



turn back the toxic tide

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October 1, 2004

Water Docket
Environmental Protection Agency
1200 Pennsylvania Avenue, NW.
Washington, DC 20460,

Attention: Docket ID No. OW-2004-0003

To Whom It May Concern:

In response to the request for public comments on the **Draft National Guidance: Best Management Practices for Preparing Vessels Intended to Create Artificial Reefs** (Reefing Guidance), 69 Fed. Reg. 46141 (Aug. 2, 2004), please find our comments enclosed.

Sincerely yours,

Jim Puckett, Richard Gutierrez

Comments on the Draft National Guidance for Best Management Practices for Preparing Vessels Intended to Create Artificial Reefs

Prepared by the Basel Action Network (BAN)

October 1, 2004

I. Introduction

The Basel Action Network (BAN) is an international non-profit environmental organization whose core mission is the prevention of toxic trade – the trade in toxic wastes, products, and technologies and the promotion of a toxics free world. Toxic trade exploits free markets and the globalization movement to transfer pollution and its costs to some of the world’s most impoverished and disempowered communities while allowing polluters to avoid upstream solutions and responsibility for creating the pollution in the first instance.

The practice of disposing end-of-life vessels through ocean dumping for “artificial reefs” concerns BAN. First, the practice can be seen as a toxic trade or transboundary movement of pollution issue – already we have heard of plans to export some US toxic ships to Caribbean countries, or to utilize areas of the high seas (the global commons) to allow dumping of toxic materials and valuable steel scrap. Second, such practices not only directly threaten environments, fish stocks and communities dependent on such resources in developing countries, but similar to the direct phenomenon of export, such dumping practices ultimately absolves the owners of the vessels (those that benefited from their existence) from taking full responsibility over their vessel’s toxic constituents now and in future through non-toxic ship design.

We are likewise concerned about the practice of dumping valuable steel resources at sea rather than accomplishing far more appropriate resource recovery in an environmentally sound and sustainable manner. The globally recognized waste management hierarchy strongly suggests that dumping waste at sea is not the environmentally preferable option. The United States should be fostering a robust and state-of-the-art ship recycling infrastructure in this country, not looking for hiding places or cheap disposal options that undermine the worthwhile development of the recycling industry.

Finally, we believe that dumping end-of-life vessels at sea sends a dangerous cultural message that the natural world and in particular our marine environment can be used as humanity’s trash bin. The notion that nature can be “improved upon” by artificial constructs, is a dangerous one as it presupposes that humans understand ecology fully and it further presupposes that nature should not be preserved to the extent possible as it is regardless of whether human beings value it in its natural state or not.

In sum, BAN believes that the practice of reefing vessels:

- poses a serious environmental threat, particularly from persistent pollutants (e.g. heavy metals and PCB constituents (in solid or liquid matrices) remaining in the reefed vessels; The threat from PCBs is known to be worse for sensitive populations including African and native Americans as well as for children.
- provides no responsibility in accordance with the polluter pays principle, and therefore provides no future incentives to prevent the use of toxic constituents in shipbuilding;
- prevents vital industrial materials, such as scrap steel, from being recycled and reused;
- prevents the jobs and industrial development for a robust domestic infrastructure for recycling our own wastes in accordance with the self-sufficiency principle of the Basel Convention;
- Sends a dangerous cultural message that the seas can be used as dumping grounds and that nature can be improved upon by human intervention;

BAN is also concerned that the two objectives of Section 3516 of the National Defense Authorization Act (NDRA), which mandated the development of these Reefing Guidance, namely: “recommend practices for the preparation of vessels for use as artificial reefs to ensure that vessels so prepared will be environmentally sound in their use as artificial reefs”, and “promote consistent use of such practices nationwide” cannot be fully realized unless the Reefing Guidance addresses the following critical issues:

1. Reefing or disposal at sea is at or near the bottom of the globally acknowledged waste management hierarchy and is not the environmentally preferable option.
2. PCBs, both in liquid or solid matrices, are very significant and unnecessary threat to the marine environment, fish stocks and human health. It is known that the highest levels of PCBs have been found in the tissues of African-Americans, which raise serious environmental justice concerns.
3. Legal issues posed by the Basel Convention, Stockholm Convention and London Convention and its 1996 Protocol are at odds with these Guidelines but appear to have been ignored by the government.

