleanup and reasonably constrain their liability for future contamination. In addition, as has been discussed in the advisory committee meetings, identifying a threshold for site cleanup unit recontamination that requires additional action and performing the technical work required to establish that a PLP has controlled their sources (or is still a significant source of recontamination) are complex, time-consuming, and costly. But, assuming such technical work is successful, our suggested revisions to this subsection would provide a liability and decision framework that is more fair, consistent with existing liability principles, and still maintains an incentive for PLPs to move forward on sediment cleanup.
18	69-70	Please see comment below regarding page 61, line 33, regarding restoration time frame.
18	79-84	Compliance monitoring. Regarding the second sentence in this subsection starting with "Monitoring will typically include…" How does Ecology plan to address pore water, surface water, and discharge monitoring within the sediment cleanup program? The proposed framework and definitions relate to bulk sediment concentrations (or related bioassays and fish tissue), which make sense for compliance monitoring. But, how do surface water, porewater, and discharge monitoring come into play? Admittedly, surface water and porewater have come up within the context of the larger cleanup sites in the region, but this subsection states that post-cleanup monitoring will be conducted to verify compliance with approved cleanup standards. As currently structured there will be cleanup standards for sediment but not for surface water, porewater, or discharges. Suggest deleting the second sentence of this subsection.
19	109	Can't natural recovery on a 10-year time frame be used to meet the cleanup standard? Why does this need to be "through active cleanup measures"?
19	115-117	In addition to the active cleanup approaches mentioned, please include *in situ* sediment amendments/treatment (e.g., granulated activated carbon) as an Active Cleanup Action. Such active cleanup is becoming more important in the region.
19	129-130	Based on advisory group meeting discussions, we understand that this part of the rule is supposed to get at the idea of a "grandfather" clause. It is not clear as written. Suggest revising this section to state that

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		sediment sites that are significantly underway will be allowed to continue without having to start again under the specific "new" requirements of the revised rule. What "significantly underway" means probably needs discussion but could mean if RI/FS data field collection and risk evaluations are complete and are approved by the department.
20	16	Does the department plan to pursue the station cluster process based on benthic toxicity alone? Not clear that this will still be relevant with new specificity on bioaccumulation and human health.
21	43-47	This section identifies comparison to the maximum allowable level (MAL) but it is not clear that the MAL (including effects-based, Regional Background, and PQL) will be established at this point in the process so what will be basis of comparison? The MAL is a site-specific criterion that wouldn't be known until much later in the process (right?). What is the expected sequencing of the station cluster process in the context of the department's new site process/paradigm?
23	26-27	Please see comment regarding page 21, lines 43-57 above. For the hazard assessment and site identification process to make use of the maximum allowable level, it seems that Regional Background and risk based concentrations will already have to be established. Is this realistic? In the existing standards, the hazard assessment and site identification could be accomplished based on the promulgated chemical criteria and available sediment quality data. With the new approach, how will this process proceed? This comment generally applies to WAC 173-204-530 in the proposed revised rule.
25	67-72	In existing process, one can readily use the SQS/CSL numeric criteria (or bioassays) to identify a site. With incorporation of the human health and bioaccumulation piece and associated Sediment Cleanup Objective (SCO) and Maximum Allowable Level (MAL) concepts, the site identification process seems different and difficult to do without a substantial amount of work on a particular bay to identify the MAL, which is supported by risk evaluations and Regional Background considerations. It's not clear how site identification works given proposed new paradigm.
30	47-52	Proposed deletion of this section [WAC 173-204-550(3)(d)] points to -500(4)(a)(i) and -200(41). Nevertheless, it still seems necessary to include a sediment unit cleanup as a type of cleanup.
31-35	1-261	Remedial Investigation (RI) and Feasibility Study (FS). How will the RI/FS process for a sediment unit cleanup be implemented? Does an RI/FS for the broader (e.g., bay-wide) site need to be undertaken first before a particular sediment cleanup unit is proposed? Page 36, lines 173-174 suggest that is the case although -560(4) suggests that the type of cleanup action influences RI content. Figure 2 (Sediment Cleanup Unit Decision Process) in the advisory committee advance materials indicates that bay-wide site establishment needs to occur before sediment cleanup units can be considered. But Figure 2 does not mention the RI/FS or state what bay-wide site establishment is. Can the department clarify the genesis of a sediment cleanup unit within the RI/FS context and incorporate that into this section?
40	30-33	Please see earlier comment regarding page 17, line 56-61.
41	55-71	Based on the framework illustrated on Figure 1 (Ecology Cleanup Program Proposal), the department's intent is that the maximum allowable level could be set at Regional Background if the Regional Background concentration is higher than the 10^{-5} risk based concentrations (and other effects-based levels) and the practical quantitation limit. As written, this subsection seems to imply that framework. But, although -570(4)(h) makes clear that you can't go above Regional Background in setting the maximum allowable level it is not stated explicitly that the maximum allowable level could be established as high as the Regional Background in certain cases. It seems worth being very clear here.
41	57-58	Please see comment below regarding page 61, line 33, regarding restoration time frame.
42	19-20	Suggest clarifying that the one-in-one million risk is based on individual carcinogens.
43	41-44	Please see comment related to page 41, lines 55-71 above regarding being explicit that the maximum allowable level could be established as high as the Regional Background in certain cases.
43	48-51	This seems to imply that the only exposure is through fish ingestion. Seems worth mentioning that direct contact scenarios will also need to be considered.
43	52-53	Given the range in consumption rates documented in the *Fish Consumption Rate Technical Support Document* prepared by the department (September 2011, Pub no. 11-09-050), the variation in fish species available at a given site, and other site-specific considerations we suggest that the default fish consumption rate (or range of rates) documented here include a provision for flexibility that would allow the reasonable maximum exposure rate (or fish consumption rate) to be higher or lower than the default rate based on site-specific information and departmental approval.

