

Historic Pesticide Contamination

Information for home owners, home buyers and other members of the public

With the development of New Jersey's agricultural land, builders, buyers and sellers are becoming aware of the possible presence of pesticide residues in former farmland soils. Homebuyers are considering this issue among the various environmental factors which may affect properties, such as the quality of drinking water, the presence of lead-based paint and radon gas, and the integrity of any heating oil tanks. The New Jersey Department of Environmental Protection (NJDEP) formed a task force to examine this issue and to make recommendations to assist those involved with properties which may have contamination due to the historical use of pesticides.

Background:

A wide variety of pesticides have been used in New Jersey over the last 100 years. Arsenic-based pesticides were used extensively to control agricultural pests in fruit orchards, vegetable fields, golf courses and turf farms, from the turn of the century until the late 1960s. DDT and Aldrin were used extensively for a wide range of insect pests on vegetables and fruits throughout the 1950s and 1960s. These pesticides tend to bind tightly to the soil, most often in the surface layer and are persistent in the environment and thus may be present in the soil long after they have been applied. Breakdown of the products is slow.

As a result, residues of a number of pesticides can be found in soils at levels that may pose a human health risk when the land changes from farms to other uses. **Arsenic, Lead, DDT and Aldrin** (along with several metabolites or breakdown products) are considered to be the primary "pesticides of concern" (See reverse side for more information on these substances). These pesticides were selected based on several factors, including their extensive agricultural use for many years, their persistence in the environment, and the fact that they have been detected at elevated concentrations at various locations in New Jersey.

In addition to levels that may result from past application of pesticides, arsenic is naturally occurring in soil at levels that can vary widely throughout the state. Sandy soils tend to have lower concentrations, while soils with high organic or clay content tend to have higher concentrations of arsenic. Although some metals such as arsenic can be expected to occur naturally at elevated levels, man-made compounds such as DDT and Aldrin/Dieldrin indicate human impacts to the soil.

NJDEP estimates that up to five percent of the state's acreage may be impacted. **The primary concern has to do with human health impacts resulting from long-term ingestion of contaminated soil, particularly by children.**

For further information, please contact the NJDEP Site Remediation Program (SRP) at one of the following locations:

**For site-specific guidance in northern NJ:
Northern Field Office
(973) 669-3960**

**For site-specific guidance in southern NJ:
Southern Field Office
(609) 584-4150**

**For general information:
Bureau of Community Relations
(609) 984-3081 or
(800) 253-5647**

The Task Force report is available on the SRP Web Page at www.state.nj.us/dep/srp

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**New Jersey Department of Environmental Protection
Site Remediation Program**



Recommendations:

- Soil sampling should be conducted when an agricultural property changes land use (i.e. farmland developed into a housing development or municipal park).
- Soil sampling should be conducted in former agricultural areas intensively used by children (schools, daycare centers, playgrounds)
- At any time, if a property owner wants NJDEP approval of their investigation, they would need to conduct a thorough environmental evaluation of the property and should consult NJDEP for guidance.
- Homeowners interested in testing the soil on their own property should consult the task force report or contact NJDEP for guidance on the sampling procedures.
- Several actions can be taken to minimize the chance of contact with contamination that may be in the soil.
 - Keep good grass coverage; this acts as a barrier to contact with the soil below.
 - Cover any disturbed or excavated soil.
 - Wash fruits and vegetables from your garden before eating. Uptake of contaminants into the food is not as much of a concern as possible ingestion of the soil.
 - Wash hands and face after playing outside and before meals and snacks.
 - Wash toys and pacifiers frequently.
 - Mop surfaces where children play.

The costs of remediating a site will vary depending on the level and distribution of the contamination, the size and layout of the site, and the remedy (or remedies) chosen. Possible remedies include capping contaminated areas, blending contaminated soils with clean soils, and excavation of contaminated soils.

ARSENIC

(NJDEP Unrestricted Soil Cleanup Criteria = 20 parts per million or ppm)

Long-term exposure can cause skin abnormalities, including the appearance of dark and light spots on the skin, which may ultimately progress to skin cancer. Arsenic has also been associated with an increased risk of liver, bladder, kidney and lung cancer.

LEAD

(NJDEP Unrestricted Soil Cleanup Criteria = 400ppm)

Lead is of particular concern for infants and young children because it can affect their developing brain and nervous system. High levels of lead affect the nervous system and kidneys of adults and children.

DDT AND ITS BREAKDOWN PRODUCTS

(NJDEP Unrestricted Cleanup Criteria for DDT = 2ppm, DDE = 2ppm, DDD = 3ppm)

DDT and its breakdown products are classified as probable human carcinogens, DDT is suspected of causing liver and pancreatic cancer in humans. Short-term exposure to high doses of DDT primarily affects the nervous system.

ALDRIN AND ITS BREAKDOWN PRODUCT

(NJDEP Unrestricted Cleanup Criteria for Aldrin = .04ppm, Dieldrin = .042ppm)

In the environment and in the body, Aldrin breaks down rapidly to Dieldrin. Dieldrin is a probable human carcinogen that causes liver tumors in test animals.