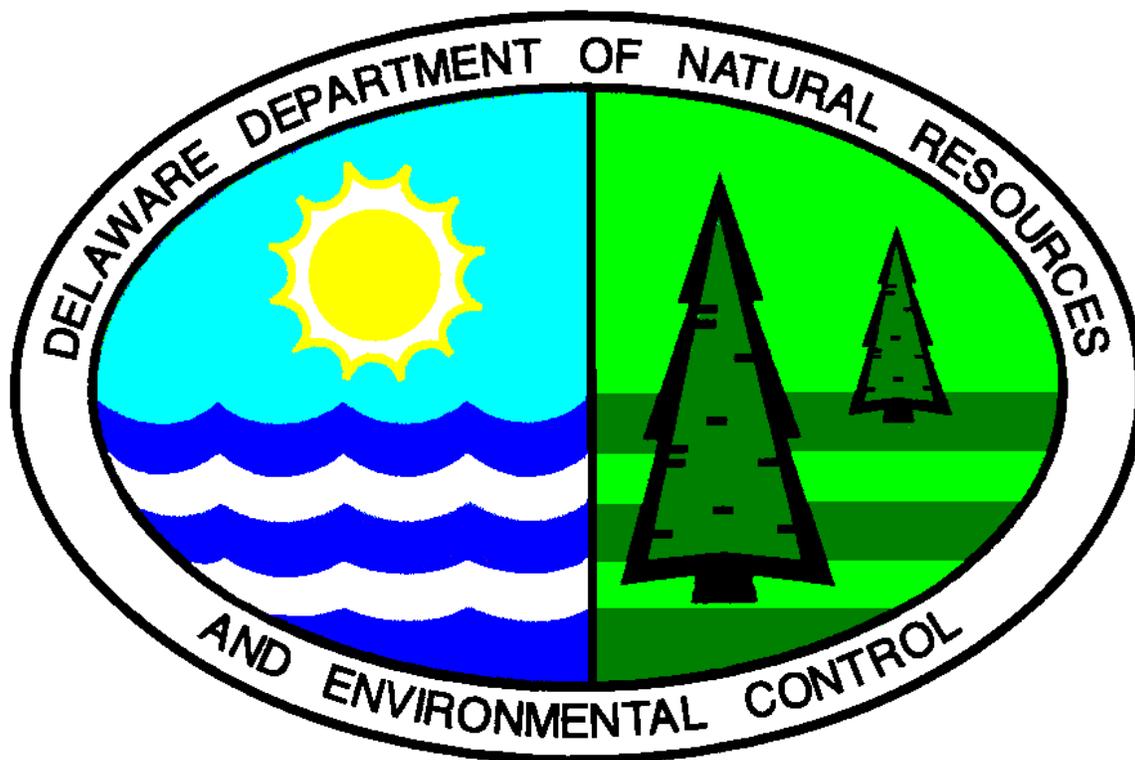


FINAL PLAN OF REMEDIAL ACTION



DELAWARE CAR COMPANY

Second and Lombard Streets
Wilmington, Delaware

DNREC Project No. DE-1059

October 2000

Department of Natural Resources and Environmental Control
Division of Air and Waste Management
Site Investigation and Restoration Branch

TABLE OF CONTENTS

I. INTRODUCTION	1
II. PURPOSE	1
III. SITE DESCRIPTION AND HISTORY	2
IV. INVESTIGATION RESULTS	3
V. FINAL REMEDIAL ACTION PLAN.....	4
VI. PUBLIC PARTICIPATION.....	6
VII. DECLARATION.....	6

LIST OF FIGURES

FIGURE 1: LOCATION OF DELAWARE CAR COMPANY IN THE STATE OF DELAWARE	7
FIGURE 2: LOCATION OF DELAWARE CAR COMPANY IN NEW CASTLE COUNTY DELAWARE...	8
FIGURE 3: LOCATION OF DELAWARE CAR COMPANY WITHIN THE CITY OF WILMINGTON.....	9
FIGURE 4: DELAWARE CARD COMPANY SAMPLE LOCATION MAP.....	10
FIGURE 5: PUBLIC NOTICE OF THE PROPOSED PLAN OF REMEDIAL ACTION.....	11

