

## SCIENTIFIC EVALUATION OF NATURAL RESOURCE DAMAGE CLAIMS ASSOCIATED WITH CDD AND PCDF CONTAMINATION IN THE AQUATIC ENVIRONMENT

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### **ABSTRACT**

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Since the enactment of Superfund legislation (CERCLA) ten years ago, state and federal agencies have pursued site remediation at active and abandoned industrial facilities as their first priority due to the concern about the hazards to public health. Only recently have regulatory agencies initiated claims seeking compensation for damages to natural resources. In the pulp and paper industry, the release of liquid effluents which contain low levels of polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) has generated intense debates in various states. The impact to recreational and commercial resources has been the primary concern. In this paper, we describe a process for addressing natural resource damage (NRD) claims. The objective of the process is to reach a fair and equitable distribution of potential restoration costs among all potentially responsible parties (PRPs). The first step is to determine the extent of contamination and whether multiple sources of PCDDs and PCDFs are present. This step may include a chemical characterization of the affected natural resource. Several statistical techniques, such as principal components analysis (PCA) and cluster analysis, can then be used to determine the relative contribution of each PRP to the contamination identified in the NRD claim.

**KEY WORDS:** Dioxins, Fingerprint analysis, Furans, Natural Resources Damages, PCDDs, PCDFs, Source Identification