4/27/2010 **COMMENTS ON THE MTCA AND SMS ISSUES UNDER REVIEW**

Larry Dunn

In response to the presentation and the discussion form 4/26/2010 meeting I would say that the concept of incorporating the fish consumption framework with a default option such as the new Oregon 176 gm/day rate would be acceptable and superior to the existing language. The frame work could be updated with new accepted consumption values such as the new Umatilla EPA accepted value and the Swinomish survey value and the, to be completed, Colville Tribe values. This would allow for a greater range of values for used and in most cases it would still defer to natural back ground for cleanups. In the use of PQLs it should be noted that there are various levels depending on laboratory, so they should be based upon best science, not run of the mill laboratory work.

On the definition for a carcinogen the proposed changes seem reasonable and acceptable.

On the hierarchy of toxicological information IRIS is indeed the gold standard but as noted is a lengthy process to complete. Regional screening tables are reasonable to use for a basis to update the CLARC data base. Annual updates should be sufficient unless an emerging issue is identified with a new chemical.

Early life stage adjustment factors should be used by Ecology for all carcinogens based on the lack of uniformity in the numerous EPA definitions of mutagenic carcinogen, as explained by Dr. Faustman at the SAP meeting. That lack of clarity causes confusion as to which toxic chemicals will be ultimately be included in their application of the factors. So until they work it out Ecology should take the more cautious route. Additionally there is sufficient evidence that endocrine disruptors pose at least as significant a risk to human health due to early life exposure. There is further evidence that children are more susceptible to many carcinogens than adults due to accelerated cell growth, lower body weight (thus higher concentration). In reference hormone mimics and disruptors they can interfere with or replace hormones on receptors causing significant health effects including cancer. Driving cleanups below background is not a viable excuse not to include all carcinogens. As with many issues MTCA is more restrictive than EPA guidance and in this instance it should error on the side of caution due to the issues brought up by EPA itself.

On lead cleanup level issues there are more than adequate research studies on lead to conclude that is no safe level for this metal. The issue then is deciding what target blood lead level should be used in determining what the clean up level should be. Due the fact that effects of lead exposure on children are so dramatic and well documented, it would be most appropriate to apply a standard which results in a blood level of 5ug/dL or lower, the existing standard has now been shown to be less protective than thought so the change is warranted.

On the SMS rule revisions issue there are several issues which have to be addressed to bring the SMS in line with MTCA, not the least of which is the human health risk assessment. SMS needs to complete a HHRA on all cleanup sites, just as MTCA does. It also has to address bioaccumulative chemicals and bio magnification in biota other than benthic creatures. Most benthic creatures display no sensitivity to dioxins and PCBs yet are effective accumulators of them to pass on in the food chain. Since many people consume clams, and crab both of which accumulate these specific chemicals the HHRA is a necessary part of a SMS cleanup as it is in a MTCA cleanup. These factors will drive most cleanups to background levels.

This opens the issue of background. MTCA has used natural background as the default value, though in central and south sound basins this may not be viable as a cleanup standard if the PLP is required to maintain the area cleaned at this level. This doesn't mean that it should be dismissed as a cleanup level; it means that there should be a change in the cleanup policy for those situations allowing for the cleanup to be to natural background with caveats. You should always consider the natural background as the ultimate goal of all of the Puget Sound waters. These would be such as restricting re-openers to the regional background level. The regional background is an issue in and of itself there isn't one region in Puget Sound much less in Washington State. Recognizing that there are several regions in and around Puget Sound and around the state this becomes a more complex issue but not unsolvable. A single regional standard would not be appropriate; the level of various COCs is variable around the Sound and surrounding area. Eastern Washington presents its own problems with contaminants such as radioactive materials and the residuals of mining as well as numerous lakes and river systems. The appropriate method of establishing background is on a case by case basis.

I would argue that the concept of calling the outer portion of an embayment regional or natural background would be inappropriate based upon our knowledge of currents with in them in general. On this issue of currents a sediment trends and transport study should be one of the first studies completed in a cleanup within an embayment, the trends and transport study is necessary for several reasons. It will help identify potential depositional areas as well as erosion areas and indicate where sampling would be most productive to identify hotspots for cleanup as well as the overall contaminant load in the bay. Regional background should not be contained with in the embayment which is being cleaned because this is in reality an area background, and not regional at all.

As an example lets look at the Bold survey results these were taken from samples around Puget Sound with some from the straits and bays within the straits, but the vast majority of samples were taken in the Puget Sound basin. The Bold survey could be argued to fit as a regional background for the Puget Sound basin, because it includes samples outside of the basin which can be considered unaffected by local sources. The Bold survey could not in anyway be considered natural background, which by definition should be free of anthropogenic sources.

Additionally the Bold survey results would inappropriate to use for cleanups outside of Puget Sound basin, because of the inclusion of data from the Basin. The presentation made about area, regional, and natural background was based upon conjecture with out actually knowing the transport mechanisms with in the various areas depicted, because without sediment trend and transport studies of the entire basin and straits areas we do not actually know the transport mechanisms and their impacts. So any conclusion based on previously published information would be based upon wind driven currents or old University of Washington models which were educated conjecture with out the appropriate studies and sampling, so I contend they were still be purely guess work. The studies on which most theories of tidal transport in Puget Sound are based upon surface currents which are wind driven and have proven reasonably accurate for floating material.

This said as we recently found out in Port Angeles Harbor that surface currents do not necessarily correlate with the transport mechanisms on the bottom. Thus if we based a cleanup on the current knowledge prior to the sediment trends and transport study it would have resulted less appropriate remedies for and possibly additional releases and missed hotspots.

To entice PLP to engage in cleanups within the various embayments of Puget Sound, I would suggest that you consider using a partial closure for them on unit cleanups, which could possibly affect the degree of their involvement in the multi PLP site cleanup in the future. To do this there would be several issues which would have to be addressed, to get closure the PLP would have to clean the hot spot to background , back fill with clean material, and have their discharge permits updated to include monitoring and reporting on the COCs which were cleaned. Re-openers would include any releases by the PLP which would be above the regional contaminant level. If they do not have any releases and the area becomes re-contaminated from homogenization of the sediments by natural actions, they should not be required to re-clean the area that they cleaned.

If there are other outfalls affecting the cleanup area they would need to be identified as PLPs and required to update their permits and take what ever action is necessary to eliminate their contribution. This would include municipalities, counties and ports. Approached in this manner one area at a time, it shouldn't

require years for these entities to comply, as it is one small piece at a time instead of a huge storm water project. The defense that these entities have used in the past is the need for integrated large scale solutions they maybe the ideal, but not necessarily the most expedient solution. The great pyramids were built one stone at a time; they weren't put in place complete.
(Portland, San Francisco and other cities are taking a more proactive stance on storm water issues, such as green roof retrofits and other environmentally friendly approaches, these are proving successful.)

In closing I hope that in the future that there is better integration of the various departments of Ecology such as permitting and water quality as well as integration of DNR and tribes in marine cleanups. I believe that we have reached the point in Washington where solutions will require collective effort to be successful in cleaning the waters and sediments around the state.

I hope that I haven't been abstruse in my response to these issues. I also hope that you consider thinking outside of the normal governmental box, as it were, in considering solutions to these issues. At the end of the day the goal should still be the cleaning and protection of the environment and environmental health.

Thank you for considering my suggestions and observations on these matters.

Sincerely; Larry Dunn