

# Superfund Program

## Proposed Plan

SCANNED

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# DNREC

## and



# EPA Region III

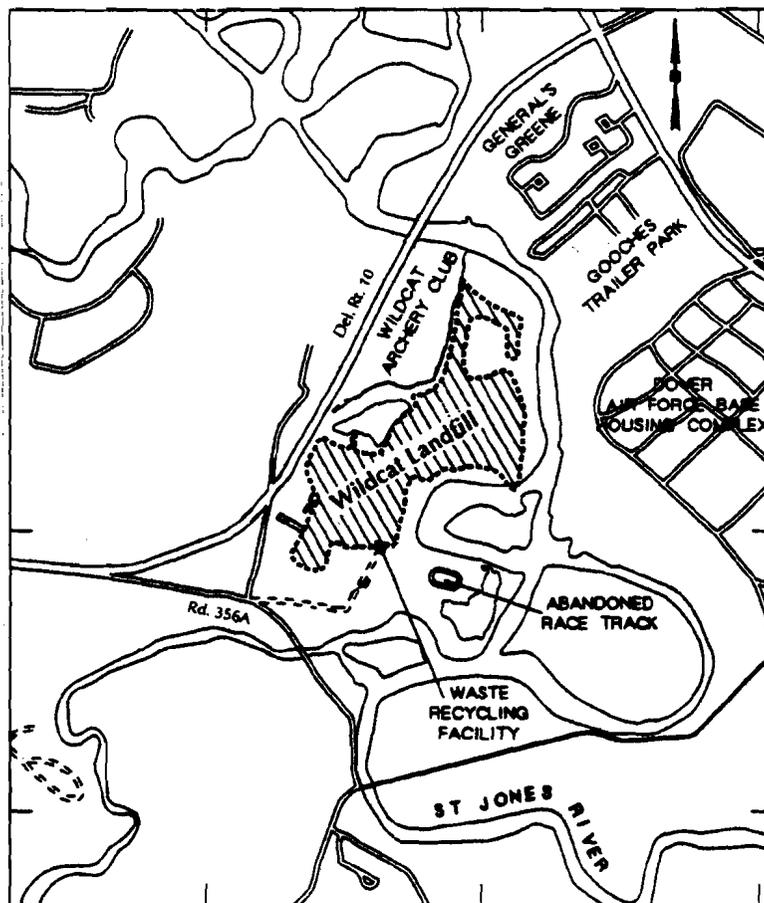
## Wildcat Landfill Site

### Kent County, DE

### May 1988

This document will describe:

- \* the background of the Wildcat Landfill site;
- \* the purpose of the proposed remedial action plan;
- \* the remedial alternatives detailed in the feasibility study;
- \* the alternative preferred by DNREC and EPA;
- \* the reason for selection of the preferred alternative; and
- \* the public comment period and public meeting to be held by DNREC and EPA.



APPROXIMATE LANDFILL BOUNDARY



## SITE BACKGROUND

The Wildcat Landfill site is an inactive municipal and industrial landfill located approximately two and one-half miles southeast of Dover, Delaware. The site covers approximately 45 acres and is bordered to the north and east by the St. Jones River and associated marshlands, and to the south and west by residential and commercial establishments. A pond which was created by construction of the landfill is located directly adjacent to the site along the northeastern edge.

According to site records, wastes disposed of at the site included household trash, sludge oil, bulk solids, solid and liquid latex, and chemical residues. The landfill was ordered closed by the Delaware Department of Natural Resources and Environmental Control (DNREC) in 1973 because of permit violations. In 1982 site investigations were conducted by the U.S. Environmental Protection Agency (EPA) and the site was subsequently placed on EPA's National Priorities List of hazardous waste sites. Delaware DNREC requested and EPA agreed to allow the state to perform further investigations and to develop possible remedial action alternatives. DNREC began the Remedial Investigation (RI) in September 1985 to determine the nature and the extent of contamination; this was followed by the Feasibility Study (FS) in November 1987 to evaluate remedial alternatives to address any problems found at the site.

The RI began with an examination of the site history and a review of available information pertinent to the site. Following this compilation and review of existing information, field investigations were begun in December 1985. The results of the RI are as follows:

### On-site

- The shallow ground water in and beneath the landfill is contaminated by the landfill wastes, much of which are saturated with water.
- Landfill contents are exposed at the surface at limited areas throughout the site.
- Leachate seeps are present along the landfill periphery in the area of the pond. These pose the only existing direct contact risk with landfill contaminated water.
- No impacts upon on-site biota were found.
- A net loss of 29.1 acres of wetlands has resulted from placement of the landfill upon existing wetlands.
- Contamination of ambient air from the site was not detected.

