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**Terminal Avenue Widening**  
**Proposed Plan of Remedial Action**

**June 1996**

**Department of Natural Resources and Environmental Control**  
**Superfund Branch**

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# Terminal Avenue Widening Proposed Plan

## 1. Introduction

In May 1995, the Delaware Department of Natural Resources ("Department") reached an agreement with the Delaware Department of Transportation ("DelDOT") (the Potentially Responsible Party) to collect information pertinent to addressing the Terminal Avenue Widening Site ("Site") and to perform remedial actions as necessary to protect public health welfare and the environment under the Delaware Hazardous Substance Cleanup Act ("HSCA") 7 Del.C. Chapter 91.

## 2. Organization and Contents of the Proposed Plan

This proposed plan is issued under provisions of HSCA and the Regulations Governing Hazardous Substance Cleanup ("Regulations"). It presents the Department's assessments of the health and the environment risks posed by the DelDOT Terminal Avenue Widening Project ("Site") and plans for limited further action.

The Department will provide public notice and opportunity to comment on the proposed plan in accordance with Section 12 of the Regulations. At the conclusion of the comment period, the Department, after review and consideration of the comments received, shall issue a final plan of remedial action which shall designate the selected remedial action. The proposed plan, the comments received from the public, responses to the comments and final plan will constitute the remedial decision record.

The contents of a proposed plan of remedial action are discussed in the Regulations, Section 8. This proposed plan contains a description of the Site; summary of the analytical results and conclusions of the remedial investigation; a discussion of objectives; a summary of the risk analysis; and the plan for the future of the Site.

## 3. Site Description and History

Terminal Avenue (Road 359) is the main thoroughfare for the Port of Wilmington Marine Terminal ("Port") located in New Castle County, Delaware (Figure 1). From Interstate Route 495 (I-495) to Golding Avenue, Terminal Avenue exists as a four-lane highway. South of Golding Avenue to the Port, Terminal Avenue exists as a two-lane road. The reconstruction project is designed to improve the flow of traffic to and from the Port by creating a continuous highway from I-495 and the Port, see Figure 2.

The Terminal Avenue reconstruction project begins at the intersection of Terminal Avenue and Golding Avenue and ends south of the intersection of Terminal Avenue with Christina Avenue, near the Port. The project also includes reconstruction of the intersection of Christina Avenue and Terminal Avenue. The total length of Terminal

Avenue involved in the reconstruction is approximately 1,600 feet. The maximum anticipated excavation depth is approximately six (6) feet.

Located along the north side of the Terminal Avenue and within the construction area is the Brandywine Chemical Company, a.k.a. the Halby Chemical Federal Superfund Site. An asphalt plant is located to the south of Terminal Avenue and a tidal marsh is located to the northeast and within the immediate project area.

The surrounding zoning is commercial/industrial with the majority of the land use being commercial/industrial. Please note, however, beyond the site area there is residential housing which is not in compliance with the present zoning.

#### **4. Remedial Investigation Procedures**

An extensive review of past investigations identified areas on the site of potential concern. DNREC accepted several assessments performed in May 1994, March 1994, and April 1992 by EA Engineering, Science and Technology, Inc. as meeting the objectives of the remedial investigation and feasibility study ("RI/FS") requirement as well as the compendium of information compiled by the Environmental Protection Agency ("EPA") for the Halby Chemical Superfund Site located to the north of Terminal Avenue through the EPA RI/FS process.

Several field sampling plans were developed to quantify levels of contamination in areas to either side and under the reconstruction zone proposed for Terminal Avenue. Media sampled included surface and subsurface soils and groundwater.

Samples were collected and analyzed for the following :

- Priority Pollutant List ("PPL"),
- Toxicity Characteristic Leaching Procedure ("TCLP"), and
- Total Petroleum Hydrocarbons ("TPH").

Sediment was not sampled as it was not found within the meets and bounds of the project. Please note, groundwater was sampled however, it is not anticipated that groundwater would be encountered within the proposed road box during the reconstruction.

#### **5. Remedial Investigation Results**

The materials within the meets and bounds of the proposed Terminal Avenue widening project varied significantly in areal extent over the site. In general the upper lithology consisted of a one (1) to five (5) feet of fill material that contained various amounts of debris, slag, and other man made materials. The matrix of the fill was commonly sand or clay with minor zones of crushed rock or gravel.

