



United States  
Environmental Protection  
Agency

# Special Cap, Underground Water Treatment Proposed for Cleanup

## Garland Road Landfill

West Milton, Ohio

June 2007

### Share your opinions

EPA invites your comments on this proposed cleanup plan for the Garland Road Landfill. Your input is important. EPA may modify its recommendations based on information and comments from the public.

**Public Comment Period**  
**June 20 – July 20 (midnight postmark), 2007**

You may fill out and return the enclosed form, or mail, fax or e-mail your comments to:

#### Janet Pope

EPA Community Involvement  
Coordinator  
EPA Region 5  
Office of Public Affairs (P-19J)  
77 W. Jackson Blvd.  
Chicago, IL 60604-3590

fax: 312-353-1155

e-mail: pope.janet@epa.gov

phone: 312-353-0628

toll free: 800-621-8431

10 a.m. – 5:30 p.m., weekdays

### Public meeting

You may also share your views and ask questions one-on-one at a public meeting where EPA staff and other government representatives will make themselves available:

**Tuesday, June 26, 2007**  
**6-8 p.m.**

**Union City Hall**  
**118 N. Main St.**  
**Union, Ohio**

During the meeting, the public is invited to present oral and written comments on the recommended cleanup plan. If you have any questions or need special accommodations for the meeting contact Janet Pope.

U.S. Environmental Protection Agency is proposing a special cap, treatment and monitoring of underground water and riverbank stabilization to clean up or contain pollution at the Garland Road Landfill. The landfill for years was used to dispose of a variety of waste including thousands of metal drums containing dangerous compounds. Many of the drums leaked or spilled and their hazardous contents contaminated soil and underground water located beneath the landfill. Underground water is called ground water in environmental terms.

In the mid-1990s, EPA and its state partner, Ohio Environmental Protection Agency, decided the landfill contamination posed a threat to human health and the environment and supervised a preliminary cleanup of the area. That project involved removing thousands of drums and treating tons of contaminated soil. However, more cleanup was needed as confirmed by further testing. This latest proposal is designed to treat or contain the pollution for the long term and protect the health of people and wildlife who come in contact with the landfill property or use nearby sections of the Stillwater River.

EPA's proposed cleanup plan calls for a special cap over the landfill that should stop rain and snow melt from seeping through the waste and polluting soil, mud (sediment) and ground water. The proposed plan also calls for riverbank stabilization, on-site ground-water treatment, ground-water monitoring, passive gas venting with an option for active venting, waste excavation and consolidation with wetlands construction, and legal restrictions on future development and land use.

A report on the landfill gives details about the contamination, health risks and proposed cleanup alternatives. This report, called an engineering evaluation/cost analysis, or EE/CA, is available for viewing at the Milton-Union Public Library in West Milton and Union City Hall.<sup>1</sup>

EPA came up with four alternatives for the latest cleanup project and identified its preferred option. The alternatives are described in more detail later in this fact sheet. The Agency will pick one of the four options as its final cleanup plan after a 30-day comment period and a public meeting. The selected cleanup plan will be announced with a local newspaper notice and in an EPA document called an action memorandum. People can discuss these proposed cleanup options with government representatives at the public meeting June 26 at the Union City Hall, and the public will have until July 20 to file written comments about the proposed plan (*see lefthand box for more details*). EPA could alter the proposed alternatives or even choose a new plan based on public comments so it is important your voice is heard.

<sup>1</sup> Section 300.415(n)(4)(ii) and (iii) of the National Oil and Hazardous Substances Pollution Contingency Plan requires EPA to provide the public an opportunity to comment on the proposed Garland Road Landfill cleanup plan. This fact sheet summarizes the technical documents about the ground water, soil and sediment cleanup that are available for viewing at the official site repositories located in the Milton-Union Public Library in West Milton and Union City Hall.

## About Garland Road Landfill

The 15-acre site is located in Miami County, one mile south of West Milton. The property lies in the flood plain of the Stillwater River. Ohio EPA has been dealing with the site since 1991 when thousands of buried and exposed drums and other waste were discovered. Samples from the landfill property showed high levels of several dangerous substances such as poly-aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), pesticides and heavy metals.

