

The third problem in this case is the majority's reading of legislative intent to leave technical (translated as "subsurface") matters to the Illinois Environmental Protection Agency and to exclude the County from considering them. I do not read criteria #2 in P.A. 82-682 as saying that. Indeed a plain reading shows the opposite intent. What could be plainer than "The facility is so designed, located and proposed to be operated that the public health, safety and welfare will be protected" (underlining added)?

The leading case in Illinois to date of errors in landfill "design and location" (to paraphrase the criterion cited above) is the Wilsonville landfill. Here, a site was approved over abandoned mine shafts. That fact is certainly germane to approval or disapproval of a site. Yet the majority's ruling on legislative intent would prohibit an elected County Board from considering subsurface geology whether involving abandoned mine shafts or earthquake faults or nearby potable water aquifers or the safety and adequacy of a clay layer.

It can be argued that a County Board is not sufficiently expert in hydrology and soils to decide issues concerning these areas. At the same time, however, the County Board members are charged with protecting public health and certainly with protecting their county's major water supply. Somewhere in the political process the elected layman has to make technical decisions if all of us are not to be governed by "experts".

Lastly let us analyze those "subsurface" factors. The Waste Management landfill will leak into the Sankoty aquifer. Joint Exhibit 13A gives the time period for this to happen (Appendix IV). Using a leachate percolation rate of 0.206 feet per year it would take 50 years to penetrate the 10 feet of clay. And using 1.03 feet per year it would take 90 more years to penetrate the average 90 feet of soil below the clay layer and above the Sankoty aquifer. That totals to 140 years.

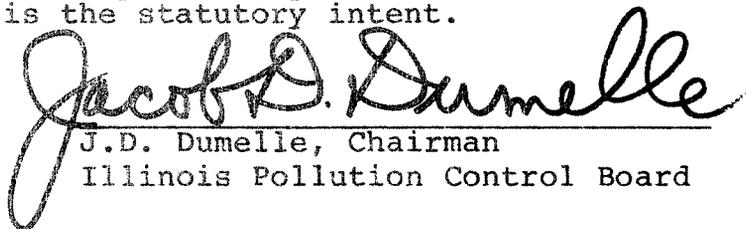
Two questions arise. How reliable are these time estimates? How "clean" will be the leachate after attenuation and cationic exchange by the clay layer?

The Waste Management witness, Dr. Murray M. McComas, an expert hydrogeologist, testified on Feb. 18, 1982 at the County hearing. He increased the flow rate through the clay layer by 50% over that estimated by Patrick Engineering, Inc. in Joint Exhibit 13A. He used 0.3 feet per year instead of 0.206 feet per year (R.93). The time necessary to penetrate 10 feet of clay then becomes 33 years and not the 50 years referred to above. Dr. McComas then states that the next layer to be encountered is a "buried silt zone" with a transmission velocity of 0.002 feet per year (R.95). But Patrick Engineering had put it at 1.03 feet per year or 515 times more porous! These major discrepancies by experts from the same side are not explained.

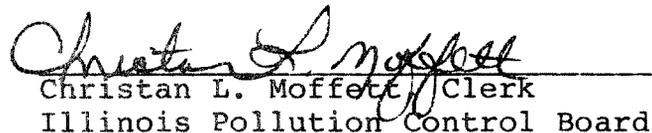
A landfill above a major potable water supply ought to be "fail-safe". If we use Dr. McComas' figure of 0.3 feet per year as the worst case condition we are talking about 33 years to penetrate 10 feet of clay. But the 10 feet of clay is the "natural clay" layer. It is not placed by man. A sand lense could occur in the bottom and negate the 10 feet of protection. Testimony by a local consulting engineer, Robert M. Randolph, points this out (R.203). If a sand lense has only two feet of clay over it, then using Dr. McComas' 0.3 feet per year rate, the bottom integrity would be breached in 6.7 years, not 33 years! How much protection would be given by the layer below the clay also depends upon its integrity with reference to the sand lense problem. The Patrick Engineering use of "average" depth of 90 feet is not correct. The least depth (50 feet) should be used. In summary the "140 year" figure is probably much too generous. Leakage into the Sankoty Aquifer could well occur early in the 21st century.

The other question posed was the degree of attenuation of organics and metals by a clay layer. Dr. McComas testified that a layer of two feet is "more than adequate" for most landfills anywhere in the country (R.103). However, the technical literature has recently begun to discuss the deleterious effects upon clay of certain organic solvents. Will the clay liner resist this action and continue to attenuate or will it simply become much more porous? Will special wastes, which include oily sludges, metal fines, and hot lime, overwhelm the attenuation capacity of the clay? Certainly the County Board would wish to consider these "subsurface" factors when making its decision.

Until other methods of refuse disposal such as recycling and incineration are better developed, landfills will be needed. But they should receive full scrutiny (surface and subsurface) by elected public officials if they are to protect their constituents. And I believe that is the statutory intent.


J.D. Dumelle, Chairman
Illinois Pollution Control Board

I, Christan L. Moffett, hereby certify that the above dissenting opinion was filed on 6th day of August, 1982.


Christan L. Moffett, Clerk
Illinois Pollution Control Board