BAN’s specific comments on these three critical issue areas follow:

II. Waste Management Hierarchy – “Reefing” as Dumping

The Reefing Guidance must make it explicit that the disposal of end-of-life vessels as artificial reefs is at or near the least preferred waste management option in the globally recognized waste management hierarchy.

Under the United Nations Environment Program, government-designated experts have outlined the elements of an international strategy and an action program for dealing with wastes, including technical guidelines for environmentally sound management of hazardous wastes:

1. Prevent the generation of wastes;

2. Reduce to a minimum the wastes generated by economic activities;
3. Recover, reuse and recycle the greatest possible quantity of those wastes which are still generated; and
4. Dispose of, in an environmentally sound manner, any remaining waste.¹

This globally accepted waste management hierarchy was again enunciated in the Basel Convention on the Transboundary Movement of Hazardous Wastes and their Disposal (Basel Convention) Guidance Document on Transboundary Movements of Hazardous Wastes Destined for Recovery Operations. In this document, it is manifestly stated that:

“Special consideration should therefore be given by governments to taking appropriate steps to ensure that the generation of hazardous wastes within their territories is reduced to a minimum. An important component of this would be promoting the development and use of cleaner production methods applicable to activities generating hazardous wastes and the *recovery of hazardous wastes unavoidably generated by such activities.*”

The United States Environmental Protection Agency (EPA) also observes the waste management hierarchy.²

While some might claim that using a ship as an artificial reef is a form of “re-use”, this cannot really be said to be true as the ship in question never served the purpose of a reef in its past. Claiming such is tantamount to saying that if the very same obsolete vessels were dumped onto US national deserts or wetlands, bird roosting and nesting places are in turn created and that is a form of “re-use”. This comparison is made to illustrate that since the proposal to dump these wastes is in the relatively out-of-sight, out-of-mind *marine* environment, this form of waste application can be called by some “beneficial to nature” and seen as acceptable. However, were the same waste proposed to be dumped in a land wilderness area, the public would be outraged particularly when they were known to contain hazardous wastes and such dumping would likely be illegal.

In other words, we are creating a double standard whereby the marine environment is somehow “improved” by dumping whereas the tertiary environment would be marred and contaminated. The fact that such dumping in the marine environment is even being considered has everything to do with economic exploitation of this double standard (less concern over marine wilderness than tertiary wilderness) rather than any proper focus on attaining the basic national environmental goals stressed in the National Environmental Policy Act.³

These goals include:

- Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings.

¹ Report of Ad hoc meeting of Government designated experts (Nairobi, 9-11 December 1991) UNEP/CHW/WG.2/1/3.

² See at <http://www.epa.gov/epaoswer/non-hw/muncpl/facts.htm>.

³ The National Environmental Policy Act of 1969, 42 USC § 4331 et. seq. [hereinafter NEPA].

- Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.⁴

The proper term is not “reuse” but one might consider the term “alternative use” – e.g. to create entertainment for scuba divers, fish aggregation, or erosion control. But such “alternative use” does not fit well within the waste management hierarchy. Alternative uses for wastes, even toxic wastes can readily be devised for any waste but that hardly means that they are environmentally sound or desirable.

We can equally entertain the notion that toxic waste can be used to fill road beds, construction materials, create dams, fill up holes, etc., but these uses are a far cry from what is meant by “recovery, reuse, recycle”. Clearly, ocean deposit of ships for so-called artificial reefs is more accurately described in the 4th step of the waste management hierarchy as a form of disposal. Indeed the EPA admits this by proposing to apply *disposal* criteria found in 40 CFR 761.62(c) for the PCB content in the vessels.

Indeed *disposal* is precisely the category in which it is referred to in the Basel Convention⁵ in its Annex IV of Disposal operations. There the lists are separated into two categories – the D list for final disposal and the R list (“resource recovery, recycling, reclamation, direct re-use or alternative uses”). The Basel listing is D7 (Release into seas/oceans including sea-bed insertion) – a form of final disposal.

Regardless of whether specific interest groups such as sport fishers or divers advocate “artificial reefs” to make their hobbies more interesting, this form of waste management can never be seen as environmentally preferable to Step 3 of the hierarchy of waste management – resource recovery.

Thus, using end-of-life vessels, as artificial reefs should only be considered when it is impossible to recover the scrap resources from a vessel e.g. the steel.