Underlying the fill material was an area of re-worked natural sediments that had been displaced due to construction and excavation related to the roadway or the underlying utility lines.

The samples collected in the fill material and analyzed for the PPL reported low levels of metals and trace concentrations of selected volatile and semivolatile organics. The samples collected in the re-worked native material reported non detectable concentrations for the PPL. All samples reported concentrations below the TCLP action levels.

## **6. Facility Remedial Action Objectives**

The Regulations provide that the Department set objectives for land use, resource use, and cleanup levels that are protective of human health and the environment. The following two (2) objectives are determined to be appropriate for the Terminal Avenue Widening Site:

- To continue to use the site as a Public Road with supplied public water for all construction activities; and
- That routine construction, excavation and maintenance activities can occur without any special chemical hazard precaution once the remedial action plan is implemented.

These objectives are consistent with the value of the zoning in the area of commercial/industrial and the use of the road as a public road maintained by the Delaware Department of Transportation and the surrounding land use, New Castle zoning policies, state regulations, and worker health and safety.

## **7. Risk Assessment Summary**

An assessment was conducted to evaluate the possible effects to human health, welfare, and the environment from the use of the site consistent with the objectives discussed above. The assessment assumes a worst case scenario. It combines site specific environmental data with more generalized information concerning chemical toxicity and exposure from standard references.

In the first step of the assessment, chemicals were identified as contaminants of concern relative to toxicity, frequency of detection and comparison to background levels and to established standards. At the completion of the screening process metals and polyaromatic hydrocarbons were identified to be considered in the assessment. The assessment then identified potential exposed individuals for the current and future land use and identified only the DelDOT construction and maintenance worker as potentially exposed through a the short term exposure pathway in both the current and future land use through inhalation. No completed pathway existed to workers via dermal absorption and incidental ingestion of soil.

Potential exposures to chemicals were quantified based upon exposure point concentrations and the frequency, duration, and magnitude of contact using standard EPA guidance. Due to the limited number of site data points, the maximum detected on-site concentrations were used to assess the exposure concentrations. This practice provided a more conservative estimate of the risk which was then compared to the Occupational Health and Safety Administration ("OSHA") Permissible Exposure Levels ("PELs") for air born particulates.

The comparison revealed, that in all cases, the nuisance dust PEL would be exceeded before the PEL for each metal compounds occurs. That is, before a metal's airborne concentration exceeds its PEL, nuisance dust would pose a worker exposure hazard that would require corrective action. Therefore, DelDOT will implement dust control measuring during and post construction of the road. In addition and in order to confirm worker exposure status and whether respiratory protection and dermal protection is required, monitoring of airborne particulates should be conducted during intrusive reconstruction activities.

Because only trace concentrations of organics were detected, organic constituents are not expected to pose an inhalation health hazard during any proposed construction excavation activities.

## **8. Proposed Remedial Action Plan**

In view of the contaminants present in the soils associated with the site the proposed plan is as follows:

- The site will be continued to be used as a road reconstructed and maintained under the jurisdiction of the Delaware Department of Transportation.
- The soils excavated from the site as a function of the road reconstruction will be disposed of properly and no stockpiling of excavated material will be allowed.
- The Department of Transportation or its representative will conduct oversight during all phases of the reconstruction.
- The Department of Natural Resources will be present as needed during the reconstruction to assist the Department of Transportation in resolving environmental issues.
- The contractor shall monitor for dust and mist and take measures to maintain these indicators at permissible levels.
- The accumulation of surface water in excavation from a storm event will be disposed of properly in that they will discharge to the nearest catch basin so as to not accumulate and thereby transport hazardous material from the Halby Chemical Site.
- The work will be conducted as per all appropriate state and federal regulations.

## **9. Public Participation**

The Department actively solicits public comments or suggestions on the proposed plan and welcome opportunities to answer questions. Please direct written comments to:

Superfund Branch  
ATTN: Jane Biggs Sanger  
715 Grantham Lane  
New Castle, Delaware 19720

or call (302)323-4540. The public comment period closes on June 30, 1996. A public informational meeting will be held if requested.

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Figure 2: Site Map

