Duwamish River Cleanup Coalition

Community Coalition for Environmental Justice • Duwamish Tribe• Green–Duwamish Watershed Alliance • ECOSS People for Puget Sound • Puget Soundkeeper Alliance • Washington Toxics Coalition • Waste Action Project

February 28, 2002

Ms. Priscilla Hackney
King County WTD
201 S. Jackson St. KSC-NR-0508
Seattle, WA 98104-3855

Dear Ms. Hackney:

Thank you for the opportunity to comment on the Draft Duwamish/Diagonal CSO/SD Cleanup Study Report. As part of an overall program to restore water and sediment quality and fish, wildlife and human habitats along the Duwamish River, we support the Elliott Bay/Duwamish Restoration Program's cleanup efforts. We are intimately involved with all aspects of Superfund planning for the river, and seek to ensure that the Panel's activities are compatible with a comprehensive, efficient and timely river cleanup that will deliver maximum environmental benefits. To this end, we offer the following comments:

Cap Depth

The Panel's Preferred Alternative calls for dredging and the installment of a 3-foot thick cap over contaminated sediments, which will be left in place. Please provide citations to verify that a 3-foot cap in a frequently dredged and tidal river containing PCBs and other contaminants present in the Duwamish is sufficient to lock these contaminants in place. Have there been any instances of outmigration of contaminants in similar circumstances? Have there been instances where the dynamics of similar river systems may have disturbed the integrity of the cap? Are there any organisms that burrow to a depth of 3-feet or greater? These are critical questions that should be investigated and discussed in the document.

Cap Disturbance

In addition to possibility of natural disturbances raised above, what assurances does the Panel have that industrial and human activities on the Duwamish will not disturb or compromise the integrity of the cap? The document states that recontamination is possible from sediments disturbed in dredging activity nearby. Is it also possible that the cap itself will be disturbed by dredging or other activities in the cleanup area? A sewer siphon runs through the site that has been in service for over 35 years? What is its scheduled replacement date? How will the siphon be serviced in the future without disturbing the cap and releasing contaminants?

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Rerouting or, at a minimum, upgrading the existing siphon to reduce this risk should be included as part of the plan to ensure that the integrity of the site will not be breached in the future. A homeowner would not bury an old waste pipe in the concrete of a new foundation; similarly the Panel should ensure that required maintenance can be performed on the siphon before burying it in a cap that cannot be breached.

Cleanup of this site should include assurances that contaminated sediments directly above and adjacent to the siphon be completely remediated to allow future maintenance and replacement without risk of recontamination. It is not clear in the document whether this is feasible with a clamshell dredging approach. Alternative technologies for removing sediments may need to be investigated to accomplish this objective. We address the issue of alternative technologies in more detail in below.

Project Area Boundaries

It is not clear exactly how the Panel determined the boundaries of the area requiring cleanup. CSL exceedances occur over large areas upstream of the proposed cleanup boundary. It is also unclear whether the map in Figure 5-9 is based solely on surficial sediments or contaminated sediments at depth. It appears high surface levels of PCBs were not used as a criteria for selecting the area to be dredged, as two areas with concentrations of PCBs exceeding the CSL by 2-4 fold are excluded from the proposed dredging area, as shown in Figure 5-5. It is also clear from Figure 5-6 that significant areas with PCB contamination at depth will not be remediated by the proposed cleanup. The sample showing the highest level of PCB concentration to the north is in the river channel itself (DUD 044), and while station DR058 showed almost no surficial PCB contamination, there are apparently PCBs at concentrations above the AET at depth at this location, as shown by DUD25. More clarification of the data used to determine the site boundaries should be provided.

Toxicity Testing Results

It appears that the boundaries of the cleanup area are based upon the results of seven toxicity samples that correlate to high phthalate levels. The QA Report should address the notable differences between samples DUD200-207 and all other sediment samples collected at the site. The results of the seven toxicity samples are equivocal at best, making their use in setting cleanup boundaries difficult to interpret. No samples from the core of the contaminated area show high levels of phthalates or toxicity. The only sample to show toxicity, and only in one test, was sample DUD204, which did not show phthalate levels much higher than the other samples. Considering that Sample DUD200 also had concentrations above the SMS for phthalates, it is not clear how the northern site boundary

was determined. To the south, it is unclear that the results from sample DUD204 are strong enough to define the boundary of the cleanup zone.

High levels of 4-methylphenol were found in the five of the six samples collected in September of 1996. The only higher concentration was found in sample DUD207 (not a toxicity study sample) collected in July of 1996. The only sample not containing the 4-methylphenol was DUD206, which was behind the dock close to shore. All of the other samples contain similar amounts except for sample DUD207, which has over 3ppm-OC. There are no other samples from the study area that tested positive for this compound. In samples DUD200, 204, and 206, levels were over the SMS/CSL. This is curious since the samples occur over a wide area from the north to the south of the site. Could these have impacted the toxicity tests? AVS was not performed for these samples and could be an important component in mortality. Typically the other samples in the surface sediments in the area did not have elevated AVS or indications of ammonia toxicity, but this should be noted. The problems with sample DUD206 notwithstanding, the only sample that indicated any toxicity was sample DUD204, which had elevated levels of 4-methylphenol, along with phathalates. This makes it very difficult to use this data to determine the boundaries of the area selected for dredging.

