PORTLAND HARBOR SEDIMENT MANAGEMENT PLAN

APPENDIX K

PUBLIC REVIEW COMMENT RESPONSIVENESS SUMMARY

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Appendix K
Public Review Comment Responsiveness Summary

Comment Number	Commented By	Comment	Response
14-1	Bob Robison	It just doesn't seem to me that $5 million is all that much money for a job as big as cleaning up the toxic muck at the bottom of the Willamette from Swan to Sauvie's Island. Especially when the alternative is the PR embarrassment and legal hassle of being listed as a Superfund Site. Is this really all it will cost? Where will we put the spoils? I would think hauling the yucky muck to Arlington would cost at least $5M.	There are several costs associated with a project of this scope. The estimated cost for implementing what DEQ calls the "Harbor-wide" studies and work that will provide additional information needed to assess the scope of the problem is between $2.2 to 3.8 million for contractor costs only (this would not include DEQ oversight costs. See page 75 of the plan). Site-specific activities, which could include cleanup actions or plans at specific locations in the Harbor, would be funded by responsible parties. If the responsible party is unknown, unwilling or unable to undertake the required actions, DEQ may use funds from their Orphan Site Account. DEQ has the legal authority to recover its costs from recalcitrant parties. Also, where and how sediments are disposed will depend on a variety of factors including: the amount and type of contamination in the sediment, risks posed, biodegradation, requirements under various state and federal laws and regulations, etc.
14-2	Bob Robison	I read portions of DEQ's plan, and it still isn't clear to me if raising this much money is a big or small problem. Can you please tell me—is it going to be difficult to come up with the needed $5M? (I would be happy to send you my lunch money on alternating Tuesday's, if that will help.)	At this point in time, it would be very difficult to assess what the total costs associated with this project might be—it would involve too much speculation. Costs from site to site vary considerably, depending on the amount, type and risks associated with the contamination. The State has spent approximately $7.6 million since the early 90's on the McCormick and Baxter Superfund site. Some of the costs for this cleanup were recovered from the responsible party.
18-1	Chevron	As a participant in the numerous technical—discussions held earlier this year between DEQ, EPA, trustees and other stakeholders, I observed first hand the great interest DEQ staff had in soliciting and listening to feedback and comments from stakeholders during the development of the Portland Harbor Sediment Management Plan (PHSMP). I commend DEQ and its staff for continuing to seek stakeholder input as demonstrated by this opportunity for providing comments on the public review draft of the PHSMP (April 19, 1999).	Comment noted.

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18-10	Chevron	Page 55 - In the 1" paragraph of the 2nd column (line 22), I believe it will read better if the sentence states - "... chemicals to verify whether they are sources of harbor-wide contamination.	Comment incorporated.
18-11	Chevron	Page 61 - The last sentence of the 2nd paragraph in the 2nd column is only true (sources of sedimentation are needed for natural recovery) for chemicals that will not biodegrade. Biodegradable chemicals will natural recovery in sediments even in the absence of significant sources of sedimentation. The qualifier—"for non-biodegradable chemicals" should be added to the end of the sentence. I hope that DEQ finds these comments useful and am looking forward to the publication of the final PHSMP. Please feel free to contact me if you have any questions related to my comments.	This assumes that the biodegradation process always occurs and to completion. Unfortunately, biodegradable contaminants are not necessarily fully biodegradable in sediment, due to weathering processes, lack of oxygen, disturbance, and sunlight. In addition, many of the most common sediment contaminants biodegrade very slowly or not at all, including metals and highly chlorinated compounds. The text has been modified to clarify this issue.
18-2	Chevron	Chevron continues to support DEQ's development of the PHSMP and commends DEQ for the significant effort the PHSMP represents. Overall, we found the draft PHSMP to be a cogent, comprehensive plan to address the complex issues surrounding management of potentially contaminated sediments in Portland Harbor. We believe the draft PHSMP demonstrates the State of Oregon's commitment to ensure that sediment contamination in Portland Harbor is managed in the most efficient and cost effective manner possible. We are supportive of DEQ's effort to maintain a lead role for remedial investigations and decisions needed to manage contaminated sediments in the Harbor. In the comments that follow, we have highlighted issues where we support the approach proposed by DEQ, as well as issues where modifications and/or improvement are warranted.	Comment noted.
18-3	Chevron	Chevron supports a state-led effort (i.e., PHSMP) for manning contaminated sediments in Portland Harbor, the draft PHSMP provides strong support for the continuation of DEQ's lead role in managing contaminated sediments in the Harbor. DEQ has demonstrated both the capacity and expertise necessary to successfully manage this large effort. A DEQ-led effort will continue the strong cooperation and collaboration evident during the development of the PHSMP. Also, a state-led effort will ensure the integration with other state watershed-based initiatives currently ongoing in the Willamette Basin.	Comment will be considered during implementation of the Portland Harbor Sediment Management Plan.
18-4	Chevron	DEQ should consider development of interim (i.e., near-term) management goals and objectives. Chevron commends DEQ for explicitly stating in clear language the environmental management goals for Portland Harbor. While supportive of the goals and objectives described in Section 7.1 (and Appendix G), we are	Comment will be considered during implementation of the Portland Harbor Sediment Management Plan.

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		concerned that they may raise unrealistic expectations for some stakeholders (i.e., they may not be met in a timeframe that some stakeholders would find acceptable). Following completion of the harbor-wide RI, DEQ should be in a better position to identify possible interim management goals that would be reasonably expected to be attained in the near-term (5-7 years). No one will benefit if the PHSMP is perceived not to be working due to unrealistic expectations by the public or other stakeholders.	
18-5	Chevron	DEQ should continue the use of the Internet (i.e., Portland Harbor web site) and other standard means to communicate and receive feedback from stakeholders on the PHSMP progress. Chevron is supportive of DEQ's attempts to include input from the local community in the development and progress of the PHSMP. DEQ should continue their use of the Internet as an effective means to communicate with the public and other stakeholders. A more standard approach that may be effective for communicating progress to the public is the use of biweekly notices in a local newspaper. For example, a 1/8-1/4 page notice could be placed in the local newspaper every two weeks to report on activities completed, upcoming activities, and the results of any chemical and risk analyses. The bottom of the notice could provide a contact for questions, comments and concerns. This may be an effective means to communicate to stakeholders that do not have ready access to the Internet.	DEQ will continue to use the Internet as a means of providing information to the public about Portland Harbor. It will be updated on a regular basis and new documents will be added as appropriate. DEQ will also continue to use the local newspapers to notify people about meetings, upcoming activities, activities completed and the results of any studies with a contact for questions. The frequency of these newspaper notices will depend on their effectiveness in reaching the public and the timing of key events.
18-6	Chevron	The following specific comments are mostly editorial in nature. Please consider them as suggestions for improving the PHSMP text. Pages 25 & 28--The maps (Figures 4-1 & 4-2) are extremely hard to read because I believe they were meant to be in color. You might want to consider re-formatting them as black & white maps. Page 27 - In the 2nd and last paragraph, placeholders for the number of stations ("XX stations") were left in the text. You need to substitute the "XX" with an estimate or the actual number of stations for which sediment chemistry and toxicity results are available for. Page 44 - I believe you meant to say "water-dependent wildlife populations" in management goal #6 (top of second column).	The figures have been revised to be more readable. The text (XXs) has been updated. The management goal has been corrected.
18-7	Chevron	Page 44 - In the third bullet in the list at the bottom of the second column, "subsistence" fishing is left out of the list of human uses of the Harbor. Is this omission deliberate?	Subsistence fishing added as indicated.
18-8	Chevron	Page 51 - In the 1st paragraph of section 7.2.1.2 (line 16), the parenthesis should read "i.e., tissue guidelines also exceeded at reference areas".	Comment incorporated.
18-9	Chevron	Page 53 - The definition of "ambient levels" in the 2nd criteria of a	Ambient levels have been defined and the use of this

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		reference area is odd. Generally, ambient refers to local background concentrations of chemicals independent of any levels of concern. What would one use to evaluate whether chemical concentrations in possible reference areas are at or below ambient levels? Can criteria #2 be evaluated? Note: Criteria 1, 3 & 4 should ensure that chemical concentrations of chemicals in the selected reference areas are below levels of concern.	term de-emphasized in the text. As noted, whether these levels constitute a concern needs to be determined a postori by the risk assessment. Criteria 1, 3 & 4 only address benthic toxicity, yet bioaccumulative impacts may also be relevant. Therefore Criterion 2 has been retained with "ambient concentrations" replaced by "levels of concern".
32-1	Columbia River Inter-Tribal Fish Commission	In coordination with the tribes, CRITFC provides these recommendations to protect the tribes' human health and natural resource interests, to assure that federal trust obligations to tribes are met and to preserve the tribes' rights as Natural Resource Trustees. CRITFC strongly recommends the following regarding cleanup of the Portland Harbor: 1) The U.S. Environmental Protection Agency list the Portland Harbor on the National Priorities List in accordance with the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).	DEQ is confident that tribal human health and natural resource interests will be met through a state-led, CERCLA-equivalent investigation and cleanup of Portland Harbor, without a NPL listing by EPA.
32-10	Columbia River Inter-Tribal Fish Commission	DEQ defines "site" as a current or future cleanup site that may extend to any other portion of the river where contaminants released from the site could come to be located. Despite this and EPA's requirement, DEQ is focusing the PHSMP on only the 6 mile stretch of the Portland Harbor as the "Harbor area" or "site." "Reference areas" will include locations within the lower Willamette River from Willamette Falls (RM 26.6) to the Columbia River confluence at RM 0, excluding the Harbor area or the Columbia River itself, that are presumably unaffected by site-related contaminants. DEQ cannot presume that downstream areas are unaffected by Harbor sediments. Harbor sediments move downstream to the mainstem Columbia River, the lower estuary and the Pacific Ocean.	DEQ does not presume that sediments downstream of Portland Harbor are all unaffected (or affected) by contaminants emanating from the Harbor. DEQ will look for downstream sediments that meet the criteria established for reference sediments. If these can be found, they will be used as reference. If no downstream sediments can be found that meet the reference area criteria, then there will be no downstream reference areas and more will be known about downstream movement (and sources) of contamination.
32-11	Columbia River Inter-Tribal Fish Commission	In violation of the federal Clean Water Act and CERCLA, EPA and DEQ have allowed levels of toxic pollutants in toxic amounts into the Willamette and Columbia Rivers. The Great Lakes was an important lesson and the tribes do not want the Columbia River to be next. Portland Harbor contaminants are not stationary, nor are the migratory fish species that use the Harbor. In fact, numerous state and federal studies have consistently documented unacceptably high level of dioxins, furans, heavy metals, organochlorine pesticides, PCBs, DDT and radionuclides throughout the Columbia River Basin. Clearly, federal and state permitted pollution by industrial sources and land use practices continue to pollute the Columbia River Basin environment in	The purpose of the Portland Harbor Sediment Management Plan is to assess the levels of contaminants in Portland Harbor sediments, evaluate risk to humans and the environment, and take necessary remedial actions. Clean Water Act compliance is addressed through an EPA-delegated program within DEQ, and is also pursuing reduction of pollutants to the River. Within the PHSMP, CWA beneficial uses and criteria are employed as part of the regulatory structure for the RI/FS. In addition, control of ongoing and new sources of pollutants to the River

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		violation of the Clean Water Act. In addition to the Harbor industries, other sources include stormwater and combined sewer overflow outfalls, pulp and paper mills, aluminum plants, land use practices, especially pesticide and herbicide applications and nuclear wastes.	is a key element in site-specific investigations and cleanup, with long-term monitoring, as well as efforts to control source of pollutants from outfalls, drainages, and nonpoint sources. DEQ acknowledges the importance of controlling pollutant inputs to both the Willamette and Columbia Rivers, and has formulated an aggressive program to eliminate those sources.
32-12	Columbia River Inter-Tribal Fish Commission	CRITFC requests DEQ to expand the geographic scope of the site assessment and potential cleanup to include upstream areas, including at least Willamette Falls and areas downstream of Harbor facilities, including the lower portions of the Willamette River, and the Columbia River. Additional sediment analysis should be obtained from the Columbia River at areas upstream of the confluence and downstream to the estuary and immediate portions of the Pacific Ocean. Contaminant problems in the Columbia River from Harbor pollutants would require a bi-state effort with Washington. A bi-state effort may create a less centralized more bureaucratic cleanup effort than would be experienced under EPA's centralized lead. Addressing upstream areas will assist in source identification and provide information on contaminant fate and transport.	As permitted by state law, the geographic scope of the assessment will extend to the "locality of the facility" (the point where DEQ can no longer find/detect harbor-related contaminants), regardless of how far down (or up) stream that requires assessment to go. However, going downstream to the Columbia estuary is unlikely, given technical limitations on the ability to detect or differentiate sources of contaminants that far downstream. Since source control is an important part of any sediment management program, we propose to work outward from known or suspected sources, rather than working upstream toward hard-to-differentiate sources.
32-13	Columbia River Inter-Tribal Fish Commission	Regarding tribal fish consumption, DEQ states that a tribal subsistence scenario is not proposed for the Portland Harbor because: "there are no known tribal fisheries within the Harbor area. However, should such a scenario be deemed appropriate, tribal consumption rates for the region should be estimated from a study of consumption rates among Columbia River tribes (CRITFC, 1994; Harris and Harper, 1997), although it is likely that these studies would greatly overestimate tribal fishing within the relatively industrialized Portland Harbor area. However, tribal consumption rates in the Pacific Northwest (CRITFC, 1994; Toy et al., 1996) are similar to those of other shoreside anglers included in consumption surveys (e.g., Landolt et al., 1987). Therefore, tribal fishermen would likely be protected by the subsistence exposure scenario described above." CRITFC requests that the CRITFC fish consumption survey and the Harris and Harper tribal fish consumption studies be used to adequately develop a tribal consumption scenario for the purpose of	The PHSMP has been revised to include a tribal fishing consumption scenario.

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		developing target fish tissue levels intended to be protective of the health of tribal members. CRITFC and the tribes should be requested to provide additional information on how best to utilize these studies to further determine the geographic scope of the cleanup site and contaminants of concern.	
32-14	Columbia River Inter-Tribal Fish Commission	Furthermore, CRITFC requests that determinations made regarding tribal fish consumption be wholly consistent with federal trust obligations and federal and state environmental justice policies.	DEQ will consult with the tribes regarding tribal fish consumption assumption used in the RI/FS, to provide for consistency with federal trust obligations and environmental justice policies.
32-15	Columbia River Inter-Tribal Fish Commission	The United States government has appropriately recognized widespread violations of Title VI of the Civil Rights Act of 1964 in the development and implementation of environmental programs. Title VI states that: > No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. Title VI applies to state programs supported by federal funding, such as state administration of the Clean Water Act and development of sediment criteria. Title VI directly prohibits intentional discrimination but also protects against discriminatory effects from seemingly neutral regulations and policies. In his 1994 Executive Order entitled, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," President Clinton highlighted the United State's commitment to upholding Title VI specifically for Federally-funded programs that affect human health or the environment. Under section 4-4 of this Executive Order, President Clinton specifically identifies the need to evaluate human health risks from subsistence consumption of contaminated fish and wildlife. Clearly, the United States has recognized EPA's obligation under Title VI and President Clinton's Executive Order to prevent discriminatory effects to subsistence fish and wildlife consumers. For the Columbia River tribes who are subsistence fishers, and who consume significantly more fish than the general population, from waters known to be overly contaminated with highly toxic pollutants, EPA has a duty	DEQ will undertake a duty equivalent to that requested of EPA; to give full consideration to tribal fish consumption data and to consult with the tribe on a government-to-government basis before making risk management decisions for Portland Harbor.

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		under principles of tribal sovereignty, treaty rights, federal trust responsibility and the EPA's own policies to give full consideration to tribal consumption data and to consult with the tribe on a government-to-government basis before making risk management decisions under CERCLA.	
32-16	Columbia River Inter-Tribal Fish Commission	Emerging evidence on the uptake of chemicals by juvenile salmon and egg fry as well as adverse impacts to returning adults dictates continued examination of impacts to salmon from toxic substances. CRITFC greatly supports further examination of impacts to juvenile salmonids from exposure to toxic contaminants and requests that DEQ keep CRITFC informed regarding the development of a technical work group to examine these type of impacts.	Agree. DEQ would welcome CRITFC participation in the work groups that will be formed to address fish issues.
32-17	Columbia River Inter-Tribal Fish Commission	DEQ does not adequately address how endangered and threatened species will be protected by the state's proposed cleanup plan. Under section 7 of the Endangered Species Act, EPA would have to consult with the National Marine Fisheries Service (NMFS) on the impact the cleanup would have on endangered and threatened species.	DEQ recognizes the responsibility under the Endangered Species Act for consultation with NMFS on impact to endangered and threatened species. The Department of Interior, NOAA, and NMFS have been involved in the development of the PHSMP, and continue their collaborative and consultative role in its implementation. Full consideration of ESA consultation and compliance requirements will be part of PHSMP implementation.
32-18	Columbia River Inter-Tribal Fish Commission	CRITFC requests that a comprehensive analysis been done to assure that endangered and threatened species are not adversely impacted. CRITFC also proposes that an EPA decision to defer cleanup to the state is a major federal action as defined under the National Environmental Policy Act (NEPA) and would require an Environmental Impact Statement.	Implementation of the PHSMP will include a comprehensive analysis of impacts to endangered and threatened species. DEQ does not understand that EPA deferral of cleanup responsibilities to state governments qualifies as a major federal action under NEPA.
32-19	Columbia River Inter-Tribal Fish Commission	Regarding DEQ's authority and resources to implement a CERCLA level investigation and cleanup and the inclusion of adequate enforcement strategies, DEQ will be guided by Oregon's 1987 Environmental Cleanup Law. As a general consideration, the current condition of the Portland Harbor is evidence that DEQ has not adequately implemented and enforced existing environmental and cleanup laws. The historical loading of pollutants has not been adequately addressed by DEQ. Although many sites are no longer in operation, DEQ has not pursued an aggressive clean up strategy, and in some cases, on-site stockpiles of contaminants remain. DEQ relies too heavily on its consent and voluntary cleanup programs. As an example of DEQ regulatory complacency against Harbor facilities, CRITFC points to the fact that Rhone Poulenc, a pesticide manufacturer from 1943-1990, entered into a consent order with DEQ	DEQ is committed to pursuing Portland Harbor investigation and cleanup aggressively, using the full powers of its Environmental Cleanup Law. A large number of cleanups have taken place under the State's Voluntary Cleanup Program. DEQ recognizes, however, that there are situations in which a swift regulatory response is needed to compel compliance. The PHSMP outlines a regulatory strategy that allows for enforcement against sites that do not make satisfactory, timely progress under the voluntary or consent agreements.

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		in 1989. After eight years, Rhone Poulenc accomplished nothing as agreed. DEQ finally terminated the consent order in 1998 after eight years of regulatory complacency against a known violator.	
32-2	Columbia River Inter-Tribal Fish Commission	2) The U.S. Environmental Protection Agency be the lead Agency responsible for overseeing and enforcing site cleanup in accordance with CERCLA.	DEQ is committed to performing a CERCLA-equivalent investigation and cleanup of Portland Harbor, and doing so in a timely and coordinated way. EPA listing is not necessary to ensure environmental protection in Portland Harbor.
32-20	Columbia River Inter-Tribal Fish Commission	Cleanup under both CERCLA and the state's Environmental Cleanup Law are risk-based. Under CERCLA, selection of cleanup remedies is based on the National Contingency Plan (NCP). CRITFC is favorable to the federal process under the NCP, which requires that remedies meet two criteria: 1) overall protection of human health and the environment, and 2) compliance with applicable or relevant and appropriate requirements (ARARs) such as the Safe Drinking Water Act and the Clean Water Act. CRITFC recommends EPA and DEQ coordinate to assure that the risk-based standards used in the cleanup are the most protective of human health and the environment, be it a state or a federal standard or criteria.	Agree. DEQ proposes to use "target tissue levels" to protect human and wildlife receptors from harm due to consumption of fish and shellfish.
32-21	Columbia River Inter-Tribal Fish Commission	Regarding coverage of petroleum and oil, which is a prevalent contaminant in the Harbor, DEQ's stated advantage is misleading. The Oil Pollution Act of 1990, which allows for remediation, compensation and liability for oil and petroleum substances, applies regardless of CERCLA's exclusion.	Agree. State law requires DEQ to consider the additive effects of multiple contaminants, as well as take into consideration issues involving unique and sensitive human subpopulations.
32-22	Columbia River Inter-Tribal Fish Commission	The State of Oregon has a great economic interest in and bias toward dredging. This is evident in their description of objectives for protecting the benthic community and supporting commercial activity in the Harbor: A healthy benthic community is a protected beneficial use. Clean sediment (i.e., those that do not restrict dredging or other commercial activities) can be identified by a lack of response in the benthic invertebrate community to contaminants in sediment. Dredging is a necessity to maintain the commercial viability of Portland Harbor. However, the presence of contaminated sediments in a working, urban harbor can greatly increase the complexity and cost of routine maintenance dredging, and may, in extreme cases, prevent dredging all together. Contaminated sediments may also adversely affect dredging for new construction or other capital improvement projects. Contaminated sediment impairs beneficial uses in the Harbor by directly impacting the benthos and by potentially placing restrictions	The PHSMP objectives have been revised in the final PHSMP to clarify the primary responsibility to protect human health and the environment, rather than support for commercial activity. The PHSMP recognizes the importance of a healthy benthic community as a protected beneficial use, and outlines specific tools and assessment plans to evaluate benthic impacts. The stated linkages between maintenance and navigation dredging and contaminated sediments in the Harbor are recognized; coordination of investigation and cleanup of contaminated sediments with all planned dredging is a key element of the PHSMP, as described in Section 13.

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		on dredging activities, as well as adding costs to agriculture (e.g., through increased shipping charges for bulk commodities) and industry. DEQ further states that dredging in the lower Willamette River has been a commonplace historical activity and "will be an ongoing necessity for the foreseeable future." Statements such as these do not allow for much consideration of non-dredge options. Furthermore, DEQ identifies three activities that will result in increased resuspension of contaminated sediments: 1) high flows 6 months of the year (Nov.- April); 2) ship and vessel traffic; and 3) dredging. Ship and vessel traffic and dredging are commonplace occurrences in the Lower Willamette and Columbia Rivers and therefore, resuspension of contaminated sediments will likely occur on a regular basis, making those contaminants bioavailable to the aquatic environment.	
32-23	Columbia River Inter-Tribal Fish Commission	It appears that DEQ is not adequately coordinating with proposed Corps dredging activities other than to assure that Corps activities are not impeded. All issues related to cleaning up the Portland Harbor must be fully addressed before any future Corps dredging activities are approved in the Harbor or in upstream/downstream areas, including the Columbia River.	The Corps of Engineers has participated in developing the PHSMP, and will continue a close coordination role. Timing of dredging activities in relation to investigation and cleanup in Portland Harbor will continue to be addressed.
32-24	Columbia River Inter-Tribal Fish Commission	CRITFC recognizes the importance of coordinating the PHSMP with the Corps of Engineers' proposed dredging activities for the lower Willamette and Columbia Rivers and incorporates by reference, CRITFC's comments on the draft EIS for that dredging project (Attachment A) and the U.S. Fish and Wildlife Service's (USFWS) draft Coordination Act Report (Attachment B). In particular, the Corps' EIS and the USFWS' draft Coordination Report do not address the environmental impacts from dredging sediments contaminated with toxics.	Thank you for providing CRITFC's comments on the channel deepening project. As noted, DEQ will coordinate closely with the Corps and USFWS to integrate schedules and activities that relate to potential dredging within contaminated areas of the Harbor.
32-25	Columbia River Inter-Tribal Fish Commission	CRITFC supports remedial options that will result in long-term remediation and clean up of a site. Sediments containing hazardous substances should be properly disposed of in a permitted hazardous waste landfill. No remediated sediment should be disposed of in such a way that those sediments will re-enter the aquatic environment nor should they be "re-cycled" into other land or industrial uses. CRITFC does not support short-term options such as "capping" contaminated sediments with clean sediments. CRITFC does not support natural recovery or biodegradation options for sediments contaminated with persistent, bioaccumulative toxics or those toxics that breakdown into more persistent, bioaccumulative toxics.	Selection of a remedy for contaminated sediments is based on a feasibility study. Depending on the concentration and extent of contamination, removal of limited amounts of sediment to landfills (upland sites) may be feasible. Generally, however, cost and technical considerations greatly limit what is feasible with sediments. In most cases, some degree of compromise is required if any remedy is to be achieved.

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32-26	Columbia River Inter-Tribal Fish Commission	To the CRITFC tribes, the state of the Willamette and Columbia Rivers is symptomatic of inadequate implementation of good environmental laws that have existed for decades, but have been hindered by economic interests and endless scientific debate. The continued emissions of persistent, bioaccumlative toxics must end and contaminated areas must be cleaned up with long-lasting solutions, not short term and "cost-effective" ones. EPA has adequate scientific evidence and authority to support these regulatory cleanup actions.	DEQ shares the tribal concern about effecting long-lasting solutions for contamination issues in the Willamette River. The planned investigation targets known data gaps and develops assessment tools to ensure harbor-wide consistency and knowledge; DEQ will use its regulatory authority and resources to move quickly toward required cleanup.
32-27	Columbia River Inter-Tribal Fish Commission	CRITFC supports a "no acceptable risk" and "zero emission" policy on bioaccumulative, persistent toxic substances, especially into fish bearing waters. Consequently, CRITFC calls upon the DEQ and EPA to implement direct regulatory action that eliminates further discharges of these substances into the Willamette and Columbia River systems. Because a CERCLA level problem exists in the Harbor, EPA and DEQ should place an immediate emission moratorium on those Harbor industries that continue to emit toxic substances into the Harbor. EPA and DEQ need to implement pollution prevention policies and technologies that will prevent the release of persistent, bioaccumulative toxics.	DEQ's cleanup program includes the investigation and risk assessment for persistent, bioaccumulative toxics. The cleanup program, in its source control efforts, will cross-program coordinate with water quality program efforts to limit the release of all toxics to the River. Pollution prevention policies and best management practices are part of DEQ's source control requirements, and have begun an effective role in reducing releases into Portland Harbor.
32-28	Columbia River Inter-Tribal Fish Commission	CRITFC maintains that risk assessments have no useful purpose for making regulatory decisions for persistent, bioaccumlative toxics, known carcinogens, "probable human carcinogens," and substances known to cause reproductive, developmental or neurological effects. The science is always debatable and risk assessment involves inherent uncertainties. CRITFC recognizes that for those substances that do not meet any of these effects criteria, risk assessment methodologies should be conservative and as protective of human health as possible. Thus CRITFC's comments related to risk assessment are made in context of this position. Furthernore, CRITFC disagrees with DEQ's interpretation of chemistry and bioassay results such that no further assessment will be done on those contaminants in sediment that are not bioaccumulative. Impacts to the benthic community should be assessed in relation to the level of contamination. Non-bioaccumulative contaminants may have adverse effects in high concentrations.	DEQ recognizes, and to some extent shares, CRITFC's concerns regarding risk assessment. Nonetheless, risk assessment is the legally mandated method for making decisions in the case of cleanup sites. DEQ's goal is to make environmental management decisions on the basis of the most scientifically credible risk assessments possible. DEQ is committed to having stakeholders as key participants in all environmental management decisions involving risk assessment (as well as involved in the performance of the risk assessments themselves).
32-29	Columbia River Inter-Tribal Fish Commission	In 1990, the Yakama Indian Nation passed a resolution calling for the elimination of organochlorine pollution by the pulp and paper industry. Because tribal members are and will be one of the ultimate receivers of the environmental and biological fate and transport of persistent, bioaccumulative toxics, CRITFC urges EPA and DEQ to stop balancing human health and the environment with risk management	DEQ will make decisions about cleanup of Portland Harbor in full consideration of environmental and biological factors of all contaminants of concern.

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		and cleanup decisions tainted by economics and politics.	
32-3	Columbia River Inter-Tribal Fish Commission	3) The Oregon Department of Environmental Quality and the U.S. Environmental Protection Agency continue to coordinate efforts to expedite cleanup of contaminated Harbor sediments and sites in accordance with CERCLA.	DEQ and EPA have collaborated on investigations to date in Portland Harbor, and on preparation of the PHSMP approach to completing Portland Harbor investigation and cleanup. That close coordination and collaboration will continue through detailed work plan development and implementation, and will be formalized in an agreement between the two agencies that is under development.
32-30	Columbia River Inter-Tribal Fish Commission	Many highly toxic chemicals, especially organochlorines, do not remain in the water column but "separate" into the sediment and bind to organic matter in the aquatic environment and are subsequently uptaken through the food chain. Therefore, EPA and DEQ must develop sediment quality guidelines and these must be protective of tribal and other sensitive populations that are exposed to those sediments in ways the general population may not be.	Sediment Quality Guidelines (SQGs), as they are defined in this plan, only address the issue of sediment toxicity to benthic invertebrates. However, the plan does call for the development of Target Tissue Levels (TTLs) - levels of contamination in fish tissue at or below which we would expect only acceptable levels of risk to humans.
32-31	Columbia River Inter-Tribal Fish Commission	Multiple exposures to multiple chemicals must, at a minimum, be considered additive, and the presence of persistent bioaccumlative toxics needs to be factored in when assessing multiple chemical exposures from different or same sources. EPA should use the best science on synergistic impacts from exposure to a combination of chemicals. Sensitive sub-populations, such as the Columbia River tribes, may have significant confounding, underlying health problems that must be recognized with any synergistic assessment.	As DEQ works with EPA, the tribes, the natural resource trustees, industry, and other interest groups to develop a detailed work plan for the RI/FS, both multiple-chemical exposures and factors related to persistent bioaccumulative toxics will be addressed.
32-32	Columbia River Inter-Tribal Fish Commission	In sum, EPA must maintain government-to-government relations with Indian tribes when implementing federal environmental laws and environmental management programs, including CERCLA. CRITFC urges the EPA to adhere to principles of treaty rights and honor its federal trust responsibility to the tribes in considering its decision to defer cleanup of the Portland Harbor to the State of Oregon.	DEQ intends to maintain an equivalent government-to-government relationship with Indian tribes as it implements the investigation and cleanup of Portland Harbor. Tribal involvement and participation in work plan development, implementation activities, review of results, and decision making on needed remedial actions, is welcomed and encouraged. Further discussions will focus on the potential for formalizing those commitments.
32-33	Columbia River Inter-Tribal Fish Commission	CRITFC believes that the state's PHSMP does not adequately address the following criteria as required by EPA: • Preservation of the tribes' treaty rights and federal trust obligations. • Preservation of Federal Natural Resource Trustees. • Protection of endangered and threatened species • Adequate expansion of the site area beyond, upstream and down	DEQ has prepared the PHSMP to address those criteria defined by EPA for consideration in deferring the Portland Harbor cleanup to a State of Oregon lead. DEQ appreciates the CRITFC comments on how the cleanup should be carried out, and commits to a CERCLA-equivalent process and results.

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		stream of the immediate 6 miles of the Harbor currently under site assessment. • An enforcement strategy against responsible parties to implement clean up. • Financial support for community and tribal involvement. • Resources to conduct a CERCLA level-of-protection investigation and clean up of the Harbor. • Coordination with Corps of Engineers dredge projects. • Management options that do not include dredging. For these reasons, CRITFC urges the U.S. EPA to list the Portland Harbor as a Superfund Site under CERCLA and that the U.S. EPA maintain lead jurisdiction over the cleanup, with continued coordination with DEQ. CRITFC supports a federal cleanup under federal law and intends for EPA to adopt these comments in its coordination with the state to develop a cleanup strategy that is consistent with federal trust obligations, protective of tribal health and treaty protected resources and will overall, be the most protective of human health and the environment.	
32-4	Columbia River Inter-Tribal Fish Commission	The following discussion supports CRITFC's recommendations. These three recommendations will not change even if the PHSMP were to meet all of EPA's requirements. CRITFC supports a federal cleanup under federal law. Furthermore, since CRITFC recommends that DEQ and EPA work cooperatively to address local and regional issues, CRITFC's specific comments on issues raised in the PHSMP are intended to apply equally to a federal cleanup process and should not be construed as CRITFC's recommendations for meeting state deferral requirements. CRITFC intends for EPA to adopt these comments in its coordination with the state to develop a cleanup strategy that is consistent with federal trust obligations, protective of tribal health and treaty protected resources and will overall, be the most protective of human health and the environment.	DEQ recognizes CRITFC's preference for a federal cleanup under federal law. Nevertheless, the aspects of a cooperative state/federal cleanup strategy that is consistent with federal trust obligations, protective of tribal health and treaty-protected resources, and protective of human health and the environment, are built into the PHSMP.
32-5	Columbia River Inter-Tribal Fish Commission	To justify an EPA decision to grant the state a deferral in the cleanup process, DEQ's PHSMP must address several deferral criteria as identified by EPA: 1) the site area must be greater than the immediate 6 miles of the Harbor currently under site assessment; 2) the state must have the authority and resources to conduct a CERCLA level-of-protection investigation and clean up of the Harbor; 3) an enforcement strategy against responsible parties to implement clean up; 4) financial support for community involvement and; 5) preservation of the rights of Federal Natural Resource Trustees.	DEQ's PHSMP addresses how it meets these deferral criteria.

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32-6	Columbia River Inter-Tribal Fish Commission	In situations such as the development of sediment quality criteria for water bodies that are off tribal reservations and are part of the tribes' treaty guaranteed fishery, the court in Northern Cheyenne Tribe v. Hodel accurately described the federal duty by stating that, "a federal agency's trust obligation to a tribe extends to actions it takes off a reservation that uniquely impact tribal members or property on a reservation." In Northern Cheyenne, the Secretary of Interior attempted to prevent its coal leasing Environmental Impact Statement from being invalidated by alleging that the Secretary did not have to consider the impacts such coal leasing would have on the tribe and that the decision to lease the coal was in the "national interest" and "vital to the nation's energy future." The court further stated: > The Secretary's conflicting responsibilities and federal actions taken in the "national interest," however, do not relieve him of his trust obligations. To the contrary, identifying and fulfilling the trust responsibility is even more important in situations such as the present case where an agency's conflicting goals and responsibilities combined with political pressure asserted by non-Indians can lead federal agencies to compromise or ignore Indian rights. Accordingly, in developing cleanup standards, especially risk-based standards, and oversight leadership for remediation of contaminated sites in the Portland Harbor, the U.S. EPA must uphold this standard and give full consideration to Indian treaty rights and resources. For the Columbia River tribes, this equates to giving full consideration to and accounting of the tribes' treaty right to take fish and to take fish that are safe to eat. Indian tribes with treaty protected resources should be afforded the greatest protection under federal agency policies.	DEQ recognizes the trust obligations to tribes in off-reservation situations, and the concerns expressed about ensuring that the approach to investigating and cleaning up Portland Harbor sediments adequately consider Indian treaty rights and resources. DEQ will undertake a CERCLA-equivalent investigation and cleanup for Portland Harbor, and provide CERCLA-equivalent participation, consideration of rights, and protection of resources.
32-7	Columbia River Inter-Tribal Fish Commission	EPA cannot defer these trust obligations to any state. A state deferral for cleaning up the Portland Harbor will place treaty guaranteed rights and federal trust obligations at Oregon's discretionary authority. Indeed, the protection of tribal interests and treaty resources should be implemented beyond a state's general and discretionary policies regarding Indian tribes and treaty resources. The state's discretion is exemplified in the fact that the state's PHSMP does not address how	Discussions are ongoing with tribal governments to better understand their treaty rights and tribal interests. DEQ is fully committed to involving tribal representatives in all aspects of the Portland Harbor investigation and cleanup, working with them substantively and with a meaningful role in development of detailed work plans and their

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		tribal governments will be involved or coordinated with.	implementation.
32-8	Columbia River Inter-Tribal Fish Commission	EPA has an obligation to maintain government-to-government relations with Indian tribes when implementing federal environmental laws and environmental management programs, including cleanup efforts and deferral decisions under CERCLA. In addition to federal and Constitutional law, EPA's 1984 policy states that: In keeping with the principle of Indian self-government, the Agency will view Tribal Governments as the appropriate non-federal parties for making decisions and carrying out program responsibilities affecting Indian reservations, their environments, and the health and welfare of the reservation populace. The CRITFC tribes are ceremonial, subsistence and commercial fishers who consume significantly more fish than the average individual. Exposure to toxic chemicals from consuming contaminated fish is of specific concern to the Columbia River tribes, their environments and the health and welfare of tribal members. The development of cleanup standards requires the EPA to consult with the tribes on a government-to-government basis and to adhere to principles of treaty rights and honor its federal trust responsibility to the tribes.	DEQ will undertake a duty equivalent to that requested of EPA; to give full consideration to tribal fish consumption data and to consult with the tribe on a government-to-government basis before making risk management decisions for Portland Harbor.
32-9	Columbia River Inter-Tribal Fish Commission	Responsible parties are liable to tribes for destruction of natural resources. With a state deferred cleanup, the rights of Federal Natural Resource Trustees, such as tribes, becomes questionable and uncertain. Whereas Federal law requires EPA to coordinate with Trustees and tribes on coordinating assessments, investigations and planning of site cleanup, the state deferral would ideally require State-trustee/tribal MOUs to assure Trustee/tribal rights are preserved. Although such MOUs with tribes should preserve tribal rights by describing the tribe's government-to-government relationship in all aspects of the site assessment and cleanup as well as assure tribal participation by providing necessary funding DEQ is not obligated to assure this. Indeed, DEQ recognizes the need for funding to support tribal participation, but is non-committal in assuring funds are available. An MOU arrangement with the state will not hold the force and effect of direct federal responsibilities to tribes.	DEQ is in the process of negotiating an agreement with other natural resource trustee agencies to ensure their participation, with needed resources, in the implementation of the PHSMP. DEQ seeks to involve the tribes in that agreement as well, formalizing its stated commitment to both participation and provision of resources. Such a formal agreement will parallel the force and effect of direct federal responsibilities to the tribes.
4-1	Connie Earshau	I believe that federal assistance and oversight is necessary to face and deal with the pollution of the Willamette. I urge you and other DEQ officials to accept the resources and authority of the EPA in this clean-up endeavor, and to cooperated with the federal agency.	The Portland Harbor Sediment Management Plan fully explains the State's resources and authority which will be used to ensure that any necessary cleanup occurs in Portland Harbor. The plan lays out a sound technical

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			approach for investigating the nature and extent of contamination and assessing risk to human health and the environment from contaminated sediments in Portland Harbor. It also outlines the enforcement mechanisms that will be used to ensure necessary cleanup is accomplished; and describes essential programmatic activities such as funding and community involvement.
2-1	Dan Pence, SCOW	SCOW, Skippers for Clean Oregon Waters, thank you for allowing us to comment and add our own expertise to the job of cleaning up our river. The information provided at the DEQ website was easily accessed and complete. We've made a thorough review of the PHSMP and found a pollution source the plan fails to consider; the accumulated effects of decades of recreational boat emissions.	Comment noted.
2-2	Dan Pence, SCOW	The Oregon Marine Board (OMB) does an excellent tri-annual survey of boat-use in Oregon. When we combine the OMB study data with marine engine emissions data from the US EPA we can make some striking assessments. Using EPA's estimate of a 25% fuel discharge rate, we've calculated that in 1995 alone (the last year surveyed); over 540,000 gallons of unburned fuel and oil was introduced directly into the Lower Willamette River from 2-stroke recreational marine engines (This number is confirmed by Willamette Riverkeeper's boating guide, and the methodology reviewed by John Dudman, Ph.D, retired Professor of Mathematic, Reed College). 2-stroke marine engines have become the engine of choice for 75% of all registered recreational boats in Oregon and have contributing to the toxicity of the river for most of this century, particularly the past four decades. The EPA estimates that 40% of this fuel and oil stays in the water and gradually disperses across the waters surface to soak into and coat anything that it comes into contact with. It's like a river-wide bathtub ring. Recently the Environmental Quality Commission, in response to a petition by SCOW, ruled that the DEQ should "Conduct discussions with other agencies and the public to determine if anything can be done to reduce the use of 2-stroke engines on Oregon waters." These discussions often include water quality studies, and data related to 2-stroke engine emissions. The PHSMP is a golden opportunity to acknowledge and account for these emissions, but only if they are a considered factor in the study.	Agree.
2-3	Dan Pence, SCOW	Selected Reference Areas. The draft PHSMP reads; "Selected reference Areas... located between Willamette Falls and the mouth of the Willamette River(or in the Columbia River)". The lower 26 miles	There are no plans to sample above the Falls. However, DEQ is keeping the Newberg pool in mind as a potential upstream source of contamination.