I. INTRODUCTION

In February 2000, the Department of Natural Resources and Environmental Control-Site Investigation and Restoration Branch's ("DNREC-SIRB" or "Department") under the authority granted by the Hazardous Substance Cleanup Act, 7 Del. C. Ch. 91 ("HSCA"), entered into a Voluntary Cleanup Program Agreement with the Delaware Car Company to oversee a Remedial Investigation ("RI") at the Delaware Car Company Site (the "Site" or "facility"), located at Second and Lombard Streets in Wilmington, Delaware (Figures 1,2,3 and 4). The RI included the sampling of surface soil, subsurface soil and ground water at various locations throughout the facility.

The RI Report was completed and approved in July 2000. In August 2000, DNREC-SIRB issued the Proposed Plan of Remedial Action for the Delaware Car Company Site ("Proposed Plan") which contained the Department's proposed remedial alternative for the Site.

II. PURPOSE

This document is the Department's Final Plan of Remedial Action for the Delaware Car Company Site ("Final Plan"). This Final Plan is issued under provisions of the HSCA and the Regulations Governing Hazardous Substance Cleanup ("Regulations"). It presents the Department's assessment of the potential unacceptable health and environmental risks posed by the Delaware Car Company Site and plans for further action.

The Proposed Plan also included a comparison of the remedial alternatives with respect to but not limited to: current and potential land use, natural resource use, proximity of human populations, use of surrounding properties, specific environmental issues (soil and ground water), protection of public health, welfare, and the environment, and compliance with applicable laws and regulations.

The Final Plan, which designates the selected procedures and stipulations concerning current and future activities, the Proposed Plan, any comments received from the public, the Department's responses to any comments, and all of the site documents forming the basis for the Proposed and Final Plans will constitute the remedial decision record required for issuing the Final Plan.

Included in Section III is a site description and history for the Delaware Car Company site. Section IV provides a description of the investigation results. Section V presents the Final Plan of Remedial Action. Section VI discusses public participation and Section VII presents the Department's declaration.

III. SITE DESCRIPTION AND HISTORY

Site Description

The Delaware Car Company (the "Site") is located at Second and Lombard Streets in Wilmington, New Castle County, Delaware (Figures 1,2,3 and 4). The Site is generally bounded by East Fourth Street to the northeast, the northwest by Lombard Street and to the south by the Amtrak Viaduct. Residential structures border the northern and western portions of the property. The Site is roughly triangular in shape and is approximately 7 acres in size. The coordinates of the site are 39° 44' 12" latitude by 75° 32' 44" longitude.

The Site is currently owned and operated by Delaware Car Company. Delaware Car Company employs 35 people in refurbishing and repairing damaged rail cars. The Site consists of three tax parcels (26.0-43.4-0173, 26.0-43.4-0174 and 26.0-43.4-0202) and the site is divided by 3rd Street in Wilmington. The area south of 3rd Street, generally referred to as Parcel A, is approximately 5.7 acres in size and consists mostly of a large, irregularly shaped brick and concrete block building in generally good condition with portions dating to 1800's. The outside grounds of Parcel A are almost entirely covered with asphalt, crusher run, or granite Belgian block.

The area north of 3rd Street, generally referred to as Parcel B, is approximately 1.3 acres in size. An old concrete slab building foundation covers a portion of Parcel B with a large portion of the remaining ground is covered with black sand. Railroad tracks transect portions of both parcels and the inner building for the purpose of moving rail cars. Both parcels are enclosed within a chain link fence topped with barbed wire.