The benefits of advocating and promoting recycling of scrap steel from end-of-life vessels are obvious. Minimization of water and air pollution, and mining wastes if scrap steel from vessels is recycled instead of mining virgin ore. Annually, steel recycling “saves the energy equivalent to electrically power about one-fifth of the households in the United States (or about 18 million homes) for one year.”⁶

For the proper implementation of Reefing Guidance, users must be apprised of the true status of disposal at sea in the waste management hierarchy. Waste management professionals and policy makers must be clear that under the widely accepted waste management hierarchy, disposal is the least preferred among the various waste management options, and not as inaccurately characterized in the Reefing Guidance as just another option.

⁴ 42 USC § 4331, b.

⁵ The Basel Convention on the Transboundary Movement of Hazardous Wastes and their Disposal *see* at <http://www.basel.int>.

⁶ *See* at <http://www.recycle-steel.org/fact/main.html>.

This reference to the waste management hierarchy must be placed into the Reefing Guidance in order to have a consistent nationwide application as mandated under Section 3516 of the NDRA.

This is vital in the context of what is needed to manage the greater numbers of obsolete vessels expected to arise. We can expect very large amounts of ships that will need to be disposed of in the future, and not just those with US flags. It is a global industry in need of global solutions, for which the United States should play a major role. The principle of environmental justice does not allow us to export toxic waste ships to low-wage countries such as India, China, or Bangladesh. The Basel Convention, for which the US is now readying implementation legislation, obligates every country to become self-sufficient in environmentally sound waste management.⁷ We should not be allowed to shift our global hiding places for waste from developing countries to the global commons (our seas).

The development of a national infrastructure and capacity of the appropriate scale to deal with all such ships via recycling and resource recovery in an environmentally sound manner are what proper self-sufficiency and the waste management hierarchy entail, particularly for the wealthiest country on earth. By diverting even a few ships to ocean disposal, at this critical period of industrial development of the American ship recycling industry, we limit the profitability and sustainability of such recyclers, forestalling (perhaps permanently) their development. As such, any preference for ocean dumping, particularly at this point in history, is seen as even more misguided.

III. Removal of All PCBs Is Essential

Double Standards

The Reefing Guidance, inappropriately and inexplicably excuses from removal PCB impregnated solid materials that are less than or equal to a concentration of 50ppm. Perhaps even more stunning is the fact that even levels higher than 50ppm of PCBs in a solid matrix do not have to be removed if a disposal permit is granted under 40 CFR 761.62(c). The precise language in the proposed rulemaking is as follows:

“Remove all solid materials containing PCBs > or = 50ppm, which includes but is not limited to felt gasket and faying material, cables, paints, rubber gaskets as well as battle-lanterns and fluorescent light ballasts. EPA recognizes that non-liquid PCBs may be difficult to locate and remove and that removal may jeopardize the integrity of the ship. If non-liquid PCBs > or = to 50ppm are to remain on the vessel, then 40 CFR Part 761 requires you to obtain a PCB disposal permit under 40 CFR 761.62(c).”⁸

⁷ Article 4,2,b, Basel Convention.

⁸ Draft National Guidance: Best Management Practices for Preparing Vessels Intended to Create Artificial Reefs, p. 27.

PCB levels in the environment, which in the past were seen to be declining have been steadily increasing in the last 10 years. This is very alarming and should command more precaution on the part of the EPA than is witnessed in the Reefing Guidance.

First, it is essential to bear in mind that the cutoff point of 50ppm was developed years ago, not with the marine environment in mind, but with respect to the levels for which PCB wastes that would be allowed to possibly avoid being placed in a controlled landfill.

It is shocking to consider what the legal options would be under US statutes if the same PCB contaminated materials that are known to exist on obsolete vessels were to be deposited on land. The Toxics Substance Control Act provides that for solid PCBs above 50ppm, there are generally four options:

- Placement in a solid waste landfill possessing required leach control systems;
- Hazardous waste incinerator;
- TSCA or RCRA hazardous waste landfill; and
- Utilize the risk-based permit approach under 40 CFR 761.62(c).⁹

As we can see, the first three options require human intervention to control leachate or emissions that will not exist in the marine environment. They also require monitoring, post-closure monitoring, and post-closure corrective action. Regarding the 4th option, which is being proposed for ships in the Reefing Guidance it is vital to note that this option has never ever before been used to justify marine disposal of PCBs. A very dangerous new precedent is thus being proposed here.