### Off-site

- No contamination by the landfill of local domestic and commercial wells was found.
- No contamination of ground water in deeper confined Frederica aquifer was detected.

- Low levels of off-site ground water contamination were demonstrated in the southeastern area of the landfill within the water table aquifer.
- Wells located directly adjacent to the landfill within the water table aquifer could be at some risk, particularly if overpumped. There appears to be no existing threat to other upgradient wells found in either the water table aquifer or the underlying confined aquifers.
- Surface water and sediments within the adjacent pond are contaminated by the landfill.
- Certain aquatic life in the adjacent pond may be impacted by inorganic contaminants originating from the landfill which are now found in pond sediments and water.
- No impacts of the landfill on the adjacent wetlands, St. Jones River, and their associated biota were detected.

#### PURPOSE OF THE PROPOSED PLAN

The Proposed Remedial Action Plan (PRAP) prepared by DNREC and EPA presents a brief summary of both the RI findings and the alternatives developed in the FS. The purpose of the PRAP is to identify the alternative preferred by DNREC and EPA and to provide the basis for this preference.

The remedial alternatives have been evaluated on the basis of how successful they will be in protecting human health and the environment, compliance with other environmental requirements, ease of implementation, short- and long-term effectiveness, reduction in toxicity, mobility, and volume, and how much they will cost. These factors were considered in selection of the preferred alternative; however, the final remedy will not be selected until public comments have been received and addressed.

#### PROPOSED ALTERNATIVES

The final remedy selected must be adequately protective of human health and the environment, be cost effective, and comply with the intent of state and federal statutory requirements unless otherwise waived. Emphasis is to be placed upon achieving permanent solutions, treatment of waste on-site, and application of innovative or alternate technologies where possible. As part of the FS, a variety of technologies were screened. Those that remained were subsequently applied to alternatives which address the problems posed by the Wildcat Landfill site.

Because additional study is required to assess the apparent problem of bioaccumulation of certain trace metals in small fish and turtles in the pond, a separate RI, FS, and proposed plan will be written. Consequently, the off-site issues in the pond are not addressed here.

The final remedial alternatives evaluated in the FS are summarized below. The summary includes the various administrative requirements, monitoring requirements, and the cost estimates for each alternative. The costs estimated for each alternative assume thirty years of monitoring and contain the capital costs plus the operation and maintenance costs.

Alternative 1: No Action. This alternative is included in the FS for comparison with the other alternatives. Under this alternative no remedial actions would be taken and the conditions that exist presently at the site would remain unchanged. There are no costs associated with this alternative.

Alternative 2: Institutional Control and Monitoring. This alternative would involve fencing and signposting to limit access to the site and monitoring of ground water to reveal any offsite migration of contaminants. Administrative restrictions would preclude any drilling of wells on the site or in certain adjacent areas determined to be at risk from the site. Fencing would be used to limit the risks of direct contact by the public. The total estimated cost for this alternative would be \$350,000.

Alternative 3: Institutional Controls, Monitoring, and Surface Control. This alternative includes institutional controls, monitoring and surface control, and removal and treatment of drums and their contents found on the surface of the landfill or uncovered during grading. Fencing and signposting would be required to protect the integrity of the cover. Temporary drainage would be required during grading to protect the adjacent pond and wetlands from runoff. Surface controls would involve grading and revegetation to achieve stable slope conditions and provide flood protection. The fill material and top soil cover would provide minimal cover and would limit direct contact of landfill wastes and leachate to both the public and biota. Drums found during grading activities would be disposed of either as solid or hazardous waste depending upon analysis of the material. The total estimated cost for this alternative would be \$6,300,000.

Alternative 4A: Containment With Soil Cap. This alternative provides for a soil cap in addition to the institutional controls, monitoring and surface controls, drum removal and treatment, and fencing described in the previous alternative. The soils cap provides additional protection against direct contact by the public and biota and provides additional erosion control during flooding. The total estimated cost for this alternative would be \$7,500,000.

Alternative 4B: Containment With Soil/Clay Cap. This alternative includes a clay lining within the cap to increase runoff, minimize infiltration, and be less susceptible to cracking caused by differential settling of the landfill. This alternative includes the institutional controls, monitoring and surface controls, drum removal and treatment, and fencing described in the previous alternatives. The total estimated cost for this alternative would be \$8,530,000.

