NOAA Hazardous Waste Site Review

Sand, Gravel and Stone (III-15)
Cecil County, Maryland
April 13, 1984

Location and Nature of Site:

The Sand, Gravel, and Stone site is an inactive quarry near Elkton, Cecil County, Maryland (Figure 1). From 1969 to 1974, approximately three acres of the site, were used for the disposal of bulk wastes (processing waste water, sludges, still bottoms) and about ninety drums of solid and semi-solid waste. Pits were excavated and used for disposal of approximately 700,000 gallons of waste. In 1975 and 1976, in response to orders from the State of Maryland, the owner removed 200,000 gallons of liquid waste from the site and buried drums and sludges on the site in clay-lined pits. In May 1982, the U.S. Environmental Protection Agency (EPA) noted contamination of surface water as well as localized contamination of groundwater at the site. Water samples collected from homes within 0.3 miles of the site were not contaminated.

The owner of the site is the Sand Gravel and Stone Company. The Spectron Company, Galaxy Chemical, and AIRCO dumped solvents and reprocessing plant sludges there in the 1970's.

Proximity of Chemical Hazard to Marine Resources:

The major concerns related to marine resources are contaminated springs, seeps, and intermittent streams which flow from the site to the west tributary of Mill Creek, and eventually into Chesapeake Bay.

A marsh located in the northeast portion of the site feeds directly into the west tributary of Mill Creek. Several seeps located in the western portion of the site flow into an intermittent stream which flows south to a spring located in the southwest section of the landfill. From the spring, surface water flows west, eventually making its way to the west tributary of Mill Creek.

In addition to the seeps, spring, and small streams, three settling ponds or lagoons are located on site. The ponds are located in the southwest, northeast, and northwest sections of the site.

The west and east tributaries of Mill Creek join to form Mill Creek southeast of the site. Mill Creek then flows east, southeast to Little Elk Creek, a tributary of Elk River, which eventually empties into Chesapeake Bay approximately 10 miles southwest of the site.