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		of the Willamette has the highest concentration of recreational boating in Oregon. Therefore if you are looking for a relatively non-polluted area to find a natural level, or un-tainted level, of contamination, this limited area is unacceptable. The effects of decades of heavy boat activity will certainly raise the levels of total petroleum hydrocarbons (TPH) as well as BTEX and PAH's way above the levels found beyond the high boat traffic areas. We urge you to sample the Willamette above the Newberg Pool beyond river station-mile 62 or one or more of the tributaries like the Clackamas, Tualatin or Molalla Rivers. If this is unacceptable keep in mind, and try to account for, the tens of millions of gallons of fuel and oil that boat engines have evenly distributed along our waterways in the past century.	
2-4	Dan Pence, SCOW	Study Boundaries. The effects of 2-stroke engine emissions have never been adequately studied, as far as we know. If the study area is broadened to include the more recreational areas of the river, i.e. upriver of downtown Portland, then we urge you to actively look for and assess TPH contamination especially adjacent to marinas and boat ramps at the summertime water surface level contour. We feel that it is unrealistic to study contamination of the river with industrial activity as the only acknowledged source.	The technical work group will consider ways to include TPH on the COI list.
2-5	Dan Pence, SCOW	Study Depth. As stated above, petroleum products tend to float on water and cause a "bathtub ring" of pollution along the shoreline and at the waterline of boats and structures in or on the river. Our personal experience as skippers makes this abundantly clear; boats moored along the Willamette get a greasy dark brown scum build-up, just at the waterline, during the busy boating season. We imagine that soil testing at the typical summertime shoreline contour will detect this greasy pollution while testing at lower depths would not. The required depths of the PHSMP must include this depth contour to adequately assess this pollution. You may also look for another "bathtub ring" higher than the low water levels of summer. During the rainy season, when the river tends to be higher, the effects of oil and rubber deposits from road run-off, may be detected and assessed.	The plan contemplates near-shore and beach testing at specific sites and possibly other areas. This should address this issue if the "bathtub ring" contains PAHs.
2-6	Dan Pence, SCOW	Preventing pollution. We think that as the DEQ and the Harbor Group assess the problems associated with toxic waste in our river (in particular TPH) we should also be sure that ongoing activities aren't still contributing to the problem. "When trying to get out of a hole; first, stop digging." Your study justifies and validates the DEQ's ability to handle this plan by citing state law; remedial actions are directed at remedying the release of "hazardous substances" into the environment, and, unlike CERCLA, specifically include oil and	A major component of the Portland Harbor Plan is prevention. DEQ acknowledges that recontamination may render sediment cleanup actions ineffective. Key components of prevention include the evaluation and implementation of source control efforts at all individual cleanup sites, a sediment transport study to quantify the extent to which upstream contaminants are contributing to Portland Harbor sediment

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		petroleum products. Procedures are laid out for identifying, investigating, and cleaning up contaminated sites and establishing liability for the associated costs, including DEQ oversight costs. Oil and petroleum products are covered (ORS 340-122-115(30)(c)). The Environmental Cleanup Law applies to the release of a hazardous substance to the environment. A "release" means any "spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, dumping or disposing into the environment…or threat thereof."	contamination and cross-program coordination to address non-point sources of contamination. Non-point sources that will be considered include releases from recreational boats, commercial shipping operations, and urban and agricultural runoff.
2-7	Dan Pence, SCOW	We firmly believe that the DEQ, using US EPA, California EPA and OMB data can make a convincing case that 2-stroke marine engines are an ongoing, significant threat to the Willamette River and should be either strongly discouraged or banned from contaminated areas of the river until the overall health of the river is restored to pre-industrial levels. Otherwise these engines will undo much of the remediation that may be performed and put an unfair burden on the industries that must pay for this clean-up.	A major component of the Portland Harbor Plan is prevention. DEQ acknowledges that recontamination may render sediment cleanup actions ineffective. Key components of prevention include the evaluation and implementation of source control efforts at all individual cleanup sites, a sediment transport study to quantify the extent to which upstream contaminants are contributing to Portland Harbor sediment contamination and cross-program coordination to address non-point sources of contamination. Non-point sources that will be considered include releases from recreational boats, commercial shipping operations, and urban and agricultural runoff.
2-8	Dan Pence, SCOW	SCOW is working with DEQ's Office of Pollution Prevention(Paul Burnett) to develop strategies to discourage the use of 2-stroke engines. The PHSMP process should coordinate with the other actions of the DEQ when these actions overlap the same problem.	Issues such as water quality, pollution prevention, and hazardous waste management all have a direct impact on how cleanup in Portland Harbor proceeds. The PHSMP will outline how coordination between DEQ's programs will occur, including cross-program consultation and joint participation in technical work groups.
2-9	Dan Pence, SCOW	SCOW wishes to kept informed of the ongoing plans and actions associated with cleaning up the Lower Willamette River. We are a resource for information related to recreational boating and clean boating awareness in Oregon and we have a vested interest in regaining a safe and healthy river.	DEQ is committed to continuing to involve the public and interested organizations as important decisions regarding cleanup in Portland Harbor occur as outlined in the public involvement plan included in the PHSMP. Skippers for Clean Oregon Waters will be added to the list of interested parties.
1-1	Daniel R. Oros, OSU	I have had the opportunity to review the draft of the Portland Harbor Sediment Management Plan (specifically Appendices F, G and H). The sampling program is focused on many target analytes, however, no emphasis is placed on sampling or toxicity testing of crude and lubricating oils and their residues present in sediments. It is well documented that these materials may enter the sediments through bilge	Although special emphasis has not been placed on toxicity testing for petroleum products, toxicity testing is an integral part of the plan and will address all contaminants and mixtures that are present. In addition, use of the narcosis approach is discussed in Appendix G, which was specifically designed to

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		pumping, fueling operations, loading and unloading of fuel and crude oil cargo and oil spills.	address the additive toxicity of petroleum mixtures, and will likely be used to assess petroleum-related sites where NAPL may be present.
1-2	Daniel R. Oros, OSU	It is true that some petroleum crude oil and heavy fuel oil (e.g., diesel and bunker fuels) components are biodegradable (e.g., n-alkanes, acyclic isoprenoids, alkylbenzenes, naphthalenes, phenanthrenes and other PAH). However a major organic component of petroleum known as the unresolved complex mixture (UCM) is extremely resistant to biodegradation. Thus, along with the petroleum biomarkers; (e.g., hopanes, steranes and tricyclic terpanes), will impart a major portion of the total organic matter component in both fresh and biodegraded petroleum contaminated sediments. It is very likely that most, if not all of the Portland Harbor sediments will be contaminated by petroleum, with some sites more than others. The presence of UCM in sediment samples poses a major problem: Basically, inclusion of the UCM as a component of total organic carbon content will result in quantitative errors when the target analytes; are normalized to the total organic carbon content. This will occur not only for sediment samples but also for tissue samples, since the UCM bioaccumulates in benthic fauna and it also toxic.	In 10 years of implementing the sediment program in Puget Sound, it has not been found that petroleum fractions introduce significant error into TOC measurements unless NAPL is present. A more common problem is wood waste. In cases where these constituents clearly affect TOC concentrations, OC-normalization of data are not recommended. However, it is often difficult to detect the influence of anthropogenic organic carbon until it reaches several percent, due to its natural variability in the environment.
1-3	Daniel R. Oros, OSU	How will the DEQ address the issue of petroleum contamination in sediments and bioaccumulation (toxicity) of UCM in benthic fauna?	Although special emphasis has not been placed on toxicity testing for petroleum products, toxicity testing is an integral part of the plan and will address all contaminants and mixtures that are present. In addition, use of the narcosis approach is discussed in Appendix G, which was specifically designed to address the additive toxicity of petroleum mixtures, and will likely be used to assess petroleum-related sites where NAPL may be present.
1-4	Daniel R. Oros, OSU	How will the DEQ treat or normalize data to best represent the actual target analyte concentrations and Portland Harbor sediments benthic fauna tissues that are contaminated with petroleum?	As noted above, sediment data for non-polar organics will likely be organic-carbon normalized unless anthropogenic organic carbon is clearly influencing TOC. Biota concentrations for non-polar organics are lipid-normalized.
1-5	Daniel R. Oros, OSU	Will you use petroleum biomarker analysis or hydrocarbon fingerprinting to identify petroleum source inputs to the Portland Harbor sediments?	This issue has not yet been discussed, but will be addressed during work plan development.
1-6	Daniel R. Oros, OSU	I would like to see that the Portland Harbor plan addresses the petroleum contamination issue. If the DEQ needs any help such as technical advice on addressing petroleum contamination in the Portland Harbor, then please do not hesitate to contact me. I would	It may be appropriate to have this person on one or more of the post-plan work groups.

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		like to contribute to the Portland Harbor cleanup effort.	
5-1	David R. Fouts	I think it is a real mistake to let the DEQ (Oregon) be responsible for the Portland Harbor clean-up. The DEQ proposal—as far as I'm concerned—is merely a ploy to slow down the clean-up process, and to not do as thorough a job as might be expected from the Federal EPA.	The Portland Harbor Sediment Management Plan outlines the State's approach for cleaning up Portland Harbor to standards protective of human health and the environment and equal to those required by Superfund. The plan lays out a sound technical approach for investigating the nature and extent of contamination and assessing risk to human health and the environment from contaminated sediments in Portland Harbor. It also outlines the enforcement mechanisms that will be used to ensure necessary cleanup is accomplished; and describes essential programmatic activities such as funding and community involvement.
5-2	David R. Fouts	In short, I think the DEQ proposal is merely a sop to the polluting [sic] industries, who will do anything to avoid the cost of their illegal acts. The DEQ is on the polluter's side. The Portland Harbor clean-up is a job for the EPA!	The Portland Harbor Sediment Management Plan outlines the enforcement mechanisms that will be used to ensure necessary cleanup is accomplished and those parties responsible for contamination found during the remedial investigation pay for the cleanup work.
27-1	Davis G. Moriuchi, U.S. Army Corps of Engineers	The U.S. Army Corps of Engineers has reviewed the Oregon Department of Environmental Quality's Public Review Draft of the Portland Harbor Sediment Management Plan (PHSMP). Specific comments related to the PHSMP are enclosed. We appreciate the opportunity to work with the state and other agencies in this effort.	Comment noted.
27-10	Davis G. Moriuchi, U.S. Army Corps of Engineers	3. Page 24. Of the 1.7 million cubic yards of suspended sediment load specify how much passes through the harbor into the Columbia River. The next sentence states that the transport capacity is low and this could be interpreted to mean that 1.7 MCY are annually deposited in the harbor area.	This very well may be the case. However, the plan will be rephrased to make a more neutral position on this issue, as well as point out the need for further investigation.
27-11	Davis G. Moriuchi, U.S. Army Corps of Engineers	4. Page 24. The Federal navigation project in the Willamette River is 600 feet to 1,900 feet wide from the mouth to the Broadway Bridge (11.6 mi.) and is authorized to 40 feet. From the Broadway Bridge to Ross Island (3 mi.) it is 300 feet wide and 30 feet deep. The Port of Portland maintains this upper section.	Comment incorporated.
27-12	Davis G. Moriuchi, U.S. Army Corps of Engineers	5. Page 24. As presently written, it is not clear if the "Channel depths range of 10 to 140 feet" refers to the Federal Navigation channel or the river in general. A description of the "river channel" needs to be separated from the description of the "Federal Navigation channel" for clarification and avoidance of possible confusion.	Comment noted.
27-13	Davis G. Moriuchi, U.S. Army Corps of Engineers	6. Page 24. The river flow data presented is from a very limited timeframe and does not reflect average or maximum flows that can be experienced. Also the lower Willamette River can be greatly affected	Comment noted.

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		by the Columbia River stage. At high Columbia River stages the Willamette River can be "pooled" to the falls. This can be greater than the tidal effect.	
27-14	Davis G. Moriuchi, U.S. Army Corps of Engineers	7. Page 24. The local sponsor has asked that the Willamette River portion of the proposed CRCD project be phased. This will delay any channel deepening related dredging of the Willamette River from the schedule shown. It is not likely that the Willamette River will be deepened at the same time as the Columbia River if the project is authorized and funded.	Thank you for the information on the delay of the Willamette River portion of the Columbia River Channel Deepening Project.
27-15	Davis G. Moriuchi, U.S. Army Corps of Engineers	8. Page 26. The definition for "contaminated sediments" given is inconsistent with the Dredged Material Evaluation Framework (DMEF) definition of contaminated sediments. We suggest a separate section for definitions to resolve differences between the definitions for terms commonly used in both cleanup and DMEF vocabularies. Because terms used in a cleanup framework may be different than terms in the dredged material evaluation framework, definitions should be carefully clarified. Also delete the third sentence because it makes no distinction between fine and coarse-grained sediments and is misleading. This statement is in conflict with DEQ's statement that the contaminants found during the Weston study appeared not to move. Other statements in the text indicate that sediment transport in the Willamette River is limited. These statements are in conflict.	The definition of contaminated sediments has been revised and the third sentence deleted as suggested.
27-16	Davis G. Moriuchi, U.S. Army Corps of Engineers	9. Page 26. Cite the information source that indicates flood flow velocities in the Willamette are 2-4 times the critical velocity to scour sediments. These values appear high. Are these values for the proposed listed area or another section of the river?	Personal communication with Chauncy Anderson, USGS.
27-17	Davis G. Moriuchi, U.S. Army Corps of Engineers	10. Page 50, SQGs: Pending development of freshwater values the DMEF has adopted the screening levels- SLs (SQGs) developed for marine waters in the Pacific Northwest. It was the position of the agencies that drafted the DMEF that these SL values are useful as indicators of the need for effects-based testing. A comparison with the draft Washington Department of Ecology freshwater AETs show the SLs adopted in the DMEF to be conservative for a freshwater environment. To be consistent with the DMEF and avoid delay in cleanup activities pending the development of Willamette River SQGs the PHSMP should adopt the position taken in the DMEF.	No, there are differences between a cleanup site and a dredge site which are not adequately reflected in the SLs or the DMEF evaluation process. For example, although the marine AETs have been adopted in the interim in the DMEF, Ecology does not use them to address freshwater cleanup sites. Freshwater bioassay testing is required, as proposed under this plan.
27-18	Davis G. Moriuchi, U.S. Army Corps of Engineers	11. Page 52, BSAFs: Existing BSAFs should be adopted as an interim measure to facilitate quick assessment and cleanup.	There are no existing BSAFs to adopt. Neither PSDDA nor Ecology has developed BSAFs that can be applied regionally. In fact, the evidence indicates that BSs need to be empirically derived for the system in question, on a bay- or harbor-wide scale in order to be

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			reasonably accurate.
27-19	Davis G. Moriuchi, U.S. Army Corps of Engineers	12. Page 62, last paragraph, item (3). This item should be rewritten. It is not clear what is meant by "cleanup would do more harm than good…?	The section has been rewritten.
27-2	Davis G. Moriuchi, U.S. Army Corps of Engineers	The Corps of Engineers has several important missions related to the study area. Together with the State of Oregon and the U.S. Environmental Protection Agency we regulate dredging and filling activities on the Willamette River to ensure environmentally sound and responsible management of sediments. We maintain and may deepen the navigation channel in the project area, representing a significant federal investment in the economy of the region. We also maintain a small fleet of dredges at our facility within the study area. We look forward to continuing our relationship with all parties in the challenging effort to improve sediment quality in the Willamette River while carrying out our mission.	DEQ welcomes the opportunity to work with USACE through the Regional Management Team for Dredging to ensure that dredging activities provide both environmental and economic benefit.
27-20	Davis G. Moriuchi, U.S. Army Corps of Engineers	13. Potential Funding Sources: Section 10.2. The following is information regarding Corps of Engineers authorities when discussing potential funding sources for the Portland Harbor Cleanup. Maintenance of the existing 40 foot deep federal navigation channel is authorized under the Rivers and Harbors Act and done with Corps of Engineers Civil Works Operation and Maintenance funds appropriated under the annual Energy and Water Resources appropriation. The Corps periodically dredges localized shoals that develop in the channel between the mouth of the Willamette River and the Broadway Bridge. Material to be dredged within the federal channel is evaluated under the Dredged Material Evaluation Framework, and to date, all dredged material has met the criteria for open water disposal. A Corps navigation project to dredge heavily contaminated sediments that required confined aquatic disposal or upland disposal could effectively remediate the localized contamination. However, these funds are not authorized for remediation purposes. However, the Corps of Engineers has authority for ecosystem restoration as authorized under the Water Resources Development Act (WRDA) of 1990. In particular, Section 312 of WRDA 90, as amended, authorizes removal of contaminated sediments from navigable waters either as part of operation and maintenance of the federal authorized navigation project channel or for the purposes of environmental enhancement and water quality to meet the requirements of the Clean Water Act. Criteria for obtaining funds for	Comment will be incorporated into Section 13.

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		this authority include: • A non-Federal sponsor who agrees to share 50 percent of the cost of removal and 100 percent of the cost for disposal must request use of this authority. • Planning for potential removal and/or remediation is done in consultation with the Environmental Protection Agency and other federal, state and local resource agencies. • Where used as part of operation and maintenance of the existing navigation channel, the Corps must demonstrate that the costs of removal and remediation, as appropriate, of contaminated sediment are economically justified based on savings in future operation and maintenance costs. • Where used for the purposes of environmental enhancement this authority may apply if it is consistent with current program and budgeting priorities. The national yearly maximum federal expenditures may not exceed $20 million. National funding priority is currently given to five specific projects. The Willamette River may be added as a priority project. The Corps of Engineers also has the potential to deepen the Willamette River portion of the authorized Columbia and Lower Willamette from the current 40 ft depth to a depth of 43 feet. As discussed in Section 13.2 of the PHSMP, the Final Environmental Impact Statement for this project is scheduled for release in Summer 1999. Deepening of the Willamette River portion of the project would include the potential removal of low level contamination in some areas of the federal channel. However, the Willamette River deepening portion of the project, if authorized and appropriated, will be phased and will likely be constructed separately from the Columbia River deepening work. If a cleanup is pursued at Portland Harbor using CERCLA authority, the ability of the Corps of Engineers to complete any of the above actions will be impacted. Although the Corps could provide support to the U.S. Environmental Protection Agency in CERCLA actions, the U.S. Environmental Protection Agency becomes the lead agency and Corps policy prohibits the use of its Civil Works funding resources within the boundaries of CERCLA sites. Exceptions to this policy would include sites such as the U.S. Moorings where contamination may result from the Corps' own activity or a specific authorization	

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		from Congress. The policy is designed to limit overlap of authority between the agencies.	
27-21	Davis G. Moriuchi, U.S. Army Corps of Engineers	14. The following is a suggested replacement for the paragraph discussing Corps of Engineers role under section 12.1.2 Federal Agency Roles and Responsibilities. U.S. Army Corps of Engineers: The U.S. Army Corps of Engineers has several statutory authorities that could be relevant to the PHSMP. Under the Rivers and Harbors Act the Corps maintains the 40 ft deep navigation channel for the Columbia and Lower Willamette Rivers. The current channel was authorized in 1962 and the Corps periodically dredges localized shoals that develop in the channel between the mouth of the Willamette River and the Broadway Bridge. The Corps of Engineers regulatory authority for the Portland Harbor includes the administration of the permit program under Section 404, Clean Water Act (33 USC 1344), regulating discharge of dredged or fill material into waters of the United States. The Corps also regulates work in or affecting navigable waters of the United States under Section 10, Rivers and Harbors Act 1899 (33 USC 403). The Corps also has authority for ecosystem restoration under the Water Resources Development Act (WRDA). In particular, Section 312 of WRDA 90, as amended, authorizes removal of contaminated sediments from navigable waters either as part of operation and maintenance of the federal authorized navigation channel or for the purposes of environmental enhancement and water quality. Specific appropriation for this authority must be requested by a local sponsor and is cost shared with the sponsor.	Comment incorporated into Section 12.
27-22	Davis G. Moriuchi, U.S. Army Corps of Engineers	15. Page 85, Delete "navigation or maintenance" as Federal and State law apply to all dredging activities and is not limited to just these two particular dredging activities. This statement applies to all occurrences of "navigation or maintenance" through out the PHSMP text.	The text has been revised.
27-23	Davis G. Moriuchi, U.S. Army Corps of Engineers	16. Page 85. Delete the two sentences, "Determination of which laws and regulations apply…determining the sediment management strategy." These statements are incorrect as written. The last paragraph in this section covers this subject adequately and correctly.	The sentences have been deleted.
27-24	Davis G. Moriuchi, U.S. Army Corps of Engineers	17. Page 85 last sentence, Change, "…physical, chemical, or biological testing..." to " physical testing, chemical testing, biological testing, or risk assessment…"	The text has been revised.

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27-25	Davis G. Moriuchi, U.S. Army Corps of Engineers	18. Page 86, At the request of the local sponsor possible deepening, if authorized, of the Willamette River will be delayed until a later date. No schedule for actual dredging has been proposed at this time.	This information has been incorporated into Section 13.
27-26	Davis G. Moriuchi, U.S. Army Corps of Engineers	19. Page 86. Section 13.3. Change "reconstruction" to "construction."	The text has been revised.
27-27	Davis G. Moriuchi, U.S. Army Corps of Engineers	20. Page 90, Permit Modifications. Change "Modification" to "Condition" and "modifications" to "conditions." Also delete "additional water quality monitoring during dredging and/or." All questions regarding water quality need to be addressed prior to dredging. Testing during dredging provided data too late to be of use in managing the dredging project. If water column impacts are a concern testing protocols are available to evaluate impacts including elutriate and modified elutriate tests. See elutriate testing under Section 13.34 Remedial Design Testing, page 91.	"Modification" has been changed to "condition". Water quality monitoring is retained by DEQ as a possible permit condition, as it may be necessary for dredging of highly contaminated material, particularly when specialized dredges or containment measures are being employed. Elutriate tests do not address all possible water quality concerns during dredging of highly contaminated sediments, such as mobilization and downstream transport of bioaccumulative contaminants.
27-28	Davis G. Moriuchi, U.S. Army Corps of Engineers	21. Page 91. Last sentence. It is suggested that the Corps/EPA document "Evaluating Environmental Effects of Dredged Material Management Alternatives-A Technical Framework" be referenced here. This framework addresses the testing needs for all dredged material disposal alternatives many of which are not listed in the present text. These include for upland disposal leachate, surface runoff, plant uptake and other testing as required.	The reference has been added to Section 13.0. All appropriate testing and management alternatives would be evaluated for applicability including those not listed in the text. Include upland disposal leachate, surface runoff, and plant uptake.
27-29	Davis G. Moriuchi, U.S. Army Corps of Engineers	22. Appendix G. The Appendix is repetitive within itself and repetitive within the main document. Recommend simplifying the structure and resolving inconsistencies.	Comment noted.
27-3	Davis G. Moriuchi, U.S. Army Corps of Engineers	1. We recommend that the introduction of the document deal with why the study is being performed, by whom, under what authority, and related authorities that will be coordinated into the plan. Much of this information already exists in the text but not until Section 12. Particular laws that should be discussed would be the state's environmental cleanup law and how it relates to the CWA, CERCLA, ESA, and RCRA.	The state's cleanup law is discussed in Section 3.0.
27-30	Davis G. Moriuchi, U.S. Army Corps of Engineers	23. App. G. 5.1.2.3. The analytical method for PCB analysis is not specified (EPA 8082). The chlorinated pesticide analysis should be EPA 8081. Refer to Table 18 for analytical methods.	Agree. The analytical method for PCB Analysis should be specified in this section. The document has been amended accordingly.
27-4	Davis G. Moriuchi, U.S. Army Corps of Engineers	2. It is not clear how "harbor-wide" studies are to be funded or how the costs might be distributed. A reasonable framework or guidelines for determining where site-specific contamination might end and "orphaned" contamination begins should be developed. Potentially responsible parties should have some assurances of the extent to which they share in harbor-wide work. Corps of Engineers authorities are	DEQ is in the process of negotiating a cooperative agreement with known potentially responsible parties to assist in the development of the harbor-wide remedial investigation. As more potentially responsible parties are identified, they will also contribute to the development of harbor-wide studies.

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		addressed in Specific Comment No. 13.	
27-5	Davis G. Moriuchi, U.S. Army Corps of Engineers	3. We understand that potential alternatives for contaminated sediments will be addressed in feasibility studies, but a complete harbor-wide sediment management plan should also address the potential need for harbor-wide contaminated material remedial options. Relying on individual parties to evaluate disposal options could result in a patchwork of disposal sites and sediment cap designs. Coordinated, environmentally sound, and consistent disposal options should be a goal of the PHSMP. Among those options should be the siting of a suitable confined aquatic disposal site for contaminated dredged material. Because Ross Island is not available as a confined aquatic disposal site, suitable potential options should be identified, coordinated, studied and designed. The Corps supports evaluating potential disposal sites as part of the study and suggests considering an interim aquatic disposal site to be used as a pilot project during the investigation.	A multiple user contaminated disposal facility would be useful for the management of contaminated sediments. Currently, such a disposal facility is not available in the lower Willamette River. Until such time as a multiple user contaminated sediment disposal facility is sited, contaminated sediments will be managed on a project-by-project basis.
27-6	Davis G. Moriuchi, U.S. Army Corps of Engineers	4. Additional useful harbor-wide studies that are not identified in the PHSMP could be conducted and integrated into the overall database. For example, a detailed bathymetric survey of the entire study area could be conducted. This information combined with seismic sub-bottom profiles that can delineate different sediment types would result in sediment surface and sub-bottom topography maps. These maps would be useful tools for assessing extent of sediment types, volume calculations, and sediment management options.	It might be appropriate to include sub-bottom investigations as part of the planned sediment bed load transport study. Detailed work plan discussions will address this point.
27-7	Davis G. Moriuchi, U.S. Army Corps of Engineers	5. The main body of the PHSMP should have a list of technical references or refer to specific sources for data used in the document.	To keep the plan itself from being too extensive, technical references are include din the detailed appendices.
27-8	Davis G. Moriuchi, U.S. Army Corps of Engineers	1. Page 23. Define "data quality objective process" or reference where it is further discussed in the text.	Agreed; text revised.
27-9	Davis G. Moriuchi, U.S. Army Corps of Engineers	2. Page 23. Suggest using the term "lowest" reach in the Willamette River before its confluence with the Columbia River, or the "first reach" above the confluence with the Columbia River.	Comment incorporated.
12-1	Dennis Shelton, CH2M Hill	Thank you for the opportunity to respond to the Portland Harbor Sediment Management Plan. This memorandum specifically provides comments on Appendix G of the plan. In general, we believe the plan uses reasonable scientific approaches to gather the information necessary to make remedial decisions. It is our feeling however, that the plan needs to provide more opportunity to incorporate the best site-specific information in cases where certainty is low using default approaches.	Default approaches provide a level of consistency and protection from errors that are critical to a regulatory program.

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12-2	Dennis Shelton, CH2M Hill	The basis for site-specific modification of default risk assessment approaches is the site-specific conceptual site model (CSM), which identifies releases and exposure conditions specific to the site. The decision guidelines for Objectives 1-6 provided in Sections 3.2, 3.3, and 3.4 seem to treat both harbor-wide and site-specific assessments equally, with little allowance for incorporating site-specific information. Site-specific information identified in the site's CSM that could influence the risk assessment assumptions include: whether or not a specific chemical was used and released at a site, or whether contamination at a site is known to have been released from an upstream source, whether the specific site is used for human recreational (swimming, wading, fishing), whether habitat characteristics influence use of the site by wading birds or other wildlife, whether resident infaunal and epifaunal species are focused on, or whether more side-ranging species are addressed.	Site-specific considerations may extend only to the presence/absence of specific exposure pathways and or receptors. Site-specific adjustments in TTL or TSC values are not contemplated.
12-3	Dennis Shelton, CH2M Hill	1. Figure G-5 and associated text as currently worded would require site-specific investigations to conduct bioaccumulation testing when a bioaccumulating COI is present at a site, even when information exists that precludes the site as the source of that COI (as revealed following development of the site CSM). As the decision flow diagram currently exists, it is possible that COIs could originate from one or more upstream sites, but cause testing requirements at a nearby site that never used the chemical. This could result in sampling and analytical costs that are inconsequential to the remedial decision for the specific site in question. To address this issue, redline changes to text on pages G-42-43 are recommended below.	A responsible party is responsible for all contaminants on its property, regardless of source.
12-4	Dennis Shelton, CH2M Hill	2. The SPM should provide the option of justifying a site-specific TTL/TSC in addition to (or in lieu of) adjusting the area-wide BSAF to come up with a site-specific RAO (per page G-43). Just like the BSAF adjustment, a site-specific TTL/TSC would consider site-specific exposure (or other) information not considered during derivation of area-side TTL/TSCs. The provision to allow site-specific exposure information is consistent with both DEQ guidelines in OAR-340-122 and EPA's Guidance for Risk Characterization. Science Policy Council. Memorandum from Carol M. Browner to Regional Administrators. March 21, 1996. To allow for site-specific refinement of default approaches, the following redline changes to Figure G-5 and text on pages G-42-43 are recommended.	Default approaches provide a level of consistency and protection from errors that are critical to a regulatory program.
12-5	Dennis Shelton, CH2M Hill	Redline excerpt from Section 3.3.1.2: Fish Tissue Consumption by Humans: As shown schematically in Figure G-5, the evaluation of fish consumption risks will not take place at specific sites until a Harbor	Comment noted.

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		and reference area evaluation of tissue levels (Figure G-6) is completed. If Harbor area exceedances are noted for a given COI [C], an attempt is made to find this same COI at specific sites. If it cannot be found at a known site, then [D] a potential non-Harbor, non-sediment (e.g., ubiquitous water-related), or unidentified site source is suspected. If a match is made with a known site, but sediment concentrations of the COI at the site are less than those in reference areas, then no further assessment of that COI at the site is required. This avoids attempting to cleanup sites to below reference concentrations. If sediment concentrations are above those in reference areas but the COI can be demonstrated to be not site-related but from an upstream source, then no further assessment of that COI at the site is required. However, if site-related COI concentrations are greater than those in the reference area, the responsible party initially calculates a RAO using a human area-wide TTL and an area-wide BSAF.	
12-6	Dennis Shelton, CH2M Hill	Redline excerpt from Section 3.3.1.2: "The responsible party may then either accept this RAO, in which case it is compared to the reference area sediment concentration. If the RAO is greater than the reference area concentration, then the RAO is set equal to the reference area sediment concentration and remedy selection begins. Again, this avoids attempting to cleanup sites to below reference concentrations. If not, then the calculated RAO is used in the remedy selection process. If the responsible party chooses not to accept the RAO calculated using an area-wide TTL and BSAF, possibly because they believe there are site-specific factors that may affect bioavailability and uptake, they have the option to consider site-specific information to justify a site-specific TTL, and/or perform testing necessary to support a site-specific RAO. If a site-specific TTL is justified and/or site-specific bioaccumulation testing is performed and, if uptake is less than the TTL, no further assessment is required. Otherwise, site-specific TTL the bioaccumulation test results are used to calculate a site-specific BSAF and then a site-specific RAO for that COI. Following comparison to reference area sediment concentrations, this site-specific RAO is carried into the remedy selection process. At sites, TTLs (either area-wide or site-specific) are converted into their remedial action objective (RAO) equivalents using either an area-wide biota-sediment bioaccumulation function (BSAF) calculated from area-wide sediment and tissue data or a site-specific BSAF calculated with data from site-specific bioaccumulation tests and sediment chemistry data (See Section G.6.2.2.5). This ensures that the TTL	Default approaches provide a level of consistency and protection from errors that are critical to a regulatory program.

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		(whether area-wide or site-specific) remains a minimum level of site performance."	
29-1	Don Francis of Willamette Riverkeeper	DEQ's draft plan does not include expanding the investigation for contaminated sediments. Contaminated sediments likely extend upstream and downstream of the 6-mile Portland Harbor "site." Under DEQ's draft plan, sampling beyond these boundaries will only focus on identifying reference sites to determine sediment cleanup guidelines. DEQ proposes to sample and analyze sediments that, through a biological screening process, are likely to be the least contaminated in the Portland area. Therefore, the full extent of contamination may not be discovered, and an incomplete cleanup of the lower-Willamette will be the result. As a result, it is likely that after a lengthy and expensive cleanup effort that human and wildlife health will still not be protected. DEQ needs to perform a remedial investigation of the entire lower-Willamette from Oregon City to the Columbia River (including the Multnomah Channel).	DEQ's immediate goal is Portland Harbor. This study, and all site-specific investigations, will extend to the locality of the facility (which may go beyond the nominal 6-mile segment), as provided for by state law.
29-2	Don Francis of Willamette Riverkeeper	In the draft plan, DEQ does not identify a clear grant amount for technical assistance grants. This amount should be, minimally, equal to that available under federal Superfund.	DEQ will conduct community interviews as the first step in implementing its public involvement plan. With further input from directly affected groups and citizens, the plan for providing technical assistance grants will be developed in more detail and implemented.
29-3	Don Francis of Willamette Riverkeeper	To date, DEQ has met with and made several informational presentations to environmental, business and community groups. A recent public involvement effort with a local environmental group yielded very little public participation. DEQ seems unable to access the groups and individuals that have the most at stake in cleaning up sediments—north Portland residents, anglers (subsistence and recreation), boaters and river-use businesses (e.g. kayak and fishing tackle shops). DEQ's draft plan provides no details about how the agency will improve public participation in the proposed cleanup effort.	DEQ will need to use a variety of mechanisms to solicit public input and involvement in cleanup efforts in Portland Harbor. After DEQ conducts community interviews, the public involvement plan will be revised to reflect how citizens, boaters, etc. want to participate in the process and how they would like to be informed.
29-4	Don Francis of Willamette Riverkeeper	DEQ needs to identify the species of fish they will catch and analyze for contaminants.	This level of detail will be addressed in the RI/FS work plan.
29-5	Don Francis of Willamette Riverkeeper	In the draft plan, DEQ states that they will acquire fish consumption information. It is essential that people conducting creel surveys can effectively obtain catch and consumption information. This has been a problem. The assumption is of a 30-year exposure. While we believe this figure should be the lowest limit in used for risk assumption, it is possible that some populations have longer exposure times to contaminated fish. Therefore, the creel survey should include	Partially agree; 30 years is the standard U.S. EPA default assumption. Will be considered in detailed work plan.