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45	54-57	In this subsection and the parallel section on freshwater sediment, it seems helpful to insert some flexibility on the detection limit issue so that the department could, based on site-specific conditions, handle non-detects on a case-by-case basis. There are several chemicals that have notoriously been difficult to quantify at a level below the SQS and are on the standard SVOCs analytical scan. The goal of this suggested flexibility is to allow discretion in situations where there is no evidence that a particular chemical is present at a site and standard/approved procedures were followed yet the non-detected level is above the SQS.
46	68-69	Check the TOC normalization calculation. As formulated on line 69, we believe it should be the decimal fraction of organic carbon not the percentage.
47	47	Good idea to put SQS and CSL on same table. Makes it much more user friendly.
52	171-177	Not clear where this issue is addressed?
53	18-20	To be consistent with marine sediment standards, shouldn't this say "Chemical concentrations **at or** below the sediment quality standard…."? (Words in *italics* are suggested edit).
53	9-12	The Chemical Parameters listed in Table VII are not the same as Table IV (Marine Chemical Criteria). Table VII includes, for example, conventionals, butyltins, and TPH. A general statement here of why they are different would be helpful. Also, has the department thought through the potential for having disconnects with different freshwater and marine lists? For example, a site that bridges marine and freshwater or where freshwater sediment could be transported downstream into a marine environment?
53-54	36-71	Some of the methods described in this subsection are different than those identified for the marine criteria. Why is this? It creates the potential for confusion and errors and, if the differences are necessary, it would be helpful to point out that the differences are present. For example, the PAH compounds that make up the total PAH criterion for freshwater sediment are not the same as the LPAH and HPAH compounds in the marine standards. Also, this section calls out the specific Aroclors that go into the total PCBs calculation method. Should this also be called out specifically for the marine criteria?
59	5-7	The phrase "…species that currently utilize, may potentially inhabit, or have historically inhabited cleanup sites." seems very broad. What will be the procedures to establish the species that may potentially inhabit or have historically inhabited cleanup sites?
59	16-29	As drafted, this subsection does not clearly follow the standard terminology for ecological risk evaluation. The conditions to establish whether a chemical is a bioaccumulative contaminant of concern (BCOC) don't clearly follow standard risk assessment methodology. Should it be identified as a constituent of interest (COI) at this point rather than a BCOC? Typically, to be identified as a potential COC, site specific information about concentrations or frequency of detections is part of the evaluation.
60	20-22	It would be helpful to generate a model Cleanup Study outline that shows how a report would be structured to concurrently evaluate the cleanup standard (under -570), the minimum requirements under -580(3); and the selection criteria under -580(4). For example, are a full range of alternatives developed in full detail, then run through all these evaluations? Are screening-level alternatives developed to first define the cleanup standard? How are multiple chemicals evaluated?
61	33	10 years from the "start" of the cleanup action poses several problems: 1 – what if the cleanup action itself takes more than 10 years? 2- What if it is a large site with several cleanup actions over a period greater than 10 years? 3 – If source control is not in place at a portion of the site, does the 10-year requirement create incentive for delay of start of cleanup in portions of the site where source control is in place? 4 - What if some of the cleanup actions are conducted under Federal authority?
61	44	This states that subsection (4) criteria are to be used to evaluate compliance with subsection (3). How they correspond is sometimes unclear. E.g., when cost-effectiveness, source control effectiveness, long-term effectiveness etc are evaluated, which subsection (3) criteria do they correspond to? It would be helpful to generate a model Cleanup Study outline that shows how a report would be structured.
61	51	"restoration of current and potential future uses": 1 – There is a syntax problem since future uses cannot be restored. 2 – These factors are not an "overall protection of human health and the environment" consideration. 3 – Both past and potential future uses can range greatly for a given area. An area may have been a mudflat and then a deepened berth in the past, and similarly could be either in the future. A given alternative could favor one use and hinder another use. Who decides which is "better," and how is this related to overall protection of human health and the environment?
61	56-57	Ecology should consider whether this applies only to treatment technologies, or to all technologies. The