Further, the risk-based approach in this instance is inappropriate for the following reasons:

1. The risks, however negligible one might consider them, are completely unnecessary. As mentioned before, there are other far more appropriate ways to dispose of PCB waste than by dumping it at sea.
2. PCBs can have estrogenic effects and impact biota, mimicking or interfering with hormonal action at extremely low levels (e.g. in the parts per trillion range) thus, it can be said that in fact there are no known “safe levels” for PCBs.

The EPA’s recognition that “non-liquid PCBs may be difficult to locate and remove and the removal may jeopardize the integrity of the ship,” is without basis. The integrity of a ship can hardly be seen as a vital consideration when the ships are going to be dumped into the sea. Towing such ships with flotation devices no matter what the integrity is clearly feasible. The higher goal of preventing the dangerous PCBs in the vessels from migrating into the marine environment should trump these other issues.

⁹ 40 CFR 761.62.

PCBs are PCBs – No Distinctions

In allowing for permits to dump PCBs in the marine environment above or below 50ppm (a land-based derived figure), the EPA has also leaned heavily on a distinction between so-called “solid” and “liquid” PCBs that is not supportable. PCBs are not commonly classified as “solid” or “liquid” in scientific literature because PCBs only exist at normal temperatures as viscous, oily liquids. The so-called “solid” or “non-liquid” PCB’s present in vessels are more accurately liquid PCB’s impregnated into porous materials like gaskets, filters, and cables, or mixed with paints.

PCB’s are toxic in any form, regardless of whether the PCB’s are in free liquid form, impregnated into porous materials or in thick resins and they have a great propensity to leach out of whatever matrix in which they are placed. We have attached herein the declaration of Dr. Peter deFur, a nationally recognized expert on ecological risk assessment pertaining to endocrine disrupting chemicals and the generation, release, and discharge of toxic chemicals, that he made regarding risks posed by PCBs on the Chesapeake Bay System that discusses this matter in greater detail.

If anything, the matrix in which PCBs are placed (solid or liquid) only modulates the rate at which PCBs might be released into the environment. As we are not talking about temporary deposit into the marine environment of the vessels, the question of time becomes moot – sooner or later the PCBs will be released into the marine environment. We can see no evidence herein that the EPA expects the PCBs to degrade in the marine environment into harmless substances. Thus, the only bearing that a slower rate of release can have is upon diffusion and dilution.

With respect to persistent organic pollutants, however, we have learned in countless studies in the last two decades that nature has a way of taking diluted substances and re-concentrating them (e.g. via bio-magnification) into the food chain. Certainly the Stockholm Convention discussed at length later, does not consider dilution as a solution to pollution. Indeed the impetus in large part to special controls and international action to address persistent organic pollutants through prohibitions rather than controls was the very fact that assimilative capacity assumptions used in the past for other pollutants, do not apply to persistent organic pollutants.

Once PCBs are in the marine environment they are very persistent and bioaccumulative. PCBs bio-concentrate and bio-magnify in the marine environment so that larger and more fatty fish consumed by humans can result in higher doses of PCBs than might be expected from small diffuse releases. Contrary to what is stated in the Reefing Guidance, Appendix C, there is no known safe level for PCBs as they have the potential to impact flora or fauna at very low levels (e.g. endocrine disruption). Thus, human health, not to mention the health of wildlife, is very much at risk with respect to persistent organic pollutants, such as PCBs, once deposited in the marine environment, particularly from the pathway of contaminated fish stocks.

Impact on Sensitive Populations and Environmental Justice

The Reefing Guidance properly notes that after sinking, humans are exposed principally through the food chain by eating animals, notably fish that have accumulated PCBs from the sediments. However, the Reefing Guidance must highlight and caution that the concentrations of PCBs are increased through food chain accumulation, and bio-magnification poses a serious threat to human populations consuming PCB contaminated fish or marine life.

Fish, birds, and marine mammals are especially sensitive to the effects of PCB's. Even concentrations of less than a part per billion in eggs can impair the growth of these animals, or alter the normal growth of the young.¹⁰

The effects of PCB's on human health and the environment are on reproduction, development of the fetus or embryo, growth and development of the brain, the function of immune systems, endocrine disruption, not to mention PCB's are carcinogenic.