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		questions about the number of years each angler has fished the Willamette and an estimate of future use.	
29-6	Don Francis of Willamette Riverkeeper	a) DEQ should adjust risk analysis based on lower body weights of children, women and some smaller-framed refugee populations. b) DEQ should also include non-cancer risks, specifically endocrine disruption, in all risk analysis.	Agree, risk estimates can be done using a range of body weights. Aside from the non-cancer reference doses in IRIS, U.S. EPA has not yet produced guidance on how to handle endocrine disrupters.
29-7	Don Francis of Willamette Riverkeeper	Due to mercury, there is an Oregon Health Division (OHD) advisory against eating large quantities of Willamette River fish. This information is published in Oregon Department of Fish Wildlife's annual fishing guide. The OHD has no education and outreach program to warn anglers. Willamette fish tissue also contains high levels of PCBs, DDT metabolites and other toxicants. Using limited DEQ tissue information, Willamette Riverkeeper had a fish consumption risk assessment performed. This risk assessment did not consider mercury contamination. The results show that a roughly 1 in 1,000 lifetime cancer risk for subsistence anglers using the Willamette. The driving toxicants were PCBs and DDT metabolites. DEQ's plan should include include a plan to develop and implement an effective fish consumption advisory effort that reaches subsistence anglers. This is a very important need.	DEQ is not authorized to issue fishing advisories. OHD uses a different standard than DEQ to assess the potential for harm through consumption. Increased coordination between DEQ and OHD will take place as the Portland Harbor RI/FS produces additional data and risk information.
29-8	Don Francis of Willamette Riverkeeper	a) The only reason for deferring a Superfund listing of the Portland Harbor is if DEQ can prove that Oregon offers a better plan. Unfortunately, in the narrative of the draft plan DEQ concludes that the level of protection with either a state or federal program would be equivalent. DEQ's only argument is that a state lead can hit the ground faster because they already have several cleanups in progress. There may be some truth to DEQ's position that the harbor cleanup may begin sooner under a state lead. The question is: Will a lack of funding cause a state led cleanup effort to take years longer? Willamette Riverkeeper is concerned that after an initial burst of cleanup activity with willing PRPs, an under-funded state orphan account will cause a stall of cleanup efforts on abandoned sites or sites with uncooperative PRPs. Our concerns are well founded. For several years the Oregon legislature has consistently cut funding of Oregon's natural resource agencies. This is the political reality in Oregon today. (Note: DEQ had to seek EPA money to fund the 1997 sediment study because local funds were virtually nonexistent.) Therefore, the likelihood of DEQ receiving adequate orphan fund money from the legislature is in doubt. As a result, a state cleanup plan could easily be delayed unnecessarily for years or decades. DEQ's plan does not provided reasonable reassurances of adequate	DEQ will look to cost recovery as the first choice to fund the work in Portland Harbor. DEQ's authorities to require RPs to perform work or cost recover treble damages from RPs are similar to EPA's, and DEQ will implement these authorities as needed. Oregon's Orphan Site Account is funded by selling long-term bonds. Since 1992, DEQ has issued bonds totaling $20.4 million. Debt on the bonds is repaid with a variety of funds, including lottery dollars, state general fund, and hazardous substance possession fees. In the past 4 years, DEQ has recouped over $7 million, almost half of which was returned to the Orphan Site Account, from responsible parties and by reaching agreements with persons who wish to purchase Orphan Sites. DEQ currently anticipates that about $9 million of Orphan Account Funds will be available in the 1999-2001 biennium. It is projected that funds needed for existing orphan sites and new orphan sites during the 1999-2001 biennium will be about $4.5 to $6.5 million. Therefore, sufficient funds will be available

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		funding for orphan site cleanup. b) DEQ needs to estimate the number and locations of non-Willamette orphan site cleanups that will be delayed due to lack of funding if orphan site funds are used for the Portland Harbor.	to provide a state contribution, as needed, of up to $1 million for work in Portland Harbor, without affecting other non-Willamette River orphan sites. If necessary, DEQ will not hesitate to go to the legislature for additional funding. DEQ has the full support of the Governor's office to keep Portland Harbor a state-led effort.
29-9	Don Francis of Willamette Riverkeeper	The importance of natural resource damage recovery cannot be over estimated. Several miles, if not more, of the Willamette River have been contaminated. People are sustaining their families on contaminated fish. Others, fearful of becoming ill, have discontinued using the Willamette for subsistence and recreational fishing. Fish and wildlife have likely been impacted. Boating and angling oriented businesses have been financially impacted too. Natural resource damages are essential to helping compensate citizens for what Willamette contamination has taken away—health, food, recreation and business. Cleaning up the Portland Harbor will take years. Assessing resource and social costs and compensation cannot be fully calculated until after the cleanup has been completed. For instance, if cleanup efforts cannot restore the safety of subsistence angling, than natural resource compensation could be substantially different than a return to a safe fishery. Under this scenario, compensation might have higher costs to PRPs, and the public may desire a compensation program that they deem is directly related to their loss (e.g. transportation to a river without contaminated fish). Oregon law requires that natural resource damage amounts and decisions be made within 3-years of discovery. Federal law requires the same within 3-years after completion of cleanup. Under DEQ, natural resource damages will have to be calculated before the final impacts to humans and wildlife are known. This is not equal to federal Superfund and does not provide a process that allows for fair compensation to the people and resources injured by Willamette River contamination. In the draft plan, DEQ does not reconcile this critical difference between Oregon and federal cleanup enforcement.	Evaluation of impacts to natural resources is integral to the Portland Harbor investigation approach. Consideration of natural resource impacts has been assured through involvement of natural resource trustees in development of the plan, and their continued commitment to participate. DEQ is negotiating a formal agreement with the trustee agencies to ensure their participation and protect trustee rights under federal natural resource law. Consideration of post-cleanup impacts and potential compensation will take place under natural resource trustee auspices.
8-1	Donald Watson, Northwest Steelheaders	I am opposed to deferral to the State of Oregon for a non-Superfund state led effort in this matter.	The Portland Harbor Sediment Management Plan outlines the State's approach for cleaning up Portland Harbor to standards protective of human health and the

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			environment and equal to those required by Superfund. The plan lays out a sound technical approach for investigating the nature and extent of contamination and assessing risk to human health and the environment from contaminated sediments in Portland Harbor. It also outlines the enforcement mechanisms that will be used to ensure necessary cleanup is accomplished; and describes essential programmatic activities such as funding and community involvement.
8-2	Donald Watson, Northwest Steelheaders	First, I note without comment the plethora of bills pending in Salem aimed at undercutting environmental law, or that will, either through financial or administrative restrictions, decrease the ability of state agencies to enforce these laws.	The Governor of Oregon has expressed his strong commitment to ensuring DEQ has the regulatory and enforcement authority to cleanup contaminated sites, and to ensure cleanup. DEQ has submitted a proposed bill which will provide the agency with additional resources to assist with cleanup of Portland Harbor. The agency has actively opposed any proposed bills.
8-3	Donald Watson, Northwest Steelheaders	Second, the recent Ross Island Sand and Gravel issue related to the impact of gravel extraction on ESA listed fish clearly demonstrates the top down nature of the process as soon as it moves to the jobs versus environment arena. The decision handed down to the agency may or may not have been correct, but the process for making the decision was fatally flawed.	The PHSMP is designed to provide meaningful input for the full spectrum of interested parties. The community, state, local and federal agencies, tribal governments and environmental groups will continue to have direct input into key decisions throughout design and implementation of this investigation and cleanup. DEQ's interest is to make the state's decision-making process as accessible and transparent as possible.
8-4	Donald Watson, Northwest Steelheaders	Third, the legislators intervened when the Board of Pharmacy wished to investigate Rite Aid in order to protect the health of Oregon citizens, by eliminating funding for the investigation.	The Governor of Oregon has expressed his strong commitment to ensuring DEQ has the regulatory and enforcement authority to cleanup contaminated sites, and to ensure cleanup.
8-5	Donald Watson, Northwest Steelheaders	Fourth, the legislature is currently working to thwart judicial and regulatory processes in regard to U.S. West.	The Governor of Oregon has expressed his strong commitment to ensuring DEQ has the regulatory and enforcement authority to cleanup contaminated sites, and to ensure cleanup.
8-6	Donald Watson, Northwest Steelheaders	Finally, I quote from the Oregon Salmon Plan, (copy of page attached). The response of the Department of Agriculture to the enforcement role of environmental laws was: "In general, the department prefers to handle enforcement issues internally to maintain credibility with stakeholders and peace of mind within the agricultural community."	Comment has been noted and will be considered during implementation of the PHSMP.
8-7	Donald Watson, Northwest Steelheaders	I believe that if the state were to take the lead in the Portland Harbor plan, this stakeholder credibility and community peace of mind view	DEQ has worked and will continue to work aggressively with the Portland Harbor community to

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		would be the controlling test for action.	understand and address their interests.
11-1	Eileen Gannon	Please forward these comments to the committee involved in the task of collecting comments from the public on this project. The gray card which was handed out at a public meeting about the Portland Harbor Sediment Management Plan-Public Comment Period-April 19-May 19, 1999 by the DEQ does not have a correct HTTP:// address. It is leaving out the word www.deq.or. STATE. thank you for you attention to this. It has influenced my decision on whether I would feel comfortable leaving this HUGE task to the DEQ.	Thank you for pointing out the error in the web site address on the post card that was distributed at some of the public meetings. It has been corrected. Luckily, the correct web site address was listed on a variety of other publications that have been distributed to the public.
11-2	Eileen Gannon	I think the EPA should include it as a Superfund Site.	The Portland Harbor Sediment Management Plan outlines the State's approach for cleaning up Portland Harbor to standards protective of human health and the environment and equal to those required by Superfund. The plan lays out a sound technical approach for investigating the nature and extent of contamination and assessing risk to human health and the environment from contaminated sediments in Portland Harbor. It also outlines the enforcement mechanisms that will be used to ensure necessary cleanup is accomplished; and describes essential programmatic activities such as funding and community involvement.
11-3	Eileen Gannon	I think it will get clearer publicity compared to what the DEQ will do for it. I think the EPA will DO a better job at remediating the problems compared to DEQ.	The Portland Harbor Sediment Management Plan outlines the State's approach for cleaning up Portland Harbor to standards protective of human health and the environment and equal to those required by Superfund. The plan lays out a sound technical approach for investigating the nature and extent of contamination and assessing risk to human health and the environment from contaminated sediments in Portland Harbor. It also outlines the enforcement mechanisms that will be used to ensure necessary cleanup is accomplished; and describes essential programmatic activities such as funding and community involvement.
11-4	Eileen Gannon	I think the title "Superfund" will lend credibility and support the importance of the need for it to be done.	The Portland Harbor Sediment Management Plan outlines the State's approach for cleaning up Portland Harbor to standards protective of human health and the environment and equal to those required by Superfund. The plan lays out a sound technical approach for investigating the nature and extent of contamination and assessing risk to human health and the environment from contaminated sediments in Portland Harbor. It

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			also outlines the enforcement mechanisms that will be used to ensure necessary cleanup is accomplished; and describes essential programmatic activities such as funding and community involvement.
11-5	Eileen Gannon	I am satisfied that EPA will have finally gotten around to including it to its projects. I enjoy the environment and its inhabitants so much here in the Northwest.	DEQ believes that the approach outlined in the PHSMP will accomplish cleanup in an efficient and effective manner protective of human health and the environment.
11-6	Eileen Gannon	Since the Clean Water-Clean Air Act, nothing has been done. It was decades past when it the problems finally got recognition and nothing was done. I think it was because DEQ does not have the UMF! to do anything on its own.	DEQ is confident that the PHSMP clearly outlines a plan for cleaning up Portland Harbor and has the resources and statutory authority to ensure it occurs. Where applicable, cleanup will comply with both the Clean Water Act and Clean Air Act.
11-7	Eileen Gannon	I think the contractors would better be from out of state too since businesses are involved and I would not want any family ties to bias activities. Thank you for this opportunity to sound off.	Comment has been noted and will be considered during implementation of the PHSMP.
6-1	Elmer G. Boag, Jr.	As a long time resident of Oregon, and a boater, I have long been very concerned about the health of the Willamette River. I was here when our then governor mounted an effort to "clean-up the Willamette River." Tom McCall had the right idea. What happened? It would appear our state agencies, Oregon DEQ and Oregon EPA have "dropped the ball." We believe proper enforcement of the "Clean Water Act" could have, and would have corrected the terrible situation we now have. Since the Oregon DEQ and the Oregon EPA have failed to act, we support the federal EPA listing the Willamette as a Superfund site and affecting a proper clean-up. The DEQ plan is seen as too little, too late.	The Portland Harbor Sediment Management Plan outlines the State's approach for cleaning up Portland Harbor to standards protective of human health and the environment and equal to those required by Superfund. The plan lays out a sound technical approach for investigating the nature and extent of contamination and assessing risk to human health and the environment from contaminated sediments in Portland Harbor. It also outlines the enforcement mechanisms that will be used to ensure necessary cleanup is accomplished; and describes essential programmatic activities such as funding and community involvement.
6-2	Elmer G. Boag, Jr.	We citizens deserve a clean river. Federal involvement is required.	The Portland Harbor Sediment Management Plan outlines the State's approach for cleaning up Portland Harbor to standards protective of human health and the environment and equal to those required by Superfund. The plan lays out a sound technical approach for investigating the nature and extent of contamination and assessing risk to human health and the environment from contaminated sediments in Portland Harbor. It also outlines the enforcement mechanisms that will be used to ensure necessary cleanup is accomplished; and describes essential programmatic activities such as funding and community involvement.
28-6	Gayle Killam	I received a request by Portland City Commissioner Erik Sten to	Implementation of the PHSMP will be in full

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		support the $200 million request to the federal government to assist with Oregon's efforts to improve watershed health for the threatened and endangered species. I could only ask how easily the actions funded by that money might be canceled out by the other federal and state dollars funding the channel deepening. I wonder the same for this clean up effort. The plan does not reassure that the level of clean up will reflect the requirements imposed by the ESA.	compliance with ESA requirements. Funding for Portland Harbor investigation and cleanup is described in the PHSMP, and DEQ has committed to making the resources available that are needed.
28-1	Gayle Killam, River Network	The single greatest concern with the proposed clean-up plan is that it lacks the appropriate connection to the proposed channel deepening in the Lower Columbia and Willamette Rivers. The DEQ harbor clean-up staff neglected to submit comments to the draft EIS for the channel deepening. Since Congress has now preauthorized the channel deepening – including the Willamette portion - it appears that more of the contaminated sediments will be stirred up not just once at the time of deepening but every few years for maintenance dredging as well. If this site is not listed on the NPL, deepening of the Willamette will occur with little regard to the public health and environmental consequences. Many will say that it is a good way to get the contaminated sediment out of the harbor. Thinking of this as a clean up strategy is problematic for a couple reasons. The steps outlined by DEQ in their Contamination Response Process dictate that no activity such as a channel deepening should be allowed to go forward until well after the ROD is finalized and remedial design/remedial action can begin. There is even a case to be made that current maintenance dredging worsens the exposure to the contamination and should be suspended or minimized until the ROD is issued. Because the federal government will cover 65% of the project in the Willamette and the state of Oregon is picking up their share, it is unlikely that the responsible parties would be made to pay for the damage they have caused to the public. It would be the taxpayers who pay for this mess to be stirred up and probably will cause more problems.	The potential for adverse effects to public health and environmental consequences should be evaluated and addressed as part of the environmental impact statement as the channel deepening project is reviewed through NEPA. DEQ will maintain close coordination with the Corps that project moves forward to avoid adverse effects in Portland Harbor.
28-2	Gayle Killam, River Network	The Clean Water Act calls for the protection of healthy aquatic species and recreation in all rivers unless it is proven that that goal is unattainable. No such analysis has been performed on the Willamette (use attainability analysis), and therefore, the problems that the contaminated sediments cause to the food chain and thus to the fish populations traveling through or living in that area are illegal.	A reference to narrative water quality standards has been added. A description of how SQGs fit in as water quality criteria has been added. A new table is provided showing these relationships between beneficial uses and site investigation and cleanup activities.

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		Documented problems to human health in the McCormack and Baxter areas also lead to the lack of protection for recreation in the harbor area. Also a violation of the Clean Water Act.	
28-3	Gayle Killam, River Network	Unfortunately we don't have sediment standards in Oregon to adequately list water bodies that are impaired due to sediment contamination. That step apparently is anticipated by DEQ in the form of sediment quality guidelines. It is unacceptable not to set standards for the state at this critical time. Guidelines are not sufficient because they are not enforceable. We will continue to run into this problem as we have for years if standards at least for the most commonly found contaminants such as PCBs, dioxin, DDT, DDE, DDD, mercury and PAHs.	The sediment quality guidelines developed for Portland Harbor will be used to clean up the area to levels which are protective of human health and the environment; the approach for their use is described in Section 7. Through the enforcement strategy described in Section 3, sites along the Harbor will be required to clean up to those levels identified in the guidelines. It may be appropriate at a future date for the guidelines developed in Portland Harbor to be adopted as standards for the entire state.
28-4	Gayle Killam, River Network	From the first presentation on the findings in the harbor sediment almost a year ago, the stage was set. The DEQ clean-up staff, EPA and the consultants who did the testing and analysis were up on the stage at the World Trade Center. The DEQ water quality staff, however, was in the audience with the rest of us - apparently not an integral part of the evaluation, nor of the plan. It is not clear how much interaction within the department has occurred since then, but it is clear that the plan focuses on the clean up of the harbor to the standards set in the Oregon clean up law – which, by the way, are generally not protective of species and human recreation. They are based on cost and the next likely uses of the land, for the most part. This situation offers quite a challenge to that model because we have other competing federal laws – the Endangered Species Act and the Clean Water Act – that call for much greater improvement in the situation.	While the PHSMP focuses the investigation and cleanup of Portland Harbor on Oregon's Environmental Cleanup Law, it also describes the ways in which compliance with the Endangered Species Act and Clean Water Act will be assured. Although cost and future land use are considerations in the cleanup process, the primary responsibility is protection of human health and the environment, and that is the manner in which DEQ will implement the law.
28-5	Gayle Killam, River Network	At the same time that the Portland Harbor Group, the Port of Portland and DEQ are talking about how Oregon's cleanup law is more stringent than what the Superfund calls for, that same stringent Oregon law has been under attack in Salem. The proposed changes to the cleanup law are unacceptable, particularly in light of this pending Superfund decision. DEQ opposes the changes and says that the relationship with EPA and the plan for the harbor would have to be reevaluated entirely if this law were to pass. The Governor has apparently stated his plan to veto the proposed changes to the law, which were presented to the committee without even allowing for DEQ testimony, if they passed. But these changes were proposed by Oregon's industry lobby, AQI, that represents several if not all the industries in the contaminated harbor area. That does not echo their	DEQ and the Administration oppose proposed changes in the Environmental Cleanup Law. The parties who have been involved with DEQ in development of the PHSMP are continuing to demonstrate their commitment to investigation and cleanup of Portland Harbor through a funding and participation agreement. Those commitments will result in a consent order or consent decree that fully binds the involved parties to carrying out the Portland Harbor investigation and needed cleanup.

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		stated willingness to clean up the contamination to necessary levels voluntarily.	
28-7	Gayle Killam, River Network	The plan is not clear about how implementation and enforcement will occur and on what schedule DEQ performance will be reviewed and evaluated for adequacy.	Schedules in Section 8 have been revised in the final PHSMP to add further detail on implementation. DEQ will review and monitor site progress on a continuous basis, and will trigger further enforcement steps as indicated to ensure sites are kept on schedule to support harbor-wide progress. Continued involvement of agencies, tribes, and the public will allow review and evaluation of DEQ's overall progress.
28-8	Gayle Killam, River Network	I do not believe the plan is sufficient to assure adequate evaluation and clean up by DEQ and the responsible parties on a voluntary basis. Especially due to the extreme competing political pressures to deepen the channel and improve the river for endangered species, it seems critical to the process that the Superfund listing occur. Perhaps the interests in local control of the clean up can be satisfied by having the DEQ take the lead and strengthen this plan to include steps to achieve compliance with the Clean Water Act and the Endangered Species Act. The Superfund listing is especially critical to prevent the deepening of the channel before the necessary evaluation and remediation decisions are made.	DEQ is confident that human health and natural resource interests will be met through a state-led, CERCLA-equivalent investigation and cleanup of Portland Harbor, without NPL listing by EPA. The PHSMP has been revised to clarify steps to achieve compliance with the Clean Water Act, and Endangered Species Act requirements are incorporated in the plan. The Portland Harbor investigation and cleanup will coordinate fully with dredging activities, including proposed channel deepening, to ensure protectiveness.
9-1	Glen D. Carter	While the plan is fairly clear in its intent, it appears to be an effort to head off an EPA threat of federal Super Fund designation if such a cleanup program is not soon implemented. Considering the history of anthropologic activities in the Portland Harbor and zones of surrounding influence, the planned sediment studies and sediment management program could go on for 25 years and still not give the conclusive answers the DEQ desires.	DEQ has defined an aggressive and comprehensive approach to Portland Harbor that will show environmental results within a few years (see schedules in Section 8).
9-10	Glen D. Carter	Based on existing information and data, it would be both ludicrous and professionally irresponsible that any qualified person would believe the Portland Harbor should be tagged for designation as a Super Fund site. There is absolutely no supportable reason for proposing to set what is tantamount to drinking water standards and food purity limits on sediment deposits in the bottom of the Portland Harbor - i.e. edible sediment and drinkable "pore" water.	DEQ believes that the Portland Harbor Sediment Management Plan outlines the State's approach for cleaning up Portland Harbor to standards protective of human health and the environment and equal to those required by Superfund. The plan lays out a sound technical approach for investigating the nature and extent of contamination and assessing risk to human health and the environment from contaminated sediments in Portland Harbor. It also outlines the enforcement mechanisms that will be used to ensure necessary cleanup is accomplished; and describes essential programmatic activities such as funding and community involvement.

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9-11	Glen D. Carter	Incidentally, taking contaminated sediments out of the Portland Harbor does not destroy or eliminate them. It merely moves them to a new location.	Removal from Portland Harbor or capping of contaminated sediments does not eliminate or destroy the chemicals in the sediments, but these management alternatives do reduce the exposure and effects these compounds have on beneficial uses.
9-12	Glen D. Carter	Oregon's water pollution control program now in place for the Portland Harbor needs no tinkering or overhaul. It is very adequate for dealing with any pollution sources needing remedial treatment or control.	Comment noted.
9-13	Glen D. Carter	The sediment management plan proposes in situ comparisons of contaminants in the sediments with the same contaminants in fish tissues. It would seem that resulting data accuracy could be challenged for lack of control subjects in the study. Also, the resident fish species are likely to be quite mobile both spatially and seasonally -making it difficult to determine exposure times and locations. Likewise, the mass of the fishes' aquatic environment is constantly on the move to complicate fish tissue studies. The very fact that aquatic organisms live and reproduce in the sediments should be viewed as evidence of an acceptable environment. Throughout EPA's history, they have used bio-diversity in aquatic systems as evidence of environmental acceptance.	The plan calls for the use of reference areas to obtain "control subjects" for this study. DEQ will be addressing both sediment toxicity in and whether fish are safe to eat.
9-14	Glen D. Carter	The plan calls for funding by 10 industries located in the study zone. This seems to be hanging a heavy financial burden on a few industries when it is quite clear that the study area has been impacted by many others over a period of 150 years. Perhaps, it would be more equitable to use public funding for the entire study. After all, the bulk of Oregon's human population and supporting industries are located in the Willamette River drainage basin. Remember, it is only 8 days flow time from Eugene to the harbor in summer and 2 days in winter. Pollutants, like bad news, travel swiftly.	The PHSMP outlines several methods by which the investigation and, if necessary, cleanup of Portland Harbor will occur. These methods include a funding agreement with already identified potentially responsible parties along Portland Harbor, identifying additional sites where contamination exists and ensuring their participation in the process, and use of state funds as needed to ensure cleanup.
9-15	Glen D. Carter	Portland harbor has not been shown to be worse than other harbors in the United States; thus, listing it as a Super Fund site would be arbitrary and capricious.	The Portland Harbor Sediment Management Plan outlines the State's approach for cleaning up Portland Harbor to standards protective of human health and the environment and equal to those required by Superfund. The plan lays out a sound technical approach for investigating the nature and extent of contamination and assessing risk to human health and the environment from contaminated sediments in Portland Harbor. It also outlines the enforcement mechanisms that will be used to ensure necessary cleanup is accomplished; and describes essential programmatic activities such as

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			funding and community involvement.
9-16	Glen D. Carter	Oregon has no sediment standards to show that cleanup is required or to define the level of cleanup, if needed.	The PHSMP outlines DEQ's approach for development of sediment quality guidelines (SQGs), which will be used to show whether cleanup and what type of cleanup will be required in Portland Harbor.
9-17	Glen D. Carter	There is no showing of the loss of recognized beneficial uses.	The PHSMP outlines DEQ's approach for development of sediment quality guidelines (SQGs), which will be used to show whether cleanup and what type of cleanup will be required in Portland Harbor. Based on those SQGs, DEQ will be able to determine whether any recognized beneficial uses are being lost.
9-18	Glen D. Carter	There has not been a scientific showing of cause and effect relationships between Portland Harbor sediments and any adverse public health or fish/wildlife effects.	Granted, but DEQ is not required to show a rigid cause-and-effect relationship in order to take steps to protect public health and the environment.
9-19	Glen D. Carter	Funding for the cleanup, if necessary, is pecuniary and misdirected at only 10 industries. All citizens in Oregon benefit from Portland Harbor activities so they should assist in any cleanup program. This can be done, for example, through household or industrial sewage treatment systems, waste water discharge permits, air contaminant discharge permits, or on-site disposal fees.	The PHSMP outlines several methods by which the investigation and, if necessary, cleanup of Portland Harbor will occur. These methods includes a funding agreement with already identified potentially responsible parties along Portland Harbor, identifying additional sites where contamination exists and ensuring their participation in the process, and use of state funds if necessary.
9-2	Glen D. Carter	Portland's harbor has been a point of world shipping and commerce for some 150 years. It will most likely continue indefinitely to serve that purpose. From the beginning, it has been dredged and the shore-side lowlands used for spoils disposal sites. Upon the spoils have been built a wide variety of the area's industries and supporting communities. They are the backbone of Portland's and Oregon's social structure.	Comment noted.
9-20	Glen D. Carter	The contributions of contaminants from natural sources have not been clearly defined. The role of floods in downstream sediment transport is not clearly defined.	Agree. A comprehensive bed load transport study will be part of the RI/FS work plan.
9-21	Glen D. Carter	This whole Portland Harbor issue appears to stem from a potential third party lawsuit against the EPA and is predicated by environmental interest groups' monetary gain through the DEQ at the expense of the citizens and industries of Oregon.	Comment noted.
9-3	Glen D. Carter	Local, state, and federal government bodies, including the EPA, have given their approval and funding to all aspects of the harbor development and use. Beginning in the 1930 period the State instituted a water pollution control authority to investigate and correct problems statewide. Special emphasis was directed to the Portland	DEQ recognizes the accomplishments achieved through implementation of the water quality program, but also clearly sees the need for investigation and, if necessary, remediation of existing contaminated sediments. Site discovery efforts have documented the

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		Harbor and waterways leading to it. The principal thrust of the State's water pollution control program was, and is, to identify the beneficial uses to be served by the water body and set water quality standards that will guarantee the continuance of those uses. Since 1970, the Portland Harbor water quality has complied with applicable standards (standards approved by the EPA) and amply supported all recognized beneficial uses. For those few waste sources in the harbor that still need remedial care, there are already rules and regulations and contracts in place to take care of them. An extensive, costly sediment study and management program, as proposed by DEQ, is not needed in addition to existing programs.	need for such work as well as ongoing source control to eliminate input of pollutants to the River.
9-4	Glen D. Carter	It is already known that sediments, once laid down on the harbor bottom, are not likely to be resuspended by natural forces. Thus, it is not likely that any contaminants below the sediment surface level could contact and impact fife forms above the sediment. Navigation channel dredging might resuspend some sediment; however, the main volume of such dredge spoils would go to out-of-water disposal sites. All of this raises the question whether sediment would best be left undisturbed on the river bottom, isolated from waters above. Past studies of sedimentation in the Portland Harbor showed there was little deposition when river flows at Salem measured 30,000 cfs or more - suspended solids carried through to the Columbia River. At flows of less than 30,000 cfs, sediment deposit in the Portland Harbor was a fact. Thus, there are periods of flow when sediment deposits in the harbor could have originated from anywhere in the upper drainage basin. In addition to human waste sources in the upper drainage basin, there are places where metals occur naturally and get into the surface water. Another aspect of flow and sedimentation in the Portland Harbor is the wedge of higher density Columbia River water that intrudes along the bottom as far up as Swan Island under certain flow conditions. The Columbia River water brings with it sediment contaminants. In short, I believe a study of sediment contaminants in only the plan's designated 6-mile harbor zone would give erroneous results.	Agree, with ending statement. A comprehensive bed load transport study will be part of the RI/FS work plan.
9-5	Glen D. Carter	There is some expression in the sediment management plan that the study should extend up stream to the Oregon City falls. Except for a few small back-eddies along the shores, there are essentially no appreciable sediment deposits between Ross Island and Oregon City. There is adequate current through this zone, to keep the bottom swept fairly clean—even to some depths of 125 feet. This river zone was substantially deepened by gravel miners over a period of 50 to 60	Comment noted. The plan envisions searching this upstream reach for reference areas, not necessarily sediment deposits.

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		years.	
9-6	Glen D. Carter	The DEQ PHSMP does not delve into the on-going ruckus over dredge spoils disposal in the Ross Island lagoon, but the subject needs some further clarification. A few years ago, Ross Island was legally declared to be owned by the Ross Island Sand and Gravel Company. The company had interagency approval to mine gravel from within the lagoon as long as the perimeter dike was maintained and the gavel supply lasted. Upon depletion of the gravel supply, the owners agreed to make the lagoon available for dredge spoils disposal. Once the lagoon was filled again, and the island rebuilt, it would be turned over to public ownership and planted to appropriate nesting trees for great blue herons. Apparently, that well-received plan and agreement between agencies and the owner has hit a snag. The original agreement would serve the public well if reinstated.	DEQ's Northwest Region Cleanup Program is currently working with Ross Island and the Port of Portland to investigate past disposal practices and assess their impact on human health and the environment. More information on this project can be obtained by contacting the project manager, Jennifer Sutter (229-6148).
9-7	Glen D. Carter	Quite often, in recent years, we have read news reports of distressed and/or dying fish in the Willamette River system. The reports often suggest that the fish might be the victims of exposure to toxic substances or carcinogens'. But there was never confirming evidence linking the two. People seem to forget that plants and animals suffer natural mortality rates the same as humans. In any particular year a substantial portion of any biological population will die from natural causes including trauma, disease, predation, parasites, or just plain old age. Fish of all species in the Columbia River, and elsewhere, are host to a number of parasites - especially parasitic copepoda. The copepods often make lesions which are open to bacterial disease, which may lead to fish mortality. A large number of course scaled suckers die each year in the Willamette River system due to the rigors of spawning. The appearance of the rotting bodies floating downstream can excite all sorts of imagination about cause of death. However, the process of their death and decay is perfectly natural. The annual migration of Pacific lampreys, shad, and salmon into the river system bring with them scenes of death and decay. For some unknown reason, the casual observer assumes pollutant exposure. Simply, that is not true. Please note the following fact about fish mortalities in Oregon. When the Fish and Wildlife Department purposely eradicated "trash fish" from Thompson Valley Reservoir in Lake County, they killed more fish in that one operation than those killed in all pollution events combined in the history of Oregon. I worked 32 years as a professional aquatic biologist on the Willamette River system investigating water pollution matters (1956-1988). Only on two occasions did I see fish mortalities in the Portland Harbor that I could	Agree.

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		definitely attribute to human activity. One was caused by electrocution (a power fine drooping into the water) and the other by an oil emulsifier sprayed under private docks. Contrarily, some of the greater resident fish populations and variety of species found in any fresh water of the State were in the Portland Harbor.	
9-8	Glen D. Carter	In the late 1960's, the Fish and Wildlife Department (nee Game Commission) set a "New York" trap net in the harbor at Swan Island to assess fish numbers and species. To their surprise, and my amazement, the trap caught in one night over 700 fish of almost every species known in the area: chinook salmon, coho salmon, steelhead, cutthroat trout, shad, leather carp, mirror carp, common carp, squawfish, coarse scale sucker, fine scale sucker, chub, sturgeon, white crappie, black crappie, yellow bullhead, brown bullhead, black bullhead, sculpin, largemouth bass, smallmouth bass, warmouth bass, bluegill, pacific lamprey, and a rare troutperch. We sometimes think the harbor water conditions are poor because we have failed to look at the health of its end products and the variety of beneficial uses it serves. We hear a lot about deformed fish and tend to blame pollutant exposure for their maladies. Here again, with some field observations, one may note a number of imperfections naturally occurring in biological communities. Some of the greatest concentrations of fish deformities may be found in fish hatcheries where pristine water supplies and pure food stuffs prevail. Life forms are not always perfect.	Agree. The plan proposes fish population studies, as part of the RI, to address just this issue.
9-9	Glen D. Carter	If we take time to compare water quality conditions and sediment characteristics in the Portland Harbor with those of other major harbors in the U.S., and around the world, we find that the Portland Harbor ranks among the cleaner. Over the years, the DEQ has hosted professional pollution fighters from other countries of the world. In every case the visitor noted the cleanliness of the Portland harbor. In fact, they sought Oregon's information for their own home use.	Comment has been noted and will be considered during implementation of the PHSMP.
33-1	Helen Hillman, NOAA	As the federal trustee agency for salmon and other anadromous species in the Portland Harbor area, NOAA is keenly interested in the cleanup of contaminated sediments in the lower Willamette River. We appreciate the willingness to DEQ to include NOAA and other trustee agencies in the development and review of the plan.	DEQ welcomes NOAA's and the other trustee agencies' continuing role in implementation of the PHSMP. Collaborative efforts to date have resulted in a plan that addresses multiple interests, and those efforts will help ensure effective implementation.
33-10	Helen Hillman, NOAA	Page G-39, Section 3.2.1.2. We are very concerned that the current list of bioassays does not include a sensitive, chronic test. We will work with DEQ in subsequent technical work groups to help identify and select a more sensitive, robust suite of bioassay tests.	DEQ shares this concern and looks forward to the input.
33-11	Helen Hillman, NOAA	Page G-39, Section 3.2.1.2. Middle of page. Please strike the	Agreed. The change has been made.

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		sentence "Per Table G-5, finding that chemicals present in the sediment have no effect on the community would be used to screen out the need to perform toxicity tests," and make other changes in this section to be consistent. We do not agree that benthic community surveys can be used to determine no risk. If sediment guidelines are exceeded, bioassays must be performed.	
33-12	Helen Hillman, NOAA	Page G-40, Section 3.2.2.1. While benthic community surveys will provide a useful line of evidence, additional analyses will be required to validate the SQGs. NOAA would like to see the SQGs tested against an independent data set to determine the predictiveness of the guidelines. We have experience in this area and a database that could be used for this purpose.	DEQ is interested in the outcome of such a test. Concurrence between the two results would certainly validate the approach. However, differences in the outcome may indicate legitimate differences in the criteria due to regional variations in geochemistry, sensitivity of test organisms or lab procedures, and mixtures of chemicals present. DEQ looks forward to discussing this further.
33-13	Helen Hillman, NOAA	Page G-46, Section 3.4. The description of fish in this section is inaccurate and inconsistent with the more detailed description in Section 2.3.2. Please update this language, or strike it and refer the reader to Section 2.3.2.	Agree, text changed.
33-14	Helen Hillman, NOAA	Page G-56, bottom of page. Please add "acceptable bioassay performance" to the list of criteria for determining acceptable reference locations. We will work with DEQ to develop specific, numeric criteria for bioassay performance.	Agreed. This section has been revised to be more consistent with other reference area sections.
33-15	Helen Hillman, NOAA	Page G-58, Section 4.2.7. Statistical power is an important consideration in sampling designs and should be added to this section.	Comment noted. DEQ plans to address this issue more fully during preparation of the work plan.
33-16	Helen Hillman, NOAA	Page G-58, Section 4.2.8, Timing of Sampling. Timing matters! Seasonal variability in light, temperature, flow, nutrient loading and other parameters will certainly affect the fish and benthic community studies and may affect the biological tests. When comparing various sites to one another and using data from different studies, the timing of the sampling should be considered.	Agree, text has been changed.
33-2	Helen Hillman, NOAA	While the current draft of the plan does a good job of describing the overall process for investigating and cleaning up contaminated sediments in the harbor area, numerous details critical to a protective cleanup have not been determined. NOAA expects to be closely involved with DEQ and the other stakeholders in technical work groups over the next year to iron out these details. Items of particular interest to NOAA include selection of appropriate bioassay tests, procedures for interpreting bioassay results including Hit/No Hit designations, performance criteria for reference stations, the methodolgy for calculating Biota-Sediment Accumulation Factors (BSAFs), the design, performance, and interpretation of fish studies	Agree. DEQ will inform NOAA as early as possible as to the formation of technical work groups.

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		development of Sediment Quality Guidelines, selection of Tissue Threshold Levels (TTLs) and Tissue Screening Concentrations (TSCs). We look forward to working with DEQ staff to answer these and other technical challenges. Please let me know the schedule for technical work group meetings as soon as it is available, so I can ensure the appropriate NOAA staff are involved.	
33-3	Helen Hillman, NOAA	Page 22, Figure 4-3. Please add a line connecting fish and benthos.	Change made.
33-4	Helen Hillman, NOAA	Page 55, Section 7.3.5. Fish tissue sampling. This section seems to imply that only bioaccumulative chemicals are of concern in fish tissue. This may not be true. Tissue should be sampled for all contaminants of interest, not just bioaccumulative compounds.	There is no evidence that non-bioaccumulative compounds in sediments accumulate in fish. Long-term monitoring programs in Puget Sound and the Great Lakes have repeatedly demonstrated that detectable contaminants in fish tissues are bioaccumulative. This is largely due to basic chemical properties--non-bioaccumulative chemicals (i.e., with low Kows) will not be stored in lipid tissues and are rapidly removed from the body. It would not be a good use of DEQ's limited resources to analyze fish tissues for contaminants that have not been detected in other decade-long monitoring programs.
33-5	Helen Hillman, NOAA	Page 56, Section 7.3.6. Harbor-Wide Risk Assessment. Same comment as above. This section states that a Phase II RI/FS may be required at specific sites that contain elevated levels of bioaccumulative compounds. Non-bioaccumulative compounds may also pose risk on a harbor-wide basis and should not be excluded from consideration.	As noted above, nonbioaccumulative chemicals are highly unlikely to be of concern for any exposure pathway other than benthic toxicity because they do not accumulate in fish tissues. Existing bioassay data show that benthic toxicity is generally limited to the immediate vicinity of sites. The chemical data also do not show high concentrations of non-bioaccumulative chemicals away from specific sources. However, it is known that certain bioaccumulative chemicals are present, in low concentrations throughout the Harbor, that may present a risk. This is the rationale for the current plan. However, DEQ is aware that the data are somewhat sparse in mid-river areas. DEQ has added to the harbor-wide RI "spot-check" samples in mid-river areas to ensure that there is no benthic toxicity away from localized sites and sources. Phase II plans will not be developed until after this study and could certainly include a harbor-wide component for benthic toxicity if needed. However, that is considered unlikely at this time.

