Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

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Community Concerns FAQ

Republished in new format December 2017

Introduction

The thought of a "hazardous waste site" in your neighborhood can be scary. Is it safe to live here? Is my water safe to drink? Sometimes, it seems like government officials and other "experts" are not a lot of help - it seems impossible to get straight answers. And, once a problem is identified, it seems to take forever to get a site cleaned up.

Unfortunately, there are no easy answers or solutions to these concerns. The purpose of this page is to try to explain why this is the case, what you should know about these issues, and what you can do about these problems.

Why Can't I Get a Straight Answer - Is It "Safe" Here or Not?

No one is trying to purposely evade your question. Unfortunately, there is much we do not understand about how chemicals in the environment may affect our health. Since ignoring the problem until we have all the answers is not an option, we need to make decisions today on the basis of the best available science and information, trying to err on the side of safety. However, until (or if) the day ever comes when we completely understand all of these issues, it will be impossible for a government official and/or scientist to honestly give you a "100% guarantee" in all cases.

Important Considerations

There are some important principles that you should be aware of that may help you better understand the nature and degree of potential risks posed by these sites:

No Exposure = No Risk

This is the most important consideration to think about, as it may allow you to "rule out" a concern of this nature. Specifically, while it's difficult to predict what effects exposure to chemicals may have on your health, if NO exposure is occurring, there can be NO risk. In other words, for someone to be impacted by a contaminated site, they have to be exposed to the contamination in some manner: *breathe it, touch it, ingest (eat) it, or drink it*. This is known as an "exposure pathway". Consider the following:

- Do you get your drinking water from a public water supply source (e.g., town, water district, MWRA)? If yes, this water is likely piped in from a source area that is nowhere near the contaminated site of

concern. Even if the source of the water is near the site of concern (or another site), state regulations require that it be monitored on a regular basis, to make sure that it is safe.

- Is the contamination buried beneath the ground? If it is at the ground surface, is the site fenced, or is access otherwise restricted? If the answer to these questions is "yes", unless you live very close by, and there is a problem with blowing contaminated dust, it is unlikely that anyone will come in contact with toxic materials. Again, if there is no exposure, there is no risk.

MassDEP Regulations and Standards Err on the Side of Safety

- While terms like "imminent hazard" and "significant risk" may sound frightening, keep in mind that the entire manner in which sites are assessed and cleaned up is designed to err on the side of safety. A good rule to keep in mind is that MassDEP requirements and standards are designed to be "protective", not "predictive". That means that if you have been exposed in the past to levels of contaminants above a level currently considered acceptable, that does not mean that you will definitely (or even likely) experience an adverse health effect. That's because there are considerable factors of safety built-in to levels thought to be acceptable.

  Does that mean that you shouldn't be worried about exposures to chemicals, or that sites will never be a problem if there are no current exposure pathways? No. There is always an element of unknown, so if you are concerned about current or past exposure to a chemical, you should seek medical advice. Also, while sites with a fence or buried contamination may be safe for the time being, that doesn't mean they don't need to be permanently cleaned up, so that there will be no need to worry if the fence is ever taken down, or if the site is dug up. That is why the MassDEP rules require that all sites eventually achieve a *Permanent Solution.*

Common Exposure Pathways

What are the exposure pathways that you should be concerned about? Listed below are the most common:

- Private Drinking Water Wells

  If you have your own private drinking water well, and there is a contaminated site nearby, then concern over the possibility of contamination is not unwarranted, though it is extremely difficult to gauge the likelihood of whether your well could be impacted. In some cases, contamination has been known to move over a mile beneath the ground surface; at other sites, deep wells located within an area of known contamination have tested clean.

  There are some general rules of thumb. Some types of chemical are more likely to get into groundwater (because they are more water-soluble), and travel underground in the groundwater (because they don't tend to break down). Two types of pollutants are of special concern in this regard: chlorinated solvents (e.g., TCE, TCA, "perc") and an additive in gasoline called methyl-tertiary butyl ether or "MtBE" - which have been known to travel in the groundwater for many thousands of feet. On the other hand, chemicals like PCBs, and heavy metals like lead, are not common well contaminants (although there can be lead leaching out of solder in older water pipes). Substances like fuel oil and diesel fuel are in-between: they can impact wells if they are spilled nearby, but don't tend to otherwise be a major problem.