EPA got involved in 1993 when the Agency issued a legal order so it could conduct an urgent cleanup action on the site to eliminate an imminent health threat. Three parties potentially responsible for the pollution were named at the time — General Motors Corp., Paul D. Theis and Waterwheel Farm Inc. General Motors conducted what was called a “time-critical” cleanup under EPA supervision. The cleanup project from 1994 to 1997 included erecting a six-foot-high chain link fence along the eastern boundary of the site, installing ground-water monitoring wells to determine if pollution was contaminating underground water, removing 13,000 drums and treating 14,000 tons of contaminated soil.

A 1995 consent order signed by EPA and General Motors required the development of the in-depth EE/CA in advance of a more permanent, long-term cleanup. The EE/CA included sampling of soil, ground water and sediment and made these conclusions:

- The time-critical cleanup project did not get all of the soil contamination at the site.
- VOCs appear to be the contaminant of most concern in the underground water. VOCs dissolve easily in water and evaporate into the air, releasing dangerous gases. The level of VOCs in the ground water was found to exceed safe drinking water standards, should that water ever be used for drinking.
- Surface water samples were not collected from the Stillwater River, but a potential exists for the VOCs found at the site to move into the river, which is a major recreational and fishing attraction in the area.
- Sediment in the Stillwater River has not been affected by the site contamination yet. Fish and small bottom-dwelling animals appear healthy. The latest proposed cleanup plan is partly designed to keep conditions that way.

## Health risks to people and the environment

EPA conducted a study to determine what kind of health risks the Garland Road Landfill pollution was causing to people and wildlife. The study, called a streamlined risk evaluation, or SRE, looked at how people and wildlife could possibly be exposed to pollution and whether such exposure could increase the risk of getting cancer or non-cancer illnesses. Potential cancer rates from the contamination were separated from average cancer risks.

The SRE assumed people could be exposed to site pollution by incidental swallowing of dirt, breathing particles and dust, and skin contact at the landfill. The SRE focused on contaminants found in on-site soil, Stillwater River sediment and in the underground water.

The SRE found people could be exposed to landfill pollution in three different ways. The ways include current trespassing on the landfill, current recreational use of the Stillwater River and future recreational use of the site. Cancer risks were found to be within the target risk range or acceptable levels for both trespassers and recreational users of the site and river. Trespassers and recreational river users are not at elevated risk for non-cancer health effects, the SRE found. Future on-site recreational users faced slightly higher non-cancer risks, according to the SRE.

Health risks were also considered for future users of the underground water for drinking water. Potential future users of ground water underneath the landfill site would appear to have a higher risk of cancer and other health effects.

As far as wildlife is concerned, the SRE found no evidence fish and animals were being harmed by site contamination. However, the Stillwater River is considered an important wildlife habitat and preventing the Garland Road pollution from moving into the river is a top priority of any cleanup plan.

## Cleanup options

After extensive studies on the Garland Road pollution, EPA came up with four cleanup alternatives. EPA evaluated each of the four cleanup alternatives against three broad criteria and nine detailed criteria (*see box for an explanation of the criteria on Page 7*).

Three of the alternatives include land-use restrictions on the landfill property that will prohibit residential uses and new drinking water wells. These restrictions are called institutional controls. These restrictions will lessen the chances of human exposure to site pollution and prevent disturbance of the cap to be placed on the landfill. Each of the alternatives also calls for gas venting, fencing as

needed, consolidating waste from the southern end of the site under the cap, construction of a functional wetland and long-term site monitoring. All alternatives are summarized below, but full details are available in the engineering evaluation/cost analysis document on file in the Milton-Union Public Library and Union City Hall.

**Alternative 1 - No Action:** A no action alternative is always included in EPA's analysis as a comparison point.

**Cost - \$0**

**Alternative 2 – Containing landfill waste with a dual barrier cap, riverbank stabilization, ground-water monitoring and institutional controls:** The proposed dual barrier landfill cap made of a layer of clay and a flexible membrane liner would meet Ohio's standards for a solid waste cap. This alternative is designed to eliminate all direct human contact with soil on the site and minimize the production of leachate from rain and snow melt. Leachate is water that collects pollutants as it trickles through waste. This cleanup option would also prevent contaminated soil from eroding into the Stillwater River.

