

# Site Review And Update

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VENTRON/VELSICOL

WOOD-RIDGE BORO, BERGEN COUNTY, NEW JERSEY

CERCLIS NO. NJD980529879

AUGUST 27, 1992

REVISED

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Public Health Service  
Agency for Toxic Substances and Disease Registry  
Division of Health Assessment and Consultation  
Atlanta, Georgia

## Site Review and Update: A Note of Explanation

The purpose of the Site Review and Update is to discuss the current status of a hazardous waste site and to identify future ATSDR activities planned for the site. The SRU is generally reserved to update activities for those sites for which public health assessments have been previously prepared (it is not intended to be an addendum to a public health assessment). The SRU, in conjunction with the ATSDR Site Ranking Scheme, will be used to determine relative priorities for future ATSDR public health actions.

REVISED SITE REVIEW AND UPDATE

VENTRON/VELSICOL

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CERCLIS NO. NJD980529879

Prepared by:

Environmental Health Service  
New Jersey Department of Health  
Under a Cooperative Agreement with the  
Agency for Toxic Substances and Disease Registry

## SUMMARY OF BACKGROUND AND HISTORY

The Ventron/Velsicol (also known as Berry's Creek) site is in a heavily industrialized section of Wood-Ridge and Carlstadt Township, Bergen County, New Jersey. From 1929 to 1974, the 40-acre site was used by a mercury processing/reclamation facility. Mercury wastes were landfilled on site and discharged directly into Berry's Creek, which is adjacent to the site (figure 1). Elemental mercury has been detected in on-site soils at levels as high as 195,000 ppm. It is estimated that as much as 160 tons of mercury waste are buried at the site. Mercury processing operations at the site have resulted in contamination of the Berry's Creek tidal ecosystem over a distance of several thousand feet downstream. Bioaccumulation of organic mercury at levels of public health concern in wetlands flora and fauna has been documented, and is the focus of continued investigation by the New Jersey Department of Environmental Protection and Energy (NJDEPE).

Structures of the former mercury processing facility were demolished, after which two warehouses were built on a seven-acre subdivision of the site in 1974. The warehouses did not house the mercury processing facility, as reported in the ATSDR preliminary health assessment of April 1989. One of the warehouses is used to store packaged cheeses and meats; the other stores office furniture. Indoor air of both warehouses has been sampled for mercury, but none was detected. The eastern warehouse (storing furniture) was built on the most heavily contaminated area of the site, and mercury vapor has been detected at vents in the building foundation at concentrations up to 0.1 mg/m<sup>3</sup>. The western warehouse (food storage) was built on the most heavily contaminated area of the site.

Residential areas are approximately 600 feet northwest of the site. Nine residences where mercury concentrations in soils exceeded the NJDEPE cleanup objective of 14 ppm (maximum detected concentrations < 60 ppm) were the subject of a soil remediation action by the NJDEPE in 1990.

The ATSDR preliminary health assessment categorized the site as a public health concern based on the possibility of human exposure pathways associated with dermal exposure to contaminated soils, inhalation of mercury vapor, and ingestion of contaminated biota. Human exposure pathways associated with the ingestion of surface water and groundwater are unsupported in light of current site conditions and available information. An ATSDR consultation of the site was performed in July 1991. The consultation identified a potential human exposure pathway associated with volatilized mercury vapor in ambient air. The consultation recommended on- and off-site time weighted air monitoring of mercury vapor, but such sampling has not been conducted. Portable equipment (Jerome monitor) detected mercury vapor off site at concentrations up to 0.04 mg/m<sup>3</sup>.

Community health concerns have focused on the potential health effects of mercury which has migrated off-site into soils at residences and the adjacent Wood-Ridge Wastewater Treatment Plant posing a risk to area residents and plant workers.

A full Remedial Investigation (RI) of the site has not yet been conducted although on- and off-site monitoring wells were installed in 1990 and 1991. According to the NJDEP, fieldwork for the RI should commence in the summer of 1993. The NJDEPE is also continuing to investigate the Ventron/Velsicol sites' impact on the salt water marsh environment of Berry's Creek and the Hackensack Meadowlands and their indigenous species.

## CURRENT SITE CONDITIONS

NJDOH personnel, James Pasqualo, conducted a site visit in August 1992 with ATSDR representative, Joseph Little; ATSDR Regional Operations, Arthur Block; and EPA and NJDEPE representatives. Access to the site was partially restricted by fencing and warning signs posted along the site perimeter. Evidence of a makeshift shelter was reported within the site boundaries; although, no trespassers were encountered.

The Berry's Creek ecosystem contained a wide variety of plant and animal life, and reportedly supports various aquatic species that might directly enter the human food chain: fish, shellfish, and blue-claw crabs.