Site History

The Delaware Car Company property has an extensive industrial history involving metal working dating to the early 1800's. Lobdell Car Wheel operated on the property from 1836 to 1884, and was the largest producer of iron wheels in the United States at the time of its operation. A fire destroyed the plant in 1853, but it was immediately rebuilt and enlarged. Between 1884 and 1937 the property was owned by corporations which manufactured nuts and bolts. By 1937, Benjamin F. Shaw Steam Piping Contractors had considerably expanded the complexes of buildings, and utilized the property until the early 1970's for manufacturing pipes and pipe fittings. Mechtron purchased the property in 1974 for use as a repair facility for railroad dining cars. Mechtron also used Parcel B as a warehouse yard and stored hazardous substances on this portion of the property. Mechtron filed for insolvency on March 28, 1981. Delaware Car Corporation purchased the property in 1983, and sold it to Delaware Car Company in 1987.

IV. INVESTIGATION RESULTS

In February 2000, the Department performed a Brownfield Preliminary Assessment II (“BPA II”) on the site. WIK Associates, Inc. conducted a Remedial Investigation of the property in conjunction with the DNREC BPA II and developed a Remedial Investigation Report in June 2000.

Ground water samples were collected from three locations during the BPA II investigation in February 2000. Ground water samples were submitted to the DNREC Division of Water Resources Lab, Dover, Delaware, for analysis of all of the United States Environmental Protection Agency Target Analyte List (Inorganics) and Target Compound List (Organics) (“TAL/TCL”).

One (1) ground water sample (DCC-MW-1/MW-4) exceeded HSCA Uniform Risk-Based Standards (“URS”) values (December 1999) for lead, and also for volatile and semivolatile organic Tentatively Identified Compounds (“TICs”) which were detected in the sample. The organic contamination is most likely the result of a ground water plume of contamination that is believed to have migrated from the a former gasoline service station site which was located at Fourth and Spruce Streets, onto the northern portion of Parcel B of the Site. This plume carried gasoline compounds and is the most likely source of the benzene detected in the ground water sample. The data tables are contained in the RI Report of July 2000.

During the investigations by the Department and WIK Associates, thirty-one soil samples were collected. All soil samples delivered to a HSCA certified laboratory were initially screened in the DNREC-SIRB mobile laboratory for the following classes of hazardous substances: Volatile Organics (“VOCs”), Pesticides, Carcinogenic Polyaromatic Hydrocarbons (“PAHs”), Polychlorinated Biphenyls (“PCBs”), and Metals. Of the soil samples collected and field screened, twelve were selected for confirmatory laboratory analysis.

Arsenic levels were detected above HSCA URS restricted standards in four of the shallow soil samples and one deep soil sample. Sample DCC-SS-2 contained elevated concentrations of six semivolatile organic analytes and high levels of semivolatile organic TICs (Tables 1-4).

As part of the RI, WIK Associates conducted several site-specific risk calculations for the Site. Based on the analytical results, arsenic was the only inorganic analyte that exceeded the restricted use HSCA URS criteria. The Site concentrations for Arsenic ranged from 0.88 mg/kg to 19.6 mg/kg.

WIK Associates also conducted a HSCA Sample Specific Standard Calculation for Multiple Carcinogenic Analytes for the area of sample DCC-SS-2, under guidance from DNREC-SIRB. The results of the risk calculation demonstrate that the exposure risk for

the sample area is below 10^{-5} , based on a Department accepted one-hour exposure time for each day of the work year.

The detailed risk calculations are contained in the RI Report of July 2000.

According to HSCA Regulation 8.4(1), remedial action objectives must be established for all Proposed Plans of Remedial Action. The remedial action is evaluated utilizing both Qualitative and Quantitative Objectives. The following considerations were taken into account in the development of the Qualitative and Quantitative Objectives.

The Qualitative Objectives for this site are:

- Control potential human contact with contaminated soil.
- Control potential human contact with contaminated groundwater.