In terms of sensitive populations, children are particularly sensitive to the effects of PCB's¹¹. Recent studies reveal that early exposure to even low levels of PCB's can cause impairment of the brain and of behavior.¹²

Furthermore, the Center for Disease Control's Second National Report on Human Exposure to Environmental Chemicals found that the highest levels of PCBs were African-Americans. The National Environmental Justice Council documented numerous studies finding high PCB levels among Native American (including Alaskan Native) subsistence anglers in their report "Fish Consumption and Environmental Justice."¹³

Executive Order No. 12898 on Environmental Justice required this research on human health as a result of environmental impacts on poor and minority communities, and called for guidelines for subsistence consumption of fish and wildlife. The Executive Order also called for public participation and access to such information. Yet in this proposed guidance, there is no evidence EPA considered environmental justice implications of the rule despite the fact that PCBs pose a particular threat to environmental justice communities.

¹⁰ Rice, C.P., P. W. O'Keefe and T.J. Kubiak. 20023. Sources, Pathways and Effects of PCB's Dioxins and Dibenzofurans. Pp 501- 573 In: Hoffman, D.J., B.A. Rattner, G.A. Burton and J. Cairns, Jr. Handbook of Ecotoxicology, 2nd Ed. Lewis Pub. Boca Raton FL.

¹¹ S. Schantz et al., (2003). Effects of PCB exposure on Neuropsychological function in children. Environmental Health Perspectives vol 111: 357-376.

¹² *Id.*

¹³ See at

http://64.233.167.104/search?q=cache:JwhPvGf1JrwJ:www.epa.gov/compliance/resources/publications/ej/fish_consump_report_1102.pdf+Fish+Consumption+and+Environmental+Justice&hl=en

Risky Assessments

Data from the Navy¹⁴ have revealed that fish and invertebrate tissue levels of PCBs, lead, and cadmium were higher in samples from Navy ship reefs than from reference natural reefs. This shows clearly that the PCBs will leach from ships and enter the food chain. For example, average levels of tissue samples of the fish White Grunt were found to be 16.7 ppb in the tissue in natural reefs as compared to average levels of 1118.9 ppb in White Grunt found around the naval vessel.¹⁵ White Grunt is a species known to stay within a small habitat area during its life span. To put this in perspective, it should be noted that many states and local governments regularly issue fish advisories in this range. For example, California's level for triggering a fish consumption warning advisory is 100 ppb. Despite these findings, the Navy report makes a claim that the levels are of low risk. However, as we have discussed such risk assessment approaches attempting to establish safe levels are inappropriate.

Even if they were deemed appropriate there is simply no data to support a proper risk assessment. The Navy study cited above is not useful as there is really no knowledge of what kinds of PCBs and how many PCBs were in the ship studied (USS Vermillion). As such it is useless other than to tell us that PCBs do indeed leach from such ships into the marine environment and are taken up by fish.

Any risk assessment therefore would have to rely on prospective assessment, using predictive fate transport modeling and as such would have a high degree of uncertainty. What would really be necessary to provide the proper data would be to conduct reefing and monitor the sites for several decades. When in fact, such resources to do this will not likely be supplied by the Federal government (current owners of most of the available ships). Such responsibility would be likely passed to the states impacted. Again there is little guarantee that state resources would exist for reliable data gathering.

Even if such data gathering were to be accomplished, however, by the time we found an "unreasonable risk" it would be too late to redress it. The damage would have been done.

Post Disposal Costs, Maintenance, and Corrective Actions

Finally, it is very important to note that in practice the EPA requires financial assurances for closure by storers and disposers of PCB waste to cover closure costs. The reefing rules proposal in fact considers reefing as disposal. As that is the case, EPA must herein outline what financial assurance is going to be required, when closure is triggered and when the responsible party is freed from maintaining such financial assurance.

It is imperative in our view that due to all of the reasons above, and in particular, the lack of any real data about fate and transport of PCBs, it is not appropriate or possible to make use of the 40 CFR 761.62(c) permitting process as it was foreseen.

¹⁴ A Screening Level Ecorisk Assessment for Using Former Navy Vessels to Construct Artificial Reefs, Final Report, July 17, 2003.

¹⁵ *Id.*

Indeed, based on all that we now know about PCBs, persistent organic pollutants, endocrine disruption, bioaccumulation, etc. it is absolutely inappropriate to intentionally deposit any level of PCBs into the marine environment.

