

5.2 Top Contributing Sources and Chemicals

Each emission source's contributions to the maximum health risk impacts is shown in Tables 5-2 and 5-3. The smelt dissolving tank and lime kiln contribute more than 50 percent to the cancer risks. The pulp dryer is the top contributor to the chronic health risks, accounting for about 73 percent of the MEIR and 50 percent of the MEIW chronic hazard indices, respectively. Acute health risks were mostly due to the pulp dryer emissions, which accounted for about 99.5 percent of the acute hazard index.

TABLE 5-2
Top Contributing Sources to Cancer Risks and Chronic Hazard Index at the Maximum Exposed Receptors
Evergreen Pulp Human Health Risk Assessment

Health Risk	Source	Contributions (%)	
		MEIR	MEIW
Cancer	Smelt Dissolving Tank	38.0	35.7
	Lime Kiln	20.2	29.2
	Recovery Boiler	13.1	12.8
	Pulp Dryer	12.3	5.4
	Green Liquor Clarifiers	11.5	10.1
Chronic Hazard Index	Pulp Dryer	73.3	50.5
	Green Liquor Clarifiers	11.9	16.6
	Slakers and Causticizing Tanks	7.9	21.6
	Smelt Dissolving Tank	4.2	6.3
	Lime Kiln	1.0	2.3

TABLE 5-3
Top Contributing Sources to Acute Hazard Index at the Maximum Exposed Receptors
Evergreen Pulp Human Health Risk Assessment

Health Risk	Source	Contributions (%)
Acute Hazard Index (at PMI)	Pulp Dryer	99.5
	Smelt Dissolving Tank	0.51
	Slakers and Causticizing Tanks	0.03
	High-density Tanks	0.009
	Combined Bleach Plant and Second PO Hoods	0.003

Tables 5-4 and 5-5 presents the top contributing TACs to the maximum health risk values for the Evergreen mill. Hexavalent chromium and acetaldehyde emissions contributed a majority of the cancer risks at both MEIR and MEIW locations. Acrolein is the greatest contributor to chronic and acute risks, accounting for 99.6 percent of acute hazard index. However, as described in Section 2.2, the emissions rates of acrolein used in this HHRA are likely overly conservative.