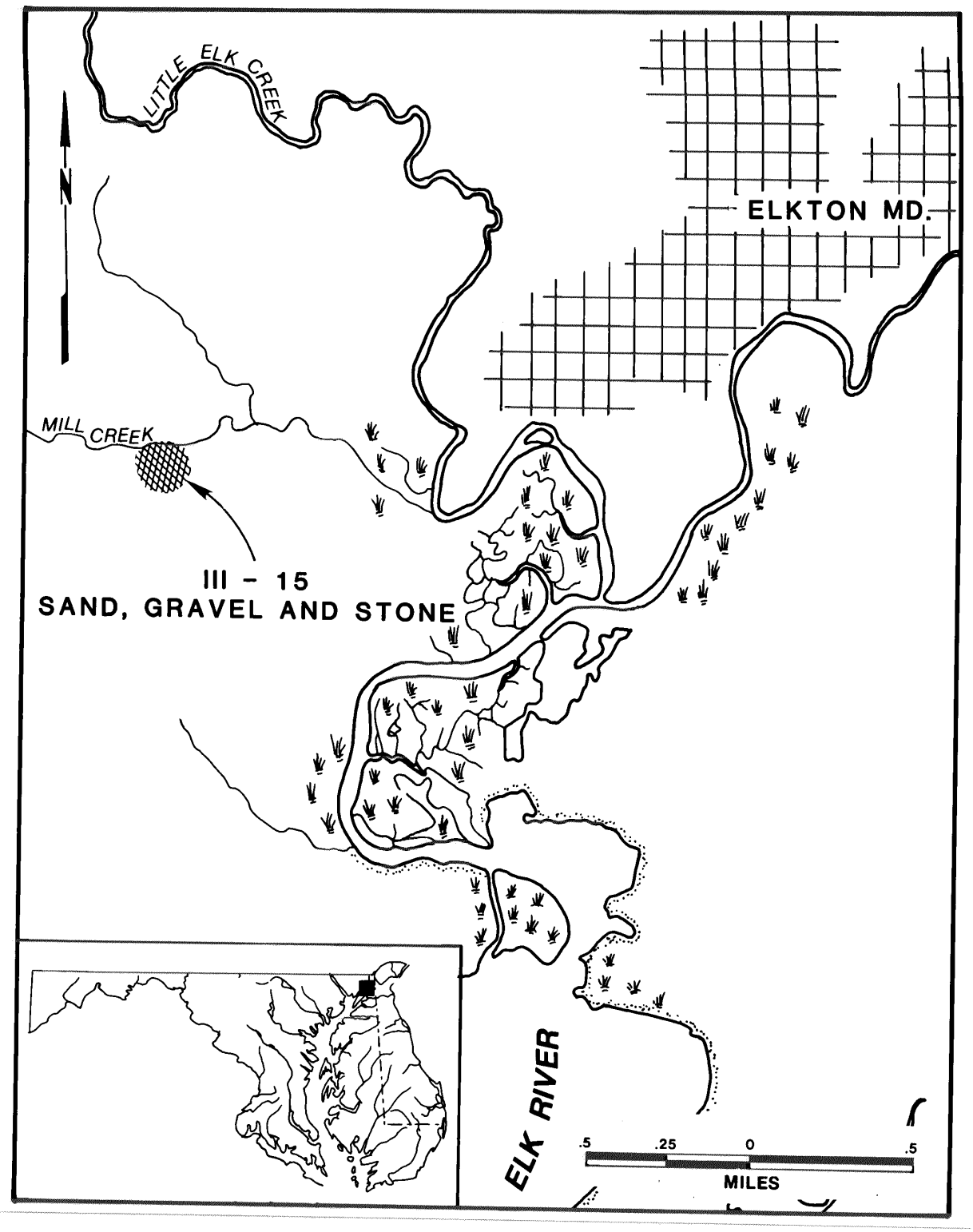

FIGURE 1. Site location.

Table 1 indicates the extent of surface water contamination measured in Mill Creek.

Table 1. EPA Priority Pollutants Measured Above Detectable Levels in Surface Water Samples, February 1982 (6)

	Mill Creek North of Route 40	East Tributary to Mill Creek	(in ug/l) West Tributary to Mill Creek	(in ug/l) Stream Below Spring
di-n-butyl phthalate	ND	26	46	ND
chorobenzene	ND	12	*	20
1,1,1-trichloroethane	14	210	49	ND
1,1-dichloroethane	ND	25	ND	ND
1,1,2-trichloroethane	ND	10	ND	ND
1,1-dichloroethylene	ND	13	ND	ND
1,2-trans-dichloroethylene	ND	10	ND	ND
methylene chloride	10	10	10	10
toluene	ND	ND	ND	12
trichloroethylene	ND	10	ND	ND
2,3,7,8-tetrachloro-dibenzo-p-dioxin	ND	ND	ND	TRACE
iron	690	1,100	1,600	ND
manganese	120	160	180	ND

The confirmation of surface water contamination in Mill Creek could indicate a reasonable potential of contaminants from the site reaching the Elk River which is one to two miles away.

Marine Resources at Risk:

The Elk River estuary is a spawning and nursery area for many anadromous fish species (Table 2) and has extensive fresh and salt water marshlands.

There are about 400 acres of freshwater marshland at the mouth of Mill Creek. At the mouth of the Big Elk River there are approximately 700 acres of tidal marshland and grassflats (5).

Anadromous fish migrate through the Chesapeake Bay estuarine system during the early spring on their way to freshwater spawning grounds. This occurs in the upper reaches of the major tributaries of Chesapeake Bay and in some of the smaller freshwater tributaries (4). The adults return to the lower parts of Chesapeake Bay. Juvenile fish, hatched in the spring, remain in the upper parts of Chesapeake Bay until late summer or earl fall when they also migrate into the lower parts of the bay (3). The Elk River (Mill Creek) is a prime spawning area for all anadromous fish species found in the Chesapeake Bay in addition to a complement of freshwater species. The river supports valuable commercial and sport fisheries (7).

Table 2. Fishery Resources of the Elk River (1, 2, 5)

Finfish Species	Adult Habitat	Spawning Area	Nursery Area	Comm. Fish.	Rec. Fish.	Migr. Route
Anadromous						
Alewife				x	x	x
Blueback herring		x		x	x	x
American shad		x		x	x	x
Shortnose sturgeon						x
Atlantic sturgeon						x
Gizzard shad		x	x	x	x	x
Striped bass		x	x		x	x
Non-anadromous						
White perch		x	x	x	x	x
Flounder	x					
Atlantic menhaden			x			
Norhtern kingfish	x					
Largemouth bass	x					
Yellow perch	x	x	x		x	
Black crappie	x				x	
White crappie	x				x	
Channel catfish	x			x	x	

The Atlantic sturgeon is a species of special concern to the State of Maryland, and the shortnose sturgeon is a species of special concern to the Federal government.

Several State and Federal Management Areas are located near this site:

Chesapeake and Delaware Canal Wildlife Area	8 miles downstream
Elk Neck State Forest (located inland)	0.5 miles upstream
Elk Neck State Park	14 miles downstream

Summary of Site-Related Actions:

The State of Maryland has taken enforcement action against a party potentially responsible for wastes at the site. In December 1983, the U.S. Environmental Protection Agency recently completed a Remedial Action Master Plan outlining the investigations needed to determine the full extent of cleanup required at the site (6).

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References:

1. National Marine Fisheries Service, 1974. Anglers Guide to the United States Atlantic Coast.

2. U.S. Fish and Wildlife Service, 1980. Atlantic Coast Ecological Inventory.

3. Breder, C.M. and D.E. Rosen, 1966. Modes of Reproduction in Fishes. TFH Publications.

4. Byrne, D. Personal communication. Delaware River Anadromous Fishery Project, U.S. Fish and Wildlife Service.

5. Virginia Institute of Marine Science. Environmental Sensitivity Atlas - Maryland.

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7. Foster, John, Personal communication. Tidewater Administration, State of Maryland Department of Natural Resources.