

The Short Version

November 1999

A Summary Report Published by the Connecticut Council on Environmental Quality

Eat. Drink. Be Wary?

Preventing Needless Exposure to Toxic Chemicals in Connecticut

Tens of thousands of Connecticut residents are drinking, eating, or breathing small quantities of chemical contaminants every day. In most cases, the amounts are too small to be considered major health risks. At public forums, the Council on Environmental Quality has heard repeatedly that many people are concerned about even these low levels of chemical contamination. If given a choice, many would attempt to avoid unnecessary exposures. The problem is that residents often do not know where they are likely to encounter pesticides, toxic metals, and other contaminants: in the cool water drawn from their own wells, in the fish caught in

Connecticut's beautiful lakes and rivers, and in schools. Some people, including children, could be exposed to a variety of contaminants at all times of the day. These exposures are not inevitable byproducts of a modern economy. They are needless exposures that can be prevented.

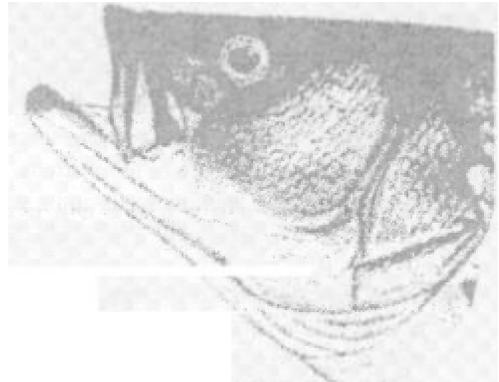
In this report, the Council examines five examples where residents' exposure to toxic contaminants is largely avoidable, and where the State of Connecticut can and should do more to prevent such exposures.

Mercury

Mercury enters the air when coal, garbage, medical waste, or sewage sludge is burned. It falls on land and makes its way into every stream and lake. Most game fish species accumulate mercury in their body tissue, posing health threats to the 160,000 Connecticut citizens who eat fish from local waterways as part of their regular diet.

Once in the food chain, mercury takes the form of methyl mercury, which is many times more poisonous than the highly toxic metal itself. High levels of mercury can affect prenatal development and cause permanent damage to a person's brain and kidneys. Health officials classify children under six and women who are pregnant (or might be within one year) as the high-risk group for mercury toxicity. These people should be limiting their consumption of freshwater fish to one meal per month or less (depending on species and waterway).

The state's attempts to notify the public about mercury and other toxins have fallen significantly short. More than 50% of Connecticut residents are unaware that state agencies have advised them to keep their fish consumption within specific limits. This health information has yet to reach 69% of minority and 63% of limited income households.



This is "The Short Version" of one in a series of interim reports from the Council on the most urgent environmental challenges confronting Connecticut. Summaries of each interim report will appear in the Council's annual report to the governor. "The Long Version" of this report is available from the Connecticut Council on Environmental Quality, 79 Elm Street, Hartford, CT 06106; (860) 424-4000, fax: (860) 424-4070; e-mail: karl.wagener@po.state.ct.us

Mercury has been used in many products that end up in the daily trash: batteries, thermostats, thermometers, fluorescent lights, pharmaceuticals, and dental fillings. Connecticut incinerates most of its trash. Considerable quantities of mercury discarded by consumers have gone up the smokestacks of the state's six resource recovery facilities. In 1995, resource recovery facilities contributed almost half of locally-emitted mercury. Since then, the mercury content of many products has declined sharply. It is now apparent that other sources, such as sewage sludge and medical waste incinerators, are at least as important. Outside the northeast, coal-burning utility plants are the major source of mercury emissions. Electric utility plants in states to the west of Connecticut are now probably the largest source of mercury entering New England's environment.

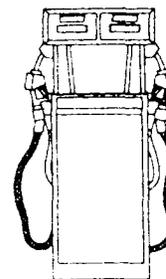
The DEP's pollution prevention plan emphasizes elimination of mercury from products and garbage, but does not identify timetables or resources for implementation. Even when implemented successfully, any plan will take decades to reduce mercury levels in the environment to acceptable levels. Mercury poses a serious environmental health problem, and the state as a whole must confront the threat with a more serious commitment.