It is important to note that Canada, more appropriately does *not* use a risk-based approach for ship dumping at sea. Their clean-up standard for ocean disposal of vessels calls for “any equipment or components suspected of containing PCBs must either be removed or certified that the equipment or component does not contain PCBs.”¹⁶

If ship reefing must be done, which we believe is highly dubious based on the waste management hierarchy, the Canadian approach is the correct approach environmentally and legally (see also below re: Stockholm and London Conventions).

IV. Basel, Stockholm and London Conventions

As we shall see, what the EPA and MARAD are proposing in the Reefing Guidance flies in the face of international legal norms and obligations some of which directly bear on the United States.

Basel Convention

The Basel Convention on the Control of the Transboundary Movement of Hazardous Waste and Their Disposal, adopted in March of 1989 seeks to minimize transboundary movements of hazardous wastes, their generation, and promote environmentally sound management of hazardous and other wastes which are unavoidable. While the United States has failed to ratify the Basel Convention, they have signed it, and thereby indicated intent to ratify it. Indeed it is known that implementation language has been readied this year and is expected to be forwarded to Congress early in 2005.

The Basel Convention as mentioned earlier does not consider ocean disposal to be a form of recycling or reuse. Annex IV, A of the Basel Convention clearly indicates this practice as a form of final disposal. While most of the thrust of the Basel Convention has to do with transboundary movement of hazardous wastes, Basel also exists to promote environmentally sound management of hazardous wastes and has created numerous technical guidance documents on various waste streams. One of these guidance documents deals with PCBs. Following the adoption of the Stockholm Convention this guidance documents were deemed out-of-date and is now currently in the process of being re-drafted to reflect changing disposal technologies, and the legal frame of the Stockholm Convention.

The most recent draft (August 2004) of the Basel Convention Technical Guidelines for

¹⁶ Environment Canada. 2001b. Clean-Up Standard for Ocean Disposal of Vessels. Revision 1 – July 2001
Environment Canada, Environmental Protection Branch, Pacific and Yukon Region.
http://www.pyr.ec.gc.ca/EN/ocean-disposal/english/cleanupstandard_jul01_e.htm#38

Environmentally Sound Management of Wastes Consisting of, Containing or Contaminated with Polychlorinated Biphenyls, Polychlorinated Terphenyls or Polybrominated Biphenyls¹⁷ does not consider ocean disposal as either a means of destruction or irreversible transformation of PCBs waste as required by the Stockholm Convention, nor does it consider ocean disposal as a means of PCB disposal in the case when destruction or irreversible transformation “does not represent the environmentally preferable option”. The Basel Guidelines considers various environmentally sound destruction options, such as Alkali Reduction, Base Catalyzed Decomposition, Gas Phase Chemical Reduction, etc. to be in line with the mandates of the Stockholm Convention on POPs (the Stockholm requirements are discussed in the succeeding section) – ocean disposal is by no means a method of POPs *destruction*.

The Basel Convention was also required to look at the case when the POP content is considered “low” in accordance with the Stockholm Convention language. While the draft guideline is not specific as to how to deal with low levels of PCBs, it must be noted that the Basel Convention has already set a standard of 50ppm for the level at which PCBs should be controlled.¹⁸ This is also the level below which negotiations are determining that PCBs will be considered to be “low”. Thus, the EPA Guidance Document is remiss (according to international norms) to not manage PCBs above 50ppm (no matter whether they are in solid or liquid matrices) as being in a category that must be destroyed or irreversibly transformed.

Stockholm Convention

The Stockholm Convention, which entered into force May 17, 2004, is a global treaty to protect human health and the environment from persistent organic pollutants (POPs). POPs are chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of living organisms and are toxic to humans and wildlife. POPs migrate globally and can cause damage wherever they travel. PCBs are POPs, and are in fact one type of several POPs slated for global elimination under the Stockholm Convention.¹⁹ The United States has not ratified the Stockholm Convention yet, but has signed it and indicated every intention of ratifying it.

The Stockholm Convention among other things defines how the international community must manage POPs wastes. Article 6 (d) of the Stockholm Convention provides that each Party must:

Take appropriate measures so that such wastes, including products and articles upon becoming wastes, are:

x x x

(ii) *Disposed of in such a way that the persistent organic pollutant content is destroyed or irreversibly transformed so that they do not exhibit the characteristics of persistent organic pollutants or otherwise disposed of in an*

¹⁷ See at http://www.basel.int/techmatters/popguid_may2004_wcc.pdf.

¹⁸ Annex VIII, entry A3180, Basel Convention.