Based on the above qualitative remedial action objectives, DNREC-SIRB has determined that the following Quantitative Objectives will meet the Qualitative Objectives:

- Prevent human contact with soil having hazardous substances which exceed 10^{-5} cancer risk.
- Prevent human ingestion of ground water at the site containing lead concentrations greater than 15 $\mu\text{g/L}$.
- Prevent human ingestion of ground water at the site containing benzene concentrations greater than 5 $\mu\text{g/L}$.

Three potential remedial alternatives were evaluated in the Proposed Plan of Remedial Action in order to address the Remedial Action Objectives. DNREC-SIRB adopts the comparison of remedial alternatives contained in the Proposed Plan. The alternative selected for the Site is as follows:

Alternative 2: Containment of affected materials in compliance with the Regulations and placement of institutional controls.

V. FINAL REMEDIAL ACTION PLAN

Based upon the information and results of the investigation performed at the Delaware Car Company property in Wilmington, Delaware, the Department concludes that a remedial action is required to prevent continued contact with site soils. The following items from the Proposed Plan are adopted as part of the Final Plan:

- Fencing - A fence will be maintained around the PAH contaminated area to reduce physical contact between humans and the soil;
- Containment - PAH contaminated materials will be covered with a two inch layer of compacted stone;
- Deed Restriction – A deed restriction, subject to DNREC-SIRB approval, will be placed on the property to prevent future land uses that could cause unacceptable exposure risks to the contaminated soil;
- Require notification of, and written approval from, DNREC-SIRB prior to any future intrusive activity in the containment area;
- Development of an Operation and Maintenance Plan (“O & M Plan”) to maintain the containment system.

Based on information the Department has received since advertising the Proposed Plan, it hereby incorporates the following more protective remedial measures into the Final Plan of Remedial Action:

- A layer of asphalt will be added to the PAH contaminated area, of sufficient thickness to support the projected uses of the area, to minimize human exposure in compliance with HSCA Regulations.
- Deed Restriction – A deed restriction, subject to DNREC-SIRB approval, will be placed on the property to prevent future land uses that could cause unacceptable exposure risks to the contaminated soil. The deed restriction will require prior written approval of the Department for any soil disturbing activities or demolition of the building where a former railroad tank car is buried under the floor of the building and which was formerly used for storage of petroleum products. There is documented petroleum contamination in soil in the area of the buried tank car. Therefore, the Department will also require that, if that area is ever exposed or if the building is demolished, an additional investigation, and, if necessary, a remedial action, will be performed in that area to address this known contamination.
- The petroleum contamination in the on-site ground water is likely from an off-site underground petroleum storage tank which is being addressed by the DNREC Underground Storage Tank (UST) Branch. The UST Branch will implement a Ground Water Management Zone for the Site.
- Operation and Maintenance Plan – The O & M Plan shall be submitted to DNREC-SIRB, for its approval, including details for implementing all the provisions of the Final Plan of Remedial Action.

VI. PUBLIC PARTICIPATION

The Department actively solicited public comments or suggestions on the Proposed Plan and welcomed opportunities to answer questions. A Public Hearing on the Proposed Plan was not requested, and none was held.

The public comment period for the Proposed Plan of Remedial Action began on August 10, 2000 and ended on August 30, 2000 at 4:30 p.m. The legal notice advertising the Proposed Plan appeared in the Delaware News Journal on August 10, 2000 and is shown as Figure 5 in the attachments. No comments were received by the close of business on August 30, 2000.

VII. DECLARATION

This Final Plan of Remedial Action for the Delaware Car Company site is protective of human health, welfare and the environment and is consistent with the requirements of the Delaware Hazardous Substance Cleanup Act.