PCB Recontamination

The Panel has estimated that recontamination above SQS will result within two years as a result of sediment transport from a nearby PCB hotspot not included in the Preferred Alternative cleanup plan. The Panel references the pending Superfund cleanup as a possible remedy for this neighboring hotspot.

It is not reasonable to assume or rely on Superfund cleanup of the hotspot within two years of the CSO cleanup. Responsibility for potential recontamination sources lie solely with the Panel if the Panel chooses to conduct this cleanup. Any reliance on Superfund to cleanup potential recontamination sources would require written agreement with the Lower Duwamish Waterway Group or other responsible party to conduct and complete this cleanup before recontamination could occur. In the absence of this, the Panel needs to address this recontamination source in its own cleanup plan. If the estimated cost of the cleanup is accurate, and $8 million remains in the Panel's settlement fund, then another Alternative that includes cleanup of the neighboring PCB hotspot could eliminate this source, greatly improve the effectiveness of the proposed cleanup, and remain within the Panel's available resources. Regardless, cleanup of the CSO site without cleanup of the adjacent recontamination source is unacceptable and shortsighted.

In meetings and individual discussions, members of the Panel have argued that some cleanup is better than no cleanup – that the risk this site poses to fish warrants immediate action even if additional cleanup due recontamination is required later. There has been no data presented to support this argument. If this site poses such a great risk to salmon or other Duwamish River fish and wildlife that an inefficient cleanup is warranted for its short-term benefits, then data and analysis to support this action should be provided and those risks should be clearly stated.

Phthalate Data

Discussions with King County staff about the lack of recent data on phthalates in Appendix G resulted in a review of EcoChem's Evaluation of Source Control in the Norfolk CSO Drainage Basin, dated March 31st, 2000. This document provides additional evidence that phthalates from storm drains may be a significant source of contamination. The document does not provide much more information on possible BMPs to address the removal of phthalates from storm drains, unfortunately. The best available data comes from a vactor waste solids characterization in the 1995 Herrera Environmental Consultants study (King County Maintenance Waste Disposal Project Characterization Study, Volume 1; Data Presentation, Analysis and Discussion). This study indicates that the TOC normalized values for phthalates ranged from 178mg/kg-OC in residential basins to over 250 and 241mg/kg-OC for commerical and industrial basins, respectively – all above the CSL. These values indicate that any sediments washed into the Duwamish from major storm events would result in sediment concentrations in the range of those observed off the Duwamish SD outfall. It is not clear in reviewing the WEST model whether such data was used to predict sediment concentrations.

One of the major problems with data collection for phthalates is the potential for plastic contamination in samples, especially storm drain samples. It is not clear for any of the sample concentrations presented how the sediment or water concentrations were characterized. If there were pieces of plastic being extracted, values could be higher than what would be biologically available in toxicity tests. As there are no standard methods to address such issues, more investigation of other sites with phthalate contamination needs to be performed. A much more detailed literature survey is necessary since EcoChem did not find much information in the EPA Literature Search. The information in the Sendar 1993 report from the Thea Foss Waterway also did not indicate the characterization of the vactor sediments and the values of 5 to 30 mg/kg did not indicate whether these concentrations were wet or dry weight, and no TOC values were given. Once converted, are these similar to the Herrera values? The results of the toxicity studies performed at the Thea Foss Waterway did

indicate some lack of toxicity in samples contaminated solely with phthalates. More investigation is necessary to address these questions before determining the site cleanup boundaries.

Sampling of phthalates is obviously difficult due to blank contamination, as well as detection limits in water. The question of whether phthalates could be detected with lipid bags was not addressed is the document. Attempting to locate a tracer compound with similar structure and partitioning to reduce detection limits could be ideal for some sewer line studies to determine partitioning, detention time in the sewer system, and effectiveness of removal applying various technologies.

Solutions to phthalate source control will require a better understanding of phthalate distribution in the storm drain. It is not clear whether there is a relationship between TOC and phthalates in CSO and storm drain effluents. Can the majority of phthalates be removed using detention basins, or is it bound on suspended material? Are the BMPs being developed for removing oil and grease from storm drains with filters able to help reduce phthalates?

Investigations related to the Jansco Case in the early 1980s resulted in detection of di-N-butyl phthalate, which has not been detected in any significant concentrations in surface sediments. Was any attempt made to determine if any discontinued or controlled phthalates could be used as date markers in the sediments? Correlating depth to time could help provide an important indicator of the current loading – and sources – of phthalates.