MTBE

MTBE (methyl-tertiary-butyl-ether) is a chemical added to gasoline to improve performance, increase oxygen content, and yield less air pollution. It enters the ground water from leaking underground fuel tanks and piping, fuel spills, incomplete combustion in engines, and the exhaust, spillage and evaporation that occur when watercraft or vehicles are refueled.

The U.S. Geological Survey (USGS) found MTBE to be the most common chemical in wells in the Housatonic, Connecticut, and Thames River Basins. One quarter of these wells contained MTBE. It was detected in nearly half of the wells sampled in urban areas and less frequently in water under forests and farmland. Most of the detections were in shallow wells within a quarter mile of gas stations. However, nearly a third of the shallow wells and a striking 86% of deeper water supply wells with MTBE were not near gas stations or storage tanks.

The DEP must report to the legislature by February 2000 as to whether the continued use of MTBE in Connecticut is desirable. The United States Environmental Protection Agency has announced that it will ask the U.S. Congress to amend the Clean Air Act so that MTBE will no longer be mandated. There remain potential political impediments to a rapid resolution of the MTBE debate at the federal level. Connecticut will need to take aggressive action in concert with other northeastern states.



Drilling Wells in Polluted Water

In 1999, the DEP is publishing draft aquifer protection regulations that should help to prevent the development of high-risk pollution sources in areas of significant ground water resources - an approach that correctly emphasizes prevention. The Council is recommending that the DEP adopt an effective version of these regulations early in 2000, as continued delay would be a serious threat to the health of Connecticut's citizenry.

There is also a converse of the prevention problem: people drilling new wells into ground water that is known (or should be known) to be contaminated from existing pollution sources. There are many predictable locations where chemical contamination levels are much higher than the more common low levels. These include some old agricultural fields, developed areas with nearby commercial uses such as dry cleaners and gas stations, and areas around old landfills. There are hundreds of closed landfills in Connecticut, and most of them closed before the current strict requirements for closure and monitoring took effect. Now the surrounding land is much more attractive for development. The DEP has accumulated large volumes of data for almost all of the old landfills, gas stations, storage tanks, and other likely sources of contamination. This data could alert landowners and local health directors to potential problems, but for various reasons the information does not always reach these people.

Council research uncovered four cases in recent years where multiple new homes were built over contaminated ground water. There probably were more. Just in the past three years, however, the DEP and the Department of Public Health (DPH) have taken important steps that could help prevent future cases. Through the use of Geographic Information Systems (GIS), the DEP has mapped known sources of contamination and presented these maps to local officials in western Connecticut. In late 1999, the DEP was extending this work into the Thames River basin. This is very timely, as local health directors were authorized in 1997 to require testing of well water in areas they believe might be contaminated. The DEP and DPH are also mapping contamination sources in relation to existing public water supplies. This GIS work replaces static hand-drawn maps. The DEP faces a whole new opportunity: putting up-to-date information on the world wide web for immediate use by everyone who needs it.

Pesticides in Schools

Last year, citizens approached the Council to make it aware of a potential health risk: schools were not required to use professional pesticide applicators to spray for pests. Parents, students, and school personnel often had no idea when their buildings or grounds were being sprayed, or what chemicals were being used. School districts were allowed to apply pesticides while school was in session.

By taking advantage of a new state law that goes into effect in July 2000, state agencies have a unique opportunity to foster the reduction of pesticide use in schools. The new law requires schools to use only certified professional pesticide applicators, and prohibits pesticide application while school is in session. Certain pesticides, such as disinfectants, are exempt, and the bill does not address the other chemical hazards that children face in their schools.



These will need to be addressed, but the current focus on pesticides alone is useful because so many of them can be eliminated with no sacrifice.

Integrated Pest Management (IPM) involves a combination of strategies to reduce pest populations while also reducing the need for pesticide applications. This method has proven to be highly successful in Middletown's Woodrow Wilson Middle School. As part of a DEP-coordinated pilot project, pesticide use in the school was reduced by an impressive 98%. IPM is being implemented by a few other schools, and the DEP has assisted by preparing model plans and bid specifications. However, as with any new procedure, school districts will need additional short-term assistance help to implement IPM. If many years pass before IPM is implemented statewide, many thousand pounds of pesticides will be applied needlessly in schools.

