NOAA Hazardous Waste Site Report

Wildcat Landfill (III-1)
Dover, Delaware
April 13, 1984

Location and Nature of Site:

The Wildcat Landfill covers about 84 acres in a wetland area adjacent to the St. Jones River in Dover, Delaware (Figure 1). The site was privately owned and operated as a disposal facility for municipal and industrial waste until 1973, when it was closed for numerous permit violations under the State's solid waste regulations. Wastes were dumped in wetland marshes and frequently left uncovered. Various drums and solidified sludges are visible on the surface. The groundwater is contaminated with lead, cadmium, beryllium, arsenic, benzene, phthalates, and low levels of PCBs (6 ppb).

The Remedial Action Master Plan for the site (6) notes that sampling results show contamination by inorganic constituents (zinc, iron, barium and manganese) in violation of State and Federal drinking water standards. Analysis of aqueous leachate and on-site surface water samples shows contamination by organic compounds (benzene, PCB - 1248) and inorganic compounds. Concentrations of these constituents exceed EPA criteria.

The dumping of municipal wastes and hazardous industrial wastes at the Wildcat Landfill site presents three major environmental concerns:

- Contamination of surface waters via discharge or storm water runoff
- Potential contamination of groundwater aquifers; and
- Potential air pollution emanating from the site.

The responsible party is Wildcat Landfill, Inc.

Proximity of Chemical Hazard to Marine Resources:

The landfill is located in wetlands and marshes immediately adjacent to a tidally-influenced region of the St. Jones River. Sampling has shown that inorganic constituents have migrated into the River. The most likely pollutant pathways include both runoff from the site into surface waters and hydraulic movement from the shallow water (Columbia) aquifer toward the St. Jones River. Table 1 indicates the hazardous substances detected in groundwater and surface water associated with the site.

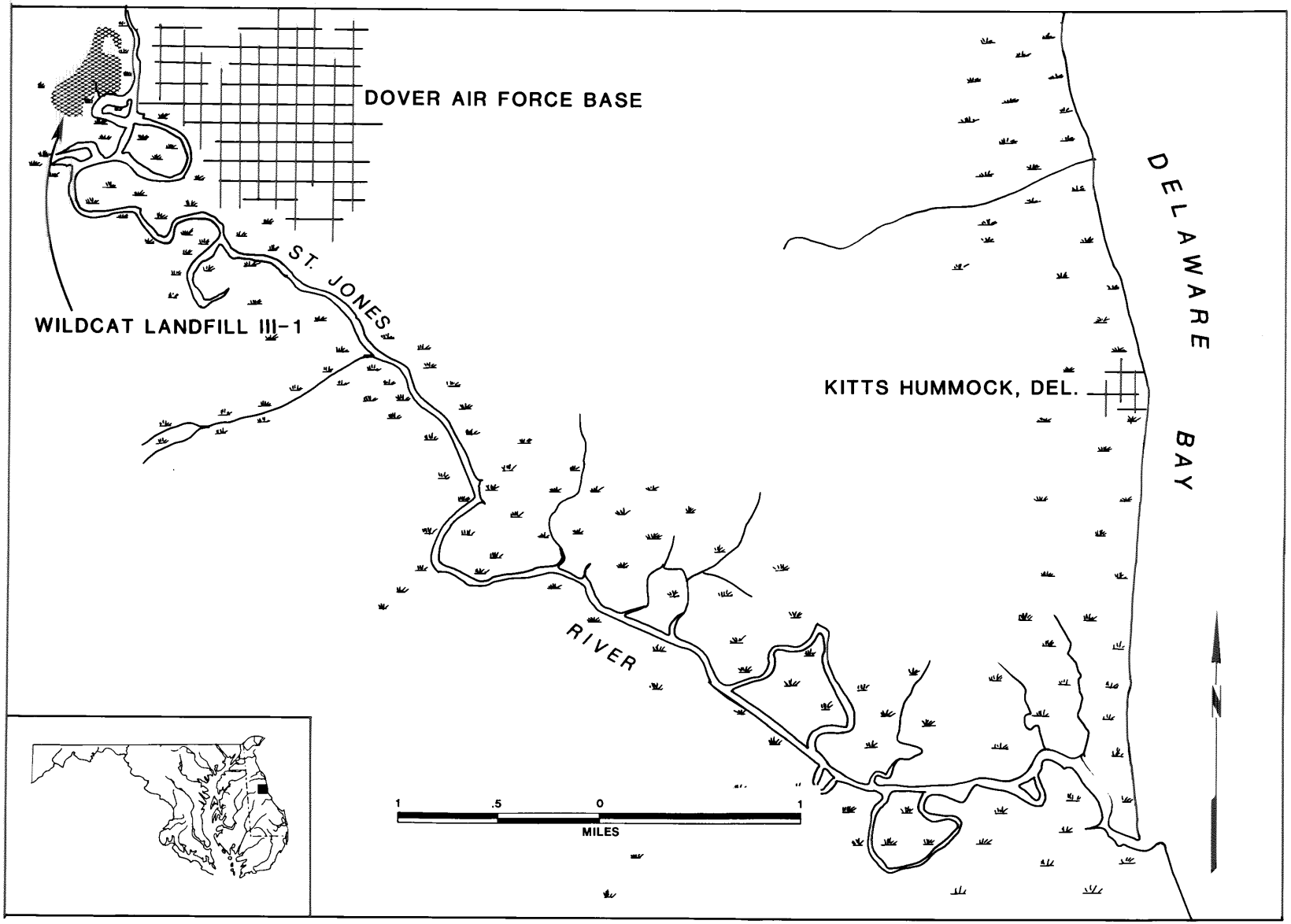

FIGURE 1. Site location.