During the site visit, an inspection of the interior of the warehouses was conducted. The warehouse containing the cheese and meat products was refrigerated; all food products were prepackaged.

Conclusions of the preliminary health assessment regarding potential human exposure pathways associated with inhalation of mercury vapor, and dermal contact and/or ingestion of soils and sediments remain valid for those areas not remediated. However, concerns cited in the preliminary health assessment regarding potential exposure pathways associated with ingestion of groundwater are unsubstantiated because area residences are using municipal water supplies.

The preliminary health assessment is based on data from the 1983 hazard ranking package. In the interim, the NJDEPE has removed contaminated soil from adjacent residential areas, minimizing that exposure pathway. Physical conditions and environmental contamination associated with the site have remained constant since the preliminary health assessment was conducted.

## CURRENT ISSUES

Past public health concerns associated with the site focused on residential exposures to mercury through soil and air. While residential soils have been remediated, there is insufficient data to substantiate or reject exposure via the air pathway.

Current community health concerns associated with the site focus on the municipal repair yard adjacent to the site. Mercury has been detected in concentration of over 600 ppm at the

municipal repair yard and sewer treatment plant adjacent to the site. The area is used by municipal workers for a wide variety of tasks and is also the site of a small composting operation. The Borough is currently developing plans to convert this plant site to some future recreational use since the community is near complete development and severely lacking recreational space. The treatment plant is currently being decommissioned since the Borough tied into the Bergen County Regional Treatment Plant in 1992. Exposure of municipal workers to mercury in soils (and possibly to vapors emanating from the site) is possible until the area is remediated.

There are insufficient data to adequately ascertain the public health significance of mercury vapor volatilization from the site. Sampling events have been sporadic and not of a design appropriate to determine the magnitude of residential long term exposure.

### CONCLUSIONS

Based on available information, the soils of the Ventron/Velsicol site are grossly contaminated with elemental mercury. Contamination has spread throughout the tidal marshland of the Berry's Creek ecosystem and has resulted in bioaccumulation of organic mercury compounds in flora and fauna of the area, some of which are species consumed directly by humans. There are limited data describing site-related contamination of other environmental media.

The great concentration of mercury in the area, and the vapor concentrations detected by portable equipment on and off site, suggest volatilization of mercury may be of sufficient magnitude to represent a human exposure pathway through inhalation of ambient air.

Conclusions in the preliminary health assessment regarding potential human exposures via ingestion of ground- and surface water, and inhalation of mercury vapor in the food warehouse are unfounded in light of current data. Conclusions in the preliminary health assessment regarding potential human exposure via ingestion of contaminated fish are supported by current site data. Inhalation of mercury vapor remains a potential exposure pathway until sufficient data are available for evaluation. Recommendations of the ATSDR preliminary health assessment to limit site access and sample the warehouses for mercury contamination have been satisfied by NJDEPE and EPA.

The Ventron/Velsicol site is considered by ATSDR and NJDOH to be an indeterminate public health hazard until environmental data become available for review and evaluation. A health consultation is needed to evaluate possible exposure to contaminated residential soils prior to NJDEPE remediation (IRM) and possible exposure of on-site municipal workers during remediation. In addition, a public health assessment is needed when additional RI/FS documents are available for review.

Data and information developed in the Site Review and Update have been evaluated to determine if follow-up actions are indicated. Further site evaluation is needed to determine public health actions.

### RECOMMENDATIONS

Time weighted sampling of ambient air on and off site (residential areas and municipal maintenance yard) should be incorporated into the forthcoming remedial investigation of the site, or conducted independently if necessary, to determine the validity of potential human exposure to mercury vapor.

The recommendation in the preliminary health assessment for additional environmental data will be addressed by the upcoming Remedial Investigation/Feasibility Study.

A health consultation should be performed to evaluate the degree of exposure to residential soils prior to NJDEPE remediation, possible exposure of on-site municipal workers, and possible exposure of persons who consume area aquatic species. In addition, a public health assessment should be performed when additional RI/FS documents are available for review.

### DOCUMENTS REVIEWED

1. Berry's Creek Study, Volume I: Nature of The Problem, Final Report. ERM-Southeast Inc. November 1985.
2. Mercury Levels In Berry's Creek. New Jersey Department of Environmental Protection, Office of Cancer and Toxic Substances Research. 1982.
3. Site Status Report. New Jersey Department of Environmental Protection and Energy. November 1991.
4. Preliminary Health Assessment. Ventron/Velsicol. ATSDR. April 1989.
5. Health Consultation. Ventron/Velsicol NPL Site. ATSDR. July 29, 1991.