#### DNREC AND EPA'S PREFERRED ALTERNATIVE

Both DNREC and EPA have carefully considered the proposed remedial alternatives for addressing the problems posed by the Wildcat Landfill site. The alternatives which have been presented have various advantages and

disadvantages which will be described. The preferred alternative incorporates certain aspects of Alternative 2 and Alternative 4A. This "modified alternative" would require institutional controls and monitoring for protection of the public from future risks that have been identified both on-site and off-site. These requirements are described in Alternative 2. Where existing direct contact risks which pose an unacceptable risk to public health and the

environment have been identified on-site, the grading, covering with a soil cap, and revegetation requirements from Alternative 4A would be used. Drums encountered during the grading activities or where otherwise exposed on the site would be removed and treated as was described in Alternative 3. The modified alternative would not include the fencing option but signposting would be required. The specific determinations of the areas requiring stabilization would be done during design based upon the findings of the RI.

This modified alternative has been chosen because of the large surface area of the site, the risks that have been identified, and the non-homogeneous nature of the surface conditions. This modified alternative allows the identified on-site and off-site risks to be adequately controlled while leaving intact those areas on-site that are adequately covered, vegetated, and posing very minimal or no risk. This alternative further allows present site conditions which are beneficial to remain undisturbed. (For example, large areas of the site have returned to wetlands.)

#### RATIONALE FOR PREFERENCE

The modified alternative which incorporates certain requirements from Alternative 2 and Alternative 4A has been determined to be adequate for addressing the risks to human health and the environment posed by the site while remaining cost effective when compared to the other alternatives. This alternative has been determined to be preferable to the other alternatives for the following reasons:

- The No-Action Alternative (1) does not address the existing or future risks posed by the site nor does it meet all the environmental requirements.
- The Institutional Controls and Monitoring Alternative (2) has been almost entirely adopted in the modified alternative. The institutional controls primarily prevent future direct contact risks identified both on- and off-site by preventing construction activities on-site and preventing well drilling both on-site and in adjacent areas which are either contaminated or potentially contaminated. Monitoring would be required for adequate protection of human health and the environment and to assure that the final remedy is adequate.
- The fencing requirement found in Alternative 2 may be unnecessary in the modified alternative where the on-site direct contact risks have been eliminated.
- Removal and treatment alternatives were not considered at this site because "hot spot" sources of contamination were not identified in the remedial investigation, the volume of landfill contents was very large, and the existing problems that were identified were surficial direct contact with landfill contents and leachate. Further, treatment without removal of the source would require treating indefinitely.
- Alternatives 3, 4A, and 4B require extensive grading, covering, and revegetation over the entire 45 acres of the landfill. These requirements are in addition to the the institutional, monitoring, and fencing requirements that have been described. The remedial investigation has identified the specific areas where the on-site direct contact risks are found. Much of the site has cover material and vegetation at varying

degrees where the risk of direct contact are only for future exposure should on-site development occur. These future on-site risks are being managed by the institutional controls needed at the site. Alternatives 4A and 4B would require large volumes of cover material which would cause subsidence of landfill contents because of the added weight. Further, the costs for these three alternatives when compared with the benefits is not as effective as the modified alternative that has been chosen.

- The modified alternative that has been proposed is expected to be much less costly than alternatives 3, 4A, and 4B while achieving the same level of protection of human health and the environment. Only areas on the landfill which have exposed landfill contents or where leachate seeps are found would be graded, covered with soil, and revegetated. All previously described on-site and off-site institutional and monitoring requirements would be included in this alternative although the fencing option may not be required.

#### NEXT STEPS

This proposed plan puts forth the remedial action preferred by both DNREC and EPA. However, selection of the final remedial action will not be made until the public comment period is complete and comments considered in the decision-making process. Both DNREC and EPA rely on public input in selection of the final remedy such that the needs and concerns of the local community are addressed.

DNREC and EPA will use the findings of the RI, FS, and public comments to select the final remedy. That remedy will be documented in the Record of Decision (ROD) which will summarize how the final decision was arrived at. Implementation of the remedy selected in the ROD will begin following design of the remedy.

#### PUBLIC COMMENT

DNREC and EPA will hold a public meeting at 7 PM on June 16, 1988 at the DNREC auditorium located at 89 Kings Highway, Dover. DNREC and EPA will present the findings of the RI followed by a presentation of the alternative preferred. All interested citizens are invited to ask questions and provide comment.

The public meeting takes place during a 30 day public comment period which began on May 26, 1988 and concludes on June 24, 1988. All site related documents are available for review at the Dover Public Library, 45 S. State Street, Dover, DE, and at U.S. EPA Region III, 841 Chestnut Street, Philadelphia, PA. Interested citizens are invited to review these documents. Written comments should be submitted to the following addresses:

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