

Smithtown Groundwater Contamination

Smithtown, New York

EPA Facility ID: NY0002318889

Basin: Long Island Sound

HUC: 02030201

Executive Summary

The Smithtown Groundwater Contamination area is approximately 3 km (2 mi) south of Smithtown Bay and Long Island Sound in Smithtown, New York. Field investigations have identified an area of VOC-contaminated groundwater of approximately 1,036 hectares (2,560 acres). The primary VOC of concern is tetrachloroethylene. The presence of VOCs at the site may increase the potential for other, more persistent contaminants to migrate through the groundwater to NOAA trust resources. Further analysis for other contaminants has not been conducted, and no other analytes have been measured in the groundwater. Several commercial and industrial facilities in the area have been investigated to identify the source of the contamination, but sources of contamination have not been identified. The Nissequogue River and Stony Brook Harbor estuaries within Long Island Sound, which are the NOAA habitats of concern, contain NOAA trust resources, including marine and anadromous fish species, that use the waters for spawning, rearing, and adult residence.

Site Background

The Smithtown Groundwater Contamination area is approximately 3 km (2 mi) south of Smithtown Bay and Long Island Sound in Smithtown, Suffolk County, New York. The groundwater contamination area is approximately 1,036 ha (2,560 acres), bounded to the north by Stony Brook Harbor and to the west by the Nissequogue River (Figure 1) (CDM 1999b).

Volatile organic compounds (VOCs), primarily tetrachloroethylene (also known as perchloroethylene, or PCE), were first detected in groundwater at the site in 1997 (Weston 1998). The Suffolk County Department of Health Services has investigated 11 potential sources of the contaminated groundwater plume, including current and former commercial and industrial facilities located east of the contamination. The sources of contamination have not been fully identified (CDM 1999b).

The U.S. Environmental Protection Agency (USEPA) signed an Action Memorandum in July 1998 authorizing removal action activities to be conducted in the groundwater contamination area. The USEPA proposed that the Smithtown Groundwater Contamination area be placed on the National Priorities List in January 1999 (CDM 1999b).

The shallow, unconfined water table aquifer over most of Long Island is within the Upper Glacial aquifer system (CDM 1999a). Regional groundwater flows north toward Smithtown Bay and Long Island Sound, although the Nissequogue River and Stony Brook Harbor induce flow to the west and east, respectively (CDM 1999b). The minimum depth to the water table is approximately 9 m (30 ft) below ground surface (CDM 1999a).