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Review/Comment Form

Reviewer Name:	Pete Rude and David Schuchardt, City of Seattle, Seattle Public Utilities (submitted *via email to* RuleUpdate@ecy.wa.gov January 12, 2012)
Sections of Document Reviewed:	SMS sections 173-204-200 and -500 through -590
Document Version/Date:	November 2011 updated draft including freshwater standards

Page Number	Line Number	Comment
		CERCLA equivalent applies only to treatment. An example lack of clarity: If this applies to dredging, then is dredging considered to increase the toxicity (e.g., through porewater release), increase mobility (e.g., through spreading of residuals)? Does dredging reduce volume, even though the volume is simply relocated? Similar interpretation issues arise with other non-treatment technologies.
62	70	The City agrees that the expected effectiveness of source controls should be considered. Alternatives that would actively remediate areas that would simply recontaminate above the action levels should be ranked lower under several of the cleanup selection criteria.
62	78	Including restoration timeframe here is duplicative of criterion (g).
62	86	Clarify if this means through treatment. Reduction in contaminant mobility should also be a consideration. Amendments with carbon or other sequestering agents (e.g., directly to sediment, to an ENR layer, or to a cap) should allow a cleanup action to be ranked relatively higher for long-term effectiveness.
62	87	Open-water disposal should rank below containment with an engineered cap.
62	88-89	As written this could apply to an upland landfill, or an engineered in-water CAD or nearshore CDF. The relative rankings of these should be clarified.
63	92	Natural recovery (the ongoing processes that are occurring regardless of regulatory activities) should be distinguished from monitored natural recovery (MNR) as a cleanup action. MNR includes monitoring of the processes, specific goals, specific timeframes, and typically includes contingent actions to correct any areas that do not recover. Thus MNR should rank above "natural recovery"
63	100-101	Suggested rewording: "The contribution of natural recovery processes to the cleanup alternative's performance, and the degree to which those processes are expected to reduce concentrations of contaminants." Note that this consideration could apply to an MNR component of a remedy (e.g., meeting the SQS at a certain location at Year 10), as well as to site-wide overall "polishing" (e.g., incremental reductions in site-wide SWAC after active cleanup, to further approach cleanup goals based on background).
64	23-24	What about RCRA or TSCA cleanup authorities?
65	1	General – Sediment recovery zones (SRZ) have rarely (never?) been actually used to date. Does Ecology intend these to be a common tool? The strategy for the role of SRZs is unclear.
65	17	Is this section applicable to "sediment" or "surface sediment?" Depending on definitions "sediment" may imply that a SRZ is needed for a cap or for buried contamination
65	18	If the cleanup objective is natural background for chemicals like PCBs, then vast areas of Puget Sound would be SRZs. Presumably any small site could trigger the need for a very large region to become a SRZ. Who would bear the burden of confirming that all of the requirements of this section have been met for establishing the SRZ? None of these large regions would have an expectation of reaching natural background in 10 years.
65	16	"…where selected actions leave in place…" Does this section apply if the action does not leave contaminated sediment in place, but it subsequently becomes recontaminated above the SQO?
66	31	Unclear what "necessary" refers to.
66	32-34	This statement introduces many concerns and may substantially delay or even preclude cleanups. 1) It is not clear how AKART is defined or will be determined to be met. 2) SRZ's may be very large with many possible owners of many discharges. 3) What if the performing party (or parties) do not control some of the discharges? 4) Satisfying this requirement could take many years and delay cleanups for many years. 5) Since this section applies to cleanup decisions (Page 65, line 15) it appears that Ecology could not even make a cleanup decision until AKART is in place for all discharges.
66	61-62	Cleanup options that require a SRZ with 10-year or less duration may not be practicable. In addition, source control may be a long process that requires SRZ to extend longer than 10 years.
		END OF COMMENTS

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