**Cost - \$6.5 million**

**Alternative 3 – Containing landfill waste with an impermeable (low penetrating) cap, sheet piling along the east side and south end of the site, leachate extraction and treatment, ground-water monitoring and institutional controls:** In this option, an impermeable cap of clay, a geosynthetic (specially woven plastic) sheet or a combination of both would be placed over the landfill. Extraction wells would intercept the contaminated leachate and treat it with a technique called air stripping. The sheet piling would stabilize the riverbank to slow erosion and movement of the contaminants.

**Cost - \$16.5 million**

**Alternative 4 – Containing landfill waste with an impermeable cap, riverbank stabilization, source area ground-water treatment, ground-water monitoring and institutional controls (this is EPA's preferred cleanup alternative):** This option is similar to Alternative 3 in proposing the use of the clay, geosynthetic layer or combination cap. This option is similar to Alternative 2 in the type of riverbank stabilization proposed. This option also includes source-area treatment to ensure ground-water cleanup goals are met. Like Alternatives 2 and 3, this option is designed to eliminate all direct human contact with soil on the site and minimize the production of leachate from rain and snow melt. This cleanup option would also prevent contaminated soil from eroding into the Stillwater River.

**Cost - \$5.6 million**

## Evaluation of alternatives

The EE/CA evaluated the alternatives against the three broad criteria and the nine detailed criteria described in the comparison chart and EPA believes the best one is Alternative 4 – containing landfill waste with an impermeable cap, riverbank stabilization, source area ground-water treatment, ground-water monitoring and institutional controls. EPA decided the “no action” alternative for contaminated soil and sediment would not protect people or the environment so it quickly rejected that option. Alternative 2 meets many of the cleanup goals but would not stop contaminated underground water from continuing to move as much as Alternatives 3 and 4. Alternative 3 is very expensive although it meets most of the cleanup goals, including slowing the movement of contaminated ground water.

Alternative 4 was judged to be the most cost-effective cleanup option. It combines the special cap of Alternative 3 with the erosion protection of Alternative 2. Under Alternative 4, the landfill cap would either be constructed of two feet of clay with two feet of frost protection and six inches of topsoil, or a geosynthetic liner with a drainage layer plus one foot of soil and six inches of topsoil. The option allows for a combination of both cap constructions depending on conditions found at the site. Once the cap is built, it will be seeded with native vegetation.

## Ohio EPA's proposal for an additional cleanup alternative

Ohio EPA suggested an additional cleanup alternative that starts with Alternative 2 as described above, but adds ground-water treatment like Alternative 4. The dual barrier cap of Alternative 2 would limit the infiltration of precipitation through wastes located above the water table to a slightly greater extent than the impermeable cap included with Alternative 4. Therefore, Alternative 2 would reduce the movement of contaminants from wastes above the water table, but it wouldn't offer any further measures to control source area ground water. Adding the kind of ground-water treatment that is included with Alternative 4 to Alternative 2 would provide for source area ground-water control. In reviewing Ohio EPA's suggestion, EPA considered the following:

- a significant portion of the waste at the site is relatively unaffected by the infiltration of precipitation because it is below the water table;
- neither cap can fully prevent the infiltration of flood waters that sometimes saturate a portion of the waste above the water table; and
- either kind of cap will prevent direct contact with the waste. EPA also considered that while the dual barrier cap of Alternative 2 is slightly more effective at

preventing infiltration of precipitation through wastes located above the water table than the impermeable cap included with Alternative 4, ground-water treatment will control when the ground water will meet cleanup goals. Given site-specific characteristics, Ohio EPA's suggested alternative offers effectiveness that is similar to Alternative 4, but at a significantly higher cost, and so EPA screened out the combination of Alternative 2 with ground-water treatment and it was not further considered in the EE/CA report.

