

4. SUMMARY

Although certain types of data are currently lacking, available information highlights several concerns. Concentrations of 2,3,7,8-TCDD in fish tissue in several areas of the Columbia River basin exceed levels protective of human health at the 10^{-6} risk level and indicate that the state water quality standards are currently being exceeded. Regional and national data strongly suggest that pulp mills which use chlorine to bleach are the most significant sources of 2,3,7,8-TCDD to surface waters. Direct measurements of effluent samples taken from chlorine-bleaching pulp mills in the Columbia River basin confirms 2,3,7,8-TCDD levels requiring control.

There is a remaining need to refine information on contributions from other potential sources such as woodtreaters, as well as to describe the effect of attenuation and the role of sediments. This TMDL reserves a portion of the calculated loading capacity as unallocated because of this need for information. The TMDL established herein for 2,3,7,8-TCDD discharges to the Columbia River Basin completes the following actions:

- Establishes waste load allocations to individual pulp mills which use chlorine bleaching, at this time. Use equal mass discharge per unit production (Table 3-2, Option 2) to allocate waste loads to individual pulp mills in that source category. NPDES permit limits for these pulp mills must be consistent with this TMDL.
- Estimates loading from Columbia River sources upstream from the U.S.-Canada border. The total loading reserved for this source category is 0.31 mg/day. By 1994 the Celgar pulp mill, is expected to reduce its contribution to approximately 0.05 mg/day. The remainder of the 0.31 mg/day is reserved as a margin of safety to cover other unidentified sources upstream of the U.S.-Canada border and/or a shortfall by Celgar in achieving anticipated reductions.
- Estimates loading from some Region 10 point sources other than the pulp mills for which WLAs were established. Appendix B describes the evidence suggesting a total 2,3,7,8-TCDD loading from these sources of less than 2.3 mg/day.
- Reserves the remaining loading capacity (1.29 mg/day, after subtracting the WLAs and estimated loadings for the sources identified above) for (1) other undesignated sources, (2) an additional margin of safety to account for uncertainties in the assumptions used in developing this TMDL, and (3) future growth. This reserved portion is equal to approximately 22% of the total loading capacity. As uncertainties are reduced, more of the reserved capacity could be allocated to new or existing sources.

Table 4-1 and Figure 4-1 summarize the overall structure of the Final TMDL with the allocations based on currently available information.

Table 4-1. Waste Load Allocations for Chlorine-Bleaching Pulp Mills in Context of Watershed Targets

		<u>2,3,7,8-TCDD (mg/d)</u>	
		<u>WLA</u>	<u>Loading Capacity</u>
LOADING CAPACITY FOR ENTIRE COLUMBIA RIVER BASIN			5.97
Columbia River Basin above Washington/Canada border			
Watershed target			2.31
Estimated Canadian Loading including Celgar mill		[0.31] ¹	
Snake River Basin above Ice Harbor Dam			
Watershed target			1.18
Pulp Mill WLAs: Potlatch (Lewiston, ID)		0.39	
Willamette River Basin above confluence with Columbia R.			
Watershed target			0.54
Pulp Mill WLAs: Pope & Talbot (Halsey, OR)		0.19 ²	
Remainder of Columbia R. Basin			
Pulp Mill WLAs:			
	Boise Cascade (Walla Walla, WA)	0.25	
	James River (Camas, WA)	0.42	
	Longview Fibre (Longview, WA)	0.08	
	Weyerhaeuser (Longview, WA)	0.26	
	Boise Cascade (St. Helens, OR)	0.27	
	James River (Wauna, OR)	<u>0.21</u>	
	TOTAL	1.49	
SUM OF WLAs FOR REGION X PULP MILLS IN BASIN		2.07	

¹ This is not a WLA, but is included for purposes of comparison with the WLAs for U.S. mills.
² This is the same WLA identified in ODEQ's NPDES permit (issued 11/7/90) for this facility.

Figure 4-1. Overall Division of Columbia River Basin Loading Capacity