Denise Ferguson-Southard
Director, Division of Air and Waste Management

DATE

ALB:KLT:hlb
alb00037.FP.doc
DE-1059 II B9

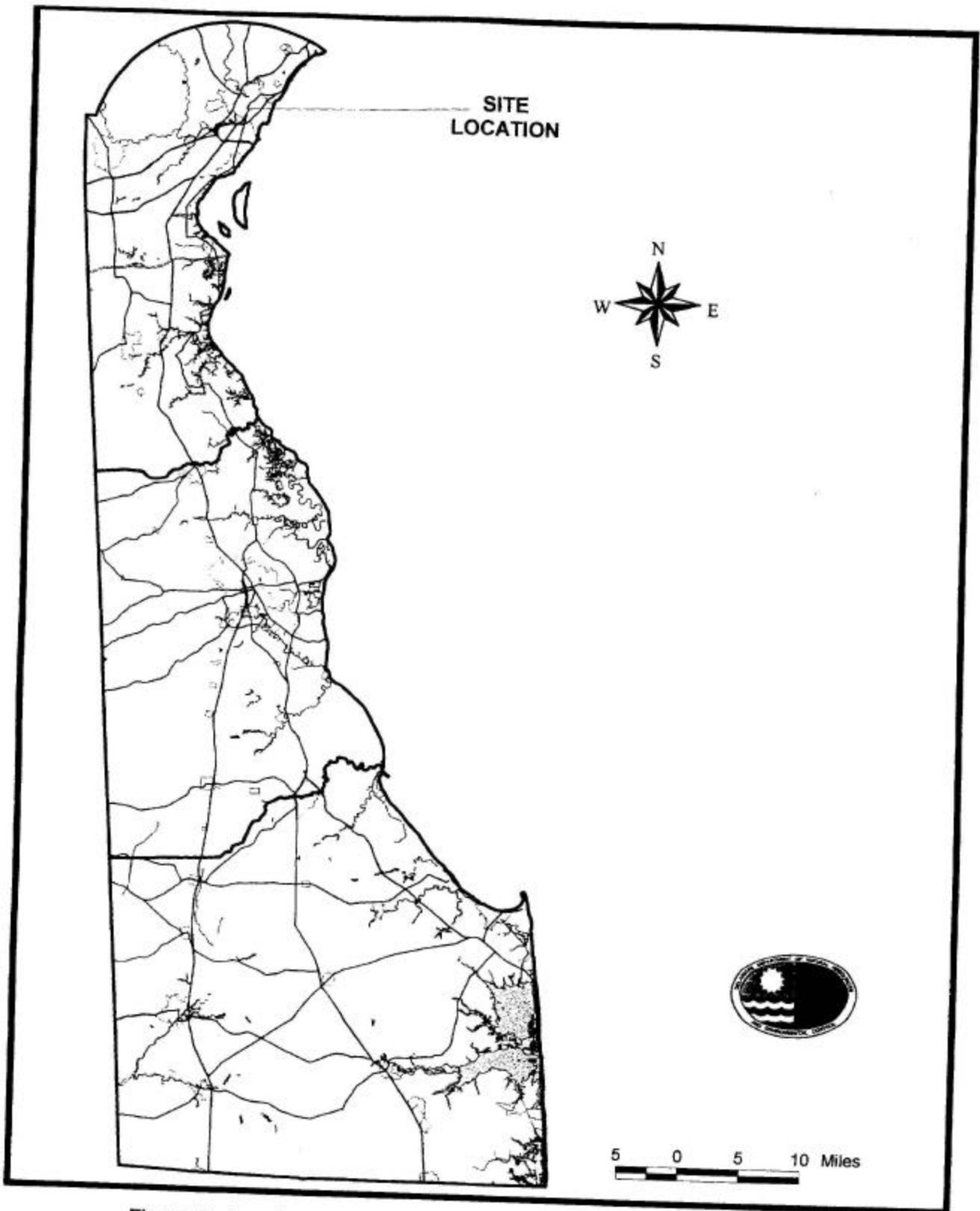


