

The amount of phosphorus discharged to U.S. streams from municipal outfalls for any year, n , was estimated from the formula:

$$(\text{lbs. phosphorus discharged per year})_n = (P_P)_n \left[(SP)_{on}^f oP + (SP)_{pn}^f pP + (SP)_{sn}^f sP \right]$$

Refractory Organics

8. The category, Refractory Organics (RO), was assumed to be the difference between COD (Chemical Oxygen Demand) and BOD. The concentration of refractory organics in raw municipal sewage was assumed to be 100 mg./l. (350 mg./l. COD less 250 mg./l. BOD). Assuming a daily per capita municipal waste flow of 140 gallons, the annual refractory organics contribution, P_{RO} , would be: 30.4 lbs./capita/year. This value was assumed to be constant during the period 1900 to 2000 because information on historical trends was not available.

9. The assumed efficiencies of primary and secondary treatment in removing refractory organics are shown in TABLE 3. To establish these estimates, the following BOD and COD concentrations in raw sewage, primary effluent, and secondary effluent were assumed.

	<i>Concentration, mg./l.</i>		
	<i>Raw</i>	<i>Primary</i>	<i>Secondary</i>
COD.	350	240	65
BOD.	250	160	25
RO.	100	80	40

The amount of refractory organics discharged to U.S. streams from municipal outfalls for any year, n , was estimated from the formula:

$$(\text{lbs. RO discharged per year})_n = (P_{RO}) \left[(SP)_{on}^f oRO + (SP)_{pn}^f pRO + (SP)_{sn}^f sRO \right]$$

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REFERENCES

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