

Superfund Program Proposed Plan



DNREC
and

 **EPA Region III**

Delaware Sand & Gravel Site

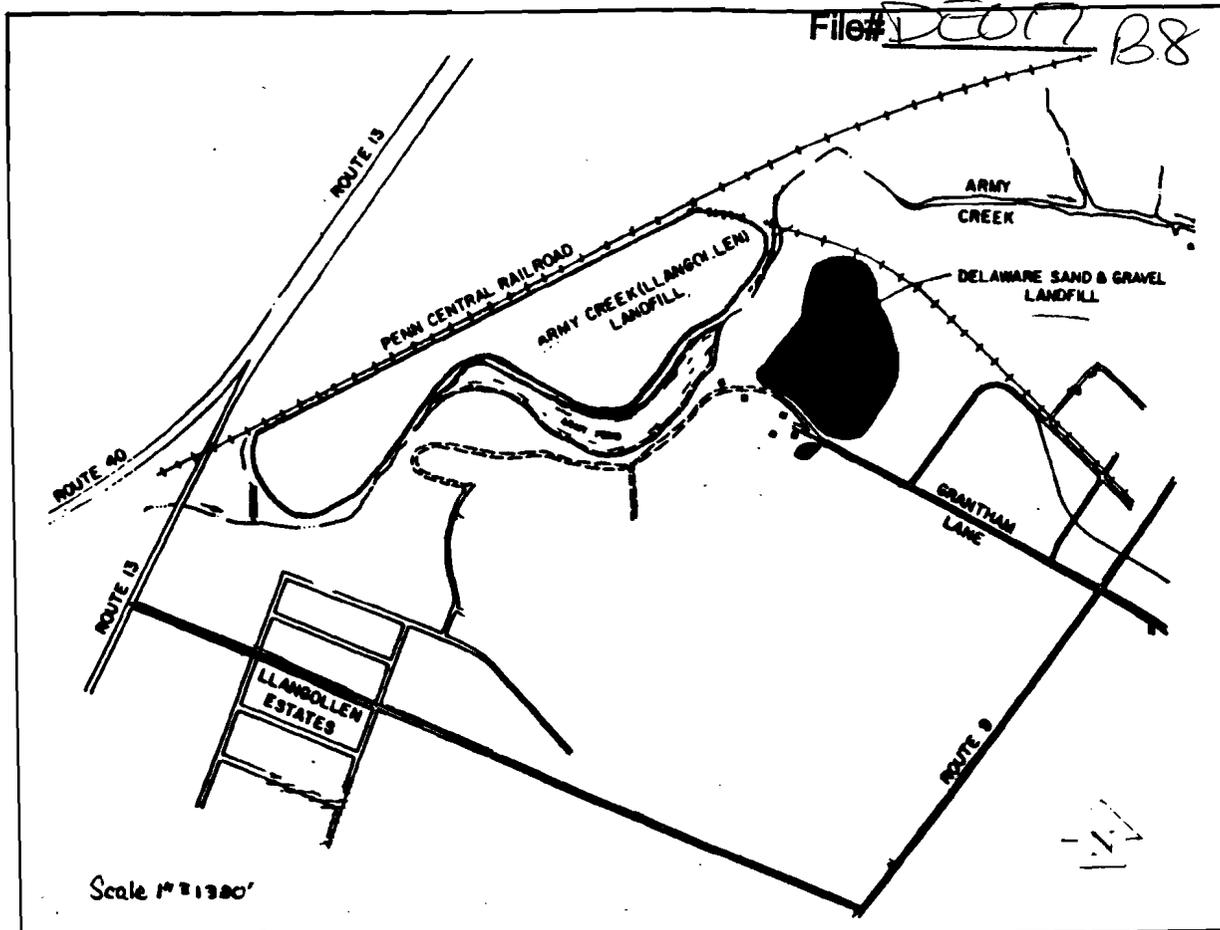
New Castle, DE

February 1988

SCANNED

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This document:

- Describes briefly the site background as detailed in the Remedial Investigation for the Delaware Sand & Gravel site.
- Describes briefly the remedial alternatives detailed in the Feasibility Study for the Delaware Sand & Gravel site;
- Identifies the Department of Natural Resources and Environmental Control's preferred remedial alternative and reasons for preference.
- Solicits public review and comment on all alternatives set forth in the detailed analysis section of the Feasibility Study.

