

Environ LLC
10 Beaver Street
Flagstaff, AZ 87890

Independent Mathematical Contractor
00 Anystreet
Anytown, Anystate 00000

Dear IMC:

My company consults with businesses concerning environmental cleanups. I was recently approached by a company who was discharging pollution into a lake. After three years of operation, the company was issued a compliance order by the EPA requiring them to stop these discharges. In addition, they were charged with developing a plan to recover the pollutants from the lake. My company is working with the company to develop the plan for this cleanup.

The factory discharged pollution into a lake at a rate of $r(t) = at\sqrt{t^2 + 10}$ tons per year, where t is the number of years that the factory has been in operation and a is the number of letters in your last name. To remove the pollutants from the lake, equipment is available that will remove the pollutants from the lake at a rate of b tons per month, where b is the number of letters in your first name.

The key question I need answered is this: Using this equipment, how long will it take to remove all of the pollutants from the lake?

Since I need to present this figure to the EPA for their approval, I would like you to document your solution as carefully as possible. I need to make sure that the solution you provide is reasonable and that I can explain it to the EPA should any questions arise. In addition, since this matter is very delicate I would like this to be handled confidentially. Please do not discuss this with anyone until the EPA has issued a permit for the pollution removal.

Jack B. Green