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33-6	Helen Hillman, NOAA	Page 66, Figure 8-1a. According to this figure, fish studies will occur over 150 days. This is not nearly long enough. In order to determine fish usage of the area, sampling will have to be done over multiple seasons. We anticipate working closely with DEQ to develop a thorough, cost-effective sampling and assessment strategy.	The schedule has been updated. It is, however, very unlikely that more than 1 year could be devoted to fish studies in the context of a U.S. EPA CERCLA cleanup.
33-7	Helen Hillman, NOAA	A map would be a useful addition to this Appendix, as the text contains many references to river mile marks, bridges and other geographical features.	No more maps are available at this time.
33-8	Helen Hillman, NOAA	Page G-7, Section 1.2. Coordination with Natural Resource Trustees. It is unlikely that natural resource injury issues can be addressed through data collection efforts alone. Addressing injury issues may require cleanup and restoration work in addition to a thorough investigation.	Agree, text changed.
33-9	Helen Hillman, NOAA	Page G-32, Figure G-1. Please add a line connecting fish to benthos.	Figure changed.
10-1	James G. Barrett	I have reviewed the summary of the DEQ' Draft Portland Harbor Sediment Management Report. I have also reviewed parts of the Public Review Draft of the Portland Harbor Sediment Management Plan and its various appendices. Based on my reviews, I find that the report and plan to be wholly deficient from two different perspectives.First Deficiency. The first deficiency is the restricted area of the Willamette River covered by the Management Plan (e.g. a 6-mile stretch from Swan Island to Sauvie Island). While the sediments in this 6-mile area may contain very high levels of toxic contaminants, segments of the river upstream of Swan Island through the City of Portland and South to the Ross Island area, also have sediments that contain high levels of contaminants. Therefore, the Management Plan excludes, and does not adequately address, some of the major sediment and toxic contaminant problems that exist in the Willamette River. If not included in the sediment removal process, these upstream sediments and their toxic contaminants, will migrate down stream where they will ultimately replace the sediments to be removed from the 6-mile stretch.	Agree. Results of the bed load study may affect DEQ's understanding of the nature and extent of contamination and hence of the locality of the facility.
10-2	James G. Barrett	Second Deficiency. The second deficiency is the fact that, the Management Plan completely ignores, and does not address the sources of the sediments and the toxic contaminants, what made them appear in the waters and sediments of our streams, rivers, and lakes, and does not address any process or programs to prevent them form occurring. Geologic erosion is a slow, natural, process that produces the sediments that are deposited in streams, rivers, and lakes. However, most of today's erosion (e.g. last 200 + years) and the sediment it produces, is due to the accelerated erosion and runoff	A major component of the Portland Harbor Plan is prevention. DEQ acknowledges that recontamination may render sediment cleanup actions ineffective. Key components of prevention include the evaluation and implementation of source control efforts at all individual cleanup sites, a sediment transport study to quantify the extent to which upstream contaminants are contributing to Portland Harbor sediment contamination and cross-program coordination to

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		caused by people (humans) who manipulate and mismanage the surface of the land. Toxic contaminants are also a by-product of human mismanagement, which allows rainfall and runoff to wash the contaminants into the waters of our streams, livers, and lakes Some contaminants combine with (adhere to) soil particles, and enter tile waters of our streams, liven, and lakes attached to the sediments produced by erosion during periods of rainfall and runoff. Other contaminants (soluble and insoluble) are flushed from the surfaces of the land by rainfall and runoff where they join with the sediments in our streams, rivers, and lakes. In either case, both the sediments and the toxic contaminants are cause by human mismanagement, and there is no current program that adequately addresses their prevention. Existing programs (rules and regulations) are designed to address these problems only after they occur—they are reactive rather than preventative.	address non-point sources of contamination. Non-point sources that will be considered include releases from recreational boats, commercial shipping operations, and urban and agricultural runoff.
10-3	James G. Barrett	Conclusion. Until these two deficiencies are adequately addressed (e.g. The area of the Willamette River included under the management plan, and the development of programs that will address the prevention of erosion and sediment, and toxic contamination), the Portland Harbor Sediment Management Plan should not be considered as the answer to the problems it is supposed to address.	Through the results of a bed load study and identification of source control measures, both of these issues will be addressed.
10-4	James G. Barrett	Cleaning up the contaminated sediments without taking steps to stop more from taking their place will be a very short lived solution, and a big waste of time, efforts and money! We appreciate the opportunity for our comments.	A major component of the Portland Harbor Plan is prevention. DEQ acknowledges that recontamination may render sediment cleanup actions ineffective. Key components of prevention include the evaluation and implementation of source control efforts at all individual cleanup sites, a sediment transport study to quantify the extent to which upstream contaminants are contributing to Portland Harbor sediment contamination and cross-program coordination to address non-point sources of contamination. Non-point sources that will be considered include releases from recreational boats, commercial shipping operations, and urban and agricultural runoff.
13-1	Jenny Prokos	Hello, my name is Jenny Prokos and I attended a meeting on the Portland Harbor clean up last night. I am not sure if you are the correct person to be addressing, but I was told the DEQ was taking the public's comments until Wednesday. From what I learned last night at the Chapman School meeting it appears the DEQ still needs refinement of the clean up plan. The fine details of who will be doing what, paying for what, who will be working in conjunction with what	As described in the PHSMP, DEQ has the statutory and regulatory authority to ensure that responsible parties pay for any required cleanup. Currently, there are ten potentially responsible parties that are participating in the development and implementation of the PHSMP and have committed to continue to provide funding support. Also as outlined in the plan, DEQ

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		other state dept., and will they really work together, or just pass the buck, is not clear. Since this is a very important issue I think these should be addressed before any decision is made.	will provide additional resources as needed. Detailed work plan development and continuation of funding agreements will further address the detailed plan.
13-2	Jenny Prokos	I would like to see Oregon take care of its own problems, without the federal government stepping in. However, if the plan remains vague, my main concern is that Portland Harbor is cleaned up, and if it takes it becoming a Superfund site I have no objection.	DEQ believes that sufficient detail has been added to the PHSMP, based on public comments and information developed since the public review draft, to clearly identify how cleanup will occur in Portland Harbor under a state-led process.
13-4	Jenny Prokos	I left the meeting last night not 100% confident that the DEQ can handle this project. I hope I am proved wrong. Thanks for your time.	DEQ believes that the PHSMP includes the detail necessary to ensure cleanup occurs in Portland Harbor and is committed to providing the resources, using every enforcement authority available to the agency, and conducting the cleanup in a manner that is protective of human health and the environment.
30-1	Joan P. Snyder, Stoel Rives	I am writing on behalf of The Schnitzer Group ("Schnitzer") to offer comments on the Public Review Draft of the Portland Harbor Sediment Management Plan ("PHSMP"), dated April 19, 1999. Schnitzer supports the initiative the Oregon Department of Environmental Quality ("DEQ") has taken in the Portland Harbor. Schnitzer believes DEQ has the resources required to address the issues presented in the Portland Harbor. It believes the PHSMP generally will provide a workable framework for allocating those resources appropriately. Schnitzer offers these comments to raise issues that it feels DEQ will need to address in-the course of implementing the plan. While many of its comments will not be items for which amendments to the PHSMP are required, they are issues that will ultimately need to be addressed. To the extent it has relevant expertise, either due to the nature of its operations or from its experience in Commencement Bay, Schnitzer will continue to provide its input to DEQ's PHSMP managers. Schnitzer has evaluated the PHSMP from the perspective of a stakeholder committed to ensuring the wide range of uses the Portland Harbor currently supports. Schnitzer agrees that all necessary steps need to be taken to address contaminated sediments in the Portland Harbor in a way that fully protects human health and the environment. Schnitzer also knows that the Portland Harbor plays an extremely significant role in the economic well being of the Willamette Valley. The Willamette River provides a transportation channel that is critical, both directly and indirectly, to the livelihood of many Oregon residents, to the survival of water transportation-dependent industries	Comment noted.

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		and, indeed, to Oregon's role in national and international commerce. Schnitzer appreciates that the PHSMP has recognized this in its discussion of the critical link between dredging activities and the investigation and possible remediation of contaminated sediments. This very important transportation role of the Portland Harbor also needs to be kept in mind as the agency proceeds with remedial investigation and feasibility studies.	
30-2	Joan P. Snyder, Stoel Rives	Schnitzer believes that Table F-3 in Appendix F requires some clarification. A person reading Table F-3 and the vague references to it in Appendix F could conclude that these are properties that DEQ has determined to be sources of contamination in the river (e.g., section 3.5 of Appendix F describes Table F-3 as properties "associated with the sediment areas determined to be of highest priority"). A person reading Table F-3 could similarly conclude that the column in Table F-3 entitled "Reason(s) for DEQ Concern" is a list of chemicals that have actually been found on that property and have migrated to the river. Both of these conclusions would be wrong, and Schnitzer believes that Appendix F and Table F-3 should be changed to prevent such a misperception. From its discussions with DEQ and its review of the subject files, Schnitzer has confirmed that Table F-3 is the list of properties for which DEQ has requested property owners to provide further information so as to determine if they are sources of sediment contamination in the river. The column entitled "Reason(s) for DEQ Concern" lists chemicals DEQ has found in the river in some vicinity of the listed property. It is not based on any evidence that these chemicals were ever located on the subject property, let alone that they made their way from that property to the river. Schnitzer believes that the PHSMP should clearly identify the specific method the DEQ will use to identify entities which are potentially responsible for sediment contamination. For each site, DEQ should be able to identify: (1) the releases that occurred on the site; (2) the pathway by which those releases migrated to the Portland Harbor; and (3) the presence of those specific contaminants at levels of concern in the sediment area suggested by the pathway.	Where historical data is lacking a review of Sanborne Insurance Maps and aerial photographs may be completed to determine activities at the property that may have resulted in releases of hazardous substances. A detailed review of any complaints, spill reports, or other DEQ files associated with the property will be completed. An effort will be made to identify potential sources and migration pathways that could have resulted in the sediment contamination identified in the initial review. It is possible that review of information provided by property owners and information available in existing reports will indicate other potential sources for the contaminants identified and new sites may be identified through this process. It is also anticipated that additional sediment sampling conducted as part of the harbor-wide investigation will provide data which may more clearly define source areas.
30-3	Joan P. Snyder, Stoel Rives	In general, Schnitzer believes the PHSMP presents a good framework for addressing any potential threats to human health and the environment posed by hazardous substances in the Portland Harbor sediments. The following comments are meant simply to raise issues to which Schnitzer believes DEQ will need to devote attention in the	DEQ expects that contaminant levels in sediments will be at or below SQGs at all sites unless extensive site-specific testing has been performed to show that the sediments are not toxic and bioaccumulative.

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		course of implementing the PHSMP. Schnitzer commends DEQ's decision to rely on both Portland Harbor-specific Sediment Quality Guidelines and site-specific information. The proposed development of "ideal" Sediment Quality Guidelines ("SQGs") based on concentrations that give the least number of errors in predicting biological adverse effects is a rational extension of well established methods used by others to develop SQGs. Equally critical are the PHSMP's assumptions that: (1) SQGs will be iterative; that is, even if they are initially developed based on a Harbor-wide study, they will continue to be refined as site-specific data is made available (e.g., PHSMP § 7.3.4); and (2) SQGs are not the last word, but only one tool available to assess site-specific conditions and determine necessary remedial action, if any, at particular sites (e.g., PHSMP § 7.4. 1).	
30-4	Joan P. Snyder, Stoel Rives	One factor that Schnitzer notes appears to be missing from the PHSMP, although it is probably intended by DEQ to be a part of the process, is the need for site-specific determinations as to the applicability of SQGs. Experience in Commencement Bay has indicated that there are circumstances where SQGs are not relevant to the health of site-specific biota because biota are limited by some other factor, such as Biological Oxygen Demand ("BOD"). Obviously, consideration of such factors will be a necessary part of each site-specific study.	DEQ expects that contaminant levels in sediments will be at or below SQGs at all sites unless extensive site-specific testing has been performed to show that the sediments are not toxic and bioaccumulative.
30-5	Joan P. Snyder, Stoel Rives	As the PHSMP is implemented, DEQ should give appropriate consideration to the efficacy of interim removal actions. The PHSMP provides no discussion of the role of interim removal actions. This is a tool that has been effective elsewhere in rapidly and efficiently addressing threats to human health and the environmental. It is one that EPA has utilized in Commencement Bay and at other contaminated sediment sites. Interim removal actions should clearly be one of the options DEQ considers when addressing Portland Harbor issues.	Interim removal and response actions are an integral part of the investigation and cleanup process and provided for by statute. Removal or control of contamination will continue to be utilized where it will result in immediate and needed protection of human health and the environment.
30-6	Joan P. Snyder, Stoel Rives	Investigation and remediation of the Portland Harbor cannot be separated from the need for appropriate sediment disposal sites. Although the PHSMP recognizes the important need to coordinate with dredging activities (PHSMP § 13.0), Schnitzer believes the agencies and the public must also recognize the important link to the specific issue of disposal sites for contaminated dredge material. The Ross Island site may offer a very effective and efficient method for	A multiple user contaminated disposal facility would be useful for the management of contaminated sediments. Currently, such a disposal facility is not available in the lower Willamette River. Until such time as a multiple user contaminated sediment disposal facility is sited, contaminated sediments will be managed on a project-by-project basis.

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		protective placement and containment of contaminated sediments dredged from the Portland Harbor. It will be very important to coordinate the PHSMP with the current assessment of Ross Island's disposal capabilities, which is something DEQ is uniquely positioned to do because of its lead role in the assessment of Ross Island.	
25-1	Kathy Stryker, EPA	In general, a Management Plan should be an objective presentation of facts and plans. EPA suggests moving language regarding DEQ's argument for deferral to the Executive Summary or as an ancillary document.	DEQ appreciates the comment. It believes that the question of deferral should be presented early in the plan to serve as a framework for understanding the proposed state-led approach.
25-10	Kathy Stryker, EPA	3.4.2.1 - The conceptual model should address receptors such as amphibians, reptiles, aquatic plants. This section should also discuss issues relating to the use of NOAELs and LOAELs - vs. dose/response data and some other level (1, 5, 10%) of effect (especially experimental artificiality in the selection of dose levels).	Not enough is known about reptiles, amphibians, and plants to address at this point. DEQ also felt that these wouldn't be selected as assessment endpoints. This issue will be revisited during work plan development. NOAELs and LOAELs were chosen as being consistent with U.S. EPA guidance - other approaches (such as EC10) are possible and may be preferable given the admitted problems with NOAELs.
25-11	Kathy Stryker, EPA	4.2.1 - Table G-10 - Include • grain-size analysis and other physical measures. • SVP camera method • any biogeochemistry done to identify groundwater discharge zones • in situ bioassays or transplants done for exposure assessment	Agree, add text as indicated.
25-12	Kathy Stryker, EPA	4.2.4 - Sampling depth should consider where biota live and feed.	Agree. This is one of the goals of the benthic studies.
25-13	Kathy Stryker, EPA	4.3.2 - Discuss the use of colonization trays as a potential tool.	It is unclear how the use of colonization trays would augment more standard benthic infaunal analysis and consequently they are not included in the suite of assessment tools for the PHSMP.
25-14	Kathy Stryker, EPA	4.3.3.1 -The practicality of in-situ methods needs further discussion (candidate methods, have they been tried, why wouldn't they work, etc.). • discuss how to minimize loss of VOCs from composited sediment samples	This will be addressed in the work plan.
25-15	Kathy Stryker, EPA	5.1.3.2 - Need tissue sample QA guidelines (reference tissue samples).	This will be addressed in the work plan.
25-16	Kathy Stryker, EPA	5.3.1 - Discuss the need for power analysis.	Comment noted. Will be covered during work plan development.
25-17	Kathy Stryker, EPA	6.2.1.6 - The choice of an upper limit of 20% false negatives appears to be partially a policy decision. I suggest further discussion of the influence of this choice on identifying areas for remediation.	Agreed. This is a policy decision, and this was only a straw man proposal. The actual limit will be decided in the SQG technical work group. It is not possible at this time to assess the effect of this choice on cleanup

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			decisions, but will be possible once the distributions have been developed and actual criteria values are available for review.
25-18	Kathy Stryker, EPA	6.2.2.2 - Please provide more on the justification to use marine test results for freshwater (OK for narcosis, not sure for other effects).	DEQ is proposing to test whether adding marine data is reasonable using a test of statistical difference. If the two distributions do not differ, there would be no reason not to combine them to provide a larger overall data set.
25-19	Kathy Stryker, EPA	6.2.2.3 - Please provide more on Monte Carlo techniques and QA thereof (e.g., two-way MC to target poor data sets)	These techniques will be discussed in more detail in the RI/FS work plan.
25-2	Kathy Stryker, EPA	1.2 P. 5. To be complete the listing of management options should include under option 1: listing with EPA as lead and listing with state as lead.	Comment has been incorporated in Section 1.0 of the final Portland Harbor Sediment Management Plan.
25-20	Kathy Stryker, EPA	6.2.2.4 - What suggests that the relationship between TTLs exceedance and exposure is linear?	There is a fair amount of evidence that the relationship between sediment and tissue concentrations is reasonably approximated by a linear regression (e.g., see Whatcom Waterway RI; Ecology/Exponent BSAF reports). PSAMP has found similar relationships in their evaluation of Puget Sound data.
25-3	Kathy Stryker, EPA	1.1 Management objective 1 should include exposure via pore water and discharging groundwater. I am presuming that benthic communities also include resident species (crayfish, freshwater clams/mussels if applicable) since they are implied in 1.1.1 under designated beneficial uses for the Willamette River.	The management objective does not speak to the issues of exposure pathway, which is addressed elsewhere. Yes, the benthic community includes resident species.
25-4	Kathy Stryker, EPA	2.1 Is there any information on sediment transport as it relates to hydrology? How about for groundwater discharges to Portland Harbor?	Data on groundwater transport to the river may be available on a site-specific basis but not necessarily on an area-wide basis. A comprehensive bed load transport study will be part of the RI/FS work plan.
25-5	Kathy Stryker, EPA	2.2.1 - Table G-1. It is EPA's understanding that a GIS will be available so that one could look at these data on a geographic basis (e.g., view areas characterized as clean (areas with only 1 hit), sediment characteristics, salmon runs, etc.). Were risk-based detection limits used? If not, please comment on the influence of the detection limits on the selection of the COIs. Are unsampled areas assumed to be clean? Table G-2. Will co-planar PCBs be evaluated rather than Arochlors?	An ARCVIEW project has been prepared containing most of the existing data, and transmitted to NOAA and the PHG. This information, along with the data newly entered into SEDQUAL, will be comprehensively evaluated during the work plan development process. Risk-based detection limits cannot currently be identified, because SQGs and tissue guidelines have not yet been developed. A range of detection limits used in the historical surveys has been added to the COI section in Appendix G for review. DEQ does not anticipate performing congener-specific (co-planar) PCB analyses unless there are positive detects for Aroclors. However, DEQ

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			is currently reviewing the approach for transitioning to congeners developed by Erika Hoffman of Region 10 proposed at the recent SMARM for potential applicability.
25-6	Kathy Stryker, EPA	2.4 - Exposure pathways should include burial, degradation/transformation/etc. Are any groundwater - surface water studies available or planned (in 2.4.2)?	These sources can be made more explicit. GW-SW studies may be planned (or underway) at specific sites with respect to upland sources.
25-7	Kathy Stryker, EPA	2.5.2 - Need to allow for adaptation when new information is acquired—probably should clear this up early on, especially when conclusions regarding adverse effects may be involved.	Agree.
25-8	Kathy Stryker, EPA	3.1 - Recommend some discussion of the practical and statistical problems of matching areas (lack of adequate sites; pseudoreplication, etc.).	DEQ will address these types of details in the work plan.
25-9	Kathy Stryker, EPA	3.2.1.2 - One of the technical work groups should address the suggested bioassays and their representativeness for the Portland Harbor benthos.	Agree. This is an issue to be addressed by technical work groups.
15-1	Kathy Taylor, Columbia River Estuary Task Force	Thank you for the opportunity to comment on the Draft Portland Harbor Sediment Management Plan (PHSMP). In the fall of 1997 the Oregon Department of Environmental Quality (DEQ) and the U.S. Environmental Protection Agency (EPA) conducted a sediment study in the Portland Harbor. Based on findings released in 1998 the EPA has proposed that the Portland Harbor be considered for listing on the National Priorities (Superfund) List. Oregon asked the EPA to delay its decision for six month, so a state-led plan could be developed that would avoid listing the harbor as a federal Superfund site. The P14SMP must demonstrate to the EPA how the state will conduct its remedial investigation and feasibility study for the harbor. The plan presents a framework for the DEQ to identify and assess contaminated sites in the Portland Harbor, investigate remediation strategies, conduct a feasibility study of remediation strategies, and issue a Record of Decision that details what remedial action will be taken.	Comment has been noted.
15-2	Kathy Taylor, Columbia River Estuary Task Force	The Columbia River Estuary Study Taskforce (CREST) is a council of governments representing local governments and port districts in Oregon and Washington surrounding the Columbia River Estuary. Although the scope of DEQs cleanup plans focus on a 6-mile stretch of the Willamette River, CREST recognizes the importance of participating in this process as contaminated sediments in the Portland Harbor is contributing to contamination in the Columbia River Estuary.	DEQ agrees that any contamination found to be present in Portland Harbor will have an impact on the Willamette River downstream from the site as well as the Columbia River. Throughout implementation of the PHSMP, the state will continue to working with organizations, such as the Columbia River Estuary Study Taskforce, to ensure that those issues are being satisfactorily addressed.
15-3	Kathy Taylor, Columbia River Estuary Task Force	CREST requests an extension of the 30-day comment period in order to adequately review the PHSMP. We feel that proper cleanup of the	DEQ will continue to accept and consider public input after the formal comment period. The public will

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		Portland Harbor is an extremely important project to the region and short-term economics and political pressure should not jeopardize long term management of contaminated sediments. Based on a cursory review of the PHSMP, CREST has the- following specific comments:	continue to be involved throughout implementation of the PHSMP. There will be numerous opportunities for the public to provide feedback during implementation of the plan via work groups, public meetings, and other formal comment periods as well.
15-4	Kathy Taylor, Columbia River Estuary Task Force	Implementation of the PHSMP is estimated to cost $3-5 million, largely from Oregon State funds, and will take several years. Plan implementation however, only goes as far as issuing a Record of Decision for management of each identified site. The funding of the actual cleanup of each site will come from voluntary participation of the responsible party and from the State. The plan is not clear as to how much time and money the actual cleanup will take.	Until the remedial investigation is completed and the amount of cleanup required in Portland Harbor is known, it is difficult to estimate the time and amount of money which will be required to complete cleanup. Through existing agreements and available enforcement mechanisms, DEQ will ensure that cleanup is accomplished as quickly and efficiently as possible and costs are recovered from as many parties as possible.
15-5	Kathy Taylor, Columbia River Estuary Task Force	The PHSMP does not involve Washington State agencies or include public participation from communities in Washington, who are already being affected, by contamination in the Portland Harbor.	Comment has been noted and will be considered during implementation of the PHSMP. Opportunities for coordination with Washington State tribes and agencies will be considered in addition to those identified in Section 12.0.
15-6	Kathy Taylor, Columbia River Estuary Task Force	The PHSMP citizen involvement component is not clear on how community comments will be incorporated into each site feasibility study and affect the record of decision.	Community concerns are considered in determining current and future uses of land and water which in turn is used to define the scenarios to evaluate in the risk assessment. The risk assessment sets the standard for developing and evaluating remedial action alternatives in the feasibility study. After DEQ staff recommend the most feasible remedial action alternative, public comments are evaluated and considered. Any public comments are addressed before choosing a final course of action as part of the Record of Decision.
15-7	Kathy Taylor, Columbia River Estuary Task Force	The U.S. Army Corps of Engineers DEIS and feasibility study for Channel Improvement for the Willamette and Columbia Rivers states that the sediments within the Willamette harbor shipping channel are clear for in water disposal and outlines a plan to dispose of any contaminated sediments in deeper areas of the Willamette and cap it with clean material. DEQ cleanup coordination with channel deepening and maintenance dredging is not clear. The sediment testing by the DEQ and EPA in 1997 may dispute the level of contaminants in the Willamette as presented by the Corps. Disturbance of contaminated sediments through dredging may conflict with the PHSMP.	Suitability of dredge sediments for unconfined in-water disposal would be evaluated using the Dredged Material Evaluation Framework. Sediments unsuitable for unconfined in-water disposal would be managed by either upland disposal or confined in-water disposal. The preferred alternative would be chosen on a project-by-project basis. The DEQ Divisions of Water Quality, Waste Management Cleanup, and Hazardous & Solid Waste coordinate on these projects to assure that contaminated sediments are handled consistently between programs.
15-8	Kathy Taylor, Columbia	Conflicting management objectives presented in the plan does not	Section 1.0 has been clarified to show DEQ's primary

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	River Estuary Task Force	make it clear whether long term cleanup of sites will be a priority when considered with the need to keep the Willamette open for commercial shipping.	goal is to protect human health and the environment. Other uses of the Harbor are important and will be considered during any cleanup action, but cleanup of sites is the highest priority.
17-1	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	There are numerous references throughout the plan to the need for a harbor-wide remedial investigation/feasibility study (or harbor-wide RI/FS). However, it was understood during development of the plan that the harbor-wide study would encompass only a remedial investigation, and that site-specific feasibility studies would be conducted at individual sites in the Harbor. This clarification should be provided in the plan text.	The PHSMP outlines the approach for conducting a harbor-wide remedial investigation. Based on the nature and extention of contamination found during the investigation, it may be necessary to conduct either a harbor-wide feasibility study or site-specific feasibility studies. Until the remedial investigation is completed, it is premature to identify what next steps will be.
17-10	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Section 2.0, fourth paragraph, third sentence-Replace "salmon" with "selected salmon species." Not all salmon species have been listed.	Comment incorporated.
17-11	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Section 2.0, fifth paragraph, sixth sentence-Replace "hazardous substances" with "pollutants."	Comment incorporated.
17-12	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Section 3.5, last paragraph, third sentence-Replace "that present a risk to human health or the environment" with "that present an unacceptable risk to human health or the environment."	Comment incorporated.
17-13	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Section 4.1, second paragraph, fourth sentence-The meaning of the sentence is uncertain because the term "normal stages" is not defined.	Comment incorporated.
17-14	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Figure 4-1-The features on this map cannot be distinguished in a black and white copy. Will it be in color in the final plan? In addition, major metropolitan areas should be identified, and the Portland Harbor study area should be clearly indicated.	This figure has been revised in the final PHSMP.
17-15	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Section 4.2, first paragraph, third sentence-This sentence provides the incorrect impression that sediment contaminants from Portland Harbor will be transported downstream into the Columbia River, potentially expanding the study area far beyond its present boundary.	This very well may be the case. However, the plan will be rephrased to make a more neutral position on this issue, as well as point out the need for further investigation.
17-16	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Elsewhere, statements are made that suggest there is no large-scale downstream movement of sediment contaminants, and that they tend to stay near their sources.	Again, there are insufficient data at this point to make claims about sediment transport one way or the other.
17-17	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Section 4.3, first paragraph, fourth sentence-Reference is made to a Figure 4-5, which does not exist. None of the existing figures appear to identify "known chemicals" associated with individual sampling locations.	This comment has been incorporated in Section 4.
17-18	Lawrence McCrone, Exponent (on behalf of Elf	Section 4.3, second paragraph, first sentence-Replace "XX stations" with the proper number of stations from the approximately 20 previous	The text has been updated.

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	Atochem)	studies.	
17-19	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Section 4.3, third paragraph, third sentence-Here (as well as elsewhere in the Plan), the term "ambient concentrations" is used, although a definition of what is meant by "ambient" is never provided. Does this imply pristine background concentrations, anthropogenic urban background concentrations, or another interpretation?	Ambient levels have been defined and the use of this term de-emphasized in the text. As noted, whether these levels constitute a concern needs to be determined a postori by the risk assessment.
17-2	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Executive Summary, first paragraph, third sentence-The list of known site contaminants should either be more extensive or be preceded by the statement "but not limited to."	Comment has been incorporated into the Executive Summary.
17-20	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Section 4.3, fourth paragraph, second sentence-Replace "XX stations" with the proper number of stations for which there are toxicity test results.	Text has been updated.
17-21	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Figure 4-2-The features on this map (as well as the legend) cannot be distinguished in a black and white copy. Will it be in color in the final Plan?	This figure has been revised in the final PHSMP.
17-22	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Section 4.7, fourth paragraph-Mention is made in this paragraph of sediment quality guidelines (SQGs), although the concept of SQGs and how they will be used has not been discussed earlier in the Plan.	These terms have been defined and context provided.
17-23	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Figure 5-1-The site labels in this figure should all be the same font size to make it apparent that all of the sites are equivalent. The label for the St. John's Bridge should be removed or made a different font size to differentiate it from the cleanup sites. The legend includes a symbol for sample locations, although none are shown in this figure. A north arrow should be added.	This figure has been revised in the final PHSMP.
17-24	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Table 5-1, Elf Atochem, second column-Replace "Manufacturer of DDT (1947-1954)" with "Prior owner manufactured DDT (1947-1954)."	Comment incorporated.
17-25	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Table 5-1, Elf Atochem, last column-Replace "additional sediment, groundwater, source area characterization" with "additional sediment and groundwater characterization."	This comment was not incorporated. The present text correctly characterizes the ongoing work at the site.
17-26	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Section 7.1, bulleted list, fourth, fifth, and sixth bullets-Reference is made to ensuring that organisms will not be exposed to toxic levels of COIs in water. However, the Plan is not intended to address water exposures.	DEQ needs to be able to distinguish between surface water and sediment as sources of contaminants. DEQ also needs to be able to determine when sediment is acting as a contaminant source to surface water. This plan is not intended to remedy all impaired beneficial uses in the waterbody. If water quality impairments are caused by problems other than contaminated sediments, they will be addressed through other programs.
17-27	Lawrence McCrone,	Section 7.1, fourth paragraph, first sentence-Reference is made to	This comment has been incorporated into the final

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	Exponent (on behalf of Elf Atochem)	Sections 4 and 7.2.1 for discussion of federal and state ARARs. However, those sections do not address ARARs.	PHSMP.
17-28	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Section 7.1, fifth paragraph, first sentence-Replace "represent a risk to human health and the environment" with "represent an unacceptable risk to human health or the environment."	Comment incorporated.
17-29	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Table 7-1, Objective 3, Carcinogenic risks from incidental ingestion exposures, Testable Problem Statement-Add "for individual contaminants" to first bulleted item.	Comment incorporated.
17-3	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Executive Summary, second paragraph, second sentence-Replace "threatened and endangered" with "anadromous." The harbor's value extends to anadromous fish species other than those recently listed as threatened or endangered.	Comment incorporated.
17-30	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Table 7-1, Objective 3, Carcinogenic risks from incidental ingestion exposures, Testable Problem Statement-Add "for individual contaminants" to first bulleted item.	Comment incorporated.
17-31	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Section 7.2.1.1, third paragraph, fifth sentence-An explanation of what is meant by "associated sites" would be helpful.	Text clarified.
17-32	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Section 7.2.1.2, first paragraph, fourth sentence-Insert "in" before "reference areas" in the parenthetical expression.	Comment incorporated.
17-33	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Section 7.2.1.2, second paragraph, third sentence-Replace the outdated term "cancer potency factors (CPFs)" with the current term "cancer slope factors (CSFs)."	Comment incorporated.
17-34	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Section 7.2.3, second paragraph, first sentence-Replace "contaminant concentrations at or below ambient levels (concentrations of ubiquitous chemical greater than zero, but less than level of concern" with "contaminant concentrations below a level of concern."	Ambient levels have been defined and the use of this term de-emphasized in the text. As noted, whether these levels constitute a concern needs to be determined a postori by the risk assessment.
17-35	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Section 7.5.2, second paragraph-Notwithstanding DEQ's preference for treatment prior to disposal in a landfill, it should be recognized that experience with contaminated sediments elsewhere in the country has demonstrated that it is seldom practical to treat contaminated sediments. The large volumes and high water content make most treatment alternatives prohibitively expensive, and, consequently, treatment of contaminated sediments, especially prior to disposal in a landfill, is rarely practiced.	Text has been included acknowledging the greater difficulty of treating sediments compared with soils.
17-36	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Section 8.0, second paragraph-There are references in the text to Figures 8-1a and 8-1b, but no reference to Figure 8-1c.	Comment has been incorporated into the final PHSMP.
17-37	Lawrence McCrone,	Figure 8-1a-All of the numbers of days listed in the "Duration" column	The schedule is being revised. However, DEQ would

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	Exponent (on behalf of Elf Atochem)	appear to be considerably less than the time periods represented by the bars in the timelines to the right. The time frame for benthic community analyses (i.e., November-December for the sediment profile.	like an indication of the health of the benthic community on a more than one season basis. At a minimum, however, sampling should be done in late summer.
17-38	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	imaging camera survey and January-March for sampling of the benthic community) is inappropriate. Benthic communities are likely to be relatively depauperate during the winter months. The preferred time for such surveys is when benthic organisms are likely to be more abundant in late spring through late summer.	The schedule is being revised. However, DEQ would like an indication of the health of the benthic community on a more than one season basis. At a minimum, however, sampling should be done in late summer.
17-39	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Figure 8-lb-The timelines for the Elf Atochem site shown in this figure bear no resemblance to the information submitted to DEQ earlier in the development of the Plan. A remedial investigation for the uplands portion of the site is underway and is expected to be completed by the end of the spring in the year 2000. A feasibility study for the uplands portion of the site is expected to be initiated next winter and be completed by the end of the fall in the year 2000. Work on a record of decision for the uplands portion of the site is then expected to occur in the spring and summer of the year 2001. Uplands remedial design and remedial action would occur at a later date. The phrase "Source control action completed in 1977" should be deleted. It is not true that "No sediment sampling is anticipated." Phase I sediment sampling for the sediments portion of the site has already been conducted and Phase H sediment sampling is awaiting finalization of the plans for the Portland Harbor investigations described in the Plan. It is currently anticipated that a remedial investigation for the sediments portion of the site will be completed in the late summer of the year 2000, and that a feasibility study will then be completed for the sediments by the end of the summer in the year 200 1. Work on a record of decision for the sediments portion of the site will then begin in the late fall of the year 2001, followed by remedial design and remedial action. The schedule for all of these activities is summarized in the following figure.	The schedules have been revised.
17-4	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Executive Summary, second paragraph, third sentence- Insert "selected" before "salmon species." Not all salmon species have been listed.	Comment incorporated.
17-40	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Table 10-1-Will all of the sections labeled "To be completed" be filled in prior to finalization of the Plan?	Table 10-1 has been completed.
17-41	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Section 11.1, first paragraph, third sentence-Replace "critical" with "very important."	Comment incorporated.
17-42	Lawrence McCrone,	Appendix E, Section 1.1.3, second paragraph, second sentence-We	Comment incorporated.

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	Exponent (on behalf of Elf Atochem)	respectfully request that this sentence either be deleted, or, at the least, the phrase "from upstream sites such as ElfAtochem, Rhone Poulenc, Gould, and Gasco" be replaced with "from upstream sources." There is no evidence currently available to support the identification of individual sites as the source(s) of the sediment contaminants, and therefore the previous statement was speculative.	
17-43	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix E, Section 1.1.8-We respectfully request that the following changes, submitted on an earlier draft of the Plan but not yet addressed, be made prior to finalization of the Plan. Delete second paragraph. Add the following sentence to the beginning of the third paragraph: "Elf Atochem North America, Inc. purchased the site from the Pennwalt Corporation in 1990."We believe that these changes will make the text more factual and less speculative. In addition, the added sentence clarifies that Elf Atochem was not the owner or operator of the facility at the time of DDT manufacturing.	Comment incorporated.
17-44	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix E, Section 1.1.8, fifth paragraph, second sentence-the word "residual" should be inserted prior to the words "dense nonaqueous phase liquid", and "soils in" should be inserted after the phrase "...containing chlorobenzene and DDT in...." These changes are based on our current knowledge of the site and they make the statement more factual.	Comment incorporated.
17-45	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix F, Section 3.3, fifth paragraph, first sentence-Reference to Figure F-3 should be deleted from this sentence because the figure does not relate to the sentence.	Comment incorporated.
17-46	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix F, Table F-1, Phthalates, Dredge Screening Value-It is not apparent what is meant by "219701 calc" in this column.	(The parantheses on this value should probably match.) The calculated value for the dredge screening value that appears in Table F-1for phthalates was obtained by adding the values for individual phthalates. Originally, the site discovery evaluation was completed using phthalates as a group. Later, baseline values were determined for individual phthalates. Individual phthalates appear further down on the table and the sum of the dredge screening values for these compounds is equal to the 21,970 value that appears for phthalates.
17-47	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix F, Figure F-2-The site labels in this figure should all be the same font size to make it apparent that all of the sites are equivalent. The label for the St. John's Bridge should be removed or made a different font size to differentiate it from the cleanup sites. The legend includes a symbol for sample locations, although none are shown in this figure.	This figure has been revised in the final PHSMP.

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17-48	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix F, Table F-2, first row-Two references to "Mobile Oil" in this row should be changed to "Mobil Oil."	Comment incorporated.
17-49	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix F, Table F-2, ninth row-Text should be inserted to the cells in this row	Comment incorporated.
17-5	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Executive Summary, fourth paragraph, first sentence-Replace "elevated levels of contaminants" with "contaminant concentrations that present unacceptable risks to human health or the environment." The criterion for cleanup cannot be simply elevated concentrations.	Comment incorporated.
17-50	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 1.0, second paragraph, last sentence-The acronyms "TSCs and TTL" are introduced in this section, before they have been defined or discussed.	The acronyms have been defined.
17-51	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 1.1, numbered list, fourth, fifth, and sixth items-Replace "are not impact" with "are not adversely affected."	Comment incorporated.
17-52	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 1.1, last paragraph-References in this paragraph to Sections 2.6. 1, 2.6.2, and 2.6.3 should instead be to Sections 2.5.1, 2.5.2, and 2.5.3.	Comment incorporated.
17-53	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 1.2, first paragraph-The acronym "NRDA" is introduced in this section before it has been defined or discussed.	Comment incorporated.
17-54	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 2.0, third paragraph-References in this paragraph to Sections 2.6. 1, 2.6.2, and 2.6.3 should instead be to Sections 2.5.1, 2.5.2, and 2.5.3.	Comment incorporated.
17-55	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 2.2.2, third paragraph, fourth sentence- It is inaccurate to refer to the induction of DNA adducts as an "impact" to fish. DNA adducts represent a modified form of PAHs that bind to DNA molecules. However, there are natural enzymes that are capable of repairing this condition, and the induction of DNA adducts is therefore a reversible condition. It is not known whether the presence of DNA adducts is associated with induction of diseases or other abnormalities in juvenile salmon. DNA adducts may be an indicator of exposure to PAHs, but are not, in and of themselves, an "impact."	Both NOAA and USFWS believe that the presence of DNA adducts (as well as immunosuppression) represent a potential "impact". Post-plan work groups will be conducted to more fully address this issue.
17-56	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 2.3, sixth sentence-"Corophium" is a genus of amphipod, and, as such, should be capitalized and italicized.	Comment incorporated.
17-57	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 2.3.1, first paragraph, first sentence-Replace "This is" with "There is."	Comment incorporated.

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17-58	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 2.3.2, second paragraph-This paragraph should include the most up-to-date information on the listing of salmonid species as threatened and endangered species.	Comment incorporated.
17-59	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 2.3.2, Chinook, fourth paragraph-The discussion of the studies with juvenile salmonids in this paragraph is highly inflammatory and potentially misleading. The study by Arkoosh et al. (1991) found evidence of immunosuppression in fish collected from urban estuaries, but no evidence was presented that linked the observed effects to any specific chemical, or even to chemical contamination in general. Furthermore, the authors themselves concluded that "The consequence of suppressed immunological memory in disease resistance of juvenile salmon is currently unknown." The results of Arkoosh et al. (1998) should also be described as equivocal. The researchers chose to emphasize the results that appear to support their position, while dismissing the results that are contradictory. In any case, their results do not support the assertion that the purported effects were attributable to exposure to chemicals in the urban estuary. Furthermore, even if the results were indicative of chemical causation, they would not be sufficient to establish a link between the purported effects in juvenile salmon and any specific chemical.	This will be clarified through a work group process. DEQ, however, respects the desire of USFWS to have this specific language included in the plan.
17-6	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Section 1.1, first paragraph, second sentence- Replace "threatened and endangered" with "anadromous." The harbor's value extends to anadromous fish species other than those recently listed as threatened or endangered.	Comment incorporated.
17-60	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	The statement that "Factors that affect health in the early life stage may affect recruitment to adults" may indeed be true, but a link has never been demonstrated between exposure of juvenile salmon to contaminants during their brief residence in urban environments and subsequent increased mortality in natural populations that results in reduced recruitment of adult salmon.	Both NOAA and USFWS believe that the presence of DNA adducts (as well as immunosuppression) represent a potential "impact". Post-plan work groups will be conducted to more fully address this issue.
17-61	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	The statements in this paragraph are made with an air of authority without recognition of the high uncertainties involved. These are extremely complex issues that certainly warrant further attention. The way in which they are presented in this document, however, is oversimplified and misleading and gives the reader the incorrect impression that juvenile salmonids are at grave risk from migrating through an urban, industrialized area, even if their exposure to chemical contaminants, while in that environment, is insignificant.	Agree; the language will be made more neutral and more reflective of the complex scientific issues involved. Both NOAA and USFWS believe that the presence of DNA adducts (as well as immunosuppression) represent a potential "impact". Post-plan work groups will be conducted to more fully address this issue.
17-62	Lawrence McCrone, Exponent (on behalf of Elf	Appendix G, Section 2.4.2, fifth paragraph, first sentence-Replace "concentration" with "DDT concentrations."	Comment incorporated.