¹⁹ Annex A, Stockholm Convention on Persistent Organic Pollutants.

environmentally sound manner when destruction or irreversible transformation does not represent the environmentally preferable option or the persistent organic pollutant content is low, taking into account international rules, standards, and guidelines, including those that maybe developed pursuant to paragraph 2, and relevant global and regional regimes governing the management of hazardous wastes;

The Stockholm Convention is unequivocal in its mandate that POPs content of substances, such as PCBs, must be destroyed or irreversibly transformed, or if the POPs content is low or destruction or irreversible transformation is not an environmentally sound option to undertake environmentally sound management options for the POPs wastes.

The Basel Convention as noted above has been tasked to work with the Stockholm Convention to determine the various environmentally sound options that can satisfy the mandate of the Stockholm Convention. And as previously highlighted, disposal at sea is *not* enumerated as an environmental option for dealing with PCBs nor does it meet the mandate of Article 6.

The United States is a signatory to the Stockholm Convention, and is bound to respect and not undermine the Convention's provisions. Based on its international obligations, it is imperative for the United States to reconcile the Reefing Guidance with the requirements of the Stockholm Convention on the disposal of POPs, particularly PCBs in the vessels destined for reefing. The clearest way for the United States to accomplish this is by incorporating into the present draft of the Reefing Guidance a discussion of the legal requirements of the Stockholm Convention and elaborate the procedures for the *removal of all PCBs* on board the vessels prior to reefing. Such removed PCBs should then be subject to destruction technologies.

London Convention and the 1996 Protocol

The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter²⁰, otherwise known as the London Convention, entered into force in August 30, 1975. The United States *is* a party to this Convention.

The London Convention covers the deliberate disposal at sea of wastes or other matter from vessels, aircraft, and platforms. It controls and prevents marine pollution through several means: by prohibiting the dumping of certain hazardous materials; requiring special permits for the dumping of a number of other identified materials; and requiring a general permit for the sea dumping of other wastes or matter.

The disposal or dumping of vessels and platforms or other man-made structures at sea is generally prohibited under the London Convention.²¹ An exception to this prohibition is when

²⁰ See at http://www.imo.org/Conventions/contents.asp?topic_id=258&doc_id=681#7. [hereinafter London Convention].

²¹ Art. 4 and Annex 1, London Convention.

materials “capable of creating floating debris or otherwise contributing to pollution of the marine environment has been removed to the maximum extent”.²²

Parties to the Convention are urged to take appropriate measures within their territory to prevent and punish conduct in contravention of the provisions of this Convention,²³ and to “ensure by the adoption of appropriate measures that such vessels and aircraft owned or operated by it act in a manner consistent with the object and purpose of this Convention”.²⁴

In addition to its outstanding obligations under the London Convention, it is worth considering the United States’ further obligations under the London Convention’s 1996 Protocol.²⁵

The 1996 Protocol will supersede the Convention once the 1996 Protocol enters into force, and with this change, more stringent obligations are forthcoming. Although the 1996 Protocol provides a narrow possibility for the dumping of vessels, similar to the original London Convention, one of the most important provisions that impact the Reefing Guidance is that in the course of considering the dumping of vessels in the ocean, Contracting Parties must be mindful of the objectives of the Protocol and the General Obligations.

The objective of the 1996 Protocol is as follows:

Contracting Parties shall individually and collectively protect and preserve the marine environment from all sources of pollution and take effective measures, according to their scientific, technical and economic capabilities, *to prevent, reduce and where practicable eliminate pollution* caused by dumping or incineration at sea of wastes or other matter. Where appropriate, they shall harmonize their policies in this regard.²⁶ (Emphasis supplied)

The thrusts of the objectives are three-fold, prevent, reduce, and eliminate. These are the standards that should be brought to bear in the Reefing Guidance.

Supporting the objectives are the general obligations established in Article 3 of the Protocol. One of the important Party obligations is to take the *precautionary approach* whereby “appropriate preventative measures are taken when there is reason to believe that wastes or other matter introduced into the marine environment are likely to cause harm even when there is no conclusive evidence to prove a causal relation between inputs and their effects.”²⁷

Given what we have learned above about the fact that no reliable data exists to date with respect to transport and fate of PCBs in the marine environment from PCB in solid matrix materials found on board of obsolete vessels, it is clear that the precautionary approach applies in this instance.

²² Annex 1, Section 11(d), London Convention.