Figure 1: Location of Delaware Car Company in the State of Delaware

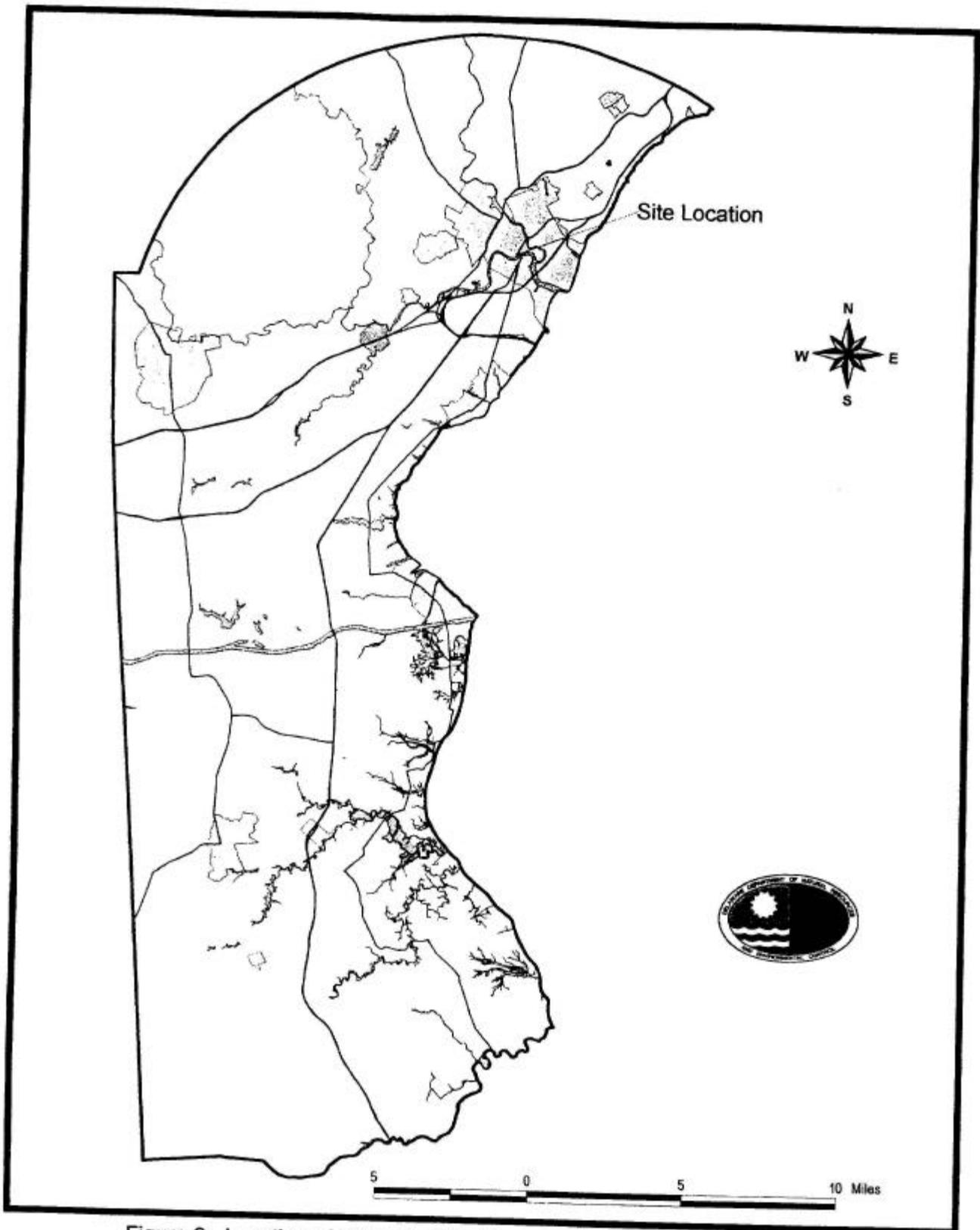


Figure 2: Location of Delaware Car