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17-63	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 3.1, first paragraph, fourth sentence-In this sentence, use of sites in the Columbia River for reference areas is precluded, although elsewhere in the document it is acknowledged that reference areas may be in the Columbia River.	Agree, text has been amended to allow for Columbia River stations.
17-64	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Table G-3, first row, Testable Problem Statements-Replace the current text with the following: "Contaminant concentrations in bulk sediment or pore water do not exceed contaminant-specific SQGs [Table G-4, Outcome A] or Sediment bioassay tests show no adverse effects in test organisms exposed to Harbor sediment [Table G-4, Outcome C] ".	Comment incorporated.
17-65	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Table G-4-Use of the letters A, B, C, and D for both outcomes and toxicity tests in this table is confusing. It might be better to number the toxicity tests. In addition, a footnote should be added indicating that a "+" for toxicity indicates that the response in a sediment toxicity test with a test sediment was significantly different from the response with a reference sediment.	Comment incorporated.
17-66	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Table G-5, second row-Another possible interpretation is that the observed toxicity is attributable to chemical contaminants for which there are no SQGs available, in which case further assessment may be warranted.	Comment incorporated.
17-67	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Table G-6, first row, Testable Problem Statements-The last line of the text in this cell should be "for all carcinogens" and should not be superscript.	Comment incorporated.
17-68	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Table G-6, first row, Measures- Replace the outdated term "cancer potency factor (CPF)" with the current term "cancer slope factor (CSF)."	Comment incorporated.
17-69	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 3.4, first paragraph, fourth sentence-Replace "sub-yearly" with "Subyearling."	Comment incorporated.
17-7	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Section 1.1, fifth paragraph, third sentence- Replace "elevated levels of contaminants" with "contaminant concentrations that present unacceptable risks to human health or the environment." The criterion for cleanup cannot be simply elevated concentrations.	Comment incorporated.
17-70	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 3.4.1.1, first paragraph-Replace "are the same as those summarized in Table G-8, except using TSCs instead of TTLs" with "are summarized in Table G-8."	Comment incorporated.
17-71	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 3.4.1.1, second paragraph-Replace "are the same as those summarized in Table G-9" with "are summarized in Table G-9."	Comment incorporated.

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17-72	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 3.4.2.1, first paragraph, third sentence-It is not apparent how water temperature, water velocity, and physical obstructions can be factored into the fish exposure analysis.	These are "measures of characteristics" that have a bearing on how long a fish spends in a given area and whether it is possibly also under stress from non-contaminant factors. See the examples given in U.S. EPA's most current ecological risk assessment guidance.
17-73	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 3.4.2.2, fourth paragraph, first sentence-It is inaccurate to state that there is "documented significant accumulation of PAHs" in outmigrating Chinook salmon in Puget Sound estuaries. PAHs are metabolized by fish and do not accumulate in their tissues. Although the authors of the cited studies have asserted a link between PAHs and organochlorine compounds and altered immune responses in the fish, there has been no conclusive evidence establishing such a link. It would be more accurate to state that such a link "has been suggested."	Agree. The text has been edited.
17-74	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 4.1, first paragraph, fourth sentence-Replace "complimentary" with "complementary."	Comment incorporated.
17-75	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 4.1, first paragraph, fourth sentence-Replace "complimentary" with "complementary."	Comment incorporated.
17-76	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 5.1.2.1-The reference for Plumb (198 1) is as follows: Plumb, R.H., Jr. 198 1. Procedure for handling and chemical analysis of sediment and water samples. Technical Report EPA/CE-81-1. U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS.	Comment incorporated.
17-77	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 5.1.2.3, third paragraph, third sentence-The referenced section (G. 1.2) does not exist.	Comment incorporated.
17-78	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 5.2.6, third sentence-The reference should be to Section 5.1.4, not Section 4.1.4	Comment incorporated.
17-79	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 6.2.1.3, fourth paragraph-In addition to defining a "hit" in a biological test as a significant difference from the reference sample, consideration should be given to establishing a minimum level of absolute response that is ecologically significant, as is done in the Washington State Sediment Management Standards.	Consideration will be given to alternative hit/no-hit thresholds. This decision will be made by the SQG development work group. Text has been included to that effect.
17-8	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Section 1.2, bulleted list, first bullet, first sentence-Replace the awkward term "viable liable parties" with "viable responsible parties."	Comment incorporated.
17-80	Lawrence McCrone,	Appendix G, Section 6.2.1.3, fifth paragraph, second sentence-The	Comment incorporated.

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	Exponent (on behalf of Elf Atochem)	reference should be to Section 5.2.5, not Section 5.2.4.	
17-81	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 6.2.2.4-The outdated term "cancer potency factor (CPF)" used in this section should be replaced with the current term "cancer slope factor (CSF)."	Comment incorporated.
17-82	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 6.2.2.4, sixth paragraph, fifth sentence-It appears that there may be errors in the units in this sentence. We believe that the sentence should be: "Dividing the RME exposure (g fish/day) by the body weight gives a daily fish intake of 1.1 g/kg for children and 0.9 g/kg for adults, roughly equivalent."	Agree. The text has been edited for clarity.
17-83	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix G, Section 6.2.2.5, fourth paragraph, third sentence-There are too many logistical problems with simulating actual exposures to recommend the use of laboratory bioaccumulation studies with fish.	This is a detail that will be addressed during work plan development.
17-84	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix I, Attachment G, Elf Atochem, last column-Replace "additional sediment, groundwater, source area characterization" with "additional sediment and groundwater characterization."	Comment incorporated.
17-85	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Appendix L-The acronym list in Appendix L is a valuable guide for the reader not familiar with the many acronyms used in the Plan. However, there are many more acronyms used throughout the Plan that are not included in Appendix L. A partial (not necessarily complete) list of acronyms not found in Appendix L includes: ARL, BA, B-COCs, COC, COE, COI, COPC, CPEC, DDD, DDE, DDT, DO, ERED, ESCI, ESU, FDA, HEAST, HI, HPAH, HW, IRIS, LOAEL, PAH, NOAEL, NRDA, PAE, PCB, PCDD, PCDF, PCP, PED, RDT, SAM, SAP, TBT, TCA, TCLP, TEC, TPH, VOC, and WRDA. Every effort should be made to include all acronyms used in the Plan in Appendix L.	The acronym list in Appendix L has been revised to incorporate a complete list of acronyms in the PHSMP.
17-9	Lawrence McCrone, Exponent (on behalf of Elf Atochem)	Section 1.3, first paragraph, fourth sentence-Although a key player in development of the Plan, the U.S. Army Corps of Engineers is not a "natural resource agency" as indicated.	Comment incorporated.
3-1	Linda Bauer	Everyone that I have worked with at DEQ is very dedicated and hard working. Man power shortage and lack of adequate supplies seem to be a daily problem. Everyone that I have worked with does a lot more than their share of the work and to ask for more work out of these people does not seem possible or realistic. If DEQ is going to take on all this new work, they need additional resources. They already have the dedication, they also need our support (moral and financial). I would like to especially thank these people: Larry Caton, Dennsi Jurries, Daniel E. Murphy, Elliot Zais, Robert Baumgartner, Neil Mullane, Jeff Bachman and Tom Melville.	The PHSMP outlines DEQ's commitment to use those resources involved in developing the plan to continue with implementation activities. This team includes management support, a toxicologist, cleanup site project managers, a public involvement coordinator, and a project coordinator. Additional resources from other DEQ programs, such as water quality, will support the work performed by this core team. It is expected these resources will be sufficient for moving forward with an efficient and effective investigation of Portland Harbor.

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31-1	Linnton Neighborhood Association	First of all, I think that I am accurate in representing the vast majority of people in my neighborhood when I express a complete ignorance of this troubling issue. Meaning that somewhere between DEQ's desire to include the community in this project and the exercise of this goal something failed. I would suggest both an utter failure on the part of Northwest Environmental Advocates, as you so clearly pointed out, and a lack of basic support from DEQ. The $10,000 you gave to NEA for this public relations project is silly when one considers what expense public relations entails. It shows a true lack of honesty on the part of DEQ. It demonstrates a certain amount of lip-service designed to "show" that DEQ is involving the public, but makes one wonder why, then, do you not take the necessary steps to ensure this involvement? In these busy days, word of mouth just doesn't work. Dedication and follow-through are needed.	DEQ appreciates the comment on the public involvement approach to date. Additional efforts will take place during detailed public involvement planning and implementation to ensure these interests are addressed.
31-2	Linnton Neighborhood Association	Look at all the information both DEQ and NEA passed out at the meeting (here included). Where was this information before? Why was it not actively provided to the public (i.e. through the mail)? Having it in your offices is like having public access to construction permits down at the courthouse. Fully 99.9% of the normal citizens will never take advantage of this access. Then to, the time limits. When I view how little time one has to review the issue and provide feedback, I understand that the reality of the situation denies an honest desire for public opinion. Why waste 10 grand when you could just have gone ahead with your project without public input, as you are now doing?	Access to information will be a focus of public involvement implementation, and consideration will be given to the amount of time needed for effective public review of project materials and decisions.
31-3	Linnton Neighborhood Association	Don't take this criticism personally, dear lady. From your attitude and intelligent articulation at our neighborhood meeting I can see that you are both sharp minded and dedicated to this project. You personally are someone in whom I can place faith. NEA seems like a group of subversives who would rather undermine DEQ than clean up the damn river, regrets for that impression. I say get as much money as you can, go for the super-funds. I also say, stay involved. I sincerely ask you to take action to clean up the river as soon as possible. Bottom line: I don't want businesses dumping toxic waste into the river, the very idea is pathetic, evil, and greedy on their part. We have the technology to avoid this tragic form of pollution. I want our river to be a place which invites people out of their homes and reestablishes Linnton as a community and not solely a hated place by environmental enthusiasts.	Comments noted for consideration in implementation.
7-1	Lona Pierce, Wildlife Too	Although the PHSMP declared that "remedies must be protective of,	The intent of the PHSMP is to provide a framework to

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		human health and the environment", the obvious prime priority of this entire process is protecting dredging rights. I doubt if designating the harbor as a superfund site will alter this reality, since the Corp of Engineers will also emphasize dredging over all other considerations. With this in mind, I am making the following recommendations for managing toxic sediments in the Portland Harbor area.	evaluate the risk from contaminated sediments in Portland Harbor. DEQ acknowledges in the PHSMP that coordination with maintenance and navigational dredging near potential cleanup sites is necessary from an environmental standpoint. A Superfund listing in the harbor will likely affect dredging activities in the harbor, since the Corps of Engineers has a policy of not dredging at Superfund sites.
7-2	Lona Pierce, Wildlife Too	Open-water dredge dumpsites of clean material must be environmentally sound. Sites will be rejected that bury crab habitat, fill wetlands, create caspian tern fiasco's, etc. It's disruptive enough that miles of the Columbia River system are continually dredged. The government must become more responsible by disposing of the dredge spoils without harming wildlife, wetlands, or fisheries. Altering the shoreline with dredge spoils must not adversely affect landowners or natural areas.	Dredge projects and dredge material disposal are evaluated by regulatory and resource agencies to assure that these projects comply with the applicable rules and regulations and to minimize adverse effects to beneficial uses. Disposal of sediments removed from Portland Harbor, if any, will take place according to all pertinent regulations.
7-3	Lona Pierce, Wildlife Too	The cost of cleaning up contaminated sites that are a result of unregulated activities decades ago should be paid for by all of the metro area, not pinned solely on the perpetrator or present landowner. These toxic materials were dumped into the rivers and on the shoreline with the government's blessing, to promote jobs and growth. Everyone should shoulder the consequences of willingly being terrible stewards of our waterways. Businesses that Illegally contaminated water or land should be forced to clean up their own messes, or fined, or both.	Oregon's cleanup statute, passed by the Legislature and approved by the Governor, is based on the principle of holding those responsible for contamination, responsible for cleanup.
7-4	Lona Pierce, Wildlife Too	DEQ needs to enforce existing laws that protect water quality.	DEQ's water quality program is responsible for enforcing existing laws that protect water quality. Cleanup efforts in Portland Harbor will be closely coordinated with the water quality program to ensure that all requirements are being met and that cleanup proceeds in the most effective manner possible. The coordination that will occur is described in more detail in Section 9.
7-5	Lona Pierce, Wildlife Too	The city of Portland needs to get more serious about cutting back on stormwater run-off. Property owners shouldn't just be asked pretty-please to unhook downspouts, or properly dispose of waste oil. Make it easy to do it right by increasing collection sites for hazardous wastes, and actively help individuals reduce water run-off from their property. Willful non-compliance should mean a ticket. We have no problem fining big business when they pollute. Gas stations or homeowners can quit being slobs too, when they know their activities	A major component of the Portland Harbor Plan is prevention. DEQ acknowledges that recontamination may render sediment cleanup actions ineffective. Key components of prevention include the evaluation and implementation of source control efforts at all individual cleanup sites, a sediment transport study to quantify the extent to which upstream contaminants are contributing to Portland Harbor sediment

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		are harmful.	contamination and cross-program coordination to address non-point sources of contamination. Non-point sources that will be considered include releases from recreational boats, commercial shipping operations, and urban and agricultural runoff.
7-6	Lona Pierce, Wildlife Too	Suspended sediments should be tested for toxins at several locations downstream of toxic sites at the time of dredging. This will inform us how far the current carries contaminated sediments, and how much is released into the currant	Good point; DEQ hopes to test the sediments before they are disturbed by dredging. This is also an issue that can be addressed in each feasibility study and during the sediment bed load transport study.
7-7	Lona Pierce, Wildlife Too	Contaminated sites that are not likely to be dredged should be capped. Don't stir up stable sediments	As the plan explains, a feasibility study is the step in the cleanup process for determining appropriate remedial actions.
7-8	Lona Pierce, Wildlife Too	Dredging isn't permitted during critical salmon migration times, is it? I wonder how many sturgeon get ground up and blended into the dredge spoils.	The dredge window, the time of year that dredging is allowed, has been coordinated with regulatory and natural resource agencies. The dredge window for the Portland Harbor was chosen to minimize adverse effects to the migration of anadromous salmonids. The effects of dredging on sturgeon are unknown.
16-1	Mike Burton, Portland Metro	As the current owner of the Willamette Cove property, Metro presents the following attached comments to DEQ's Public Review Draft of the Portland Harbor Sediment Management Plan ("the plan"), dated April 19, 1999. While Metro is supportive of the mission and goals identified in the plan, the attached comments address some investigative and responsibility issues which Metro believes could be better or more fully addressed in the final version of the plan. An underlying hypothesis is presented in the plan that DEQ "believes that contaminants may not have moved or migrated a great distance away from their sources in many areas of the Harbor, and may not be widely distributed or suspended by water movements." See Section 1.1, at p. 1. We believe this hypothesis may not be accurate for the contaminants present in the Harbor today. The rationale offered in the draft plan for this hypothesis is that mean river velocities for most of the year are below that needed to scour sediments that have settled to the bottom. As the report recognizes, "during flood and other high flow events, velocities exceed 2 to 4 times the critical velocity" for sediment bed load transport. Metro agrees with the statement in the draft plan on Page G-24: " Although bed load transport in the Harbor may be limited because of channel dimensions and the type of bed material (COE 1997a), the issue is not fully resolved." According to Appendix G-27, "Because water velocities in the Harbor are generally low, sediments (and associated contaminants) that have settled to the	Agree. A comprehensive bed load transport study will be part of the RI/FS work plan.

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		Harbor bottom will generally not tend to be resuspended and transported to another location within the Harbor." While this generalization is conceptually helpful, it does not address site-specific conditions. With (1) discoveries made by Army Corps of Engineers that 2- to 4-foot layers of silty loam fluff comprise the sediments in certain areas of the harbor and (2) flow velocities high enough to transport sediment bed load occurring each year, portions of the harbor's sediment are clearly not stable. More investigation on sediment transport is needed.	
16-2	Mike Burton, Portland Metro	In addition, many of the contaminants in the Harbor have been in existence for decades, dating back to when high-contaminant industrial activity was occurring adjacent to the Harbor. The plan recognizes that sediments that deposit on the river bottom could be transported to other locations during dredging, floods, or other high water events. See plan, Section 4.2 at p. 26. Because the sediment contaminants present in the Harbor have experienced many periods of flooding, high water, and dredging, it is likely that the existing contaminants may indeed have moved or migrated a great distance away from their sources in the Harbor, contrary to the assumption set forth in the plan.	Possibly. A comprehensive bed load transport study will be part of the RI work plan.
16-3	Mike Burton, Portland Metro	Metro concurs with the statement in the plan that "a better understanding of sediment transport and loading has been identified as a data gap for the remedial investigation." See Section 4.2, p. 26. Metro also believes that a better understanding of contaminant transport and loading is a large data gap that must be thoroughly investigated. Until these data gaps are closed, we believe that the plan, and actions taken pursuant to the plan, should not reflect a hypothesis or bias that contaminants remain close to their sources. Addressing these data gaps should be via a task force of independent scientists, whose work product should be made available for public review and comment during development.	Agree. A comprehensive bed load transport study will be part of the RI/FS work plan.
16-4	Mike Burton, Portland Metro	The hypothesis made in the plan that contaminants remain close to their source is particularly unreliable in areas with high net sediment deposition, such as those areas identified in Appendix G, section 2.4.1, at page G-24. In such areas the hypothesis should be reversed, and the assumption should be that in those sites near high sedimentation points, the sediment, and thus any sediment contamination, most likely originated from a different upstream source.	Possibly. A comprehensive bed load transport study will be part of the RI/FS work plan.
16-5	Mike Burton, Portland Metro	The primary focus of the Portland Harbor Sediment Plan is characterization of the extent of sediment contamination and assessment of risk associated with exposure to that contamination. A very important part of characterizing the sediment contamination is	Agree. A comprehensive bed load transport study will be part of the RI/FS work plan.

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		defining the sources. There must be a clear scientific-based understanding of the fate and transport processes linking land-based activities to contamination in the aquatic system. Equally important, we must understand fate and transport of contaminants within the harbor's aquatic system. To do this, we need a better understanding of the harbor's hydrodynamics, sedimentation, and sediment bed load transport. As stated in the Draft Plan (Section 4.7, p.34), "Sediment transport into and out of the Harbor may affect the success of remedial actions proposed for sediments within the Harbor." Sediment transport within the Harbor will also affect the success of remedial actions.	
16-6	Mike Burton, Portland Metro	As flow velocities decrease in these areas, there is an increase in sediment deposition, as well as an increase in finer sediment in those reaches. The finer sediments, often associated with an increase in organic carbon content, are often prone to be higher in contaminants. Thus the slower reaches and higher deposition areas of the harbor may indicate river sediment dynamics rather than local contaminant sources. Until there is a thorough understanding of the harbor's sediment transport dynamics, linkages to potential contributors and mechanisms for remediation cannot proceed effectively.	Agree. A comprehensive bed load transport study will be part of the RI/FS work plan.
16-7	Mike Burton, Portland Metro	The plan calls for the development of Sediment Quality Guidelines (SQGs) via additional data collection through harbor-wide sampling, with a majority of the sampling stations to be located within known sites. The SQGs developed from this data will then be applied to the entire Harbor. See plan, Section 7.2 at pp. 50-51. The plan states that "costs of any additional harbor-wide synoptic sampling will be minimized by use of a single contractor. The costs for individual stations will be apportioned and allocated back to the associated sites with the Harbor." See plan, Section 7.2.1.1., at p. 51. Determining which sites are "associated" with sediment contamination should not simply be a function of who currently holds title to the adjacent upland area, but instead should be based on causation or exacerbation of the contamination. The allocation of costs for sediment sampling should not simply be determined based on river frontage. Cost allocation should take into account the active industrial or municipal entities who have contributed to the contamination present in the Harbor. Once current owners have identified past owners who may have contributed to the contamination, DEQ should use its statutory powers to ensure that these responsible parties pay their share to investigate and remediate any contamination to which they contributed. These past owners may or may not already be part of the Harbor Group or currently addressing other sites, but in any case, allocation of costs for	The comment about a methodology for allocating costs for sampling will also apply to ultimate allocation of responsibility for cleanup in Portland Harbor. The concepts described will be considered in detailed planning to implement the PHSMP.

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		carrying out the plan should in the first instance be tied to causation, and not simply to current property ownership.	
16-8	Mike Burton, Portland Metro	The plan states that "until SQGs are developed, all sites will collect synoptic sediment chemistry and toxicity bioassay data." See Appendix G, at G-38. However, the site-specific activities schedule included in the plan indicates that at certain sites, including the Elf Atochem, Gould, Linnton Oil, Mobil Oil, and Time Oil sites, "no sediment sampling anticipated." See plan at Figure 8-1 b, at pp. 67-71. Since sediment sampling throughout the Harbor will be used to develop the SQGs which will inform and in some cases determine the level of cleanup required at each site, no site should be categorically excluded from sediment sampling requirements. If a site is to be excluded, then this decision should be made only after public discussion and input. If after such a process a site is to be excluded from testing, then that site should still be assessed its proportionate share of costs for the testing based on that industry's or agency's contribution to contamination in the Harbor.	The schedule is in error and has been updated. All current and future active sites will be expected to perform varying degrees of testing.
16-9	Mike Burton, Portland Metro	Metro supports the mission and goals identified in DEQ's plan. However, Metro believes that equitable allocation of responsibility and costs must be made by DEQ, and must be based first and most aggressively on those industries or agencies which have contributed to the contamination existing in the Harbor, or who have profited from being located on the Harbor.	Sections 5 and 7.4.3 describe site discovery work that has already taken place in Portland Harbor as well as plans for continued identification of sites that may be responsible for contamination.
26-1	Nina Bell, Northwest Environmental Advocates	Introduction: Overall, we find this plan to be largely a set of statements rather than a plan. For example, the plan establishes what legal authority the Department has but fails to set out what the Department will do with that authority. It notes that the Clean Water Act exists but says nothing about how the Act applies and how the Department will use it. The plan is also very confusing. This is specifically true with regard to its geographic boundaries. For example, the plan refers all harbor-wide contamination to site-specific sources, giving the impression that the only sources for contamination in the harbor come from these site-specific sources which have been or will be identified. In other places, the plan is exceedingly vague. The public relations aspect of the plan is a notable example. It simply doesn't say anything despite the Department's use of the notion of "local control" as a primary selling point for Superfund deferral. In short, the plan offers few assurances that from a legal, public involvement, enforcement, or technical standpoint that deferral will provide the same level of protection for human health and the environment as an NPL listing.	Comments noted and addressed in other sections. DEQ is confident that the PHSMP will serve as the framework for a CERCLA-equivalent RI/FS for Portland Harbor and provide equivalent protection for human health and the environment.

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26-10	Nina Bell, Northwest Environmental Advocates	Several times in section 7.0, the plan notes that if an area is found to be posing a risk or affecting other areas such as the overall harbor then remedial action or a feasibility may be warranted. Why is the DEQ using such subjective terminology when they explicitly indicate that in the Contamination Response Process itself that if a risk is found then a Feasibility Study will be conducted and Remedial Action will be carried out? The choice of words in section 7.0 of the plan indicates that DEQ will not take remedial action on a harbor-wide basis. This section of the plan and others like it should be more clearly written and direct about what the DEQ is and is not going to do on a harbor-wide basis. pg. 56 and 57.	Section 7 has been edited to clarify these points. DEQ will ensure that if harbor-wide investigations indicate between-site risk, a feasibility study will be undertaken and necessary remedial action carried out.
26-100	Nina Bell, Northwest Environmental Advocates	4.2.8.Timing of Sampling. How can the timing of sampling "generally not [be] a critical factor"? This assumption is extremely odd considering the logistical concerns raised in section 4.2.6., the effect of dredging activities, the timing of high flows and deposition, and the use of the waters.	This might be a factor in the specific instance of Portland Harbor.
26-101	Nina Bell, Northwest Environmental Advocates	4.2.10 Sampling and Analysis Plan Documentation. This section discusses the site-specific Sampling and Analysis Plans which will take place as part of the overall Portland Harbor Sediment Management Plan. Although this section lists what the SAPs must have in common it is not clear how these plans will be coordinated with overall harbor activities. For example, how will the mangers handling the SQGs and the harbor-wide assessment ensure the individual SAPs meet all of the items listed on pg. G-60 in the plan? In order for the SAPs and their implementation to be useful to harbor-wide work the DEQ would need to ensure the individual SAPs meet their needs. How the DEQ will ensure this is not detailed in the plan. pg. G59 and G-60.	DEQ conducts project manager coordination meetings, underway for some time, and will continue that management coordination through the life of the project. Staff training in implementation of the PHSMP and continuing coordination will be assured through DEQ management structure and implementation.
26-102	Nina Bell, Northwest Environmental Advocates	4.3.3.1 Discrete vs. Composite Samples. In this section, the description justifying sample compositing seems to be quite subjective. It is not clear how the DEQ will ensure that appropriate samples are collected from the harbor when the guidelines for determining whether to take discrete or composite samples are vague. This decision will have tremendous consequences on the sampling analysis and subsequent clean-up objectives. The plan should more clearly delineate the criteria for compositing samples. pg. G-67.	The discussion of composite sampling will be deleted from the plan.
26-103	Nina Bell, Northwest Environmental Advocates	6.1.3 Applicability. This section makes reference to using the SQGs, TSCs, and TTLs to assess sediment and tissue quality on a harbor-wide basis. Taken with references from the main part of the plan there is only a vague indication that a RI/FS will be done for the 6 mile stretch called Portland Harbor. This plan has been vague and	DEQ will implement the RI/FS described in the PHSMP on a harbor-wide basis. If the investigation finds unacceptable risk that needs to be addressed with a feasibility study, whether site-specific or between sites, a feasibility study and any remediation indicated

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		circumspect about whether a harbor-wide risk assessment will be done and whether a feasibility study and possible remediation will take place on a harbor-wide basis. The plan leads people to believe the RI/FS will be done by reading the main document but after reading the whole plan it appears as though the DEQ is not going to do this. The plan indicates that if harbor-wide risks are found then the focus will be steered towards site-specific sources of contamination or blamed on sources from upstream of the harbor. The harbor-wide process needs to be clarified further in the context of the DEQ's own Contamination Response Process. pg. G-99 and Section 7 of the main document.	by that study will take place. The plan does address the issues related to effecting harbor-wide remediation options in light of upstream contamination, but commits to addressing harbor-wide remediation as indicated by the assessment.
26-104	Nina Bell, Northwest Environmental Advocates	6.1.3 Applicability. This section also mentions that the SQGs developed will not be immediately applied to dredge material evaluations. Why not? It also mentions that the Lower Columbia River Dredged Material Evaluation Framework "may" be revised once the SQGs are developed. This needs to be clarified further. Other aspects of this plan indicate there is going to be a lot of collaboration and integration with dredging activities but the statements here read like large loopholes in the plan. What are the criteria for having the dredging framework use the SQGs and why are these details not provided in the plan? pg. G-99.	These clarifications are now provided in the plan.
26-105	Nina Bell, Northwest Environmental Advocates	6.2.2.5 Derivation of Bioaccumulation-Based RAOs for Sediments. The plan discusses here the area-weighted concentration which fish would be exposed to in the harbor. The approach used in the analysis implies that the entire harbor is a single exposure unit for fish. Does this further imply that if the contamination level warrants a clean-up that a harbor-wide clean-up will be conducted? The subsequent discussion in the same paragraph implies something different, that large contributing sources to harbor-wide contamination will be dealt with until the harbor-wide concentration is no longer a risk. This approach leaves many "holes" in the clean-up process and should be better explained in the plan and how this piece will be integrated with other RAOs for the Portland Harbor. pg. G-120 and G-121.	This is correct but more explanation has been provided.
26-106	Nina Bell, Northwest Environmental Advocates	6.3.1.4 Summary of Chemistry and Bioassay Data. The plan states, "However, for risk assessment purposes, it does not appear that a Harbor-wide toxicity study is needed; site-specific investigations should be sufficient to delineate areas of benthic toxicity within the Harbor." How was this determined? This conclusion is rather significant for the implementation of the plan and yet there is no discussion about how this conclusion was reached. pg. G-126.	The sentence has been deleted. This issue will be addressed further once a complete review of existing data has been completed as part of work plan development.
26-107	Nina Bell, Northwest Environmental Advocates	The first glaring error to note in the plan is the use of the word "Relations" in the actual title. "Community Relations Plan." The	The title has been changed back to its original form: "Public Involvement Plan" This is the title DEQ uses

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		word "relations" can be defined as "the act of telling or narrating" or as "reference or regard, connections" (New Collegiate Dictionary). The word "relations" tends to indicate a separation between the actual agency and plan being implemented and the people affected by its implementation. This is quite different than if the DEQ stated Appendix I was a "Community Involvement Plan." Involvement indicates "to draw in as a participant or to include in as a part" (New Collegiate Dictionary). This results in a different meaning for the plan. If the DEQ is interested in having the community participate in the Portland Harbor clean-up then, to start, Appendix I should be titled "Community Involvement Plan."	for its cleanup outreach plans.
26-108	Nina Bell, Northwest Environmental Advocates	How is Section 3 part of a community involvement plan? The information in Section 3 can be found in other parts of the plan and is obviously just for the purpose of making this appendix look bigger.	The Public Involvement Plan (PIP) was drafted as a stand-alone document that could be distributed to the public without the other sections of the PHSMP attached and to provide quick and easy public access to background information/history of the site area. As the PHSMP is implemented, people with varying levels of information will be involved in the process. DEQ has found this section to be very helpful at other cleanup sites and the EPA uses a similar background section in its plans as well. The PIP is a draft document that will undergo many changes as the public provides more input on what information they need and how they would like to receive it.
26-109	Nina Bell, Northwest Environmental Advocates	The origin of Section 4.2 is not clear and as noted in conversations with the DEQ in public meetings is only a sample of the concerns noted by environmental groups and others before the release of the PHSMP. Why are these sample concerns in the Appendix I? Why do comments from community members belong in the community involvement plan? These should be located in either Appendix C: Public Activities Conducted During Plan Preparation or Appendix J: Public Review Comment Responsiveness Summary.	An integral component in the development of a community or public involvement plan is to gain an understanding of the concerns and issues of the community. This section of the plan (PIP) will be devoted to community concerns and issues, both prior to and after the plan's implementation. Issues and concerns may change over time as cleanup actions occur, thus indicating that outreach activities will need to address these changes or new issues. This section also addresses more than just the comments received to date on the PHSMP (responsiveness summary only covers comments received to date) and are broader than comments received during activities conducted during the Plan's preparation.
26-11	Nina Bell, Northwest Environmental Advocates	7.4.3.2 Outfalls and Natural Drainages: This part of the plan which includes activities related to the City of Portland's work with CSOs, which empty into the Portland Harbor, is vague. The only other part	DEQ plans to reach an agreement with the City of Portland about the details of assessing and addressing its municipal outfalls as part of implementation of the

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		of the plan that notes activities with the COP for the plan is Figure 8-1c which notes a time line for three activities. Based on conversations with representatives from the COP's BES in a public meeting the COP has already developed ideas on what the city is planning to do as part of the PHSMP to clean up the outfall areas. Why isn't this information in the plan? There should be details about how the COP plans on addressing areas contaminated by stormwater outfalls and CSOs.	PHSMP.
26-110	Nina Bell, Northwest Environmental Advocates	Section 5. This section provides a list of the "Key Stakeholders" for Portland Harbor but the list does seem to include how subsistence fishers or homeless people who frequent the banks of the Willamette River will be kept informed of issues related to the PHSMP implementation. These are obvious groups of people who may be exposed to contamination through fish consumption or direct contact with sediments.	The subsistence fishing population is a concern that will be addressed in the implementation of the PHSMP. Articles in local papers, announcements of public meetings, postings, and information at libraries will provide information to the public at large. Organizations that work with the homeless (e.g. shelters, jails, etc.) and subsistence fishing populations will also be given information to post or distribute.
26-111	Nina Bell, Northwest Environmental Advocates	Section 5. At minimum signs should be place along both banks of the Willamette River throughout the 6 mile reach called the Portland Harbor to inform the public that this stretch of the river is an active clean-up project. The signs should be informative, provide some warning about the sediments, and provide information on who to contact at the DEQ if the public has any questions. The signs should not use scare tactics and should be periodically updated as more information about the nature and extent of the contamination in the harbor is known. Additionally, the signs should be very sturdy and well mounted in the ground to discourage vandalism. Lastly, the signs should be in more than one language to reflect the ethnic background of the people who frequent the banks throughout the Willamette River in Portland Harbor.	DEQ will work with the Oregon Health Department to evaluate the need for and planning for posting the Portland Harbor area.
26-112	Nina Bell, Northwest Environmental Advocates	Section 6. The first bulleted item should refer to section 5.0 not section 4.0. The second bulleted item refers to mailing information out to interested parties, which sounds effective for keeping the public informed, but there is no commitment made as to how frequent information will be mailed out or whether the mailings will correspond with key opportunities for the public to review future documents. Bullets 3 and 4 mention notifying interested parties of public meetings on issues related to the project but again there is no commitment to actually do this on a regular basis. Additionally the plan does not state how an interested community group can request a public meeting. Is it simply a phone call to request one or something more? This needs to be clarified and the DEQ needs to demonstrate their commitment in the plan.	Information will be mailed out on a quarterly basis at a minimum and will correspond with key opportunities and events throughout the cleanup process for the public to review. Interested parties will be notified of meetings, etc. on a quarterly basis or more often as needed or requested by the community. A community group is being formed that will meet with DEQ on a regular basis (once or twice a month depending on needs of the group). Additional details on implementation of the PIP will be added following community interviews.

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26-113	Nina Bell, Northwest Environmental Advocates	Section 6. Another bulleted item states the DEQ will provide opportunities for the public to comment on public documents, but again there is no commitment by the DEQ showing how frequently they will provide these opportunities and how the "opportunities for comment" will be done. Will there be open houses for each new document? The plan needs to clarify this. This item in the plan also seems to indicate that public comments will be stored in a database but the plan does not mention whether this database will be actively reviewed by project managers to see if comments will warrant changes in the plan or whether implementation might have to be modified to address community concerns.	Opportunities for comment will be determined based on community needs and requests. Some of this information will be gathered during community interviews and throughout the process as implementation of the PHSMP occurs. For example, during or prior to removals, investigations, and evaluations of possible long-term cleanup alternatives, DEQ will provide opportunities for comment through community meetings, and through specific meetings with the community group or other groups impacted by the activity. Citizen concerns and comments will be considered by project managers and others involved in the project to determine if changes are warranted.
26-114	Nina Bell, Northwest Environmental Advocates	Section 6. Appendix G mentions there is an interest in having community groups and/or the public participate in the process of developing sediment quality guidelines through technical work groups. Why doesn't Appendix I have details on this and why doesn't the plan say anything about these technical work groups? The community involvement plan does mention technical workshops, but these are not the same as the decision making technical work groups discussed in Appendix G. Clearly this is major oversight in Appendix I because these technical work groups are so critical to guiding the clean-up. Perhaps this reflects DEQ's intent to keep the public from participating in these technical work groups as it has in the previous groups that helped prepare this plan.	The technical work groups will be formed to have a specific focus, function and process. A technical work group will be formed to advise DEQ on preparation of the comprehensive RI/FS work plan. Other groups will be formed to assist in developing SQGs, TTLs, etc. The public involvement plan addresses public needs and concerns more broadly, including all interested groups and the general public. Therefore, the methods and activities will vary considerably to reach the many people who are interested in a wide variety of issues.
26-115	Nina Bell, Northwest Environmental Advocates	Section 6. The plan does not state how public comments will be handled for the draft of the PHSMP. The plans states the comments will be listed and responded to in Appendix J but the plan does not say how individuals will be informed of the DEQ's response to their comments. Clearly individuals are not interested in sifting through 100 pages or more of responsiveness to find their comments. The plan should consider this issue and should also provide for the instance when comments will result in a change in the plan. The fact that the DEQ plan puts the public comments and responses in a separate appendix indicates the DEQ is not planning on the comments actually changing the plan. This whole issue of responsiveness to public comments needs to be addressed more extensively.	People who commented on the draft PHSMP received a card notifying them that DEQ received their comments and that they will be receiving a summary of the comments received on the PHSMP and where changes were made. Changes to the PHSMP have been made based on the analysis of comments received. Appendix J will ensure that everyone who is or might become involved in the implementation of this project would have the opportunity to review comments received on the draft PHSMP. Comments will be sorted by commenter for ease of finding an individual's comments.
26-116	Nina Bell, Northwest Environmental Advocates	Section 6. The report does not state whether there will be additional opportunities for the public to comment on the current plan if the EPA gives its go-ahead to the DEQ in June.	There will be opportunities for public comment throughout the detailed work plan development, the investigation and cleanup process, and during all phases of the plan's implementation based on

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			community interest and concerns.
26-117	Nina Bell, Northwest Environmental Advocates	Section 6. The plan mentions that "selected" Multnomah county libraries will be repositories for public information on the project. How will the DEQ let the public know which libraries have the information, and what documents will be supplied to the library and which ones will not be supplied to the library?	The plan is to send Portland Harbor information to libraries or other locations where the public has voiced an interest in receiving or reviewing materials. A list of Portland Harbor documents will be made available at the libraries and on the web page so that the public can see what is available. All technical documents and reports, including the PIP, will be placed in an information repository located at the Multnomah Public Library and other locations if significant interest is indicated. Documents of significant interest to the public will also be available on DEQ's web page. Periodic ads will be placed in local newspapers and mailings made to inform the public of releases of new documents.
26-118	Nina Bell, Northwest Environmental Advocates	Section 6. Another bulleted item proposes providing technical and financial assistance to a community group during implementation of the PHSMP. The idea sounds good to help the community so they have their own technical assistance in understanding the issues related to implementing the plan. The DEQ provides no details on this technical and financial assistance. How is the public suppose to have faith in the DEQ proposing such an approach if they do not provide the details? Additionally how will the public know about this opportunity and how to apply for the financial resources if the details are not provided in the key plan document released to the public? If the details are provided later, will an announcement be made with as much fanfare and public notice as the PHSMP itself? Lastly, based on discussions with the DEQ the details of what the community wants for such technical and financial assistance will come out of community interviews which the DEQ will conduct. This was not mentioned in the plan. Community interviews are noted in the plan but no details on what these interviews are or will cover are provided. The purpose and goals of the Community Interviews should be detailed and integrated better with other items bulleted in section 6.0.	It would be premature to guess what the needs of the community are before community interviews have been conducted. Community interviews are a common activity conducted at Superfund sites. Community interviews for Portland Harbor would be very similar to those conducted at Superfund sites. An attachment has been included in the PIP that explains the purpose and goals of community interviews. Following analysis of input received in the interviews, DEQ will structure its technical assistance grant approach.
26-119	Nina Bell, Northwest Environmental Advocates	Section 8.0. The implementation schedule for the community relations plan is vague and short term. While recognizing that the schedule may change over time as noted in the plan, the schedule does not commit to anything after September 1999 nor does it mention how the community will learn how the community involvement plan will change as a result of the community interviews to be conducted in June, 1999.	The implementation schedule for the public involvement plan will depend on a variety of factors: timing of cleanup actions or events, development and implementation of plans and public interest and priorities. DEQ will gain a better understanding of the public's interests after the community interviews. The schedule and activities in the PIP will change based on

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			information from these interviews and the RDT decision in June. Community representatives, libraries and DEQ's web site will receive the revised schedule in the PIP some time shortly after the RDT decision.
26-12	Nina Bell, Northwest Environmental Advocates	7.4.3.3 Expanding the Study Area Boundaries: The plan notes that there are other areas of the Willamette River which indicate "significant contamination" so why are the boundaries of this project limited to 6 miles? Additionally the plan says there is contamination upstream and downstream of the Portland Harbor so how can accurate reference sites be selected in the Lower Willamette River? The reference sites are suppose to get "background" or "ambient" levels of contamination. How will the DEQ ensure they have located appropriate sites if they have already acknowledged that the areas to be sampled are potentially contaminated? Lastly, the information provided in this section seems to indicate the study area should be expanded beyond the 6 mile reach, but the plan provides no criteria to justify not expanding the boundaries. pg. 59.	The geographic scope of the assessment will extend to the "locality of the facility" or the point at which DEQ can no longer find/detect harbor-related contaminants. Both upstream and downstream contamination will be considered. Consideration of expanding the study area will be made based on results provided by the assessment. DEQ believes that appropriate comparative reference areas can be found outside the Harbor that are significantly less contaminated and will meet the assessment needs.
26-120	Nina Bell, Northwest Environmental Advocates	Attachments A through C. How are these part of the community relations plan? Are these here to show examples of what will be coming for fact sheets or examples of what has already been done?	Attachments to the PIP are examples of information previously distributed to the public and what will be placed in the libraries along with other documents as they are developed.
26-121	Nina Bell, Northwest Environmental Advocates	Attachment D. How is a less than five minute spot on the Fox evening broadcast of 1/17/99 considered a Portland Harbor meeting? Not enough information was discussed to educate the public. Additionally if this is what the DEQ calls a meeting then it raises questions about some of the other "meetings" listed in Attachment D, in at least one of which the Portland Harbor was not even discussed.	Attachment D is not specifically a list of PH meetings but includes events, meetings, discussions, communications, etc. where information about PH was discussed or presented.
26-122	Nina Bell, Northwest Environmental Advocates	Overall the community involvement plan seems to be poorly put together. There are a lot of great references to keeping the public informed but no commitments in the plan which people could comment on in the draft or rely on later during implementation. The draft PHSMP is the perfect opportunity for the DEQ to make public involvement commitments to the community and have the public comment back on it through this comment period. This will immediately let the DEQ know what people think is lacking or missing from the plan. The plan presented in Appendix I is so vague there is not much one could complain about because there are no commitments in the plan. The community interviews, to find out "how the public wants to be kept informed," is one approach but should have been done months ago and the results put in the draft plan. How is the public going to find out the results of the community interviews and	The public will have opportunities throughout implementation of the PIP to comment on it and revise it based on their needs and concerns. As noted in the PIP, it will be developed in phases, to adapt to the needs of the audience and the timing of events.