Pesticides in Private Drinking Water Wells

About 500,000 Connecticut residents get their drinking water from private wells. Very few of them have their water tested for pesticide contamination, as pesticides are not among the contaminants for which state agencies require or recommend testing routinely. Ten years ago, the DEP surveyed 59 well sites located near croplands, orchards, golf courses, and residential areas. Sixty-six percent (39 sites) had detectable quantities of pesticides in the ground water, indicating that these chemicals are capable of filtering down through the soil and entering even the deepest wells. One recommendation of this study was for the state to put resources into additional, wider testing of residential private wells.

Little additional testing was done until a Connecticut nonprofit organization, Environment and Human Health, Inc., using private funds and working with the Connecticut Agricultural Experiment Station, tested actual drinking water wells in a residential suburban community. Eleven percent (6) of the 53 homes were found to have pesticides in the wells. In five of the six wells, more than one type of pesticide had leached into drinking water. There is limited research on the interactions of these chemicals with each other, or on their compounded effects on human health. Pesticides were found to have traveled from the location where they were applied, contaminating the wells of homeowners who did not even use them.

Moving Forward

' The DEP and DPH should be appropriated adequate resources to launch an effective campaign that reaches all residents with the types of information described in this report. It would be best to create one well-designed, comprehensive, long-term campaign. Part of this effort would likely require the creation of a single contact point - a Toxics Information Center -- for people with questions about toxic materials in their communities.

Mercury

1. The Connecticut DEP should work aggressively with regional pollution control organizations to cut mercury emissions in half in five years, and eliminate almost all mercury emissions within ten years.

Removal of all mercury from the garbage burned in resource recovery facilities will require product labeling and opportunities for recycling such as takeback programs sponsored by large retailers.

2. Companies that benefitted from the introduction of mercury into the environment should finance the state's health-education activities that will be required until mercury is reduced to safe levels.

3. Connecticut must develop and implement an aggressive legal and Congressional strategy to force reductions in mercury emissions in states to our west, particularly the major coal-burning states.

4. The DEP and DPH should design and implement a long-term campaign for informing the public particularly the high-risk segment of women and children - about mercury and other contaminants in the aquatic food chain.

MTBE

1. The DEP should take an aggressive posture toward any chemical, such as MTBE, that so readily enters the water supply. This will entail a phase-out of MTBE at the earliest practical date.

The General Assembly should adopt a law prohibiting MTBE that would take effect when three or more other northeastern states with sizable populations adopt comparable laws.

2. When a chemical such as MTBE threatens ground water all across the state, the DEP should be prepared to inform the public with useful information.

Drilling New Wells

1. State agencies should adopt a goal of preventing new wells in contaminated areas. The General Assembly should prohibit using tax dollars to replace new wells drilled in contaminated areas.

2. The DEP should be equipped to use currently available technology to manage and display the vast files of data on sources of contamination.

3. Where local health directors approve wells in contaminated areas, the DEP and DPH should keep records and work to prevent any repeat occurrences.

4. The DEP should adopt effective aquifer protection regulations (now overdue) early in 2000.

Pesticides in Schools

1. The DEP should adopt a goal of having 100% of public schools practicing IPM by 2005.

2. The DEP should be given the resources to hire additional staff to work with schools, training them in pest control policies that minimize pesticide use, and helping them comply with the 1999 legislation.

Pesticides in Wells

1. The DEP should conduct additional studies that look at private residential wells to determine the magnitude of pesticide contamination.

2. The UConn Cooperative Extension System should launch a public education campaign that informs homeowners about the ways pesticides enter drinking water, and how many of these pesticides could be eliminated from everyday use.

3. The DPH should create effective campaigns to inform the public of widespread chemical contamination and the wisdom of testing well water.

The Council on Environmental Quality is the state agency charged with reporting to the governor on the status of the state's environment, recommending improvements to state environmental programs, reviewing state agencies' construction projects, and investigating citizens' complaints. Members are Donal C. O'Brien, Jr. (Chairman), Marian Chertow, Thomas Harrison, Susan Mendenhall, Susan Mellow, Richard Miller, Earl W. Phillips, Jr., Cecil Ursprung, Wesley Winterbottom.