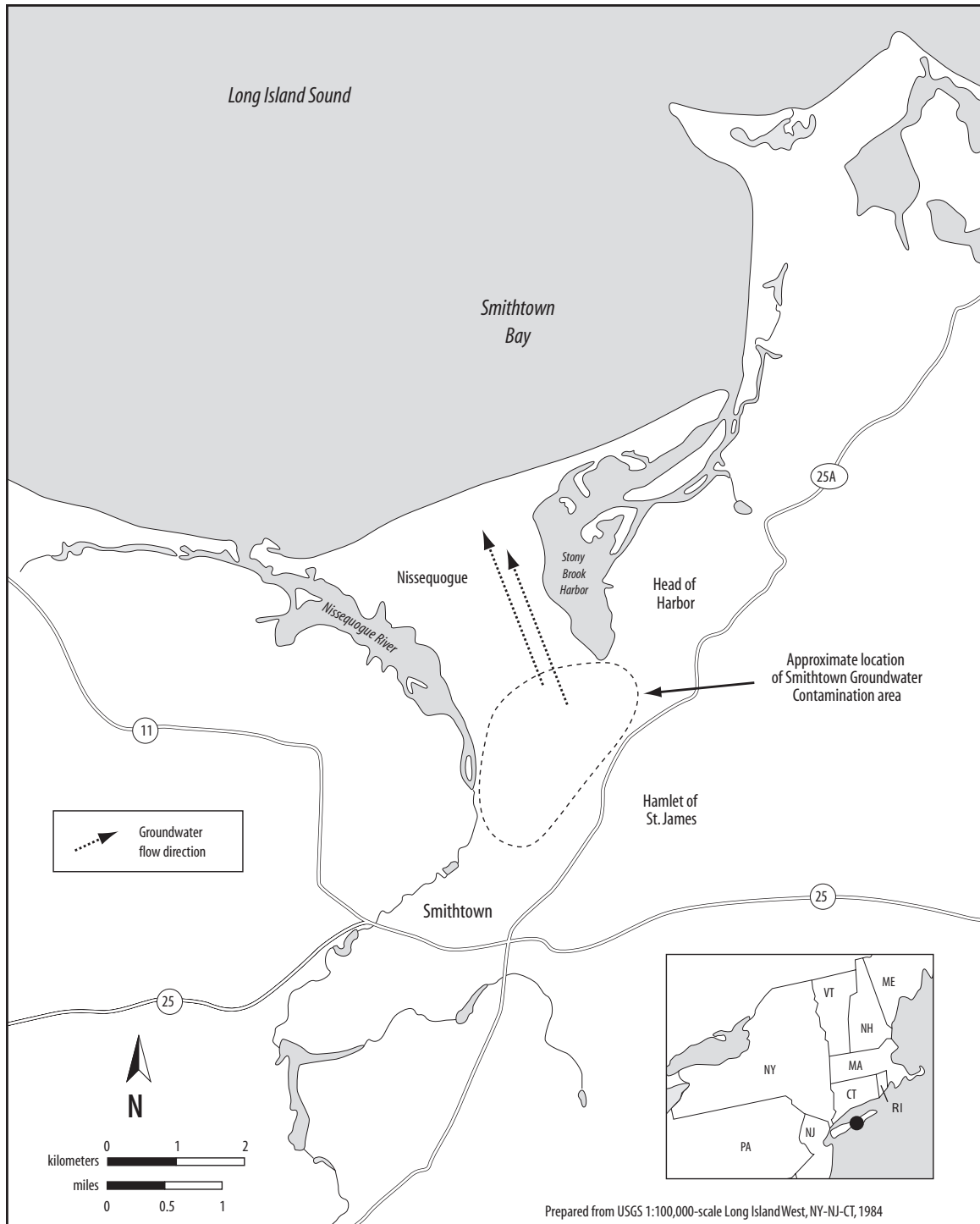


Figure 1. Approximate location of Smithtown Groundwater Contamination area in Smithtown, New York.

NOAA Trust Resources

The NOAA habitats of concern are the Nissequogue River and Stony Brook Harbor, which are estuaries within Long Island Sound. Many fish and invertebrates, including NOAA trust resources, use these estuaries for spawning, rearing, and adult habitat (Table 1).

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Table 1. Fish and invertebrate species commonly found in Long Island Sound estuaries (Stone et al. 1994).