SITE BACKGROUND

The Delaware Sand and Gravel Landfill is an inactive industrial and municipal waste dump, located in New Castle County, Delaware. The site is approximately two miles southwest of New Castle on Grantham Lane, west of Route 9, and less than one mile east of the intersections of routes 13 and 40. The property considered as the Delaware Sand and Gravel Landfill is approximately 27 acres in size. The Delaware Sand and Gravel landfill was operated as a permitted solid waste landfill from 1968 to 1976. Wastes disposed of at the site included but were not limited to household and construction waste and approximately 7,000 drums containing industrial liquid and sludges from perfume, plastic paint and petroleum refining processes.

In 1975 the Delaware Department of Natural Resources and Environmental Control (DNREC) noted improper operating procedures at the landfill. Enforcement action against the Delaware Sand and Gravel Company was initiated resulting in closure of the site in 1978. In 1981 and 1982, a site investigation was completed in order to characterize the site problems. In an effort to reduce the hazard at the site, the Environmental Protection Agency (EPA) and DNREC performed an emergency removal in the Spring of 1984. Approximately 600 drums were removed from the surface of the northern portion of the site.

In the fall of 1984, EPA and DNREC began an investigation at the site in order to determine the nature and extent of contamination. During the investigation it was discovered that wastes had been disposed of in four distinct areas on the property - the drum area, the ridge area, the inert area, and the Grantham South area. Each of the areas were investigated to determine the nature and extent of contamination to air, surface soils, formation soils, surface water, sediments and groundwater. The following conclusions resulted:

- Contamination to the ambient air from each disposal area has not been detected.
- Contamination of surface soils has occurred in the Ridge and Grantham South areas.
- Contamination of subsurface soils has occurred in the Drum Disposal area.
- Surface water and sediments have not been significantly impacted due to groundwater discharge or surface run-off from the disposal areas.
- Contamination to the groundwater Upper Potomac Hydrologic Zone has occurred due to leaching of contaminants from the drum disposal area.
- The environmental setting of the Delaware Sand and Gravel Landfill (DS&G) is complicated by the adjacent Army Creek (Llangollen) Landfill, located west of and immediately across Army Creek from DS&G. Due to the proximity of the sites, it is likely contaminants from Army Creek have intermixed with contaminants from DS&G.

Specific results of the investigation have been documented in the Remedial Investigation (RI) Report for Delaware Sand and Gravel December 1987.

REMEDIAL ALTERNATIVES

In order to determine the most appropriate way to address the contamination at the site DNREC has conducted a Feasibility Study which identifies and evaluates remedial action alternatives. These alternatives were evaluated on the basis of the standards set forth in Section 121 of the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) which include how easily they could be implemented, how successfully they could protect public health and the environment, and how much they would cost.

Alternatives have been evaluated for each disposal area and the groundwater contamination plume. These alternatives are outlined below.