### Next steps

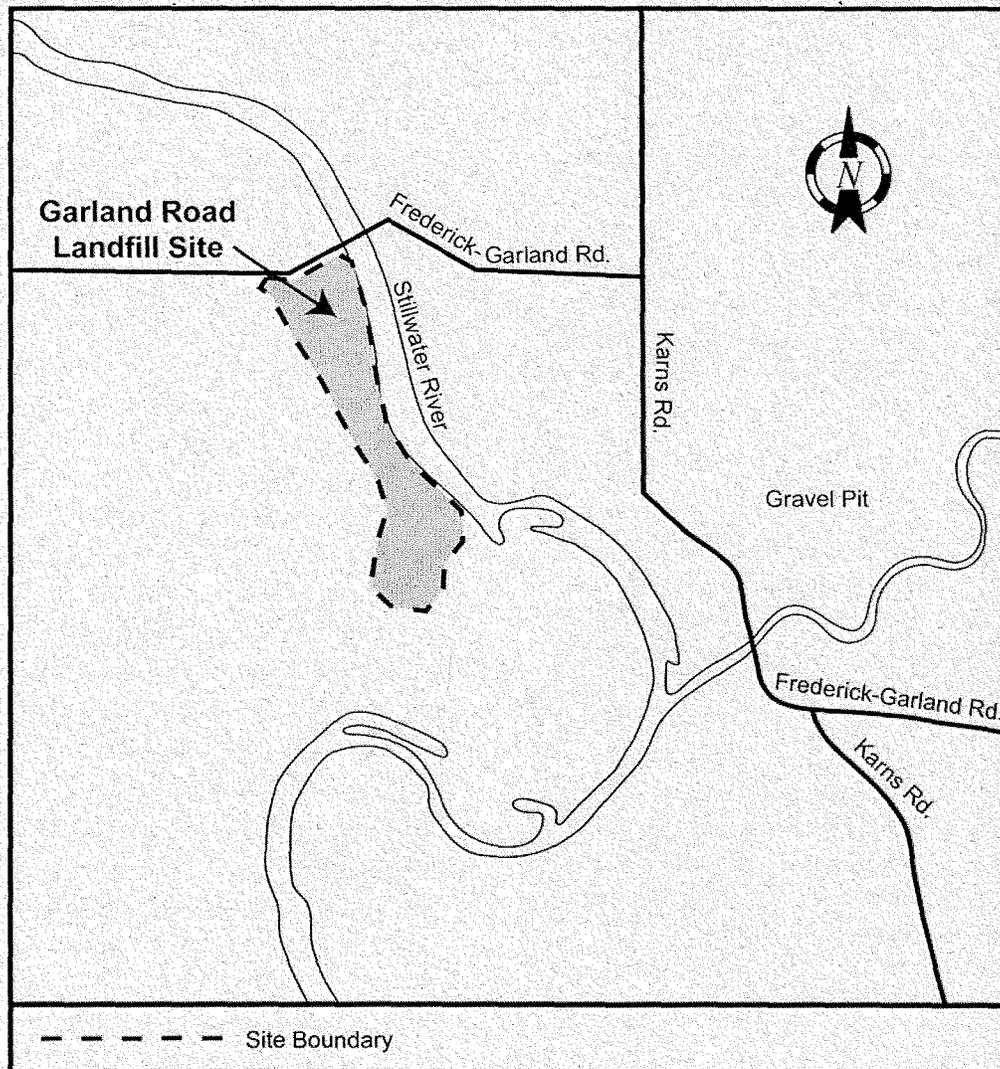
EPA in consultation with Ohio EPA will evaluate public reaction to the preferred cleanup plan during the comment period and at the public meeting before deciding on a final choice. Based on new information or public comments, EPA may modify its proposed option or select another of the cleanup alternatives outlined in this fact sheet. EPA encourages you to review and comment on the cleanup alternatives and attend the public meeting on June 26. Much

more detail on the cleanup alternatives is available in the official documents on file at the Milton-Union Public Library in West Milton and the Union City Hall.

EPA will respond to the comments in a file known as a responsiveness summary. It will become part of the administrative record for the final decision document, known as the action memorandum, which selects the cleanup plan. EPA will announce the selected cleanup plan in a local newspaper and will place copies of the action memorandum and responsiveness summary in the information repository at the local library and city hall.

After a final cleanup plan is chosen, EPA will notify the parties believed responsible for the pollution and request they conduct the site cleanup. Following negotiations with the potentially responsible parties, the final cleanup action will be designed and constructed. If the potentially responsible parties are unable or unwilling to conduct a cleanup, money may be used from EPA's Superfund. But EPA may later go to court to recover those costs from the potentially responsible parties. This entire process could last several years.