  If you are concerned, you should consider testing your well. If there is evidence of contamination in your water supply well (e.g., chemical or petroleum odors) contact your regional MassDEP office.

- Direct Contact with Contamination on the Ground Surface

  Contamination present on the ground surface is of most concern, especially in an area where small children may be present. The best way to judge concerns of this nature is by considering the present and past use of the site and area in question. If there is evidence of past industrial/commercial activity that involved toxic materials, and/or evidence of spilling or dumping, contact your regional MassDEP office. If there is not such evidence, but you want to further investigate this concern, see the “Testing Soil” question below. If you are worried about contamination by lead paint, see the “Lead Contamination” question below.

- Vapors Impacting a Building from Underground Contamination

  On occasion, certain chemicals that are buried in the ground, or moving in the groundwater, can evaporate (volatilize) from beneath the ground surface, and impact a home, school, or other building. As with drinking water wells, the contaminants of greatest concern are chlorinated solvents, and gasoline. Fuel Oil and diesel fuel can also be a problem, if recently spilled at or very near the property of concern.

  If you have evidence that such a problem may exist (e.g., persistent, unexplained odors, especially in a basement; knowledge of nearby spills of gasoline or volatile chemicals, etc), then contact your regional MassDEP office.

Why won't MassDEP work on a site I am concerned about?

MassDEP frequently receives requests from concerned residents and neighbors to take a more active role in the assessment or cleanup of a site of interest. Unfortunately, we do not have enough scientists and engineers available to honor many of these requests. We must prioritize cases, and assign our project managers to those sites that appear to present the greatest risk to public health and the environment.

If you believe a site is posing an immediate and serious threat to your health, contact your regional MassDEP office. We will check out the situation to the degree needed to either (1) conclude that there does not appear to be an immediate or serious threat, or (2) take action or ensure that actions are taken by responsible parties to mitigate any immediate or serious threats.

If MassDEP cannot assign a case manager to a site of interest, you can still become more involved in the process by taking advantage of the Public Involvement provisions of the state regulations.

What if I have concerns over the incidence of disease in my neighborhood or community?

Sometimes it may seem like there is an elevated incidence of cancer or other disease within a certain neighborhood or community. In such cases, there are two specific issues of concern: is there really an abnormal rate of disease, and if there is, what is causing it? Unfortunately, getting the answer to either of these questions is extremely difficult. For example, what may seem like a high rate of cancer may in fact be within expected statistical ranges, when you factor in all of the relevant considerations (e.g., age, occupational history, family history, smoking, etc.). Consider also the fact that 1 in 4 people in America will contract cancer at some point in their life, and that most cancers are thought to be caused by diet, smoking, work-related exposures to chemicals, and genetic factors; not environmental exposures.

Nevertheless, if you have concerns of this nature, contact your local Board of Health. They can then work with you to determine if a formal study should be requested of the Massachusetts Department of Public Health. If such a study is performed, and an increased rate of disease is confirmed, MassDEP will work with appropriate authorities to try to investigate possible causes that may be related to environmental exposures from contaminated sites.

Why does it take so long to clean up contaminated sites?

This is a common question people ask MassDEP. This is also a question we sometimes ask ourselves....

Though it may seem hard to believe, steady progress is in fact being made in Massachusetts to clean up contaminated sites. The majority of smaller spills and contaminated sites are cleaned up quickly (less than one year), and to the highest standards (e.g., safe for all uses, even residential homes).

However, there are a number of older, larger, and more heavily contaminated sites that have proven quite difficult to address. In many of these cases, it took decades to contaminate these sites, and it may take almost as long to clean some of them up.

Why does it take so long? Here are the top reasons:

- *It is very time consuming to fully investigate complicated sites.* What was spilled? Where has it traveled to? What are the impacts? Typically, the only reasonable way to study these sites is to conduct investigations in an "iterative" fashion, where one step follows from another. For example: install five groundwater monitoring wells at a contaminated site, test them, and that will tell us where to install the next five wells, and so on. Bear in mind that some of our worst and most problematic sites were contaminated decades (or even a century) ago, and trying to reconstruct the past and understand the present impacts can be very difficult. And sometimes, just when we think we have figured out what is going on, nature surprises us with an unexpected twist and turn.

- *The* science *of investigating, assessing, and cleaning up contaminated sites is still evolving*. Most of the knowledge and technology used in this field is less than 30 years old: we've made great strides, but we still have a way to go.