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		how the community involvement plan will be implemented? How will the community have an opportunity to review the "final" version of the community involvement plan to ensure it meets their needs?	
26-123	Nina Bell, Northwest Environmental Advocates	If Sections 3 and 4 and the attachments are removed from Appendix I then there is not much of a "plan" there. The appendix says: "2.0 Objectives," "3.0 Project Overview," "5.0 Participants," "6.0 Plan Implementation." Where is the actual plan itself? A community involvement plan should have just that, a plan, designed to meet its objectives and then a list of tasks or strategies which will be used to implement the plan can be provided.	It is essential that the "public" help in the design of a public involvement plan. DEQ will provide a variety of opportunities, activities and methods for public involvement and will evaluate which of these are the most effective. The PIP in the PHSMP is a draft document that will evolve over time as more individuals express their ideas on how to best educate, inform and involve the diverse group of stakeholders in the Portland Harbor Project.
26-124	Nina Bell, Northwest Environmental Advocates	For example, in Appendix I references are made to reviewing the plan and addressing community needs but there is no mention of a "feedback loop" to change the plan itself or who would be involved in the review process. There should be something like a flow chart showing how the plan will work, how it will change over time, how input can made by the community to modify the community involvement plan and the PHSMP, and include commitments by the DEQ to review the plan quarterly etc. Additionally the DEQ should commit to holding public meetings at specified stages throughout the Contamination Response Process for the specific sites and the harbor-wide process and the development of SQGs. Overall the plan needs more of a plan to it with more details, strong commitments from the DEQ and a demonstrated desire to have the community involved in the PHSMP and Appendix I's implementation.	DEQ is committed to improving and changing the PIP throughout the implementation of the PHSMP and cleanups in Portland Harbor. DEQ encourages feedback on the PIP at any time in the process. Any comments or suggestions about the PIP will be directed to the public involvement coordinator, who will incorporate those suggestions into the PIP. Meetings will be held at significant points throughout the harbor-wide process and during public comment periods, depending on the interests and needs of the community. More specific dates will be developed as the PHSMP is implemented.
26-125	Nina Bell, Northwest Environmental Advocates	Conclusion. DEQ's plan is insufficiently detailed to provide the assurances needed to obtain a deferral of an NPL listing. It does not set out what DEQ will do or how DEQ will do what needs to be done and often is short on basic information.	Comment noted. DEQ believes that the PHSMP adequately defines the framework for the Portland Harbor investigation and cleanup. Further detail will be developed in a continuing collaborative process to define detailed work plans and assessment tools.
26-13	Nina Bell, Northwest Environmental Advocates	Since DEQ does not know the full extent of the toxic contamination how does the DEQ know that only $1 million of the state's Orphan Site Account funds will be needed in conducting the RI/FS? Additionally since the cost of the harbor-wide RI/FS is $2.2 to 3.8 million not including the DEQ oversight costs, what firm commitments does the DEQ have that the responsible parties will pick up the rest of the cost? Why aren't these assurances included in the plan? If costs incurred by the DEQ exceed that $1 million, then the DEQ will have to delay clean-up efforts at other sites in the state until more funds can be secured. The DEQ needs to commit more financial resources to the	DEQ is confident that its regulatory abilities to obtain funds from responsible parties will provide the resources needed for Portland Harbor investigation and cleanup. DEQ is negotiating a funding and participation agreement with known responsible parties to fund the next phase of work planning. The following step will be a consent decree that provides the funds needed for the investigation and cleanup. DEQ's commitment of some money from the Orphan Site Account has been made in recognition of needed

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		Portland Harbor clean-up to prepare for potential problems, and have contingency plans to ensure there are no delays in the clean-up process.	use of that fund at other sites, and the approach has been judged adequate.
26-14	Nina Bell, Northwest Environmental Advocates	The plan also indicates that the responsible parties are suppose to cover the costs associated with cleaning up site-specific areas. What assurances does the DEQ have that they will follow through and not cause a delay in the clean-up process?	DEQ has in place agreements and orders governing site-specific cleanups, and will institute such orders and agreements at additional sites entering the investigation and cleanup process. These agreements/orders include commitments for funding required site work. DEQ will monitor progress at each site and apply its enforcement authority if sufficient progress is not being made, ensuring that the harbor-wide investigation and cleanup proceed on schedule.
26-15	Nina Bell, Northwest Environmental Advocates	The plan also does not provide contingencies for when responsible parties are not willing to pay and the state must use the Orphan Site account to clean up the site while litigation tries to get the money from the responsible party. What is the potential for this scenario in Portland Harbor? Why doesn't the plan discuss the scenario? Can the DEQ afford to use the Orphan Site Account to clean up some of these site-specific areas, use $1 million towards the harbor-wide assessment and still maintain the clean-up process at all the other sites in the state? The plan also does not seem to consider what the impact to the project would be if sites are discovered that could not be associated with a responsible party in the Portland Harbor. Traditionally the DEQ would utilize the Orphan Site Account, but with all these other costs potentially coming from this source there is a possibility that the funds may dry up. The state only supplies $6-8 million to this account on a biennium basis for the whole state.	DEQ currently anticipates that about $9 million of Orphan Site Account funds will be available in the 1999-2001 biennium. Funds projected for existing and new orphan sites during that time will be about $4.5 to $6.5 million. Therefore, sufficient funds will be available to provide a state contribution, as needed, for up to $1 million in Portland Harbor for programmatic efforts. Other funding will be available as a contingency amount, as well. DEQ also pursues cost recovery of orphan funds used, with in some cases collection of treble damages from recalcitrant parties. Those funds are used to replenish the Orphan Site Account. This analysis has been added to the PHSMP.
26-16	Nina Bell, Northwest Environmental Advocates	If a harbor-wide clean-up is warranted then who will be responsible for covering the cost of cleaning it up? This is not covered in the plan and should be because it will cost more to clean up the harbor than to conduct the RI/FS and it will take much longer to do.	DEQ is negotiating an agreement with potentially responsible parties in the Portland Harbor area to fund the Remedial Investigation (RI). Once the RI is completed and it is determined that a feasibility study is needed, DEQ will again negotiate with identified potentially responsible parties to pay for any necessary cleanup. During the RI, DEQ will be identifying additional potentially responsible parties who may contribute to the cost of cleanup. This information has been added to Section 10.
26-17	Nina Bell, Northwest Environmental Advocates	What is the likelihood that the DEQ will be able to access fund from the sources in Table 10-1? And why hasn't the DEQ confirmed whether these sources will be available and applied for them already? The plan gives the impression that there are many additional financial	DEQ has investigated a number of sources for additional funding for Portland Harbor, as noted in the review draft. Those sources are intended as potential additional funding elements; they are not relied upon

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		resources available, but there are no assurances that they will work out. The plan should be considering the most conservative funding plan for the state so the Portland Harbor clean-up will not be delayed due to lack of funds and can be prepared for problems that might occur.	to implement the PHSMP. That discussion has been deleted from the plan.
26-18	Nina Bell, Northwest Environmental Advocates	In the plan the DEQ notes that financial resources would be available to ensure technical assistance to the public. These funds, such as are available under the federal Superfund program, are necessary to help the community understand the technical issues throughout the clean-up process. Since there are so many sites involved over such a long period of time, and the issues are so complex, the DEQ needs to commit sufficient financial resources for this aspect of the project as well. Details on the amount of funding and the time period of its availability and use should be provided in the plan so the public can be assured that the DEQ is committed to providing the resources.	DEQ will conduct community interviews as the first step in implementing the public involvement plan. Those interviews are intended to broaden the input on how the public wants to be involved in the Portland Harbor investigation and cleanup. Based on the results of those interviews, the details of technical assistance grants will be further defined.
26-19	Nina Bell, Northwest Environmental Advocates	11.2 Preliminary Discussions with Environmental and Community Organizations: How does the DEQ know it has enough resources and funding to handle the Portland Harbor clean-up when the plan only addresses the project through conducting the RI/FS of the harbor-wide area? What if a harbor-wide clean-up is warranted or if there are several sites identified which can not be linked to a responsible party? pg. 80.	The PHSMP demonstrates the Governor and DEQ's commitment to provide the necessary resources to ensure cleanup of Portland Harbor occurs. Several steps are currently being taken to ensure adequate resources are in place, including submitting a proposed bill to the Legislature to provide the agency with additional resources, signing a funding agreement with potentially responsible parties in Portland Harbor, and dedicating staff resources to development of a remedial investigation and, if necessary, a feasibility study. DEQ plans to continue using all of these resources through any cleanup action and will ensure funding is provided by responsible parties, either through cooperative agreements or enforcement orders. In the event that contamination cannot be linked to a responsible party, Oregon's Orphan Site Account will provide funds. DEQ currently anticipates that about $9 million of Orphan Account Funds will be available in the 1999-2001 biennium. It is projected that funds needed for existing orphan sites and new orphan sites during the 1999-2001 biennium will be about $4.5 to $6.5 million. Therefore, sufficient funds will be available to provide a state contribution, as needed, of up to $1 million for programmatic work in Portland Harbor.
26-2	Nina Bell, Northwest Environmental Advocates	1.1 State Commitment to Manage Sediments in Portland Harbor. Based on the joint DEQ-EPA study released in 1998 DEQ believes	The PHSMP describes the harbor-wide investigations and, if warranted, feasibility studies that will deal with

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		there are some areas with elevated contaminant concentrations not associated with a site-specific source. How does the plan address this type of contamination? Assuming these elevated levels pose a risk, where in the plan does it state there are strategies for dealing with a harbor-wide (meaning river-wide) clean-up, or a known area of contamination not linked to a specific site. DEQ seems to believe that all elevated levels of contamination in the harbor can be linked to site-specific sources. Although this may be true most of the time, the plan does not present a contingency for when non site-specific sources are found.	harbor-wide cleanup.
26-20	Nina Bell, Northwest Environmental Advocates	13.0 Coordination and Integration of Investigations and Cleanup with Dredging Activities: This section of the plan is critical to an appropriate implementation of the PHSMP and yet it's one of the vaguest sections. More details need to be provided on how the DEQ will coordinate clean-up activities with the Army Corps of Engineers.	Dredging and cleanup activities will be coordinated through the Regional Management Team for Dredging. This team is comprised of representatives from EPA, USACE, DEQ and DOE. The goal of coordination within Portland Harbor will be to ensure that all dredging projects are completed in a manner that is protective of human health and the environment and comply with all applicable water quality and cleanup statutes and rules. This will ensure that appropriate disposal options are considered and implemented, that exacerbation of contamination does not occur as a result of the dredging operation, that water quality standards are met and that appropriate remedial measures are taken to address sediment contaminants left in place at the conclusion of dredging activities. For cleanup sites at which dredging activities are contemplated, DEQ cleanup personnel will participate in the decision-making process. One key focus of DEQ cleanup program participation is to ensure that these activities meet remedial action objectives for the site to the maximum extent practicable. DEQ believes that near-shore maintenance dredging projects can provide a valuable opportunity to remediate contaminated sediments and will maximize these opportunities by requiring overdredging when feasible, collecting post-dredging confirmation samples from sediments left behind, and working with the responsible party and USACOE towards habitat restoration.
26-21	Nina Bell, Northwest Environmental Advocates	13.3.3 Modifications to Dredging Projects in Contaminated Areas: The plan states that if it is determined that contaminated material will	These types of samples are already collected by the Corps of Engineers and other dredging proponents. A

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		be exposed at depth after dredging then alternatives may need to be considered. This sounds reasonable until you consider who will be doing the sampling. Since the Army Corps of Engineers homogenizes their samples over barge volumes it raises the question as to whether the Army Corps of Engineers sampling procedure will be able to identify contamination that would be exposed after dredging. How will contamination exposed from dredging be identified and who will be conducting the testing?	sample is collected from a depth corresponding to the level which will be exposed after dredging, and these samples are not homogenized. Confirmatory sampling may also be required after the dredging in heavily contaminated areas. The project proponent is required to collect all samples.
26-22	Nina Bell, Northwest Environmental Advocates	When determining the fate of sediments and whether they pose a risk, which set of sampling procedures will be used, the Army Corps of Engineers or the PHSMP? The risk posed by the sediments is the same but the final location of the sediments and interpretation of the data is not. There is a concern that the Army Corps of Engineers dredging process will be used to clean up the harbor since the overall contamination level in the resulting barge will be lower leading to cheaper disposal options. This needs to be clarified and explained in greater detail.	The risk posed by the sediments is not the same because the risk partially depends on where the sediments are located and whether they are mixed with cleaner sediments. Disposal sites are normally sited away from sensitive resources, and sediments deposited there are quickly covered with later dredged material, which in the Columbia River is largely clean. Legitimate dredging projects will therefore proceed through the dredged material evaluation process initially. If they fail to qualify for open-water disposal, or if the dredging project is canceled, the sediments would then continue in the cleanup framework.
26-23	Nina Bell, Northwest Environmental Advocates	Figure 13-1 Dredging Regulatory Framework Decision Process: The flow diagram asks the question in the lower right hand side of the figure if the sediments are acceptable under the PHSMP. If the answer is yes then no further action is taken, if no then the diagram goes to two options, Upland CID or Natural Attenuation. Based on the plan's previous discussion of remedial action options the no further action and natural attenuation are the exact same thing. This diagram needs to be clarified because presently it indicates that even if the sediments are "not acceptable" then no clean-up measure will be taken. pg. 89.	"Natural Attenuation" and "No Further Action" are not the same, since the former implies, at a minimum, periodic monitoring and maintaining the site in the environmental cleanup site data base (ECSI). This has been clarified in the plan.
26-24	Nina Bell, Northwest Environmental Advocates	1.0 Background: the plan refers to the SAM as a tool box from which "the most appropriate" tools can be selected. Rather than discussing what is "most appropriate," the plan should require use of the most conservative tools possible to ensure complete protection of the most sensitive beneficial uses.	The PHSMP describes a practical set of "tools", which if used as intended, will ensure protection of human health and the environment. The problem with consistently using only the "most conservative tools" is that this too often leads to non-feasible solutions that are not implemented.
26-25	Nina Bell, Northwest Environmental Advocates	The plan fails to establish what public review of SAPs will take place, and what, if any, participation by public and community representatives will be allowed in the development of these critical plans. In addition, the Plan should establish some guiding criteria for SAPs rather than simply stating that all tests need not be done in each SAP. Much of the outcome of a study can be directed through a SAP.	Development of sampling and analysis plans (SAPs) will take place with the involvement of the technical work group, which will include public and community representatives. Further guidance for the SAPS will be developed in that work group as well. DEQ agrees with the importance of providing clear, consistent

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		Crucial decisions about what species to sample, location and depth of sediment samples, etc. will largely guide all future work and should be both conservative and consistent.	direction through the SAPs.
26-26	Nina Bell, Northwest Environmental Advocates	The plan discusses the applicability of the SAM to the Portland Harbor and indicates the 6 mile reach will be assessed using this methodology including the need for remediation of contaminated sediments. It is unclear from this description and the rest of the plan if the DEQ intends to evaluate sediments throughout the 6 mile reach and determine if clean-up is needed regardless if the contamination can be related to a specific site. pg. G-2.	Yes, all sediments will be evaluated.
26-27	Nina Bell, Northwest Environmental Advocates	If the SAM, as it states, only applies to the 6-mile harbor and sites within it, what, if anything, applies to the remainder of the Willamette and Columbia Rivers? What are their tool box?	The SAM applies primarily to the 6-mile stretch. It also applies to any areas in the locality of any facility and to stretches where we are establishing reference areas.
26-28	Nina Bell, Northwest Environmental Advocates	Does the last sentence in paragraph 4 mean that, for example, while it would be desirable to address certain sub-lethal effects of contaminants that to do so might be "beyond the state-of-the-science" or "can not meet reasonable value-of-information criteria"? If not, what does this sentence mean? If so, what other meanings does it have? The plan should clearly lay out what the DEQ considers the limitations rather than hinting at them here while implying elsewhere that current knowledge will, in fact, be used in this process. pg. G-3.	This sentence has been deleted; these issues are more explicitly addressed elsewhere in the text.
26-29	Nina Bell, Northwest Environmental Advocates	1.1 Environmental Management Framework: The statement that "[i]mpairment of beneficial uses means exceeding criteria" is only partially correct. Impairment also includes violation of narrative criteria, the violation of which may be determined by exceedances of guidance levels or other indicators, and direct or indirect measurements of impairment. Therefore, for example, levels of toxic contaminants known to cause detrimental effects and measured detrimental effects are violations of state water quality standards, one measure of lack of beneficial use support. Unfortunately the Plan neither spells out this framework nor does it relate the language used in this paragraph to all of the applicable laws and programs than can or should come to bear on this RI/FS process.	A reference to narrative standards has been added. A description of how SQGs fit in as water quality criteria has been added. A new table is provided showing these relationships between beneficial uses and site investigation and cleanup activities.
26-3	Nina Bell, Northwest Environmental Advocates	1.2 DEQ will Accomplish Protective Cleanup Without Superfund Listing. This part of the plan states that DEQ will conduct a harbor-wide Remedial Investigation and Feasibility Study, but based on the plan and Appendix G there seems to be no plan to do just that. The Remedial Investigation seems designed to develop sediment quality guidelines and justify linking all harbor-wide contamination back to site-specific areas. There does not seem to be any mention in	A feasibility study will be performed on a harbor-wide basis if results of the assessment indicate the need. This will proceed through the contamination response process as appropriate. More detailed planning for such a harbor-wide assessment will take place when it is identified as necessary to address non-site-specific contamination.

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		Appendix G or other areas of the plan stating that a Feasibility Study will be conducted on a harbor-wide basis. Section 7.1 of the plan notes site-specific evaluation of remedial action options but no reference is made to harbor-wide remedial action options. Section 7.3.6 (pg. 45) notes that if a harbor-wide risk is determined then investigations will turn back towards studies at site-specific areas. The plan notes here that a feasibility study for the entire harbor "may" be warranted. This plan seems to be worded to avoid having to do a Feasibility Study and remediation of sediments on a harbor-wide basis. Why doesn't the plan more directly state how the harbor-wide work will progress through the Contamination Response Process? The plan should clearly specify how the harbor-wide work will fit into the Contamination Response Process. Pg. 56.	
26-30	Nina Bell, Northwest Environmental Advocates	1.1 Environmental Management Framework: The environmental goals listed in this section indicate there is a desire to "support" commercial use of the Portland Harbor but only "allow" human use of the harbor. The choice of words here tends to indicate a preference in goals for using the harbor. This clearly needs to be clarified. pg. G-3 and Section 7 pg. 44. The goals established for the Portland Harbor clean-up do not include the geographic scope of protection. This section also states, "evaluation criteria have been established through discussion with stakeholders." Does stakeholders include community groups and citizens? pg. G-4	No preference in uses of the Harbor was intended. This has been clarified in the plan. Geographic scope of protection will extend to the full extent of Oregon law. Stakeholders from community groups and the public will be involved in finalizing evaluation criteria for the environmental management framework through the technical work groups and broader public involvement.
26-31	Nina Bell, Northwest Environmental Advocates	1.1 Environmental Management Framework: The Plan does not establish if all six management objectives are equal, for example, what's the relative importance of objective 2? Pg. G-4. Objective no. 3 narrowly defines the human protection sought to be limited to "[p]ersons using the Portland Harbor." In fact, human uses requiring protection extend beyond the 6 miles of the harbor. Fish and shellfish upstream and downstream may be contaminated by harbor contaminants, for example. It makes no difference whether a person is exposed within the harbor or outside of it; those beneficial uses require full protection. Similar to Objective no 3, Objective no. 4 is restricted to protection of migratory fish as they transit the harbor but does not extend to protection to migratory fish upstream or downstream of the harbor. Objective No. 6 refers to resident wildlife but does not establish the geographic scope of the populations. The scope of the other objectives implies that protection under this one is similarly restricted to the Harbor. This is inappropriate. This objective also explicitly omits protection of all migratory wildlife that is not threatened, endangered, special status, or indicator species.	This study, and all site-specific investigations, will extend to the locality of the facility (which may go beyond the nominal 6-mile segment), as provided for by state law.

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26-32	Nina Bell, Northwest Environmental Advocates	1.1 Environmental Management Framework: Since Objective No. 2 is based on financial considerations, does DEQ intend to perform a cost/benefit analysis at each site? If so, how does this meet the other objectives? If not, what is the role of this objective? Why are objectives nos. 1 and 2 localized and related only to specific sites? Toxic contamination that migrates off-site to the Harbor and beyond and affects benthic community health should be a concern of the project. In addition, although we object to objective no. 2, why is the objective not relevant to the entire harbor, but rather limited to the specific sites? Even bank-side contamination is relevant to the channel deepening project due to increased sloughing of the sides.	Objective (2) has been deleted as it is redundant with Objective (1).
26-33	Nina Bell, Northwest Environmental Advocates	1.1 Environmental Management Framework: The use of the phrase "Harbor-wide" in this section is confusing because it often does not seem to be consistent with the definition. For example at the outset of this paragraph presumably the use of the phrase is consistent with the definition but then the discussion uses the phrase "harbor area," which not only is not defined but also implies greater limitation than the definition of harbor-wide. This section states that objectives nos. 3 through 6 are generally harbor-wide issues rather than site-specific issues. This negates the possibility that migrating fish, and threatened and endangered species might be affected by specific sites. Moreover, this paragraph specifically states that evaluations of these species will only address the "Harbor area." This eliminates any consideration of harbor impacts downstream.	Partially agree. DEQ will re-check the definitions of these spatial terms and use them consistently. The plan fully anticipates the possibility that migrating fish and T&E species may be affected by specific sites.
26-34	Nina Bell, Northwest Environmental Advocates	1.1 Environmental Management Framework: It is inappropriate at this juncture of the study to suggest that evaluations of T&E species are "largely concerned with piscivorus birds" thereby negating the impacts to T&E fish. This interpretation is consistent with statements elsewhere in the plan that the Department will look at studies on the impacts of toxic contaminants on T&E fish but hint strongly that the results of these studies will be considered too controversial to apply.	Potential impacts to T&E fish will be evaluated with TSCs and any additional tests that emerge from the work group process.
26-36	Nina Bell, Northwest Environmental Advocates	1.1 Environmental Management Framework: In paragraph 5 of this section, the plan states that the outcomes should be "scientifically sound" but fails to explain how the Department will reconcile objective no. 2 with this goal. Moreover, how will the second outcome of being "cost-effective" be factored in? The reader is simply left guessing. The plan also notes that the outcomes should take into account all "legal considerations." Unfortunately, the plan does not lay out all of these legal ramifications so that the reader can evaluate them him- or herself. This paragraph ends with the statement that the SAM "provides a framework for determining whether each of	The plan has been revised to address this concern with Objective #2. DEQ will exercise its responsibilities to protect human health and the environment in full recognition of its legal authority, which is defined in Section 3 of the PHSMP.

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		these objectives is being achieved and, if not, for providing information in support of environmental management decisions." This is meaningless for the reasons described above, e.g. the possible incompatibility of the objectives. If reduced to its minimal reading, the statement means that decisions will be made and decision-makers will point to information as justification for those decisions, regardless of whether the objectives have been met. This is likely the outcome of this process because of the emphasis on supporting the economic interests of the harbor over all else and because the plan does not state how it intends to address those issues. More specifically, stating that the plan will provide information to the dredging process and/or that programs will be coordinated, ensures that implementation of the plan will not lead to the Department exercising any of its legal authority over those all-important economic interests.	
26-37	Nina Bell, Northwest Environmental Advocates	1.1 Environmental Management Framework: The plan states that evaluation criteria will be created though "discussions with stakeholders." This fails to make clear what, if any, legal criteria the Department considers binding on this process and who these so-called stakeholders will be.	DEQ will develop evaluation criteria to implement the environmental management framework using all legally-required considerations as the starting point. This implementation activity will take place in consultation and coordination with a technical work group consisting of representatives from governmental agencies, tribes, interest groups, and the community. Broader community involvement in all aspects of implementation will also continue.
26-38	Nina Bell, Northwest Environmental Advocates	Section 1.1.1 While stating that support of beneficial uses and water quality criteria are "legally applicable to in-water site cleanups," the plan fails to explain how these criteria come into play through the Clean Water Act itself in ways that should affect the clean-up. This plan should not talk about seeking to "avoid …303(d) listing …and subsequent preparation and carrying out of a TMDL plan." Rather, it should note that the Department has a legal obligation to list the affected segments of the Willamette and related rivers and to prepare TMDLs for them.	The text has been revised accordingly.
26-39	Nina Bell, Northwest Environmental Advocates	Section 1.1.1 Moreover, the plan misses the mark by stating that the cleanups must "bring the site into compliance with the designated beneficial uses." First, beneficial use support is just one of four components of a water quality standard, not the only one. Second, collectively the sites are a source of contamination for downstream waters and waters within the harbor which needs to be cleaned in order to meet the allocation of a TMDL for the relevant pollutants. Third, one of the relevant components of the state's water quality standards is the narrative criterion for toxic contaminants. This should be quoted	The text has been revised to clarify some of these issues. A detailed discussion of how the narrative criteria will be met for affected water bodies is beyond the scope of this plan, but will be addressed during the investigation and cleanup process itself.

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		in this section and the plan should explain how the criterion will be met in all affected waterbodies.	
26-4	Nina Bell, Northwest Environmental Advocates	3.3 Enforcement Strategy to Implement the Plan. How will the public be sure that the appropriate enforcement strategies will be taken to require the responsible parties to pay for the clean-up and that it happens in a timely manner? The plan states that it has option to terminate the voluntary clean-up program but does not provide any details on how the DEQ can or will force a responsible party to pay. More details about how the DEQ will implement this section of the plan are needed for the public to feel confident that the DEQ can be trusted to oversee the Portland Harbor Clean-up. pg. 17-20.	As described in Section 3, DEQ has both the statutory and regulatory authority and the plans in place to ensure that responsible parties implement and pay for needed investigation and cleanup.
26-40	Nina Bell, Northwest Environmental Advocates	Section 1.1.1. The word "standards" in the first sentence of paragraph 4 should be changed to "criteria." Standards are composed of beneficial use support, numeric and narrative criteria, and an antidegradation policy. The confusion in the text about what a standard is affects the meaning of the document. In paragraph 5, in addition to referencing the "toxicants criteria" the plan should state both what the criteria are, including the narrative criteria and how it must be applied, and the Department's 303(d)(1) listing criteria which, although not adopted by rule, are highly relevant to the application of the standards. This paragraph appears to be the only section of the plan that addresses the other water quality aspects of the cleanup. The plan should not set out information upon which it has nothing to say or no process by which issues will be resolved.	The intent of this plan is to provide a general overview of other rules that apply, and direct readers to where they can find additional information. Terminology has been clarified as suggested.
26-41	Nina Bell, Northwest Environmental Advocates	Section 1.1.1. Paragraph 6 demonstrates that the excessive caution in the language of the plan leads to some absurd outcomes. One example is that it states the potential for violations of water quality standards "should be" considered in the development of a conceptual model. In fact, it must be considered. The question is where these criteria must be exceeded for the model to take them into account. The plan does not answer this key question. Although the plan states that the water quality criteria should be included as remedial action objectives, it does not answer why they are not included in the list of objectives presented earlier in the document.	DEQ needs to be able to distinguish between surface water and sediment as sources of contaminants. DEQ also needs to be able to determine when sediment is acting as a contaminant source to surface water. This plan is not intended to remedy all impaired beneficial uses in the water body. If water quality impairments are caused by problems other than contaminated sediments, they will be addressed through other programs.
26-42	Nina Bell, Northwest Environmental Advocates	Section 1.2. Many readers of the plan will not understand the reference to NRDA on page G-6. In addition to establishing what a NRDA is, the plan should not make statements that are not explained. While the text emphasizes that this sediment assessment will not be preliminary work toward a NRDA, it does not explain why not, what the difference is, and how that work will be conducted separately or in conjunction with this project effort. Likewise, although it states the	The noted section of the PHSMP is intended to explain how much of the information needed by natural resource trustee agencies to evaluate possible natural resource damages will be collected and assessed as part of the PHSMP. Close involvement of trustees during development of the PHSMP, development of detailed work plans, and PHSMP implementation, is designed

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		plan might "go a long way toward resolving questions" it does not explain why or how this might lessen the length of NRDA-related proceedings and comprehensive settlements. In other words, it says nothing. Assuming that this section is improved so that it does say something, it must address the impact of Portland Harbor toxic contaminants on the Columbia River estuary. The plan might want to address whether the plan would be more helpful to the NRDA process if it, in fact, took the estuary into account. Alternatively, if DEQ does not believe that the plan should dovetail in any way with the NRDA, it should simply say so.	to factor into data collection and evaluation activities the interests of those entities. Remaining natural resource damage assessment activities may still be needed, but much of the required information will be provided by the PHSMP implementation. The plan is to focus on Portland Harbor; downstream effects will also be evaluated, but there are no plans to focus the investigation at this time on the Columbia River Estuary.
26-43	Nina Bell, Northwest Environmental Advocates	2.1 Site Description. The Portland Harbor was defined as existing from RM 0 to RM 14. This is clearly inconsistent with other parts of the report which indicate the area under study is from RM 3.5 to RM 9.5. The former description includes an additional 8 miles of the Lower Willamette River and although this is a more comprehensive approach to addressing the sediment clean-up of Portland Harbor its seems to increase the size of the project significantly. pg. G-9. Rather than simply being errors in the text, the amount of confusion about the geographic scope makes this appear to be a case of deliberate obfuscation.	The text has been edited to ensure consistency in the use of geographic definitions; there was no intent for "deliberate obfuscation". Portland Harbor is defined for purposes of the plan as RM 3.5 to 9.5.
26-44	Nina Bell, Northwest Environmental Advocates	2.1 Site Description. The plan states that "[m]ost development along the Willamette River has occurred within Portland Harbor." Given the extreme state of overall development, as opposed to specifically heavy industrial use, throughout the Lower Willamette River and the basin generally, this is a poor description. Moreover, it is a misleading one because it implies that these sites are the legitimately the sole focus of attention. The problem with focusing on the most egregious sites alone is that by failing to include the contributions of other sources and other pollutants in determining the risk and remedial approaches for these sources, the clean-up levels for them will be underestimated. The more DEQ insists that it cannot and should not evaluate the risks posed by upstream pollutants, the less conservative its analysis will be. The plan goes on to describe the shipping channel. It is our understanding that technically the shipping channel in the Lower Willamette is bank to bank.	The industrial sites within Portland Harbor are not the sole focus of attention in the PHSMP. An active site discovery process is seeking other release sites, and upstream contamination will be pursued in parallel with PHSMP implementation. Comment noted on the shipping channel.
26-45	Nina Bell, Northwest Environmental Advocates	2.2 Contaminants of Interest. Discussions of the use of "background" levels for evaluating levels of contaminants completely avoid the need to conduct Clean Water Act evaluations in order to make sense of this clean-up project. Moreover, it appears that DEQ will disregard the background risk as it calculates the risk posed by the COI, thus failing to protect the beneficial uses. With regard to certain	A reference to narrative standards has been added. A description of how SQGs fit in as water quality criteria has been added. A new table has been provided showing these relationships between beneficial uses and site investigation and cleanup activities. Statements are made in this comment that are not

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		metals, the plan appears to consider this but only for the purpose of determining whether metals may interact to increase or decrease the toxicity of the COIs. The plan does not make a commitment to evaluating this, however, but merely states that "further review may be necessary."	supported by the text. Background concentrations of metals are not known to cause health risks to benthic communities, fish, or wildlife in the Pacific Northwest, or impair beneficial uses. However, any risks that are present, known or otherwise, will be evaluated through bioassays, benthic community surveys, and fish tissue evaluations (which will include contributions from both natural and anthropogenic sources).
26-46	Nina Bell, Northwest Environmental Advocates	2.2.1 Toxicity. The plan states: "With the exception of the Corps of Engineers data, these sampling locations were generally biased toward contaminated areas. It is reasonable to assume that these additional analytes are not likely to occur in the Portland Harbor sediments unless there is a history of use and discharge at a specific facility or source area." If these additional analytes are no longer to be assessed in the Portland Harbor then there is a possibility for a large gap in the assessment of contaminants in the Portland Harbor. How will the DEQ know if these analytes are not present in the rest of the harbor if the DEQ does not sample for them? Unless all of the industrial activities along the 6 mile stretch of the Lower Willamette River, past and present, are reviewed then it can not be assumed that the analytes are not present. Another approach to justify your assumption would be to do "spot checks" during the harbor-wide RI/FS to check a few of the samples for these analytes.	Agree. A combination of site-specific "spot checks" in combination with harbor-wide, between-site, sampling will be used to cover this issue.
26-47	Nina Bell, Northwest Environmental Advocates	2.2.1 Toxicity. This section of the plan also states that chemicals detected less than 5% of the time were not considered COIs in Portland Harbor and dropped from the list. This assessment does not consider the magnitude of these detections. Although a given chemical may be detected less than 5% of the time across the Portland Harbor it may still be an issue for a given site. Additionally the terms "background" and "ambient" concentrations are used several times but the difference between the two is not clear. "Background level" is defined in the glossary of terms, Appendix K, which tends to indicate a level before contamination or a release of hazardous substances occurs. "Baseline" levels is also used in the same section, and again its definition is not clear. pg. K-1,G13 and G-14.	The text has been revised to clarify the meaning of "ambient" and "baseline" concentrations. The COI list is for chemicals widely distributed throughout the Harbor; there is no question that additional chemicals could be important at specific sites. This has also been clarified.
26-48	Nina Bell, Northwest Environmental Advocates	2.2.1 Toxicity. The plan states that sediment quality guidelines for benthic toxicity will not be developed for a series of potential COIs named in the second full paragraph of page G-13 because "there are not enough data to perform the calculations." This is an extremely poor rationale on which to base a decision. The text goes on to say that they could be developed on a site-specific basis if needed. The	DEQ's intent is to, in the absence of existing data, require specific sites to perform sufficient chemical and bioassay testing to both determine the nature and extent of contamination and provide data for SQG development, so that criteria can eventually be developed for these chemicals. In the meantime, sites

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		plan does not explain the difference between such guidelines as site-specific and harbor-wide. It does not explain the potential effect of delays caused by the need to gather more data. It does not explain how DEQ will assure that there is adequate analysis of other contaminants in the absence of complete information. It appears that, while DEQ gives lip service to the issue of the additive and synergistic properties of toxic contaminants elsewhere in the plan, it does not intend to actually evaluate that prospect.	with chemicals for which guidelines are unavailable will be required to undergo biological testing, which will reflect the synergistic and additive effects of all chemicals present.
26-49	Nina Bell, Northwest Environmental Advocates	2.2.1 Toxicity. This section also indicates that if there is reason to believe a chemical would not be present at a specific site then it could be dropped from the COI list for the site "at the discretion" of the site manager. This leaves the decision solely up to the site manager but provides no indication how the site manager will justify a conclusion to drop a contaminant from the list. Sediment samples should demonstrate that the COI is not present for the site or a documented history of uses should be provided for the site. Pg. G-13. Again, the emphasis is on the risk posed by individual COIs ("COIs are not present at high enough levels to cause adverse effects"), negating the effect of multiple pollutants. Moreover, great emphasis is placed on DEQ's review of historical records but DEQ admits that such records are a poor source of information. There is nothing in the plan to address this issue.	It is impractical to test all sediment samples for every conceivable contaminant. If an examination of past and current practices on or near a site (including analytical data for upland areas and sources) does not indicate the presence of a class or classes of contaminants, it is unreasonable to suggest that tests for these be conducted anyway. The text has been revised to clarify the types of information that would be sufficient to drop a chemical from the COI list at a specific site.
26-5	Nina Bell, Northwest Environmental Advocates	3.5 Consideration of CERCLA Requirements: The plan states that the NCP requires remedies to meet two thresholds with one called the applicable or relevant and appropriate requirements (ARARs). At the end of the same paragraph the plan states the ARARs may be waived in certain circumstances. What circumstances will result in waiving ARARs? The plan needs to explain this further. How can the community expect DEQ to ensure an appropriate clean-up takes place when some of the requirements can be waived without explaining further? What are the criteria for waiving the ARARs? pg. 21	Under CERCLA, EPA has the ability to waive ARARs when it judges the circumstances require such waiver. DEQ is allowed by the legislature to waive permit and procedural (non-substantive) requirements of state or local law for onsite remedial actions selected by DEQ. Substantive requirements under laws administered by DEQ may be waived by DEQ for onsite remedial actions. DEQ has no plans to waive ARARs, and has removed that reference from the PHSMP.
26-50	Nina Bell, Northwest Environmental Advocates	2.2.1 Toxicity. This section perpetuates the lack of clarity with regard to the geographic scope of this undertaking by adding use of the phrase "Harbor Area" in the same sentence as "Harbor." What subtle distinctions are at work here? In section 2.4.1, the plan discusses the Harbor with regard to shoreline development in downtown Portland. Is that the Harbor too?	References to Portland Harbor have been clarified in the final PHSMP.
26-51	Nina Bell, Northwest Environmental Advocates	2.2.2 Bioaccumulation. Octanol water partitioning coefficients for organic chemicals greater than 3.5 were retained as bioacummulative COIs. This was stated as being consistent with other regional clean-up and dredging programs as noted in several references. This	A reference will be added. Generally, for aquatic systems, a log Kow of 5 is used as a cutoff for bioaccumulation. The use of 3.5 (which is most often applied to terrestrial systems) as a cutoff represents a

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		partitioning cutoff is critical in determining which COI are classified as bioaccumulating. Further discussions concerning this cutoff of 3.5 should be presented here. Information and or justifications from the references should be introduced here briefly so it's clear to the public why a partitioning coefficient greater than 3.5 is the cutoff. pg. G-14.	conservative overestimate of bioaccumulation potential.
26-52	Nina Bell, Northwest Environmental Advocates	2.2.2 Bioaccumulation. How will fish be protected from PAHs? This section of the plan explicitly indicates that many PAHs have an octanol water partitioning coefficient greater than 3.5 and that fish metabolize them and suffer from adverse effects. If PAHs in the Portland Harbor pose a danger to fish then why doesn't the plan present any information on how tissue guidelines will be developed. Pg. G-14.	PAHs are a particularly complex issue; see page G-50. DEQ will address the issue of PAH effects by means of a number of multi-stakeholder work group meetings during work plan development.
26-53	Nina Bell, Northwest Environmental Advocates	2.2.2 Bioaccumulation. It appears that the issue of exchanging the willing collaboration of the responsible parties for lowering the costs of evaluation and clean-up has already begun, as the plan refers to the "research-intensive" nature of developing tissue guidelines for fish and wildlife. It then goes on to tally the rather paltry set of samples obtained in previous studies with no information about what species were involved or what type of samples were analyzed. The plan does not explain why this set of data are sufficient upon which to base the decisions about what will be confirmed COIs for tissue, what will be studied, and what will be ignored.	All chemicals that have ever been detected in Portland Harbor tissues have been retained for COI development. However, there are very few tissue data available, and a harbor-wide study will be conducted to fill these data gaps. Additional COIs will be added if they are detected during that study.
26-54	Nina Bell, Northwest Environmental Advocates	2.3.1 Benthic Community. A reference was made that it was important to determine whether a benthic community could be supported by the harbor if it were not for contaminated sediments. This determination is critical to the Portland Harbor studies, but it is important to not loose sight of the fact that dredging activities, like bottom trawling in the ocean, leaves the river bottom devoid of habit structure and plant life to help support a benthic community. The plan is not clear about how it will make this benthic habitat determination and ho it will affect the harbor clean-up. Pg. G-16.	The PHSMP has identified the lack of knowledge about the benthos in the Willamette River as a major data gap and has identified SPI and community analysis as preferred methods for filling this gap.
26-55	Nina Bell, Northwest Environmental Advocates	2.3.2 Fish. There is no discussion in this section of the plan about the need to minimize the risk to certain fish species and stocks based on their ESA status. Numeric water quality criteria are determined through calculations that take into account acceptable risks. Since the risks allowed to normal populations obviously should not be deemed acceptable to those populations on the verge of extinction, DEQ should be able to state in this plan that it will recalculate those risks and the process by which it will do so.	Endangered fish and wildlife will be protected as individuals using a no-observed-adverse-effect standard; the same standard that U.S. EPA would use.
26-56	Nina Bell, Northwest Environmental Advocates	2.3.2 Fish. Nothing in this section addresses the pathways by which fish are affected by toxic contaminants or information about how they	This type of detailed information will be included in the RI/FS work plan.

