September 30, 1959

Mr. H. H. Boettcher
Chief Engineer
Air Products, Inc.
Allentown, Pennsylvania

Dear Mr. Boettcher:

Your questions concerning the effect of Pydraul in stream pollution have been referred to me. I must say that the following statements are based on opinion rather than experimental data.

I do not believe that Pydraul would be any more toxic to fish than the usual petroleum based or phosphate based hydraulic fluid. The toxicity of the two are roughly comparable in all the other manners in which we have tested them. One could set up fish tests and if this problem is sufficiently important, we could schedule a series. However, as you know, the toxicity would be proportionate to the concentration in the river. It seems hard to tell what this might be because it would vary from the day-to-day leaks to a sudden loss of the entire fluid. The cost of this fluid would seem to minimize such a loss.

It is my understanding that the state of Pennsylvania has effluent limits rather than river limits for allowable concentrations of waste material. We have never had this problem arise in any of the other states and I have had no correspondence with Pollution Control Boards regarding percentage or concentration of Pydraul AC in solution permitted as effluent into streams. Static tests can be run on fish and if you can supply me the Pennsylvania state requirements, we will see how soon this can be obtained on Pydraul AC. Do you have a realistic effluent concentration on your present hydraulic fluid or cutting oils? Certainly a 1% to 2% level of any organic material, whether it be cutting oil solvent, hydraulic fluid, or detergent, will very probably kill fish.

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It is our experience that Pydraul will settle to the bottom when washed into a stream because of its specific gravity. This would appear to furnish added protection from the standpoint of effect on fish but I realize this is impossible of measurement.

I hope you will be able to provide Mr. Davis more detailed information on your problem, with actual amounts of hydraulic fluid lost per day so we can try to set up a realistic static test on fish. As you know, the state agency has the last word on such problems and if they have any procedures for testing of discharged oils and solvents, if you could tell me where I could obtain those, our tests might be more significant.

Very truly yours,

R. Emmet Kelly, M. D.
Medical Director

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