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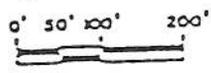
LEGEND

- UPLAND BOUNDARY
- PROPERTY LINE

EIGHT DAY SWAMP

BERRY'S CREEK

TIDEGATE

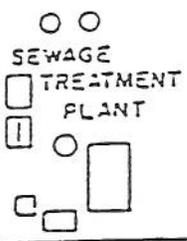


UPLAND AREA (22 ACRES)

WETLAND AREA (11 ACRES)

DISCHARGE POINT

TRENCH



WOLF PROPERTY

ORIGINAL PLANT SITE (7 ACRES)

U.S. LIFE PROPERTY

BASIN

BASIN

PARK PLACE EAST

WOOD-RIDGE

CARLSTADT

FIGURE-1 WOOD-RIDGE SITE DESCRIPTION



ERM-Southeast, Inc.

Brentwood, TN 37027 (615) 373-3350

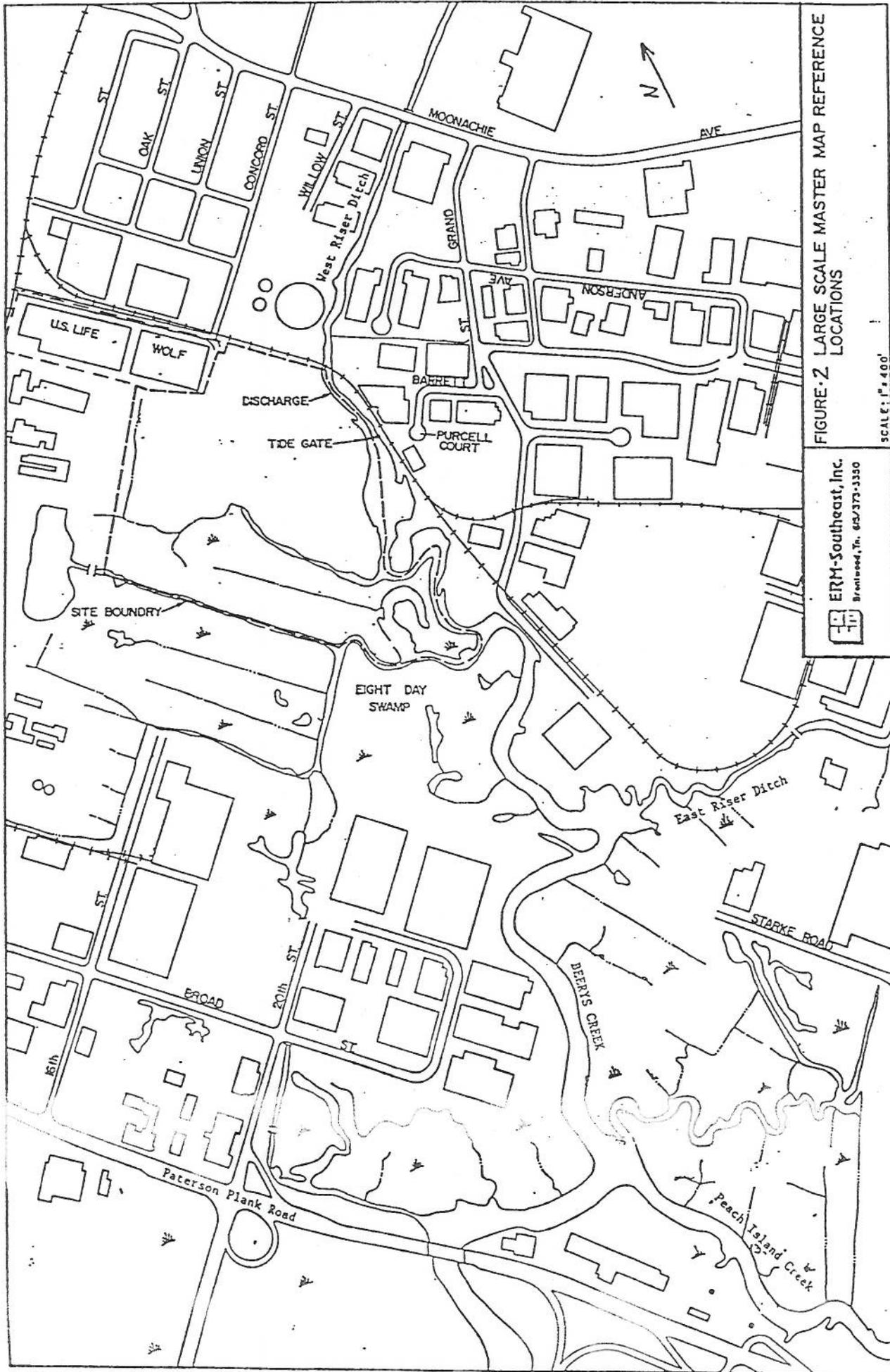


FIGURE - 2 LARGE SCALE MASTER MAP REFERENCE LOCATIONS

ERM-Southeast, Inc.  
Brentwood, TN 615/373-3350

SCALE: 1" = 400'