Company in New Castle, Delaware

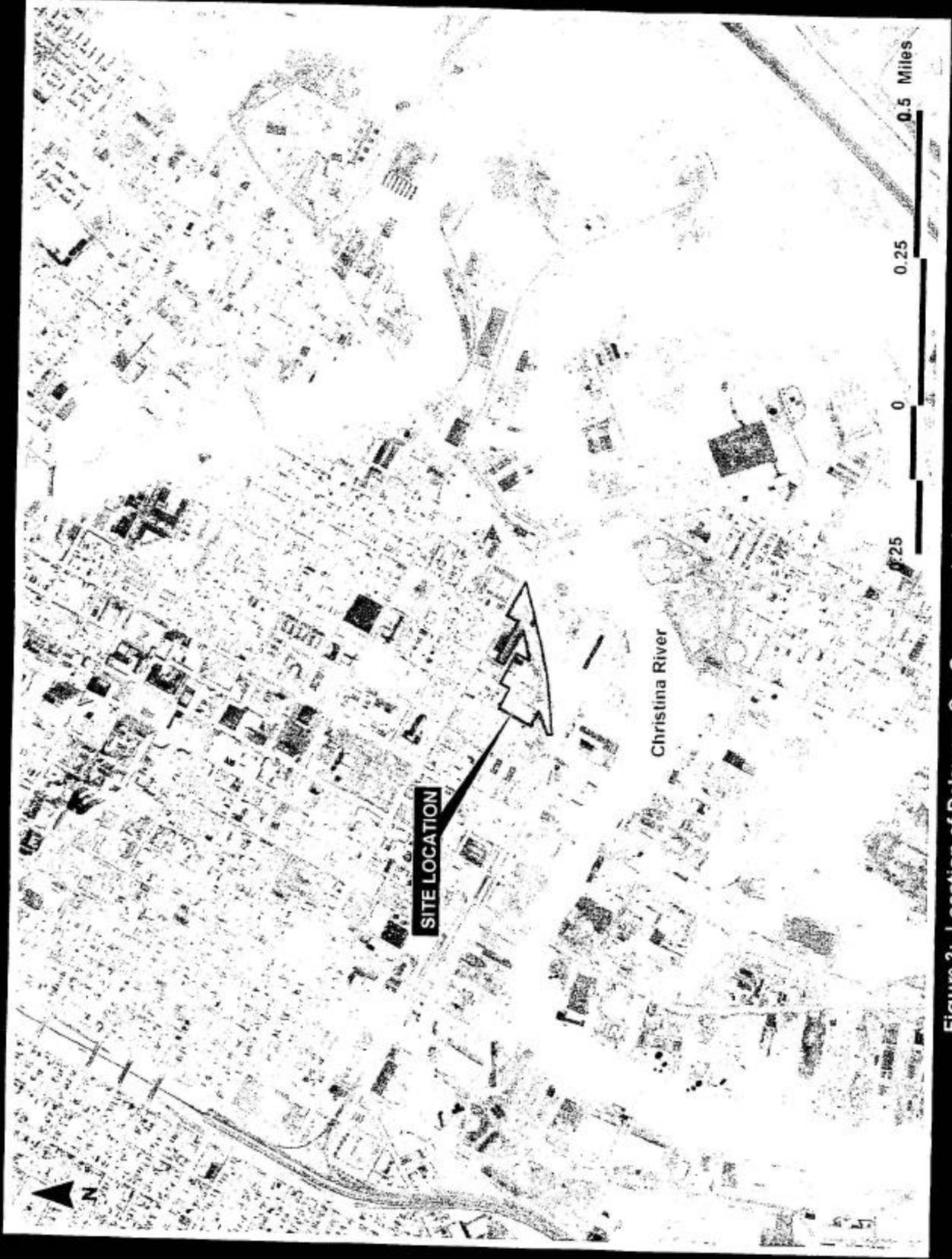


Figure 3: Location of Delaware Car Company in the City of Wilmington, Delaware