Species		Habitat Use			Fisheries	
		Spawning Ground	Nursery Area	Adult Forage	Comm.	Recr.
Common Name	Scientific Name					
ANADROMOUS/CATADROMOUS FISH						
Alewife	<i>Alosa pseudoharengus</i>		◆	◆		
American shad	<i>Alosa sapidissima</i>		◆	◆		
Blueback herring	<i>Alosa aestivalis</i>		◆	◆		
Rainbow smelt	<i>Osmerus mordax</i>		◆	◆		
Striped bass	<i>Morone saxatilis</i>		◆	◆		◆
White perch	<i>Morone americana</i>		◆	◆		◆
MARINE/ESTUARINE FISH						
American sand lance	<i>Ammodytes americanus</i>		◆	◆		
Atlantic herring	<i>Clupea harengus</i>		◆	◆		
Atlantic mackerel	<i>Scomber scombrus</i>		◆	◆		
Atlantic menhaden	<i>Brevoortia tyrannus</i>		◆	◆		
Atlantic tomcod	<i>Microgadus tomcod</i>		◆	◆		◆
Bay anchovy	<i>Anchoa mitchilli</i>		◆	◆		
Black sea bass	<i>Centropristis striata</i>		◆	◆		◆
Bluefish	<i>Pomatomus saltatrix</i>		◆	◆		◆
Butterfish	<i>Peprilus triacanthus</i>		◆	◆		
Cunner	<i>Tautoglabrus adspersus</i>		◆	◆		
Gobies	<i>Gobiosoma spp.</i>	◆	◆	◆		
Hogchoker	<i>Trinectes maculatus</i>	◆	◆	◆		
Killifish	<i>Fundulus spp.</i>	◆	◆	◆		
Northern pipefish	<i>Syngnathus fuscus</i>	◆	◆	◆		
Northern searobin	<i>Prionotus carolinus</i>	◆	◆	◆		
Oyster toadfish	<i>Opsanus tau</i>	◆	◆	◆		
Pollock	<i>Pollachius virens</i>		◆	◆		
Red hake	<i>Urophycis chuss</i>		◆	◆		
Scup	<i>Stenotomus chrysops</i>		◆	◆		
Sheepshead minnow	<i>Cyprinodon variegatus</i>	◆	◆	◆		
Silversides	<i>Menidia spp.</i>	◆	◆	◆		
Skates	<i>Raja spp.</i>	◆	◆	◆		
Tautog	<i>Tautoga onitis</i>		◆	◆	◆	◆
Weakfish	<i>Cynoscion regalis</i>		◆	◆		
Windowpane flounder	<i>Scophthalmus aquosus</i>	◆	◆	◆		
Winter flounder	<i>Pleuronectes americanus</i>	◆	◆	◆		◆
INVERTEBRATES						
American lobster	<i>Homarus americanus</i>	◆	◆	◆	◆	◆
Blue crab	<i>Callinectes sapidus</i>		◆	◆		◆
Blue mussel	<i>Mytilus edulis</i>	◆	◆	◆		
Eastern oyster	<i>Crassostrea virginica</i>	◆	◆	◆		
Grass shrimp	<i>Palaemonetes pugio</i>	◆	◆	◆		
Northern quahog	<i>Mercenaria spp.</i>	◆	◆	◆	◆	◆
Sevenspine bay shrimp	<i>Crangon septemspinosus</i>	◆	◆	◆		
Softshell clam	<i>Mya arenaria</i>	◆	◆	◆		

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Site-Related Contamination

The sources of the contaminated groundwater plume have not been fully identified (CDM 1999b). The presence of VOCs at the site may increase the potential for other, more persistent contaminants to migrate through the groundwater to NOAA trust resources. NOAA is concerned about contaminants more persistent than VOCs, but the groundwater has yet to be analyzed for contaminants other than VOCs. Therefore, data on the presence of other, more persistent contaminants were not available at the time of this report.

References

- CDM Federal Programs Corporation (CDM). 1999a. Final quality assurance project plan, Phase I, Smithtown groundwater contamination site, Smithtown, New York. New York, NY: U.S. Environmental Protection Agency.
- CDM Federal Programs Corporation (CDM). 1999b. Final work plan, Volume I, Smithtown groundwater contamination site, Phase I remedial investigation, Smithtown, New York. New York, NY: U.S. Environmental Protection Agency.
- Roy F. Weston Inc. (Weston). 1998. Hazard ranking system documentation package, Smithtown ground water contamination, Smithtown, Suffolk County, New York. New York, NY: U.S. Environmental Protection Agency, Region II Superfund Technical Assessment and Response Team.
- Stone, S.L., T.A. Lowery, J.D. Field, C.D. Williams, D.M. Nelson, S.H. Jury, M.E. Monaco, and L. Andreasen. 1994. Distribution and abundance of fishes and invertebrates in Mid-Atlantic estuaries. Silver Spring, MD: NOAA/NOS Strategic Environmental Assessments Division.