PT122 Contributions of PCDD/Fs and Dioxin-like PCBs Sources in Rivers Flowing into the Tokyo Bay, Japan. Kobayashi, N.[1], Masunaga, S.[1] and Nakanishi, J.[1,2] [1]Yokohama National University. [2]National Institute of Advanced Industrial Science and Technology. There are few reports which estimate quantitatively the contributions of sources of polychlorinated dibenzo-*p*-dioxins and dibenzofurans (PCDD/Fs) and dioxin-like PCBs in an environmental medium. However, in order to develop effective countermeasures against dioxin pollution, information about contributions of different PCDD/F and dioxin-like PCB sources to the environmental medium is necessary. In this study, source identification of PCDD/Fs and dioxin-like PCBs are presented. PCDD/F and 12 dioxin-like PCB congeners were measured in 6 major rivers that flow into the Tokyo Bay. To estimate the contributions of sources to total TEQ (Toxic Equivalency) in river water, chemical mass balance (CMB) approach was used in this study. It was assumed that incineration emission and impurity of agrochemicals (PCP and

CNP) are the sources of PCDD/Fs in Japan. And it was assumed that incineration emission and commercial PCBs (KC300, KC400, KC500 and KC600) are the sources of PCBs in Japan. In some rivers, it was estimated that more than 85% of total TEQ originated from combustion source. While, in other rivers, contribution of combustion source was less than 50%. Differences in the land use in the river basin might be reflected in the result of estimation. Moreover, TEQ of PCDD/Fs and dioxin-like PCBs transportation by each source were estimated, assuming that contributions of sources in the same river are constant in recent year. It was estimated that 7.8 g-TEQ (including 12 dioxin-like PCB congeners) were transported by sum of these 6 rivers in 2001. And it was estimated that combustion source accounted most for total TEQ (64%).

PT123 Distribution and Fate of PCDD/Fs and Dioxin-like PCBs in Seawater in the Tokyo Bay, Japan. Kobayashi, N.[1], Masunaga, S.[1] and Nakanishi, J.[1,2]
[1]Yokohama National University. [2]National Institute of Advanced Industrial Science and Technology. Polychlorinated dibenzo-*p*-dioxins and dibenzofurans (PCDD/Fs) and dioxin-like PCBs were measured in seawater in the Tokyo Bay and in 6 major rivers that flow into the Tokyo Bay. About 100-200 L of river and seawater was collected, then immediately filtered. Particle phase PCDD/Fs and dioxin-like PCBs were trapped in glass fibber filter (GFF) and dissolved phase PCDD/Fs and dioxin-like PCBs, which went through GFF, were trapped in polyurethane form (PUF). After filtering, GFF and PUF were extracted, cleaned and fractionated respectively. The final PCDD/Fs and dioxin-like PCBs fraction was identified and quantified by HRGC/HRMS. All mono- through octachlorinated PCDD/F and 12 dioxin-like PCB (IUPAC No. 77, 81, 105, 114, 118, 123, 126, 156, 157, 167, 169 and 189) congeners were analyzed in this study. In both particulate and dissolved phase PCDD/Fs and dioxin-like PCBs, river water had several to dozens times higher concentrations compared with the Tokyo Bay seawater. It can be assumed that PCDD/Fs and dioxin-like PCBs carried by the river were diluted by seawater, resulting in low concentrations in the Tokyo Bay. In particulate phase PCDD/Fs and dioxin-like PCBs in seawater, differences in concentrations were not observed among stations except for the surface layer of the St. A, which is located in front of the mouths of large rivers. Thus, particulate phase PCDD/Fs and dioxin-like PCBs in the river deposits immediately after the river water flowed into the bay. On the other hand, concentrations in dissolved phase PCDD/Fs did not differ among sampling points. From these results, it is considered that dissolved phase PCDD/Fs and dioxin-like PCBs transported from the river is immediately diluted with seawater, revealing no marked variation in the bay.