Drum Disposal Area and Ridge Area Alternatives

- **Alternative 1: No Action-** The No Action alternative for the Drum Disposal and Ridge Area includes leaving the waste areas in place. No costs would be incurred with this remedy. This alternative is included in the Feasibility Study for comparison with other alternatives under investigation and would be selected only if the areas posed no risk to public health or the environment.
- **Alternative 2: Removal and Off Site Disposal** - This alternative involves excavation of the entire Drum Disposal Area and the surface soils from the ridge area. The volume of waste would then be transported to an approved off-site disposal facility. The estimated cost of this action is \$20,250,000.
- **Alternative 3: Removal and On-Site Incineration** - Under this alternative wastes would be removed from the two areas as in Alternative 2, and incinerated on-site. Soils will be treated to a level where the leachate, emanating from them to the groundwater no longer pose an unacceptable long-term carcinogenic risk. Incineration of the material, approximately 36,600 tons, would be carefully regulated as per EPA and DNREC regulations. Residual ash would be sampled, and if appropriate, disposed on site. The total estimated costs would be approximately \$18,250,000.
- **Alternative 4: Removal - On Site Incineration and Bioreclamation of Soils-** This alternative is similar to Alternative 3; however, additional soil treatment in the drum disposal area would occur. Treatment of soil would be through bioreclamation which uses microorganisms to biodegrade organic contaminants in the soil remaining after excavation. Alternative 4 costs would be approximately \$19,985,400.

Inert Disposal Area Alternatives

- **Alternative 1: No Action.** This alternative includes leaving the waste area as it presently exists. No costs would be incurred with this remedy. This alternative is included in the Feasibility Study for comparison with other alternatives under investigation and would be selected only if the area posed no risk to public health or the environment.

- **Alternative 2: Surface Debris Removal and Capping** This alternative involves removing surface debris (i.e. trucks, wood debris, trash) from the surface, regrade and apply a soil cap as per DNREC Solid Waste regulations. The approximate cost for the alternative is \$1,061,100.

Grantham South Area Alternatives

- **Alternative 1: No Action.** This alternative includes leaving the waste area as it presently exists, with no contaminant or contaminant migration restrictions. No cost is incurred for this remedy.
- **Alternative 2: Capping.** Under this alternative, the surface would be regraded and covered. The cover would consist of a combination of soil and geomembrane. The cover would comply with EPA Resource Conservation and Recovery Act regulations. The cost of this remedy has been estimated at \$830,000.

Groundwater Contamination Plume Alternatives

- **Alternative 1: Status Quo - No further action.** This alternative involves continuing the groundwater recovery system specifically wells RW 13, Well 31, RW12, Well 29, and Well 28, until acceptable risk levels are met at monitoring wells near the site boundary. This action would continue to effectively recover contaminated groundwater from the drum disposal area at Delaware Sand & Gravel. Costs incurred for installation of the 5 recovery well system is estimated at \$322,130. Additional costs involved with this alternative would include monitoring costs as well as maintenance of recovery wells, \$388,130. Total costs for this alternative is estimated at \$710,765.
- **Alternative 2: Status Quo - Plus Treatment.** This alternative includes Alternative 1 and treatment of the recovery well water as per National Pollution Discharge Elimination system regulation before discharge to Army Creek. The total estimated cost is approximately \$2,885,765.
- **Alternative 3: Cease Present Recovery Well System.** - This alternative would result in no action for remediating the groundwater contamination plume. This alternative is included in the Feasibility Study for comparison with other alternatives under investigation and would be selected only if the contaminated groundwater poses no risk to public health or the environment. No cost would be incurred with this alternative.