**Garland Road Landfill  
Site Location Map**





# Garland Road Landfill Site Comment Sheet

---

*Detach, fold, stamp, and mail*

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_  
Zip \_\_\_\_\_

Place  
Stamp  
Here

Janet Pope  
Community Involvement Coordinator  
Office of Public Affairs (P-19J)  
EPA Region 5  
77 W. Jackson Blvd.  
Chicago, IL 60604-3590

### Explanation of three broad evaluation criteria

1. Effectiveness of an alternative refers to its ability to meet the cleanup objective within the scope of the removal action.
2. Implementability addresses the technical and administrative feasibility of implementing an alternative and the availability of various services and materials required during its implementation.
3. Cost, including the capital and long term operation and maintenance costs also known as post removal site control costs.

### Explanation of nine detailed evaluation criteria

1. **Overall protection of human health and the environment** addresses how well an option protects people and the environment. This standard can be met by reducing or removing pollution or by reducing exposure to it.
2. **Compliance with applicable or relevant and appropriate requirements (ARARs)** ensures that options comply with federal, state and local laws.

3. **Long-term effectiveness and permanence** evaluates how well an option will work over the long-term, including how safely remaining contamination can be managed.
4. **Reduction of toxicity, mobility or volume through treatment** addresses how well the option reduces the danger, movement and amount of pollution.
5. **Short-term effectiveness** compares how quickly an option can help the situation and how much risk there will be while the option is under construction.
6. **Implementability** evaluates how feasible the option is and whether materials and services are available in the area.
7. **Cost** includes not only buildings, equipment, materials and labor but also the cost of maintaining the option for the life of the cleanup.
8. **State acceptance** asks does the state environmental agency accept the option? EPA evaluates this criterion after receiving public comments.
9. **Community acceptance** judges how well do nearby residents accept the option? EPA checks this standard after a public meeting and comment period.

### Evaluation table

The evaluation table below shows that the recommended alternative (Alternative 4) would provide the best balance with respect to the nine detailed evaluation criteria. EPA cannot select an alternative unless it fully protects human health and the environment.

Evaluation Criteria	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Overall Protection of Human Health and the Environment	☐	❖	■	■
Compliance with ARARs	☐	❖	❖	❖
Long-Term Effectiveness and Permanence	☐	❖	■	■
Reduction of Toxicity, Mobility, or Volume through Treatment	☐	☐	❖	❖
Short-Term Effectiveness	☐	■	■	■
Implementability	■	■	■	■
Cost	\$0	\$6.5 million	\$16.5 million	\$5.6 million
State Acceptance	The state of Ohio is not expected to fully accept and support any of the alternatives.			
Community Acceptance	Will be evaluated after the comment period.			

■ = Meets Criteria    ☐ = Does Not Meet Criteria    ❖ = Partially Meets Criteria

Alternatives 2, 3, and 4 would require that EPA grant a waiver of certain ARARs including Ohio EPA solid waste requirements.

## Contacts

If you have questions or would like additional information about the site, you can write or call the project staff listed below:

### **Matt Ohl**

EPA Remedial Project Manager  
EPA Region 5  
Office of Superfund (SR-6J)  
77 W. Jackson Blvd.  
Chicago, IL 60604-3590  
312-886-4442  
ohl.matthew@epa.gov

### **Janet Pope**

EPA Community Involvement Coordinator  
EPA Region 5  
Office of Public Affairs (P-19J)  
77 W. Jackson Blvd.  
Chicago, IL 60604-3590  
312-353-0628  
pope.janet@epa.gov

EPA Region 5 toll free: 800-621-8431,  
10 a.m. – 5:30 p.m., weekdays

### **Joe Smindak**

Site Coordinator  
Division of Emergency and Remedial Response  
Ohio EPA - Southwest District Office  
401 E. Fifth St.  
Dayton, OH 45402  
937-285-6064

### **Susan Aman**

Public Involvement Coordinator  
Ohio EPA Public Interest Center  
P.O. Box 1049  
Columbus, OH 43216-1049  
614-644-2160

---

### **Information library**

EPA has set up what are called information repositories for the Garland Road Landfill site at the Milton-Union Public Library, 560 S. Main St., West Milton, Ohio, and Union City Hall, 118 N. Main St., Union, Ohio. The repositories contain a collection of documents, files and fact sheets.

 *Reproduced on Recycled Paper*

# **GARLAND ROAD LANDFILL SITE: EPA Proposes Cleanup Plan**

United States  
Environmental Protection  
Agency  
Region 5  
Office of Public Affairs (P-19J)  
77 W. Jackson Blvd.  
Chicago, IL 60604-3590