²³ Art. VII (2), London Convention.

²⁴ Art. VII (4), London Convention.

²⁵ 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, *see* at http://www.imo.org/Conventions/contents.asp?topic_id=258&doc_id=681#7. [hereinafter 1996 Protocol].

²⁶ Art. II, 1996 Protocol.

²⁷ Art. III (1), 1996 Protocol.

Further, the 1996 Protocol places responsibilities on polluters when it states that "the polluter should, in principle, bear the cost of pollution"²⁸ and it emphasizes that Contracting Parties should ensure that the Protocol should not simply result in pollution being transferred from one part of the environment to another.²⁹

The London Convention and its 1996 Protocol, as international laws, are implemented in the United States through Title I of the Marine Protection, Research and Sanctuaries Act (MPRSA), which mandates that the EPA apply binding requirements of the London Convention to the extent that this would not relax the MPRSA.³⁰ Notably, the MPRSA is not mentioned in the Reefing Guidance as one of several US legislations that may apply to vessel-reefing projects.

Given the foregoing facts, we urge that the MPRSA be considered and included, and that US EPA and the US Maritime Administration revisit the Reefing Guidance and consider the implications of the United States' obligations under the London Convention and its 1996 Protocol.

Most immediately the EPA needs to study the legal implications of the term found in the London Convention "maximum extent" with respect to removal of hazardous materials. By any fair interpretation such strong language implies "to the extent possible".

Thus EPA's allowance of PCBs or any other toxic substance that *can* be removed prior to ocean disposal is insupportable even under the original London Convention to which the USA is a party. An explanation by the government must be provided as to why they fail to assert that *all* hazardous substances must be removed and risk based approaches to ocean disposal in our precious marine environment are in fact unsupportable.

Given the above information, regarding international law, MARAD and EPA's proposed guidance allowing ocean disposal of PCB waste both below and above 50ppm, not only stands to violate the objective laid out in Sect. 3516 of the NDRA requesting the EPA to "recommend practices for the preparation of vessels for use as artificial reefs to ensure that vessels so prepared will be environmentally sound in their use as artificial reefs", but stands to violate international law as well.

V. Conclusion

As we have noted above, the practice of disposing of ships through the avenue of ocean disposal, even by claiming an "alternative use", is not the most appropriate waste management practice available to the United States. Such dumping is in fact a form of disposal.

Further, the Reefing Guidance fails to adequately protect the marine environment from hazardous substances and in particular one of the most infamous persistent organic pollutants -

²⁸ Art. III (2), 1996 Protocol.

²⁹ Art. III (3), 1996 Protocol.

³⁰ Section 102 (a), Marine Protection, Research and Sanctuaries Act, 33 USC § 1401 et seq.

PCBs. The notion that PCBs (all of which are liquid in normal temperatures) in a solid or liquid matrix have widely different environmental impacts is not supported by science, particularly when that science is appropriately guided by the precautionary principle. PCBs and their known endocrine disruptive effects are active at extremely low levels. This fact combined with the risk of releasing PCBs in the marine environment when this risk can be avoided, makes it obvious that a risk based approach for the release of PCBs is not appropriate.

Finally, as we note, and the Reefing Guidance fails utterly to describe, the use of the marine environment to dispose of PCBs is in contravention to international laws and norms some of which are immediately binding on the United States.

The final conclusions and thus our recommendations that should be adopted in this Reefing Guidance are as follows:

- 1. Disposal of obsolete vessels at sea should only be undertaken if recycling and resource recovery is not possible.**
- 2. If such recycling is not possible, all hazardous substances and wastes, including PCBs in any form and at any concentration level should be removed to the extent possible prior to ocean dumping of waste vessels.**

The fate of the oceans and the creatures that live in it are intricately linked with the lives of humans. At this point in time, we all have been slow and blissfully ignorant to realize the kind of devastation our race has brought upon the oceans. Fish stocks once in abundance are depleted, aquatic habitats destroyed, certain fish types, a valuable source of protein and sustenance for millions, are increasingly deemed inedible due to the toxins they bear such as mercury and PCBs.

We cannot afford to pretend in childish naiveté that our ocean environment is a limitless playground or dumping ground for our outgrown societal toys. The Reefing Guidance developed by the US Environment Protection Agency and the Maritime Administration must take our collective responsibility to heart. Serious measures are required to arrest a drastic problem; we owe this much to the environment and to the generations after us.

END

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