REMEDIAL ALTERNATIVE RECOMMENDED BY DNREC AND EPA

- After careful consideration of the proposed remedial alternatives, DNREC's and EPA's preferred alternative for the Drum Disposal and Ridge Area is Alternative 3: Removal and On-Site Incineration. This alternative will substantially reduce the volume, toxicity and mobility of the waste as required of the Superfund Amendments Reauthorization Act of 1986 (SARA). Removal and treatment of the major sources of contamination will result in a reduction of surface soil and groundwater contamination. Destruction of the wastes by incineration will substantially reduce the volume and toxicity of the wastes. Alternatives 1 and 2 would not reduce volume or toxicity of the contaminant source, consequently these alternatives were not chosen as a preferred alternative. Alternative 4 would reduce toxicity and mobility; however the effectiveness and necessity of bioreclamation is uncertain.
- The preferred alternative for the Inert Disposal Area is Alternative 2: Removal of Surface Debris and Capping. Removing the surface debris and capping this area will close out this disposal area as per Delaware Solid Waste Regulations. Alternative 1 was not chosen because it would not meet the requirements of the Delaware Solid Waste Regulations.
- The preferred alternative for the Grantham South Area is Alternative 2: Capping. Capping this area will reduce waste mobility by reducing infiltration of water into the disposal area. The required cap will meet Resource Conservation and Recovery Act regulations. Alternative 1 was not chosen because it would not meet RCRA requirements.
- The preferred alternative for the Groundwater Plume is Alternative 2: Status Quo - plus treatment of discharge. Status Quo is continued operation of the five recovery wells - RW13, Well 31, RW12, Well 29, Well 28 - currently picking up DS&G contamination. Continued operation of these wells in conjunction with Drum Disposal & Ridge Area removal (source removal) would result in a reduction in the volume and toxicity of contaminated groundwater. Alternative 1 was not chosen because it would not meet National Pollution Discharge System requirements and alternative 3 was not appropriate because it would not reduce the risk posed by groundwater contamination.

The total combined costs of the preferred alternatives:

Drum Disposal and Ridge	Alternative 3	\$18,250,000
Grantham South	Alternative 2	\$ 830,000
Inert Disposal	Alternative 2	\$ 1,161,100
Groundwater Plume	Alternative 2	<u>\$ 2,885,765</u>
	Total	\$23,126,865

- Based on information currently available to DNREC and EPA, the preferred alternative is anticipated to satisfy the requirements of being:
 - Protective of human health and the environment.
 - in compliance with other environmental regulations.
 - cost-effective.
 - a remedy which utilizes permanent solutions, alternative treatment technologies to maximum extent practicable.

COMMUNITY INVOLVEMENT

Review of Documents:

DNREC encourages review of Delaware Sand & Gravel documents by interested citizens, to ensure the preferred alternative meets the needs of local community, in addition to being an effective solution to the problem.

The Remedial Investigation, Feasibility Study and Proposed Plan as well as the Administrative Record are available for review in the 3 locations listed below.

1. Department of Natural Resources and Environmental Control (DNREC)
New Castle Office
715 Grantham Lane
New Castle, DE 19720-4801
Telephone: 302-323-4545
Hours: 8:00 a.m. to 4:30 p.m. - Monday through Friday
2. New Castle Library
Fifth and Delaware Avenue
New Castle, DE 19720
Telephone: 302-328-1995
Hours:
Mon. - Tues. 10:00 a.m. - 9:00 p.m.
Wed. - Thurs. 2:00 - 9:00 p.m.
Fri. 10:00 a.m. - 5:00 p.m.
Sat. 1:00 p.m. - 3:00 p.m.
3. Environmental Protection Agency
Region III
841 Chestnut Building
Philadelphia, PA 19107
Telephone: 215-597-9800
Hours: Monday - Friday
8:00 a.m. - 5:30 p.m.

Comments on the Documents:

DNREC must receive written comments on the documents pertaining to the Delaware Sand & Gravel site on or before March 26, 1988. Please send comments to:

DNREC New Castle Office
CERCLA Management Branch
715 Grantham Lane
New Castle, DE 19720-4801

Public Meeting:

DNREC/EPA will be holding a public meeting on March 16, 1988. At 7:00 p.m. at the New Castle DNREC office.

DNREC will present a summary of investigations and proposed remedy for the Delaware Sand & Gravel site. At this point the preferred alternative is the preliminary choice for solving the contamination problems at the site. DNREC and EPA will make the final selection of remedy only after close consideration of all written and oral comments received during the public comment period on any of the remedial options described in the Feasibility Study and Proposed Plan. Interested citizens also will be provided with an opportunity to ask questions and provide comments.

The Next Step:

Comments will be summarized and responses provided in the responsiveness summary section of the Record of Decision (ROD). The ROD is the document that will present the DNREC's and EPA's final alternative for clean-up.