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		can be evaluated. There is no discussion of lipid content of these fish, of their food sources, of the impact of contamination downstream from the Portland Harbor, of their role as food for other species, of information about what types of pollutants tend to be found in their tissue, etc.. In short, this section is nearly useless with regard to this plan.	
26-57	Nina Bell, Northwest Environmental Advocates	2.2.3 Birds and Mammals. This section of the plan is a joke. There is no information presented concerning the levels and types of fish species consumed by piscivorous birds and mammals, an evaluation of a broader geographic area, the likelihood that upland contamination puts these species at greater risk, their relative sensitivity to contaminants, their ESA status, measured impacts to these species from toxic contaminants, the level of information that exists about them, the relationship of downstream contamination on these populations, etc.. There is nothing but a statement that some of the species are "protected under the Migratory Bird Treaty Act." Of what relevance that has is unclear because the plan does not explain how that law might alter DEQ's obligations to protect these species.	This type of detail will be included in the RI/FS work plan. Reference by DEQ to the MBTA is of interest only in identifying assessment endpoints of concern to other stakeholders.
26-58	Nina Bell, Northwest Environmental Advocates	2.3.4 Human Populations. A river bank fishery along Multnomah Channel was mentioned in this section but its is not clear if the risk assessment will also include this stretch of the Lower Willamette River. Multnomah Channel is directly influenced by activities in Portland Harbor and should be incorporated into the RI/FS of Portland Harbor since it is a popular place for fishing and is just downstream from the harbor. pg. G-20. This section fails to address the use of the Willamette as a commercial crayfishery. No information is presented on risks posed to people consuming fish and crayfish in the area. For example, the 1987 National Bioaccumulation Study evaluated crayfish immediately downstream of McCormick and Baxter. There is nothing said about the use of the river at Cathedral Park, of Willamette Cove. In short, this section is not useful or thoughtful.	The human use and consumption survey will be confined to the Harbor. However, TTLs will be applicable in all areas, including the Harbor and the Channel, if so desired.
26-59	Nina Bell, Northwest Environmental Advocates	2.4 Potential Exposure Pathways. The fate and transport processes listed do not include the transport of contaminants from upstream. Clearly contaminant transport from upstream must be evaluated with the others in order to assess which contaminants came from upstream and which are from local sources in the harbor. Additionally, by considering the transport from upstream other contaminated sites may be more readily identified upstream and could be pursued as other active clean-up sites. pg. G-20. This section states that if an exposure pathway "is not complete" it does not need to be evaluated further. This simple statement negates the issue of whether the pathway was	Transport of contaminants from upstream is a factor in the PHSMP; see Figures G-5 and G-6. The conceptual model considers only pathways that are currently thought to be complete or which are reasonably likely to be complete in the future.

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		complete in the past and whether it may be in the future. To ignore both of these issues is to corrupt the study. How can DEQ say that it will evaluate the "nature and extent of the contamination" from the sites if it is unwilling to evaluate the extent of past releases? How can it be realistic if it does not take into account natural and anthropogenic disturbances that may "complete" the pathway in the future?	
26-6	Nina Bell, Northwest Environmental Advocates	4.1 Description of the Willamette River and Portland Harbor 4.2 Sediment Loading and Transport: The plan notes that "bed transport in the Willamette River is estimated to be insignificant" but does not detail how this was determined. Clearly this is a critical in determining the movement of contamination in the harbor and beyond the six mile segment noted in the plan. pg. 24. The plan then notes that this issue "is not yet fully resolved" and will be incorporated into the remedial investigation of the harbor. How will this be accomplished through the plan? Appendix G does not seem to make reference to how the data gap of understanding sediment transport will be handled in the Remedial Investigation. These sections also reveal that there are occasions when the water velocities in the river exceed the critical velocities need to transport bed sediments downstream. So why is the study area limited to a six mile reach of the river when some of the known contamination may have been scoured from the river bottom and moved further downstream? Pg. 26.	The goal of the PHSMP was to identify a data gap involving sediment transport. A sediment bed load study is planned to address the data gap; the forthcoming RI work plan will provide specific details for the study. If indicated, subsequent studies will include areas downstream of Portland Harbor.
26-60	Nina Bell, Northwest Environmental Advocates	2.4.1 Sediment Sources and Transport. The plan refers to the Harbor as having a "relatively stable channel." Where is a discussion of the potential effects of a channel deepening project, not only the proposed project but those that are likely to come in the future if this one goes forward? DEQ cannot put blinders on and pretend away development pressures.	The effects of channel deepening on side slope stability are not expected to be significant and should be addressed as part of the environmental impact statement as the channel deepening project is reviewed through NEPA. The Willamette River portion of the channel deepening project has been delayed and would be phased separately from the Columbia River portion of the channel deepening project. Information generated from the PHSMP study should be available to decision makers for evaluation of the channel deepening project.
26-61	Nina Bell, Northwest Environmental Advocates	2.4.1 Sediment Sources and Transport. According to calculations made on the amount of sediment entering the harbor and from upstream there is about 1.5 million cubic yards of sediment that discharge into the Columbia River from the harbor. Some of this sediment is from upstream of the harbor but some is also from the harbor itself. This needs to be more clearly investigated.	Agree. A comprehensive bed load transport study will be part of the RI/FS work plan.
26-62	Nina Bell, Northwest Environmental Advocates	2.4.1 Sediment Sources and Transport. Additionally the plan states that most of the sediments settle out either in the Columbia estuary or	Do not agree. Absent of a Willamette-specific "marker" contaminant, segregating specific

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		the Pacific Ocean. Have the sediments in the estuary been tested? Granted there are many potential sources of contaminants which could contribute to any overall contamination in the Columbia estuary from both the Willamette and Columbia basins, but shouldn't these locations be investigated as well?	contaminant sources for the estuary is next to impossible.
26-63	Nina Bell, Northwest Environmental Advocates	2.4.1 Sediment Sources and Transport. Bed load transport from Portland Harbor was described as being minimal but it was stated that the "issue is not yet fully resolved." So what will it take to resolve it? The issue raised here about better understanding the transport of sediments from the harbor downstream is important. This question needs to be addressed if the contamination in the harbor (and downstream) is to be appropriately addressed. If a better understanding of the sediment transport is not achieved, then how can the clean-up be protective of human health and the environment when the movement of potentially contaminated sediments is not understood?	Agree. A comprehensive bed load transport study will be part of the RI/FS work plan.
26-64	Nina Bell, Northwest Environmental Advocates	2.4.1 Sediment Sources and Transport. Lastly, without understanding the sediment transport from the harbor, how can the clean-up line be drawn for the Portland Harbor at RM 3.5 when areas downstream of the harbor could be contaminated by sediments from the Portland Harbor? pg. G-24. The plan itself discusses the substantial percent fines in the area of RM 5.1 to the mouth. This is not only relevant to the extent of the contamination but also the effect on the beneficial uses many, if not most, of which actually move within this area.	Agree. Results of the bed load study may affect DEQ's understanding of the nature and extent of contamination and hence of the locality of the facility.
26-65	Nina Bell, Northwest Environmental Advocates	2.4.1 Sediment Sources and Transport. Nowhere in this section does the plan use the information that it provides to evaluate the sampling protocols that have been used in previous studies (e.g., sampling the top two centimeters based on the judgment that that represents one year's worth of deposition). No information is provided on the role of the Multnomah Channel as a link between the Willamette and Columbia Rivers. There is no discussion of how much of what goes where after it leaves the Harbor, or the roles of dredging and high seasonal flows. The plan almost attempts to pretend away these circumstances instead of addressing them head on. Where information is presented, such as that high flow events "may exceed 2-4 times the critical velocity" the plan does not evaluate the frequency of such events, the effect of these events, but merely states that this information raises "the possibility for significant out-of-Harbor transport of contaminated sediment." How significant? If DEQ doesn't know, how will it find out?	The role of the Multnomah Channel, if any, will be addressed in the bed load transport study planned as part of the RI.
26-66	Nina Bell, Northwest	2.4.2 Contaminant Sources and Transport. The emphasis in this	Sections 2.4.1 and 2.4.2 have been edited.

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	Environmental Advocates	section is on restricting the scope of the analysis ("help to focus" and "limit the number") without due regard to the need to ensure a broad enough study is performed. In fact, the plan simply doesn't even discuss the need to weigh these two broad policy objectives against one another. Like other parts of this plan, this section does not clearly evaluate the known or suspected data gaps and discuss how those gaps will be addressed. It merely makes observations such as "very little data exist." That's what makes this a report, not a plan.	
26-67	Nina Bell, Northwest Environmental Advocates	2.4.2 Contaminant Sources and Transport. The second paragraph in this section dismisses data about contamination from upstream without making a citation to the data collected and discussed. A conclusion contradictory to this work was then made a sentence later referring to other data collected but no citation to the report or project was made. This kind of discussion is misleading and speculative when not providing citations to actual research conducted. pg. G-25 and G-26.	Sections 2.4.1 and 2.4.2 have been edited.
26-68	Nina Bell, Northwest Environmental Advocates	2.4.2 Contaminant Sources and Transport. In this section an indirect comparison for evaluating contaminant loading from upstream was suggested. The plan proposes comparing sediments in depositional areas of the navigation channel away from site sources against sediments in near shore areas close to potential sources. This indirect evaluation may be useful as long as the two sites under comparison are at the same or close to the same river mile distances. pg. G-26.	Agree.
26-69	Nina Bell, Northwest Environmental Advocates	2.4.2 Contaminant Sources and Transport. Comparisons were made in this section of the plan between the EPA collected data and data collected by Army Corps of Engineers (ACOE). There was no discussion on how the samples taken by the ACOE were done. Were the DDT samples taken as discrete points or as homogenized samples during a dredging operation? Regardless, since it is known that in some cases the ACOE uses a different sampling technique, this should be clarified when comparing data. Clearly if the ACOE uses a different sampling technique for the data presented here then a different conclusion might be derived from the results. pg. G-26.	Sections 2.4.1 and 2.4.2 have been edited.
26-7	Nina Bell, Northwest Environmental Advocates	Throughout Section 4 there are several references to the Remedial Investigation work plan that will have information pertinent to how data gaps will be filled. There does not seem to be any mention in the plan of whether the community will have an opportunity to review and provide input on this work plan or how this would be done.	The plan will state that DEQ anticipates having a "work plan technical work group," with both environmental and community members, as well as a 30-day public comment period.
26-70	Nina Bell, Northwest Environmental Advocates	2.4.2 Contaminant Sources and Transport. Generally, the discussion in this section stops short of being useful. Are grain sizes comparable between studies? How did DEQ or others determine whether contamination came from localized sources or upstream? How can	Agree. A comprehensive bed load transport study will be part of the RI/FS work plan.

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		DEQ make assumptions about sediments generally not tending to be resuspended, as if there is no anthropogenic activity or high flow events? What is the relevance of the PGE Electric Station L site, given its location in the river? What other examples are there? Are there no data on migration from the McCormick and Baxter site? How can DEQ state that there is little likelihood of commingling? What's the basis except for one very large and unsupported assumption? What is the value of this assumption and is it conservative?	
26-71	Nina Bell, Northwest Environmental Advocates	2.4.3 Exposure Routes. This section is based on general assumptions and indicates the low level of attention that has been placed on this issue. There is readily available information on the consumption habits of some of the piscivorus wildlife which should be presented here rather than a vague and unhelpful series of statements about general assumptions. Why is there no discussion of data gaps and what will be done to remedy them? Why is there no discussion of conservative assumptions? Why is there no information presented?	In the work plan. DEQ would be interested in seeing any "readily available information" on wildlife.
26-72	Nina Bell, Northwest Environmental Advocates	2.5.1. Assessment Endpoints. The plan states that the assessor developing the conceptual model should check with the environmental manager and stakeholders to ensure the model provides the information needed to make appropriate environmental decisions. Who are the stakeholders? What framework has been developed to allow the stakeholders to participate in reviewing the conceptual model? The plan is lacking details in providing information how a larger community can play an active role in how the plan, e.g. the conceptual model is developed and finalized. Then in the next section assessment endpoints are suggested to be discussed with the public and later mentions stakeholders. What is the difference between the two? Do the stakeholders represent the Portland Harbor Group? Between whom is a consensus to be reached? If so then why doesn't the public have an opportunity to participate in the review of the conceptual model? This is another key aspect of the plan's implementation and dictates many future actions in the clean-up process. It is important to include the public in these steps to ensure their interests are considered.	Agree. The PHSMP will state that DEQ anticipates having a "work plan technical work group" with both environmental and community members, as well as a 30-day public comment period.
26-73	Nina Bell, Northwest Environmental Advocates	2.5.1. Assessment Endpoints: Where is there a discussion of the Clean Water Act requirements to protect the most sensitive beneficial uses? Does DEQ really believe that endpoints must protect both navigation and sensitive species? Does DEQ believe that the Endangered Species Act supports its stated view that navigation is co-equal to protection of sensitive species? pg. G-28 and G-29.	Commercial navigation is listed as a beneficial use in state water quality regulations. The water quality regulations do not prioritize the list of beneficial uses, and therefore they must all be protected equally unless further direction is provided by the courts or the legislature. Similar situations exist in other state and

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			federal water laws; competing beneficial uses are a reality that state agencies must live with. This is not "DEQ's view", but State law. The Endangered Species Act obviously does prioritize the welfare of threatened and endangered species over other competing land uses. However, that has no bearing on this section, which describes clean water regulations. Navigation will be dropped as an assessment endpoint, as conditions that impede navigation are adequately addressed by the other endpoints.
26-74	Nina Bell, Northwest Environmental Advocates	2.5.2 Testable Problem Statements. The plan states in this section that stakeholders should be involved in developing the criteria for each problem statement and that the assessor should remain faithful to these criteria when conclusions are reached regarding adverse effects. How will the assessor be held accountable to abiding by the criteria established in coordination with the stakeholders? What framework is in place to allow stakeholders to learn about and participate in developing problem statement criteria and assessment endpoints? pg. G-30.	The PHSMP will state that DEQ anticipates having a "work plan technical work group" with both environmental and community members, as well as a 30-day public comment period. DEQ anticipates making additional TAGs available so that environmental and community groups can obtain access to the expertise needed to participate in this process.
26-75	Nina Bell, Northwest Environmental Advocates	2.6 Risk Characterization. When DEQ develops wildlife TTLs and includes an "interpretation of ecological significance" what does that mean? Does that suggest that some species can be sacrificed because they are not threatened or endangered or important to the food chain?	U.S. EPA's guidance calls for a consideration of the "social, political, and ecological relevance" of an assessment endpoint - not all plants or animals are equal with respect to environmental decision-making. DEQ expects substantial stakeholder input on this issue during the work plan work group process.
26-76	Nina Bell, Northwest Environmental Advocates	Figures G-1 and G-2. Figure G-1 is missing a connection pathway from the benthos compartment to the fish compartment. pg. G-32 See also Figure 4-3 on pg. 33 for the same error.	Agree.
26-77	Nina Bell, Northwest Environmental Advocates	Figures G-1 and G-2. In Figure G-2 it is not clear how Phytoplankton Detritus compartment goes to Aquatic Plants in the diagram. Additionally, why isn't there an arrow from the Phytoplankton Detritus to the Benthic Invertebrates and another from the Aquatic Plants to Benthic Invertebrates? pg. G-33.	Agree - will correct Figure G-2.
26-78	Nina Bell, Northwest Environmental Advocates	3.0 Technical Evaluation Framework. The plan states that its objectives "derive from the mission statement." That's a problem since the mission statement was created by the Portland Harbor Group and DEQ to the exclusion of the public.	The mission statement has been discussed broadly with the Portland Harbor community through DEQ's public involvement efforts, and serves as a broad foundation for the environmental objectives of the PHSMP.
26-79	Nina Bell, Northwest Environmental Advocates	3.1 Site, Harbor, Reference Area Investigation Coordination. Reference area selection was discussed in this section of the plan and noted that reference areas will come from the first 26 miles of the Lower Willamette and not from the Columbia River. This statement,	Sections of the Columbia River, near its confluence with the Willamette River, may provide a reference area or areas, provided that physical factors (such as grain size) are equivalent.

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		although appropriate, is inconsistent with other parts of the report which state that reference areas may be selected from the Columbia River. Reference sites for the plan should not be taken from the Columbia River basin because the sediments will not be as representative of the sediments typical in the Willamette River basin. The two basins are different both in land uses and the types of pollution which contribute to their respective river sediments. In order to more accurately assess the contamination levels in the Portland Harbor reference sites should be selected from within the Willamette basin, preferably in the Lower Willamette river if "clean" sediments can be located. pg. G-34, and Section 7.2.3, pg. 53.	
26-8	Nina Bell, Northwest Environmental Advocates	Table 7-1 Summary of Technical Evaluation Framework: Why is Objective 3, Protect Human Health via contact or ingestion of sediments, only assessed on a site-specific basis? A harbor-wide assessment should be done as well since the objectives outlined in Section 7.1 do not specify whether the objectives are site-specific or harbor-wide. The objective does not say protect public health only under site-specific areas. pg. 44 and 46.	Agree. Direct contact and incidental ingestion risks will be assessed in areas (other than sites) where human use occurs.
26-80	Nina Bell, Northwest Environmental Advocates	3.1 Site, Harbor, Reference Area Investigation Coordination. This section of the plan states that only if the harbor-wide evaluation of bioaccumulating chemicals indicates there is a risk posed by the contaminants then site-specific investigations of bioaccumulating contamination will be performed. What does this mean? The plan seems to be suggesting that if there is no harbor-wide bioaccumulating contaminants risk then investigations at specific sites are not necessary. It is these very site-specific areas where contamination levels are higher that are likely to have harmful levels of bioaccumulating contaminants. Presently it is difficult to know where a fish will move throughout the Lower Willamette River or how long it will stay in one location, but this should not result in site-specific areas being exempt from investigating bioaccumulating contaminants. The plan should be clarified here and expanded to ensure that bioaccumulating contaminants do not pose a risk on a site-specific and harbor-wide basis. pg. G-35.	If DEQ can't show any bioaccumulation threat on an area-wide basis, it is unlikely that much of one will be found in a small area. However, this will not absolve specific sites from demonstrating that they do not pose bioaccumulation risks.
26-81	Nina Bell, Northwest Environmental Advocates	3.1 Site, Harbor, Reference Area Investigation Coordination. How can literature surveys provide the information needed to avoid "costs and time" involved in obtaining required information? Presumably DEQ has already cited all relevant literature. The plan should clearly establish the data gaps and how they will be filled instead of vague references to ways to save money.	Field studies are typically supported by a thorough literature search, one much more detailed than could be accomplished within the time constraints imposed by plan preparation. Specifically with respect to wildlife toxicology information, the literature is the only practical source.
26-82	Nina Bell, Northwest	3.1 Site, Harbor, Reference Area Investigation Coordination: The	Comment noted.

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	Environmental Advocates	title of this section is about coordination. There is nothing in the text that refers to coordination.	
26-83	Nina Bell, Northwest Environmental Advocates	3.2 Objectives (1), (2) - Benthos. Clean sediments are defined as "those that do not restrict dredging or other commercial activities." The purpose of the sediment management plan is to meet all 6 of the objectives stated in the plan and although this section is specific to the first two objectives the definition provided for "clean" sediments is not representative of the other objectives of the plan. Additionally, some people would define "clean" sediments as having no contaminants at all. This definition puts the commercial interests of the harbor ahead of human health and the environment. pg. G-35.	This study, and all site-specific investigations, will extend to the locality of the facility (which may go beyond the nominal 6-mile segment), as provided for by state law. Also, "clean" means acceptable risk, not zero contamination.
26-84	Nina Bell, Northwest Environmental Advocates	Section 3 in general. What if harbor-wide sediments pose a risk to human health or the environment relative to the concentrations at the reference sites? The plan does not seem to consider this scenario. The plan seems to assume that the contamination found across the harbor is low enough to not pose any risks and hence no feasibility study and clean-up. Whether the harbor-wide sediments do pose a risk or not the plan should openly discuss this scenario.	The PHSMP anticipates examining sediments between sites. If these sediments pose unacceptable risks, they will be subject to a feasibility study.
26-85	Nina Bell, Northwest Environmental Advocates	3.3.1.2 Decision Guidelines (Human Use). The plan mentions that if a responsible party chooses not to use the Remedial Action Objectives (RAOs) developed from the harbor-wide TTL and BSAF that they can undertake their own testing necessary to develop site-specific RAOs. The plan does not discuss how this will be carried out and what will happen once the site-specific RAOs are developed. It is not clear what happens if the RAOs developed by the responsible party result in higher "acceptable" levels of contamination than the harbor-wide developed RAOs. Which version of the RAOs will then be used and why? Will the DEQ be making the decision on which set of RAOs to use for the site or will the responsible party be obligated to use their RAOs whether they are higher or lower than the harbor-wide developed RAOs. Although this process sounds reasonable on the surface many details have been left out on how this will be successfully implemented to be protective of human health and the environment. It appears that there is a lot of room for abuse in this approach. pg. G-43 and G-98	If a responsible party chooses to perform their own site-specific bioaccumulation testing, the details of such testing will be spelled out in a site-specific work plan. Site-specific RAOs so developed would be used whether they are higher or lower than default RAOs. See also Appendix G, Section 6.2.2.5.
26-86	Nina Bell, Northwest Environmental Advocates	3.3.1.2 Decision Guidelines (Human Use). Several references are made throughout Appendix G to "FDA action levels" but this does not seem to clarified as to what they are and how they relate to the rest of the plan. Specifically, it appears that DEQ intends to abandon its own water quality standards in favor of levels of toxic contaminants that are generally much greater. pg. G-44.	A definition of FDA action levels has been added. These are used by the Health Department to set fish advisories.

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26-87	Nina Bell, Northwest Environmental Advocates	3.3.1.2 Decision Guidelines (Human Use). Figures G-5 and G-6 show decision guideline flow charts for meeting objectives 3 (food), 4, 5, and 6 on a site-specific basis but there are no decision guidelines outlined for meeting these objectives on a harbor-wide basis. The plan clearly states that it will be focusing on the 6 mile reach of the Lower Willamette River called Portland Harbor, and decision guidelines for objectives 1 and 2 were discussed on a harbor-wide and site-specific basis. The plan does not clarify this or explain it and it should. The plan states that harbor-wide data will be collected and used to develop the SQGs, TTL, TSC and the BSAF but there does not seem to be any discussion on then using these guidelines to see if there are any non site-specific areas in the Portland Harbor which pose a problem. pg. G-43 and G-46.	The two figures work together. Evidence of bioaccumulation on a harbor-wide basis leads to a search for sources on a site-specific basis. Harbor-wide data will be used to develop SQGs but not TSC or TTLs, these are based on literature values.
26-88	Nina Bell, Northwest Environmental Advocates	3.3.1.2 Decision Guidelines (Human Use). The plan does not establish how the risks associated with non-treated COIs will be factored into clean-up levels of the clean-up COIs. This perpetuates the notion that appears throughout the plan that if the contamination cannot be strongly linked to a particular site, it somehow does not pose a risk that must be addressed.	Disagree. The PHSMP will be clarified to indicate that sources not already identified as sites will be addressed.
26-89	Nina Bell, Northwest Environmental Advocates	3.3.2.2 Decision Guidelines. Again, the plan is short on information and how it will fill data gaps with regard to protection of beneficial uses. Instead of generalizations about typical Northwest consumption patterns, the plan should actually outline what it known and what is not known and needs to be determined and how about the Portland Harbor and downstream areas.	More detailed consumption patterns will be addressed in the detailed RI/FS work plan.
26-9	Nina Bell, Northwest Environmental Advocates	Figure 7-1 Integration of Program, Programmatic and Remedial Investigation Elements: This figure is unclear in the information it is presenting. The diagram indicates in the lower left corner that there may be a situation when there are site-specific toxicity risks and no bioaccumulating risks which leads to a status of No Further Action. How is this route on the flow chart protective of human health and the environment? pg. 49.	A site-specific toxicity "yes" leads to two places simultaneously: an evaluation of bioaccumulation risks and a feasibility study to address toxicity risks.
26-90	Nina Bell, Northwest Environmental Advocates	3.4.2.2 Decision Guidelines (Fish and Wildlife). This section notes that if harbor area tissue concentrations exceed the TSC then the contamination evaluation moves to a site-specific level. Although this may be a prudent suggestion, it assumes that all harbor area contamination exceedances are caused by identified site-specific sources. What if the tissue concentration exceedance is due to an unknown site source or from harbor-wide contamination? No matter how likely this scenario is the plan needs to address these questions in order to ensure all sources of contamination have been reviewed and	Site discovery and site assessment activities are going on in parallel with any measurements of tissue concentrations. DEQ is not relying solely on the PHSMP to find contaminant sources. Also, DEQ will be characterizing harbor-wide (non-site-specific) in addition through between-site sampling.

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		subsequent risks assessed. pg. G-50.	
26-91	Nina Bell, Northwest Environmental Advocates	3.4.2.2 Decision Guidelines (Fish and Wildlife). Once again, the plan avoids discussion of the lower Willamette and Columbia Rivers, including the estuary, when discussing the impacts to fish and wildlife. The plan states but does not explain how "the significant differences in gross morphological or histopathological changes in fish soft or hard tissues between Harbor and reference areas could also be used to assess adverse effects." This section of the plan notes the impacts of toxic contaminants in Puget Sound studies but goes on to say that doses chosen would be "preferably related to a reproductive endpoint." How does this take into account the new information?	The Columbia River estuary is not in the scope of the PHSMP. It is common practice in environmental assessments to compare similarities or differences in various endpoints (in this case gross morphological and histopathological changes) between potentially impacted areas and reference areas. The exact details of how this could be done in the context of Portland Harbor will be discussed among the various stakeholders during work plan development.
26-92	Nina Bell, Northwest Environmental Advocates	4.1 Purpose. The plan does not explain why it is beneficial that "[m]any of the methods described within this plan [for sampling] have been selected in order to be consistent with/complimentary to the existing dredged material management guidance." How does this ensure that the objectives are met? When will the public and its representatives get to have input into the detailed work plans for sampling?	Consistency with some aspects of the multi-agency dredge manual is seen as important. The primary difference, however, is in sampling technique. The plan envisions a sampling technique different than that used in the DMEF. Work plan development will include opportunities for public participation and comment in development of detailed sampling plans, including active involvement by a technical work group.
26-93	Nina Bell, Northwest Environmental Advocates	Table G-10 Potential Sample Types. How does the 5-10 cm surficial contamination related to the 7 inches of depositional materials from storm events referenced earlier in the plan? Why doesn't the plan identify where previous sampling indicates that this is an appropriate approach to take? What does this say about previous sampling done evaluating only the top 2 cm of sediments?	Sample depths for assessing past contamination are selected to represent the depth in sediments in which most organisms live--this is very shallow, typically 5-10 cm deep. Below that level, exposure to chemicals does not occur. DEQ does not know the exact depth yet for freshwater systems, but will determine that during the harbor-wide benthic study. Evaluations of ongoing sources typically use a shallower depth interval (e.g., 2 cm) because they are attempting to evaluate only recent inputs, rather than historical contamination.
26-94	Nina Bell, Northwest Environmental Advocates	4.2.1 Sample Types (tissue residue samples). Where is the information about the species and type of tissue that will be used to determine sampling? The plan simply notes that there are considerations about human health, about cultural practices, and about wildlife but it does not state what its conclusions are, whether it in fact already has conclusions, who will be involved in making those conclusions if they are not yet made. These kinds of decisions have great impact on the results of the sampling yet little to no information is provided.	This will be added in the work plan.
26-95	Nina Bell, Northwest	4.2.1 Sample Types (surveys of epifaunal and nektonic species). This	To be addressed in the work plan.

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	Environmental Advocates	paragraph mentions that if the surveys are done over time such as seasonally then temporal information on use of a given site could be determined and used for identifying receptors. This raises an issue of how these various biotic surveys and chemical sampling will be conducted. The details on where, when and how many sites and samples will be taken is left out of this report (as may be appropriate), but there should be some indication of whether the public will get an opportunity to see another document such as the work plan mentioned in the PHSMP where the sample plan is more thoroughly described. Will temporal studies be conducted in Portland Harbor to better characterize receptors? pg. G-55.	
26-96	Nina Bell, Northwest Environmental Advocates	4.2.2 Sampling Station Location. How will "other stakeholders" be involved in selection of sampling sites? How will DEQ and others determine "appropriate sampling locations" which depend "almost entirely on what it known about a site" when DEQ has already acknowledged that it knows very little about the sites. Why does the plan refer to a "majority of cases?" There are 17 sites; the plan should be specific about what is known about each. The discussion in the plan is interesting but unhelpful. For example: "These stations may be evenly spaced or targeted to areas of known contamination." There aren't too many other alternatives. The question is, will there be sufficient sampling done to ensure that enough information is developed about specific contamination as well as its broad distribution or will, in the interests of keeping costs down, will sampling be unduly restricted or skewed to demonstrate low risks or lack of responsibility? The plan does not establish the role of random samples but merely states that where there are records of spills, sampling should follow up.	To be addressed in the work plan. Work plan development will include opportunities for public participation and comment.
26-97	Nina Bell, Northwest Environmental Advocates	4.2.2 Sampling Station Location. The plan states that the "selection of the reference operationally defines the environmentally acceptable endpoint." It does not explain how this is consistent with the Clean Water Act.	It's a simple comparison between potentially impacted and reference areas for selected endpoints. Consistency with the CWA will be discussed among the various stakeholders during work plan development.
26-98	Nina Bell, Northwest Environmental Advocates	4.2.4 Sediment Sampling Depth. A list of issues is provided when determining the sediment collection depth in this section of the plan. The first item on the list mentions that "if depositional rates are known," which raises an issue not addressed in this list. What if the depositional rates are not known? Will multiple depth samples be taken to ensure the biologically active zone or a contaminated zone are reached and included in the sample? Additionally, this section does not mention what happens if the area experiences scour in the river.	Agree; considerations could be extended to allow for the results of a comprehensive bed load transport study.

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		This would clearly indicate that any contaminated sediment would be removed from the site to be sampled to a new location. The list of considerations should be more comprehensive. pg. G-57.	
26-99	Nina Bell, Northwest Environmental Advocates	4.2.6 Other Considerations. These are significant concerns that have been given short shrift.	Comment noted.
22-1	Patricia Dost, Schwabe, Williamson & Wyatt	Figure 3-3 continues to be somewhat confusing to us. We believe that the DEQ is using the word "cleanup" as shorthand for the entire remedial investigation, feasibility study, remedy selection and remedy implementation process. The ordinary meaning of the word "cleanup," however, implies immediate, active remediation. Figure 3-3 appears to indicate that "cleanup" will precede the remedial investigation and feasibility study. We suggest the substitution of the term "RI/FS" where appropriate. I've enclosed a hand-marked copy of Figure 3-3a with suggested changes.	Comment has been incorporated into Section 3.
22-2	Patricia Dost, Schwabe, Williamson & Wyatt	Further, Figure 3-3a suggests that termination of a voluntary agreement immediately results in an orphan site. We believe that DEQ's usual practice is to issue a consent order when a voluntary agreement is terminated.	Comment has been incorporated into Section 3.
22-3	Patricia Dost, Schwabe, Williamson & Wyatt	Section 4.3 has several blanks for the number of existing sediment sampling stations.	The blanks have been filled in.
22-4	Patricia Dost, Schwabe, Williamson & Wyatt	Figure 8- 1 b, lines 102 through 108, lays out the schedule for certain activities at Time Oil's Northwest Terminal. Line 106 should be revised to indicate that the upland interim remedial action was completed in 1996 and 1997. Lines 107 and 108 are in error and should be deleted.	The schedule has been revised accordingly.
23-1	Ralph J. Moran, ARCO	ARCO Products Company appreciates the opportunity to provide comment on the Portland Harbor Sediment Management Plan (PHSMP) which was recently released by the Oregon Department of Environmental Quality (DM. Our interest in the PHSMP goes beyond our status as a business owner, operating adjacent to the Willamette River. We believe that the PHSMP represents an important step in a process to came the long-term health of the Willamette River for the citizens of Oregon. We further believe that the makeup of the plan demonstrates that the resources necessary to manage these important issues can be found within the Oregon DEQ.	Comment noted.
23-10	Ralph J. Moran, ARCO	6. Sediment Chemical Transport and Deposition. The DEQ acknowledges that sediment transport within Portland Harbor is not well understood but indicates that a depositional environment is believed to predominate in the harbor area. A clearly defined approach for assessment of sediment and chemical transport within the harbor needs to be established to develop a defensible understanding	The goal of the plan was to identify a data gap involving sediment transport. The forthcoming RI/FS work plan will specifically address how this gap will be filled. Agree. A comprehensive bed load transport study will be part of the RI/FS work plan. This very well may be the case. However, the plan will be

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		of source/sediment chemical relationships and the potential for recontamination. The PHSMP acknowledges this data gap but does not provide a clearly defined approach for its resolution. The suite of investigation and assessment tools considered to be available for site-specific remedial investigations should include methods for radio-dating sediment samples, chemical fingerprinting techniques, chemical analysis of total suspended solids, and measurement or modeling of sediment deposition rates.	rephrased to make a more neutral position on this issue, as well as point out the need for further investigation.
23-11	Ralph J. Moran, ARCO	1. Appendix G Section 6.2.1 SQG for Benthic Toxicity- Chemical-specific methodologies. The PHSMP proposes to develop empirical SQGs based on associations between chemical concentrations and toxicity test results within a site-specific and regional database. The text discussion indicates that the DEQ has given this topic a great deal of thought. However, the proposed approach seems to ignore published studies for chemicals of interest (COIs), even those which provide cause--effect, concentration-response data from controlled experiments or which document associations between COI concentrations and effects on benthic invertebrates at sites where contamination is limited to a specific chemical or chemical class. The rationale provided for rejecting the published literature for COIs, particularly information related to the equilibrium partitioning or spiked sediment approaches to sediment quality assessment, is that (1) insufficient data are currently available to apply these methods, and (2) regulatory precedent is lacking.	Concentration-response data from controlled laboratory experiments is almost invariably from spiked sediment bioassays, which provide the chemical in a much more bioavailable form than is typically present in the environment. For example, University of Washington researchers have shown that even one year of weathering reduces bioavailability of petroleum compounds in sediments by one or more orders of magnitude. These approaches do not adequately address bioavailability factors present in the environment and have poor reliability compared to empirical approaches. They also do not address chemical mixtures, as noted above. Complete sets of criteria are needed for use in a regulatory program, and such criteria sets based on spiked sediment bioassays or EqP have not yet completed the national/regulatory peer review process in either the U.S. or Canada, largely because of an inability to develop such criteria for many compounds and the lack of field-validation of the criteria.
23-12	Ralph J. Moran, ARCO	In fact, a great deal of information is available from the published literature to provide sediment quality guidelines for certain COIs, notably PAHs (as synthesized by Swartz et al., 1995 and Swartz, 1999), DDTs (Ferraro and Cole, 1997; Hoke et al., 1997; Murdoch et al., 1997a; 1997b; Nebeker et al., 1989; Schuytema et al., 1989; Swartz et al., 1991; 1994), and five metals (cadmium, copper, lead, nickel, and zinc) (as reviewed by Ankley et al., 1996; Hansen et al., 1996). For these COIs, assessment methods have been developed using cause-effect data and validated using toxicity test and/or benthic community data from PAH DDT, or metalcontaminated sites. Significant information is also available from the published literature for other COIs, such as dioxins (Barber et al., 1998; West et al., 1997).	DEQ has reviewed many of the references provided here, but the data are subject to the limitations expressed above. The references are nevertheless appreciated and will be reviewed during the criteria development process as issues related to these specific chemicals arise. In particular, DEQ is strongly considering use of the Swartz sum PAH model as a substitute for calculating SQGs for individual PAH compounds. References for DDT are especially appreciated, and will be carefully reviewed.