- Cleanup *can be very expensive*. Once you arrive at a solution to the problem, someone has to pay for it. In many cases, the party responsible for the contamination is long gone, bankrupt, or just unwilling to pay for the cleanup. That may lead to legal action which can be quite time consuming. While there are cleanup funds available from the federal and state government for these situations, there is only so much money available at any given time, and going through the government contracting procedures in such cases is also time consuming.

Lastly, we would be less than honest if we didn't concede that some of the delays in this regard are attributable to MassDEP. Sometime, staff turnover can be a problem: once a MassDEP project manager leaves their position, it may take 6 months to hire a new scientist or engineer, (assuming that funding is available to refill the position) and another 6 months for that person to come fully up to speed on the case in question. Moreover, all project managers oversee a number of cases simultaneously; if a crisis develops at one site, it may divert their attention from other cases. And now and then, for various reasons, we may "drop the ball"; though we try hard to prevent this from happening.

What can be done? Sometimes, not much. However, an interested and involved public can only serve to speed things along, to the extent possible, and keep MassDEP "on their toes". We appreciate your interest and input, and hope you can appreciate and bear with our limitations.

How do I get my private drinking water well tested?

On occasion, MassDEP receives requests to test a private drinking water well. Please note that we will only consider doing so (at State expense) if there is sufficient evidence to conclude that the well may be impacted by a spill of oil or hazardous materials. Otherwise, you will need to have this testing done through a commercial laboratory at your own expense.

For a list of laboratories that have been certified by MassDEP to conduct drinking water analyses, go to Certification Status of Laboratories . Also, you may want to check out Frequently Asked Questions on

Private Drinking Water Testing and the Use of Massachusetts-Certified Laboratories and the publication Private Wells in Urban Areas.

A reputable laboratory should be able to advise you on which testing procedures would be appropriate, given your situation and needs. Additional generic guidance is contained in Private Wells in Urban Areas. Note that these testing procedures can be expensive, so the choice is up to you on how much "piece of mind" you wish to have. For those on a budget, top choices are coliform bacteria, nitrate, volatile organic compounds (including the gasoline additive MtBE), and, if you have a deep bedrock well in granite, arsenic and radon. If you have an older house with plumbing systems that might have used lead solder, you might also want to test for lead. Should you find evidence of chemical contamination based upon this type of testing, be sure to contact your regional MassDEP office. (Note that naturally occurring radon and arsenic in deep wells, and lead leaching from pipes, are not considered chemical "contamination" and are NOT regulated by MassDEP - though they still may represent significant health concerns.)

How do I get soil tested?

As with drinking water well analysis, MassDEP will only consider testing soil (at State expense) if there is sufficient evidence to suspect a contamination problem by oil or hazardous materials. Otherwise, you will need to have this testing done through a commercial laboratory at your own expense. Although MassDEP does not at this time certify commercial laboratories for soil analyses, many of the laboratories certified for drinking water analyses also perform similar procedures on soil samples (see “Testing Drinking Water Wells” above). Common concerns at a residential setting (with no history of commercial/industrial activities) include heavy metal contamination (especially lead) and pesticide contamination (e.g. chlordane). Again, a reputable laboratory should be able to advise you on these issues, and the choice and degree (and expense) of testing is up to you. Should you find evidence of chemical contamination based upon this type of testing, be sure to contact your regional MassDEP office .

How is lead-contaminated soil managed?

Elevated concentrations of lead may be present in soils at residential properties, generally due the use of lead-based paints and leaded gasoline before 1980. While this contamination is typically confined to the first few inches of topsoil, it can present a threat to young children who may play in or near such soils. For this reason, covering, removing, or even roto-tilling of these soils (to reduce surface concentrations) would be advisable.

There is currently considerable debate over what level of lead in soil should be considered "safe". Ideally, in areas where small children will be present, concentrations less than 100 mg/kg (also referred to as "parts per million" or "ppm") are desirable, and values above 1000 mg/kg are undesirable.

Importantly, the management of such soils is exempted from state regulations that govern the cleanup of contaminated sites (i.e., the Massachusetts Contingency Plan). The US EPA has also exempted household soils of this nature from management as "hazardous wastes", should they be removed from the site. This is good news to homeowners, as it allows them to reduce risks to their children without any "red tape" and dispose of these soils in a cost-effective manner. If you want to remove this contaminated soil, consult your town officials on where it may be disposed of, or seek out a landfill to accept it.