Phalate Recontamination

The Panel cites modeling performed by KCDNR in 1997 that predicts recontamination of the site by phalates near the outfalls. In meetings and individual discussions, Panel members have downplayed the potential for recontamination, largely because modeled predictions of recontamination of the Norfolk CSO proved too conservative: e.g., recontamination has not occurred. Recontamination experience at the Norfolk CSO is not a predictor of recontamination potential at the Duwamish/Diagonal CSO/SD. Not only do the two outfalls receive their flow from different basin areas and different source contributors, but a comparison of surface (e.g., recent) phalate contamination shows enormously greater surface contamination by phalates at the Duwamish/Diagonal site (EPA 1999).

The Panel provides no data on phalates in the Duwamish/Diagonal CSO/SD discharge since 1984. The top 15 cm of phalate contamination at this site could have easily been deposited

entirely during this 18 year interim. 1982 source control efforts described in the document targeted entirely different phalates than those now found in the surface sediment layer. It is clear that phalate recontamination of this site is entirely possible, indeed likely, as the KCDNR modeling indicates. In fact, the modeling by WEST indicates that the discharge from the CSO/SD is the only source of phthalates to the sediments at the site. Appendix I suggests that the inputs used for the recontamination modeling are based upon flows of 121,000 cubic meters per year, or 32 MGY. Appendix H, however, shows more recent, corrected volumes of up to 290 MGY, or 1,096,000 cubic meters – a nine-fold increase (Table 3-1). These increased values could make the R% values in Table 3-1 increase above 100%, indicating that the only source of phthalates to the site is the CSO/SD.

Finally, the document should compare the cost of any source control or capital construction required to control recontamination sources against the cost of a second phase of site cleanup if and after phthalate recontamination occurs.

Alternative Dredging Technologies

The Panel proposes to excavate contaminated sediments using a clamshell dredge. The potential for contaminated sediment release and transport is high using this technology. The Panel further predicts that future dredging of the neighboring PCB hotspot will result in a contamination spike at the Duwamish/Diagonal site for this same reason – nearby clamshell dredging will release contaminants to the previously remediated site. The same risk exists for any dredging of phthalate contaminated sediments in the vicinity.

Alternative dredging technologies, such as hydraulic dredging, do exist and are coming into more common use for excavating contaminated sediments, where release and transport is a concern. The Panel should review alternative technologies and determine their potential for application at this site. A 1997 report titled “Advances in Dredging Contaminated Sediment,” is available from Scenic Hudson, and other resources are available in the US and Canada. Currently in Washington State, hydraulic dredging is being investigated for use as part of the Bellingham Bay sediment remediation project.

Conclusions/Recommendations

Much more information is needed about current phthalate discharges and sources of recontamination before a cleanup of this area can be properly designed. Source control from the CSO/SD appears to be a necessary component of any successful cleanup of sediments in this area. The source control efforts being designed and implemented by the City may not be sufficient to prevent recontamination. In addition to the activities described, it may also be

necessary to control phalates at the source to the storm drain, e.g., at individual businesses, and through the construction of detention and filtration basins within the storm drain. The document should compare the cost of any capital construction required against the cost of a second phase of site cleanup if and after phalate recontamination occurs. With regards to PCBs, the only responsible approach to the Duwamish/Diagonal CSO/SD cleanup is to include the neighboring PCB hotspot – predicted to recontaminate the site within two years – in the final preferred alternative/cleanup plan. This could presumably be accomplished with a site-specific dredging and capping addition to the cleanup plan. Lastly, alternative dredging technologies need to be investigated to determine the feasibility of hydraulic or other sediment removal options that will minimize sediment suspension, shorten recovery time and minimize environmental damage at the cleanup site.

The Panel's current approach appears to be one of: "let's cross our fingers and hope this works," presumably driven by a desire to complete their mandate, preferably before Superfund activities take over the river. Given the expense of public funds on this project and the critical need for real and lasting water and sediment quality and habitat improvements in the Elliott Bay/Duwamish basin, this is inadequate. Careful planning, comprehensive source control, cost-effective solutions, and long-term environmental benefits need to be top priorities for this and all future cleanup efforts on the Duwamish River. It is not acceptable or reasonable to leave the consequences of cleanup shortcomings to other parties to remedy in the future. Unless the immediate and critical benefit to fish can be demonstrated for this project, the proposed project represents a shortsighted approach to environmental cleanup on the Duwamish River. We hope to work with the Panel to address the critical questions above and design a project that can have meaningful and long term benefits for fish, wildlife and people in the Duwamish River basin.

Thank you again for the opportunity to comment on the proposed cleanup. We look forward to continuing this discussion with the Panel and the public in the coming months.

Sincerely,

BJ Cummings
Community Coordinator