Table 1. Analysis of Aqueous Contamination Associated with the Wildcat Landfill (6)

Compound/Chemical	Contaminant Location: Ground Water	Contaminant Location: Surface Water	Concentration Range: Minimum	Concentration Range: Maximum
Arsenic		x	2 ug/l	25 ug/l
Barium	x		--	2,120 ug/l
Beryllium		x	--	35 ug/l
Cadmium		x	1 ug/l	24 ug/l
Lead		x	2 ug/l	225 ug/l
Nickel	x	x	--	99.8 ug/l
Zinc		x	--	1,000 ug/l
Organic				
Benzene		x	--	28 ug/g
Bis (2-Ethylhexyl) Phthalate		x	0.2 ug/g	4.2 ug/g
Ethyl Benzene		x	--	170 ug/g
PCB 1248		x	0.01 ug/l	6 ug/l
Toluene		x	--	70 ug/l

-- Indicates less than detection limit, however, specific detection limits not reported.

Marine Resources at Risk:

The St. Jones River is a tributary of the Delaware River. The Delaware River and its tributaries provide a significant habitat for a variety of finfish resources (see Table 2).

Anadromous fish migrate through the Delaware Bay estuarine system during the early spring on their way to freshwater spawning grounds. For most of the anadromous fish of the Delaware Bay this occurs upstream of Burlington, New Jersey, although some spawning does occur in freshwater tributaries (4). The adults return to the lower parts of Delaware Bay. Juvenile fish, hatched in the spring, remain in the upper parts of Delaware Bay until the late summer and early fall, when they also migrate back into the lower parts of the Bay (3).

It is unknown to what extent other species of finfish utilize the St. Jones River watershed area, but this region of the Delaware River is unlikely to be an important nursery or spawning area for anadromous fish due to the fairly high level of development in this area and to their preference for less saline waters for spawning. Blueback herring, American shad, and striped bass may utilize this area as nursery

Table 2. Fishery Resources of Tidally Influenced Regions of the Delaware River (1, 2, 5)

Finfish Species	Adult Habitat	Spawning Area	Nursery Area	Commer. Fish.	Rec. Fish.	Migr. Route
Anadromous						
Alewife	x	x	x	x	x	x
Blueback herring	x	x	x	x	x	x
American shad	x	x	x	x	x	x
Shortnose sturgeon						x
Atlantic sturgeon		x				
Striped bass		x	x	x	x	x
Gizzard shad	x	x	x			
Non-anadromous						
Atlantic menhaden			x			
White perch		x	x	x	x	x
Flounder	x					
Northern kingfish	x					
Bluefish			x			
Atlantic croaker			x			
Spotted seatrout					x	
Black drum		x	x		x	
Silver perch		x	x		x	
Bay anchovy	x			x	x	
Hake	x			x	x	
Spot	x				x	
Channel catfish	x					
White catfish				x	x	
Brown bullhead				x	x	
Bluegill	x				x	
Black crappie	x				x	
Shellfish						
Blue crab	x	x	x	x	x	
Hard clam	x	x	x	x	x	
Eastern oyster	x	x	x	x	x	

grounds. This area is located along the migratory route for the anadromous fish of Delaware Bay, including the shortnose sturgeon, a species of special Federal concern, and the Atlantic sturgeon, a species of special State concern.

Some tidal wetlands are present at the mouth of St. Jones River, and some species of fish may be harvested by recreational and commercial fishermen in the Delaware River adjacent to the St. Jones River.

The Delaware Bay estuarine system is an important wintering area for many waterfowl and seabirds, particularly loons, grebes, and gannets. They tend to concentrate in coastal bays and wetland areas.

One State Management Area is located on the Delaware River in the vicinity of St. Jones River: Little Creek Wildlife Area, 16 miles downstream.

Summary of Site-Related Actions:

A site investigation study, including a sampling program, has been performed. The landfill was covered and reinvestigated in 1973. No other remedial action has been taken. A Remedial Action Master Plan (6) was completed in December 1983. Considerable sampling work was performed and the results are documented in this report.

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References:

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5. Research Planning Institute. Environmental Sensitivity Atlas - Delaware. Unpublished.

6. U.S. Environmental Agency, 1983. Draft Remedial Action Master Plan. April, 1983.