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23-13	Ralph J. Moran, ARCO	Although, the PHSMP indicates such methods are not in use, chemical-specific sediment quality criteria have been established for several programs. The State of New York has adopted sediment quality criteria for numerous organic chemicals based on the equilibrium partitioning approach (NYDEC, 1994). The USEPA uses guidelines calculated through the equilibrium partitioning approach as part of the RCRA (USEPA, 1995) and CERCLA (USEPA"' 1996) programs. A model for assessing PAH mixtures in sediment based in part on the equilibrium partitioning and spiked sediment approaches (Swartz et al., 1995) is being considered by USEPA as the basis for national sediment quality guidelines for PAHs, Chemical-specific approaches for protection of aquatic life for metals such as the biotic ligand model have received strong support (Bergman and Dorward-King, 1997) and are currently being considered for regulatory use by the USEPA. The PHSMP should incorporate the flexibility to allow the use of such information, on at least a site-specific basis, where technically appropriate.	NYDEC may be the only jurisdiction that has actually promulgated EqP-based criteria. All other states and provinces, as well as Environment Canada, have promulgated criteria based on empirical approaches. Although EC states that it prefers the spiked sediment bioassay approach, it acknowledges that there are not yet enough data to implement it. EqP values are not used in EPA Region 10, where AETs have been approved for use, nor have they been promulgated at a national level. Outside Region 10, EPA guidance states that use of TELs/PELs is its preferred approach in the absence of EqP criteria. If the approach outlined in the PHSMP proves not to be adequately predictive for some chemicals or chemical classes, other approaches will certainly be considered. However, this would be done on a harbor-wide, not site-specific, basis with the full participation of the technical work group.
23-14	Ralph J. Moran, ARCO	The proposed approach to developing empirical, association-based SQGs is not capable of characterizing cause-effect relationships between chemical concentrations and sediment toxicity. While the proposed approach may identify indicator chemical concentrations associated with adverse effects, the one-effect to many chemical exposures basis introduces substantial uncertainty. As a result the SQGs cannot be used in a defensible manner to predict adverse effects, and identify or minimize sources of toxic chemicals, Several factors contribute to the uncertainty of such association-based SQGs. These include: (1) misapplication of risk assessment techniques in deriving "effects-based" SQGs, (2) potential co-variance among chemicals, and (3) difficulty in identifying COIs that do not contribute significantly to toxicity.	All three of the issues raised here are important when dealing with mixture-derived data sets, and DEQ has expended considerable effort identifying approaches for addressing these concerns. DEQ does not agree that such SQGs cannot be used in a defensible manner; the predictive reliability of this approach is substantially higher than existing alternatives.
23-15	Ralph J. Moran, ARCO	One of the specific methods proposed for developing SQGs is to identify specific percentiles from the distribution of concentrations of each chemical in all sediment samples designated as toxic. This approach appears to be based on a probabilistic risk assessment technique where a distribution of effect concentrations (i.e., concentrations that produced a specified level of effect on exposed organisms in controlled experiments) is compiled and used to quantitatively define the extent of uncertainty in the effects assessment. Effects are typically considered unlikely at concentrations below the 10th percentile of the effects distribution, whereas effects	The rationale behind the proposed approach is not what is stated here. DEQ is well aware of the differences between single-chemical and mixture-derived data sets, and are not attempting to apply risk assessment techniques relying on cause-effect relationships to predict effects in a mixture-derived data set. DEQ is very much in agreement that this is a problem with how some existing SQGs are derived. Instead, percentiles are simply used as a convenient metric to explore how error rates in the overall criteria

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		are likely at concentrations exceeding the 50th percentile (Cardwell et al., 1993 - Solomon et al., 1996). This approach is only applicable if the effects distribution is based on effects that are caused by the chemical being evaluated. In the SEDQUAL database proposed as part of the PHSMP, the sediment samples designated as toxic, which would be used to define the "effects distribution" for each COI, would typically contain many potentially toxic chemicals. Thus, the meaning of a particular percentile of the "effects distribution" is not based on a chemical-specific causal relationship and cannot be translated to a defensible RAO (Sampson et al., 1996).	set change as one moves through the distributions.
23-16	Ralph J. Moran, ARCO	An alternative to "effects-based" SQGs is "no-effect-based" SQGs, which are also proposed for consideration as part of the PHSMP. "No-effect-based" SQGs may be useful, assuming that for each COI the SEDQUAL database includes three concentration ranges: low concentrations at which effects due to that COI do not occur, intermediate concentrations at which effects sometimes occur, and high concentrations at which effects due to the COI always occur. For a given COI, the low concentration range will be associated with both non-toxic samples and toxic samples where toxicity is due to other chemicals. As COI concentrations increase through the intermediate range, the number of non-toxic samples will decrease, and no non-toxic samples will occur in the high concentration range. This scenario is depicted in PHSMP Figure G-7. In this case, the "ideal SQG' is illustrated as an unspecified percentile of the no-effect distribution.	This comment was not entirely clear in what was meant by a "no-effect-based" SQG. The ideal SQG as illustrated in Figure G-7 is not necessarily based on the no-effects distribution. The reason the percentile is unspecified is that DEQ proposed to determine through an iterative process, that percentile of one (or a combination of both) of the distributions that provides the lowest error rates when the entire set or criteria are applied (i.e., not on a single-chemical basis).
23-17	Ralph J. Moran, ARCO	If the entire distribution of concentrations in the SEDQUAL database for a given COI is used to establish SQGs, then SQGs for COIs that do not contribute to toxicity will be overly conservative, sometimes dramatically so. The PHSMP proposes to take steps to identify COIs that do not contribute to the observed toxicity by examining the distribution of chemical concentrations in toxic and non-toxic samples. We commend the DEQ for taking such steps to overcome this problem with the AET approach. However, this line of evidence is not fool-proof because chemicals present only at non-toxic concentrations may co-vary with chemicals present at toxic concentrations. An example is the covariance between dioxins (present at non-toxic concentrations) and other chemicals in portions of the Now York/New Jersey harbor estuary (Barber et al., 1998). We recommend that the PHSMP consider as part of the final SQG identification proem a weight-of -evidence approach that examines chemical-specific toxicity data, sources and the results of mechanistic sediment quality criteria	DEQ agrees that covariance can be a problem. DEQ is currently developing additional techniques to identify and eliminate chemicals from the criteria set that have no effect on the overall toxicity observed. DEQ is attempting to provide a data set from a wide enough variety of sources that the potential for covariance should be minimized. However, if chemicals fully covary to the point that their individual effects cannot be distinguished, then it will not result in an inefficient cleanup process, since any cleanup areas identified for a nontoxic covarying chemical would also contain chemicals that are actually responsible for toxicity. If DEQ identifies strong covariance in the data set, it could attempt to determine which chemicals are likely responsible for the majority of observed effects by going to the literature. However, the potential for

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		approaches as lines of evidence.	additive effects by covarying chemicals that would not be reflected in the single-chemical literature must also be taken into consideration.
23-18	Ralph J. Moran, ARCO	Porewater Toxicity Testing. The PHSMP indicates that the Microtox test procedure lacks relevance to the freshwater environment. We would add that the measurement endpoint for the test lacks biological relevance to benthic invertebrates. Should this test be removed from the suite of recommended test protocols we recommend that an alternative porewater toxicity test be identified. The alternative toxicity tests discussed in section 5.2.1.2 are all bulk sediment tests. It will be important to have a porewater test available that can be used to distinguish between effects associated with bulk sediment or dissolved phase chemical concentrations. This is a required first step in any TIE approach used to farther evaluate causal relationships for bulk sediment tests. Additionally, alternative methods of porewater collection (e.g., peepers) and analysis should be considered as part of the suite of investigation and assessment tools available for site-specific investigations.	Agreed that it would be useful from a TIE perspective to have other porewater tests available to help elucidate potential causal effects. However sediment TIE methods are still very much in the R&D stage and not considered part of the standard suite of sediment testing methods. However, this does not preclude this type of assessment from a site-specific investigation. Many of the bulk sediment methods currently described in the PHSMP may be easily adapted for the evaluation of porewater. In addition since many of these species have infaunal life-histories this type of exposure could have ecological relevance.
23-19	Ralph J. Moran, ARCO	The PHSMP proposes to develop tissue screening concentrations (TSC) for assessing risks to fish based in part on the ERED database. A distribution of effect concentrations is to be developed for each bioaccumulative COI, and the tenth percentile of the effect concentrations will be identified as the TSC. As described above, it is critical that the effect concentrations compiled for each COI include only data from controlled experiments capable of characterizing cause-effect relationships. Associations between tissue concentrations and effects for fish exposed to chemical mixtures (e.g., field-caught fish; fish exposed to field-collected sediment) should not be included. Additionally, it is critical that the tissue concentrations considered in the effect distributions are comparable to those measured in Portland Harbor. For instance, COI concentrations measured in adult fish should be compared to effect concentrations for adult fish, not effect concentrations for eggs or fry. Application of the narcosis approach for assessing effects to fish may have limited applicability on a site-specific basis. We anticipate that few fish are going to spend sufficient time in a given location to suffer narcotic effects. The exception to this line of thinking night be the bottom feeding white sturgeon.	The ERED database only includes data for single chemicals, not chemical mixtures. Because of the paucity of residue-effects information some extrapolation may be necessary. However, the level of extrapolations should be reasonable.
23-2	Ralph J. Moran, ARCO	Our comments are provided as a constructive review of this ambitious program and as a point of discussion ion for initiating site-specific analyses. We agree with the PHSMP insofar as it emphasizes the need	DEQ will focus on providing and implementing a consistent and coordinated framework for site-specific investigations in Portland Harbor. However, if

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		for completion of site-specific data. Further, while we understand the need for some degree of harbor-wide investigation, we hope that the Plan will focus on limited studies necessary to develop a consistent and coordinated framework for site-specific investigations. We are hopeful that the final plan will ensure sufficient flexibility to Dow site-specific work to complement and even enhance elements of the PHSMP where such flexibility is warranted.	investigations show that there are unacceptable risks related to harbor-wide (non-site-specific) contaminants, the process of feasibility study and, if indicated, cleanup, will take place harbor-wide.
23-20	Ralph J. Moran, ARCO	5. Appendix G Section 5.1.2 Analytical Methods for PCBs and Dioxins. The proposed detection limits for PCBs are several orders of magnitude higher than those for dioxins, which may be inappropriate if toxic equivalent factors (TEFs) for dioxin-Eke toxicity are to be applied to PCBs. For sites where lower detection limits are needed, PCBs could be analyzed using EPA Method 1668 instead of Method 8082. Additionally, if total dioxin/furan or total PCB concentrations are of interest in addition to specific congeners, homologue analysis could be employed to quantify total concentrations of dioxins, furans, and PCBs at each level of chlorination. The PHSMP should include the flexibility to include such measures in site-specific investigations and assessments, where technically appropriate.	EPA Method 1668 may be appropriate for site-specific investigations for PCBs. The PHSMP provides general guidance, but does not preclude alternative procedures where technically appropriate for site-specific investigations.
23-21	Ralph J. Moran, ARCO	Individual versus Population-Level Effects. In applying the SQGs and TSCs for Portland Harbor, as well as the results of sediment toxicity tests, it will be important to note that exceedances of applicable benchmarks do not necessarily equate to population- or cornmunity-level ecological impacts. For the benthic community, the sediment quality triad approach outlined in the PHSMP provides a means of verifying and interpreting the significance of toxicity test and chemistry results. However, portions of the PHSMP appear to lay the groundwork for rejecting the sediment quality triad approach if expected differences in benthic community quality are not detected within Portland Harbor.	The sentence was inadvertently included in the draft and has been deleted. The triad approach remains the final decision method with respect to the benthic community.
23-22	Ralph J. Moran, ARCO	Based on the beneficial use which the proposed sediment toxicity tests and SQGs are designed to protect (i.e., the benthic community), it is essential that the benthic community be directly evaluated. It is possible that in portions of Portland Harbor, toxicity may be measurable but may not be a limiting factor influencing benthic community quality. For instance, factors such as organic enrichment due to combined sewer overflows, hypoxia, or sediment instability due to prop wash may limit the benthic; community to very tolerant species, which are not sensitive to the chemical concentrations causing toxicity in sensitive laboratory tests. In such cases, remedial actions that are based solely on toxicity test results and chemistry data will	Agreed that it is critical to assess the benthic community in Portland Harbor, and that is an important part of the harbor-wide study. However, disagree that cleanup is not warranted simply because there are other stressors affecting the benthic community. In these cases, more than one type of action may need to be taken to restore impaired beneficial uses.

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		ultimately fail to improve benthic community quality.	
23-23	Ralph J. Moran, ARCO	Recommendations. As noted above we commend DEQ for recognizing many of the problems inherent in association based sediment quality developments. We recommend that the PHSMP avoid development of "association-based" SQGs because they lack scientific defensibility and sufficient predictive capability. To limit the uncertainty that may be associated with Portland Harbor AETs we recommend that a weight-of-evidence approach be taken that considers the following recommendations as additional lines-of-evidence.	After a careful review of the available approaches, DEQ believes that "association-based" methods provide the most defensible and implementable approach to establishing SQGs. These approaches have wide scientific support throughout the U.S. and Canada. DEQ is proposing modifications to existing approaches that increase their predictive ability and address issues such as covariance in the data set. Many of the recommendations provided by the commenter are nevertheless useful and are addressed further in specific responses below.
23-24	Ralph J. Moran, ARCO	Use the published scientific literature as an additional line of evidence to identify COIs that do not contribute to sediment toxicity in Portland Harbor. For example, bis(2-ethylhexyl)phthalate has been shown to be non-toxic at percent levels in sediment, due to its low solubility relative to its toxicity (Call et al., 1997(still in prep)). Information on the toxicity of other extremely hydrophobic chemicals such as high-K., PAHs may become available in the near future as well. As another example, invertebrates are insensitive to dioxins at environmentally relevant concentrations, apparently because they lack the Ah receptor (Barber et al., 1998; West et al., 1997).	Presumably, the lack of toxicity of these chemicals will be apparent in the data set and DEQ will not need to develop COIs for these chemicals. DEQ does not expect benthic toxicity to be the driving factor for dioxins, for the reasons stated. Would appreciate receiving a copy of the phthalates paper once published.
23-25	Ralph J. Moran, ARCO	Consider developing literature-based SQGs for well-studied COIs such as PAHs and DDTs. A potentially useful combination of the association-based and literature approaches would be to compile a no-effect distribution from the SEDQUAL database for the Swartz et al. (1995) sumPAH index, which could provide a line of evidence in the site-specific calibration of the PAH model.	The sum PAH index will likely be integrated into DEQ's approach (but not "consensus-based values", which are not considered to be scientifically derived).
23-26	Ralph J. Moran, ARCO	Similarly, the Swartz et al. (1995) approach could be used in the development of SQGs for other distinct chemical classes, such as phthalates. To the extent possible, SQGs for toxicity- and bioavailability-weighted indices for chemical classes should be preferred to SQGs for individual chemicals (Swartz, 1999). As data become available, an SQG could also be developed for potentially bioavailable "SEM metals" (cadmium, copper, lead, nickel, and zinc), measured as SEM minus "S".	Addressing phthalates and divalent metals as a class is an interesting idea, it can be discussed further in the technical work group.
23-27	Ralph J. Moran, ARCO	A logical extension of evaluating chemical classes as mixtures is to develop a chemical mixture model for all COIs identified as potentially contributing to toxicity. An example is the chemical mixture model developed as part of the ARCS program for the Great Lakes (Wildhaber and Schmitt, 1996). Such a model could be	This seems to carry the group concept a little far, as not all of the chemicals present act with the same toxicity mechanisms. It is not clear why one would group such chemicals together.

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		developed from the literature and tested using information from the SEDQUAL database, particularly as data collection methods proposed in the PHSMP for future investigations appear to allow the estimation of bioavailability for all COIs (e.g,, SEMAVS, porewater metals and ammonia).	
23-28	Ralph J. Moran, ARCO	Lastly, we reiterate our interest in seeing greater flexibility in the PHSMP suite of methods available for site-specific assessments, site-specific conditions, investigation and assessment requirements will vary substantially within the harbor. Therefore, efficient and effective evaluations for sediment associated risks may require investigation and assessment tools that are not addressed in the PHSMP.	Agree, in part. There may be site-specific opportunities for additional assessment tools; however, a minimum set of tools are expected to be used at each site. Default approaches provide a level of consistency and protection from errors that are critical to a regulatory program.
23-3	Ralph J. Moran, ARCO	We're pleased to see that the PHSMP generally follows the most important elements of the sediment quality “triad" approach to achieve the sediment assessment objectives. We have concerns however, regarding some specific program objectives as well as some technical elements. Accordingly, the enclosed comments provide general, programmatic comments as well as more specific, technical comments for your consideration.	Comment noted.
23-4	Ralph J. Moran, ARCO	General Programmatic Comments: In general, the Oregon Department of Environmental Quality (DEQ) is to be commended for the thoughtful and thorough development of a conceptual approach for assessing sediment quality in Portland Harbor. Our primary concern is the fact that the proposed approach includes a substantial field effort but lacks sufficient predictive capability to make credible sediment management decisions on a site-specific basis. Specifically, we have concerns regarding the methodologies selected for developing sediment quality guidelines (SQGs) for benthic invertebrates, assessing impacts to fish based on tissue burden concentrations, and DEQ’s assumptions about the relationship between sediment transport in the River, sediment chemical concentrations and source proximity, as discussed below.	Comment noted on SQG development; addressed in Comment 23-5.
23-5	Ralph J. Moran, ARCO	1. Predictive Risk Assessment. The PHSMP lays out a suite of methods for investigating sediment chemical conditions in Portland Harbor, potential sediment clean up criteria, and remedial action objectives. However, the use of apparent effects threshold (AETs) values for benthos, and tissue screening concentrations for fish based on field derived data sets to evaluate the potential for adverse effects does not establish causal relationships and has insufficient predictive capability.	Disagree. The predictive ability of field-derived criteria has been repeatedly established in the literature, and error rates will be calculated and published so that the accuracy of the SQGs will be known. Their predictive ability will be tested using independent data sets. Their reliability will be compared with all existing approaches to calculating SQGs to ensure that their predictiveness is at least as good as other available methods. Minor clarification – AETs are not proposed in the PHSMP. Modifications

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			to existing approaches are being proposed that should substantially improve their predictiveness and minimize error rates. TSCs and TTLs are based on laboratory studies with single chemicals. No field data are proposed to be used in developing tissue criteria.
23-6	Ralph J. Moran, ARCO	2. Source Identification and Causal Relationships. The PHSMP sediment assessment methodology is based primarily on association-based approaches that assume causal relationships between a measured effect and many potential toxicants. This approach is not sufficient to establish a defensible basis for identifying source relationships, site-specific risk, or developing remediation strategies. Furthermore, DEQ's belief that sediment transport within the harbor is limited and that chemical conditions are most strongly related to the nearest known source regardless of upstream conditions is a point of concern (Section 1. 1). The PHSMP acknowledges that sediment deposition conditions throughout the harbor are incompletely defined. Therefore, plans to charge the cost of investigation for the harbor-wide sampling locations back to the parties associated with adjacent sites appears unfounded.	Details of assigning responsibility for funding harbor-wide activities will be developed during detailed implementation planning. Further study will answer questions about sediment transport into, within, and out of the Harbor.
23-8	Ralph J. Moran, ARCO	4. Tissue Screening Concentration Basis for Assessing Impacts to Fish. The PHSMP proposes to assess potential adverse impacts to resident and migratory fish through tissue screening concentrations (TSCs). There is sound literature based-research to support this approach for a limited number of COIs (e.g., methyl mercury and dioxins). However, this approach is not applicable to the majority of the COIs identified for the Portland Harbor because causal relationships between adverse effects and tissue burden have not been credibly established. This is particularly true for field collected datasets that were not intended for this purpose and are confounded by potential chemical interactions, diverse field conditions, and variable data quality.	Partially agree. The plan does not propose using field-derived data sets for establishment of TSCs. The adequacy of existing data sets for establishing TSCs will be further evaluated in the bioaccumulation technical work group; however, limited alternatives exist for establishing such criteria. Despite its acknowledged limitations, the TSC approach was viewed as the best available minimally acceptable fish evaluation method. Other methods may also be used, particularly with respect to PAHs. What is not acceptable is to not evaluate fish impacts in some fashion.
23-9	Ralph J. Moran, ARCO	5. Population and Community Level Effect Endpoints. The assessment endpoints identified in the PHSMP for the ecological community are appropriate given the mix of resident species and non-resident endangered species. It is important that the measurement endpoints used to evaluate ecological risks are relevant at the population and community level and are not focused exclusively on effects to individuals. The focus should be placed on measures of survival, growth and reproduction preferentially over more obscure endpoints.	Partially agree. However, where ESA species are involved, protection at the level of the individual is required.
20-1	Sierra Club	The Columbia Group of the Sierra Club, representing 6,000 members	DEQ is confident that the approach defined in the

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		in the Portland area, supports the listing of Portland Harbor as a Superfund site. However, we may be able to support a DEQ-led cleanup of the harbor, but with a Superfund designation. We have a number of concerns regarding a possible DEQ-led cleanup. We have doubts that DEQ will be willing to make politically difficult decisions that may come during the cleanup. We are also concerned about whether DEQ will have adequate funds to complete the job. These concerns are only strengthened by actions of Oregon State legislators who, this session, have sought to interfere with the actions of state government agencies who pursue environmentally friendly policies. As well, the state legislature has also threatened the funding of some such agencies. What assurance do we have the similar interference will not take place in the cleanup of the Portland Harbor?	PHSMP, which provides necessary regulatory authority and funding resources, will result in an investigation and cleanup of Portland Harbor that meets and exceeds all federal requirements. DEQ and the Governor are opposing potential legislative actions to weaken the program.
20-2	Sierra Club	The Portland Harbor is highly polluted. It certainly merits Superfund status. What we believe should happen is a plan similar to the Oregon Plan for salmon. This plan operates under the auspices of the Endangered Species Act but is locally controlled. However, the fact that the salmon stocks are listed under the Endangered Species Act provides some clout as the National Marine Fisheries Service can move in at any time if sufficient steps are not being taken to save endangered salmon runs. Such a model could work with Portland Harbor as well, with the site listed as a Superfund site but with cleanup being the primary responsibility of DEQ.	DEQ also sees similarities between the PHSMP and the Oregon Plan. The requirements of CERCLA, which are mirrored in Oregon's cleanup law, and EPA's continuing participation and oversight of the PHSMP implementation, will provide such a model without the Superfund listing.
20-3	Sierra Club	Public Review Draft Page v. We question the blanket statement that dredging in the Willamette River and Portland Harbor is necessary to maintain the waterway. While some dredging is no doubt necessary to maintain the existing channel, the dredging for a 43 foot channel or for new port and marina construction may not be necessary and has the potential to cause considerable environmental harm.	Dredging is necessary to maintain the existing channel, berths, and docks. The necessity for the Channel Deepening Project should be addressed in the Environmental Impact Statement prepared under NEPA.
20-4	Sierra Club	7.1 We are concerned with the use of the several phrases. The first is the use of the work "toxic levels" with respect to both the benthic community and fish life. Unfortunately we did not have time to review Appendix G, but we are very concerned about how toxic levels are defined. Furthermore, there are no doubt serious effects on the benthic; community and fish life from subtoxic levels. We are similarly concerned with what is an "unacceptable risk" for persons using the Harbor. Unless shown that the cost is prohibitively high, or that it is not feasible, we are not inclined to accept any "unacceptable risk". Our view is that industry and government created the Superfund site, they should clean it up to the point that people (and wildlife) can use the site without any risk.	The plan has defined or re-stated "toxic levels" throughout. DEQ cannot, by law, accept any "unacceptable risk".

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20-5	Sierra Club	7.4.3.2. It is stated that neither storm sewers nor natural drainages were specifically targeted in the Harbor-wide investigation. These areas need to be investigated.	Storm sewers and natural outfalls will be sampled in support of site discovery efforts as described in 7.4.3.2 of the plan.
20-6	Sierra Club	7.5. DEQ expresses the view that DEQ does not believe that remediation to levels below harbor-wide baseline levels is feasible. We believe that goals should be set regardless of how immediately feasible they may seem. If high goals are set, DEQ could then determine what measures are necessary to achieve those goals (e.g. restrictions on upstream pesticide and herbicide use, storm drainage restrictions, etc.). If low goals are set there will be no restrictions on pollutants entering the harbor from upstream and we will be left with a contaminated Willamette River which is a threat to the health of it's inhabitants and humans in the area.	The final plan better explain the role of a feasibility study in determining appropriate remedial actions.
20-7	Sierra Club	Appendix E, 1. 1. 13. It is stated that Rhone Poulenc entered into a consent order with DEQ to conduct a RI/FS at the site and eight years after the consent order was signed, nothing had been done. Is this the sort of expedited cleanup that DEQ is promising if it is allowed to conduct the cleanup rather than EPA? This case history argues strongly for a Superfund listing.	DEQ has developed an enforcement strategy for Portland Harbor that will ensure that site-specific activities are closely monitored. Additional steps leading toward enforcement will be triggered if site milestones are not met.
24-1	Tom Angus, Ecology and Environment	Ecology and Environment, Inc. (E & E) is pleased to provide the following comments on the public review draft of the Portland Harbor Sediment Management Plan. Our comments are the result of reviews by several members of our technical staff including Mr. Carl Mach (Ph.D. limnologist), Mr. Gordon Randall (human health risk assessor), Ms. Julie Wroble (human health risk assessor), Mr. Steve Peterson (Ph.D. wildlife ecologist), and me. Overall, we were impressed with the comprehensive nature of the plan and the considerable attention given to both policy and technical issues. The focus of our comments is on broad technical issues related to the design of the plan that potentially could save time and resources and/or improve the credibility of the findings.	Comment noted.
24-10	Tom Angus, Ecology and Environment	Page G-100. The task described in Section 6.2.1 of developing sediment quality benchmarks specific to the Portland Harbor is important, but may not be needed initially to identify sites where sediment contamination is great enough to warrant further site investigation. To save time and resources, E&E suggests that DEQ consider using screening benchmarks already available, such as the freshwater Probable Apparent Effects Thresholds (PAETs) developed by the Washington Department of Ecology (Cubbage et al. 1997), the freshwater sediment standards developed by Persaud et al. (1993), or those benchmarks provided in USEPA (1996). E&E is aware of the	During work plan development, DEQ will identify laboratories that can achieve the stated detection limits.

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		limitations inherent in the use of these and other sediment benchmarks. However, at the project onset, it appears that the use of existing benchmarks would suffice, because the benchmarks are only one part of a weight-of-evidence approach being used to determine whether further site investigation is warranted. If deemed appropriate as the project progresses, harbor-specific sediment benchmarks could be developed for selected high-priority contaminants using data from site-specific investigations in the harbor. Another benefit of using existing benchmarks, especially conservative benchmarks such as those summarized by USEPA (1996), is that a conservative screening step is EPA's preferred approach and would be more likely to satisfy federal regulatory requirements.	
24-11	Tom Angus, Ecology and Environment	Page G-52. No detail was found in Appendix G (Sediment Assessment Methodology) on how statistical sample sizes will be determined for the various aspects of the work, such as (1) when comparing chemical levels from the site with background and (2) when determining the number of samples to collect from an impacted area to estimate the mean concentration of a chemical with a certain level of confidence. A good discussion of the first topic can be found in USEPA (1989). E&E suggests that the guidelines in this reference be considered for use in the Portland Harbor project so the sample sizes are adequate to demonstrate a difference from background with a specified statistical confidence and power. Gilbert (1987) provides detail regarding the second topic mentioned above.	These detailed aspects of sampling will be addressed in the work plan.
24-12	Tom Angus, Ecology and Environment	Page G-108. E & E recommends the use of conservative modeling as an initial step in limiting the number of compounds that must be included for development of TSCs for fish and TTLs for human health and wildlife. Conservative modeling could be used to determine partitioning of chemicals from sediment to surface water and these values could be compared to ambient water quality criteria or benchmarks derived using the Great Lakes Tier 11 methodology (many of which are available in Suter and Tsao 1996). Risks to human health and wildlife could be evaluated by modeling uptake into fish. E & E recognizes that available models may significantly overestimate fish uptake but by including this as a conservative screening step, the list of COCs could be reduced and certain areas may be eliminated from further consideration. This would reduce time and expenses for developing site-specific TSCs, TTLs, and BSAFs. Resources could be focused on the contaminants and areas that pose a significant potential for risk.	Modeling was discussed and rejected because it is generally too conservative in its outcomes and/or is too subject to manipulation toward a desired outcome.
24-13	Tom Angus, Ecology and	Page G-109. The concept of using marine data to increase the size of	This issue will be addressed during the development of

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	Environment	the data set for TSCs needs more evaluation. Data for individual chemicals should be evaluated to determine whether there is a significant difference between marine and freshwater uptake and toxicity.	the TSCs by conducting a sensitivity analysis to determine whether the marine and freshwater data sets are significantly different, chemical by chemical.
24-14	Tom Angus, Ecology and Environment	Appendix G, Attachment A. Achieving the recommended detection limits specified in this section could be extremely expensive, particularly given the number of samples that could be required to complete the RI. Some of the detection limits may even be impossible to achieve with any established method. For example, the detection limit of 0.05 ng/kg for TCDD in tissue could be impossible, even using EPA Method 1613. Overall, it appears that many of the analyses selected for use are among the most expensive available. How were these methods and detection limits selected? More evaluation of data quality objectives could lead to substantial cost savings if either less expensive methods can be identified or additional selection criteria can be developed so that expensive analyses would be run only if less expensive analyses produce elevated results.	Agreed. This is an issue that will be discussed in detail during work plan development.
24-15	Tom Angus, Ecology and Environment	We look forward to providing additional input to DEQ on the Portland Harbor work, and we would be happy to meet with you and your staff to discuss our comments further. E & E has considerable experience addressing the ecological and human-health issues associated with sediment contamination in rivers, lakes, and estuaries, and on developing approaches for restoring and/or remediating such sites. Please call me or Mr. John Montgomery at (503) 248-5600 if you would like additional information regarding our comments.	As implementation of the PHSMP proceeds, input will be welcomed on technical issues.
24-16	Tom Angus, Ecology and Environment	Page G-72. Required detection limits for some of the bioaccumulative chemicals may be difficult for many laboratories to achieve. On several occasions, E & E has found it necessary to have biological samples, such as fish and crustaceans, measured for selected organic chemicals at low levels for risk-assessment projects.	The use of existing criteria was evaluated in detail during the plan development process and this approach was rejected, as many of the existing criteria are greatly over- or under-conservative and are highly inaccurate in predicting actual effects.
24-2	Tom Angus, Ecology and Environment	Page 33, Figure 4-3. Under the secondary release mechanism, the illustration would be more clear if erosion were replaced with runoff.	Comment incorporated.
24-3	Tom Angus, Ecology and Environment	Page 53, Section 7.2.3. The rationale for the selection of background areas and the methods for the use of background data need further evaluation. The criteria listed in this section seem overly stringent. Sampling only at areas with "concentrations at or below ambient levels", with "no significant toxicity", and with a "healthy benthic community relative to other areas" will result in the conclusion that any areas with measurable chemical concentrations or toxicity will exceed the reference areas. The purpose of the reference locations should be to identify reasonable ambient concentrations and	Disagree. To the maximum extent possible, DEQ would prefer to have reference areas as free of chemical contaminants (particularly harbor-related ones) as possible.

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		conditions rather than to locate a pristine environment.	
24-4	Tom Angus, Ecology and Environment	In addition, the uses of the reference area data described in Appendix G need to be clarified. In some cases in the evaluation process, the harbor data are never directly compared to the reference data, as is usually performed. For example, on Page G-46 (and elsewhere), the reference area data appear to be used only to locate additional sources of contamination in the reference area. For contaminants in which the reference FTC exceeds the TTL, the exceedence may indicate that background concentrations of chemicals pose a risk, rather than indicating that there is a specific source of contamination in the reference area. The harbor area FTCs should be compared to the reference area(s) FTCs. If a chemical's harbor concentration is below the reference concentration(s), and specific sources of contamination are not identified in the reference areas, then it would likely be inappropriate to perform a cleanup in Portland Harbor based on risk posed by this chemical.	The suggested comparison is performed in Figure G-5.
24-5	Tom Angus, Ecology and Environment	It may be easier and more useful to simply collect reference data from areas throughout the Willamette River avoiding known hazardous waste sites but otherwise not restricting site selection. This approach would provide a data set most representative of ambient background concentrations in the Willamette River rather than pristine conditions. These data then could be compared to the data from the harbor to determine whether the harbor shows elevated concentrations or toxicity, rather than using these data to attempt to locate other unrelated sources in the reference areas.	This is essentially what was done initially with the Weston data. DEQ expects to do this again, but on a larger scale, using the SEDQUAL data base.
24-6	Tom Angus, Ecology and Environment	Page G-11, Table G-1. It would be useful to include ranges of detection limits in this table. Certain chemicals may not have been detected or may have low frequency of detection because the detection limits were too high. Also, historical chemical use at various sites in Portland Harbor should be examined to determine whether other chemicals should be included in the COI list.	Agree. Have added detection limit ranges to Appendix G. Chemical use will be evaluated on a site-specific basis.
24-7	Tom Angus, Ecology and Environment	Page G- 15, Table G-2. Several phthalate compounds are listed as bioaccumulative COIs in Table G-2, apparently because they have been detected in sediment from the harbor and because data on their levels in harbor fish are unknown. E&E suggests that DEQ consider removing the phthalates from the list of bioaccumulative chemicals for two reasons: (1) their threat to wildlife and human receptors through the food chain has been evaluated for other systems, such as the Great Lakes, and they were found not to be bioaccumulative contaminants of concern (USEPA 1995), and (2) these compounds were not detected in fish or crayfish from the Columbia Slough, although they were often	These references will be reviewed during work plan development for possible refinement of the COI list.

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		found in slough sediment in recent investigations (BES 1995, E & E 1997 and 1998). Removing these compounds from the list of bioaccumulative COIs will help limit analytical costs for the project.	
24-8	Tom Angus, Ecology and Environment	Page G-57. Comparison to background will be a key decision point in evaluating sediment contamination/toxicity. Are any sites currently proposed as reference locations? The selection of a reference location will significantly affect the results of the risk assessment. It would be appropriate to choose more than one reference location if possible, for comparison purposes.	The plan is a broad statement of data gaps and goals. Specifics of these issues have been reserved for work plan development, which will begin following the RDT decision in late June.
24-9	Tom Angus, Ecology and Environment	Page G-32. In Figure G-1, there should be a line indicating potential fish exposure to contaminants in benthic organisms.	Comment incorporated.
19-1	URS Greiner Woodward Clyde (on behalf of Rhone Poulenc)	The schedule (Figure 8-1a) shows that many elements of the Programmatic Activities including sediment and tissue guidelines, selection of reference areas, etc. will be developed while data collection is underway. If the program (including identification of detailed Data Quality Objectives for data collection) is not completed prior to data collection, a real danger exists that the data collected will be insufficient, unnecessarily excessive, or the wrong data to answer the questions posed. If data are collected unnecessarily and/or if additional data collection has to be conducted after the Programmatic Activities are completed, the RI activities cannot be performed cost-effectively and will present an unnecessary financial hardship to participants.	Criteria for the selection of reference locations will be specified in the work plan (see page G-56 of the plan). Final selection of reference locations is only possible with field verification to determine whether the criteria have been met. Tissue and sediment guideline development will described in the work plan. The development of sediment guidelines will require the collection of site-specific and harbor-wide data.
19-2	URS Greiner Woodward Clyde (on behalf of Rhone Poulenc)	The objectives for most of the Programmatic Activities appear to be to develop guidelines and methods applicable to the entire state of Oregon, and possible for freshwater systems in the entire west coast of the United States. It is inappropriate to propose funding such a broadly applicable program on the backs of a limited number of parties. To the extent that the program is applicable outside the Portland Harbor, it should be funded by some alternative mechanism.	The need for sediment quality guidelines was strongly stated by the Portland Harbor Group, the agencies, and the public involved in this process. Use of data from Portland Harbor along with other areas is the only way to cost-effectively and rapidly develop defensible and accurate sediment quality guidelines for Portland Harbor. Their potential applicability to other areas is not the focus of this program, as they are needed regardless.
19-3	URS Greiner Woodward Clyde (on behalf of Rhone Poulenc)	The PHSMP does not identify clearly how appropriate baseline contamination levels in the Portland Harbor will be determined or how the reference areas will be selected. Selection of remedial actions and determination of cost allocations cannot be done without proper selection of reference areas and baseline contamination levels.	The plan provides statement of data gaps and goals. Specifics of implementation have been reserved for work plan development, which will begin following the RDT decision in late June.