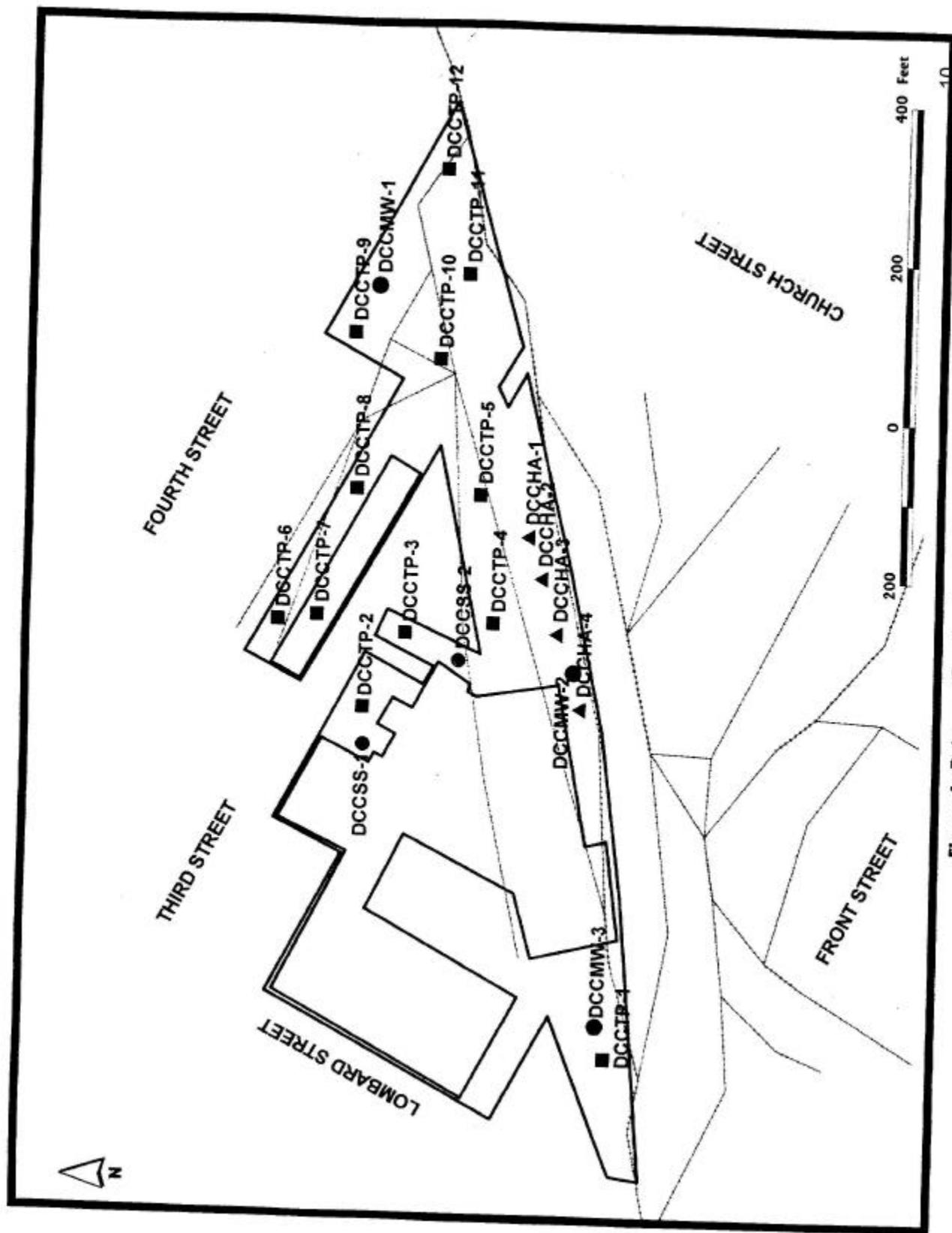


Figure 4: Delaware Car Co. Sample Location Map

Figure 5: Public Notice of the Proposed Plan of Remedial Action