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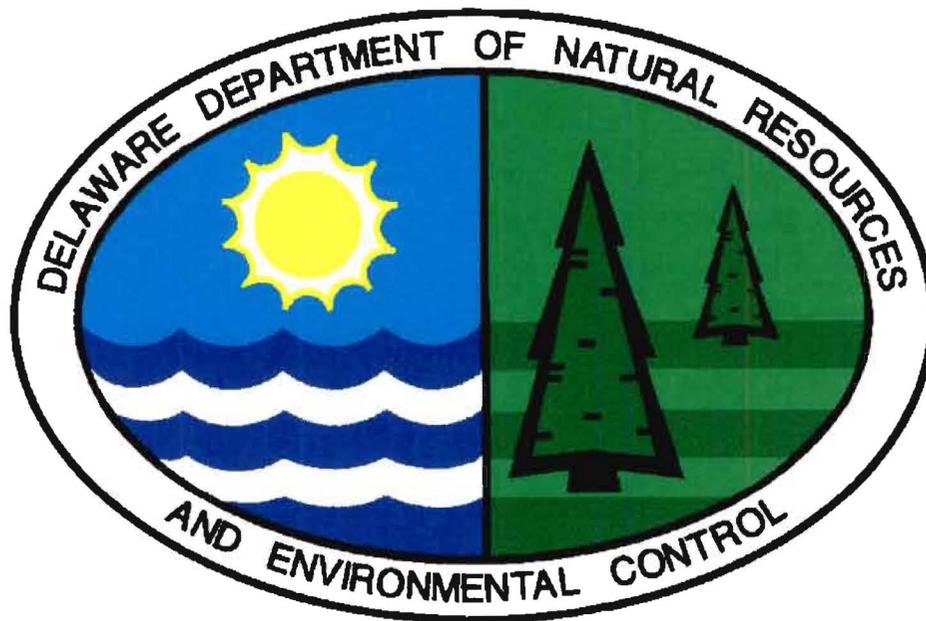
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## FINAL PLAN OF REMEDIAL ACTION

Naamans Road Site  
Wilmington, DE

DE 1135



September 1999

Delaware Department of Natural Resources and Environmental Control  
Division of Air and Waste Management  
Site Investigation & Restoration Branch  
391 Lukens Drive  
New Castle, Delaware 19720

ENTERED IN  
SITE STATUS  
DATA BASE

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## I. INTRODUCTION

The Naamans Road Site (Site) is located in Wilmington, Delaware east of the intersection of Foulk and Naamans Road. The Site was formerly a Texaco gasoline station and is currently part of a Delaware Department of Transportation (DelDOT) road widening and wetland mitigation project.

In order to fulfill the requirements of the Department of Natural Resources and Environmental Control's (DNREC) Underground Storage Tank Branch, approximately 3,000 cubic yards of suspected petroleum contaminated soil were excavated and sent off-site for thermal treatment. Subsequent to the removal activities a soil investigation was conducted to ensure that all impacted soil was removed and to ensure that the wetland mitigation area would not be placed in an impacted area. The results of the investigation revealed that pesticide contamination was present on site. The DNREC – Site Investigation and Restoration Branch (DNREC-SIRB) then entered into a Voluntary Cleanup Program (VCP) Agreement with DelDOT under 7 Del. C. Chapter 91, the Delaware Hazardous Substance Cleanup Act (HSCA). Through this agreement, DelDOT agreed to investigate the potential risks posed to the public health, welfare, and the environment.

The purposes of the investigation were to: 1) understand the nature and extent of any soil and/or groundwater contamination at the site, 2) evaluate risks to public health, welfare, and the environment associated with identified contamination, and 3) perform a Feasibility Study (FS) that would identify and recommend a Remedial Action, if required by DNREC-SIRB. DelDOT expressed its desire to obtain a Certificate of Completion of Remedy from DNREC upon completion of all required tasks.

This document is DNREC's Final Plan of Remedial Action for the Site. It is based on the results of the previous investigations performed at the Site. This Final Plan is issued under the provisions of the Delaware Hazardous Substance Cleanup Act, 7 Del. C. Chapter 91 (HSCA) and the Regulations Governing Hazardous Substance Cleanup (the Regulations). It presents the Department's assessment of the potential health and environmental risk posed by the Site.

In accordance with the Regulations, DNREC-SIRB provided notice to the public and an opportunity for the public to comment on the Proposed Plan in accordance with Section 12 of the Regulations. At the conclusion of the public comment period, DNREC-SIRB reviews and considers all of the comments received and then issues a Final Plan of Remedial Action. The Final Plan of Remedial Action designates the selected remedy for the Site. The Proposed Plan, the comments received from the public, DNREC-SIRB's responses to those comments, and the Final Plan of Remedial Action will constitute the Remedial Decision Record.

Section II presents a summary of the site description, site history and previous investigations of the site. Section III provides a description of the facility evaluation results. Section IV presents a discussion of the remedial action objectives. Section V discusses the interim response action conducted at the Site. Section VI discusses public participation requirements.

## II. SITE DESCRIPTION AND HISTORY

### Site Setting

The site is located east of the intersection of Foulk and Naamans Road and is the former location of a Texaco gasoline station (see Figure 1). The F&N Shopping Village borders the Site to the south and west. To the north is Naamans Road and to the east is Naamans Creek.

The Site is generally rectangular in shape and covers less than one acre. The Site is clear of structures and is currently being used to store road construction materials.

### *Site and Project History*

The following information is from the Interim Response Action Work Plan Former Texaco Station Naamans Road Wilmington, Delaware by EA Engineering, Science, and Technology.

Between February 1997 and January 1999, EA conducted a multi-phase investigation at the Texaco gasoline station, including the placement of 26 direct push soil borings to collect soil samples for screening and laboratory analysis.

During the 1997 investigation, petroleum impacted soil and groundwater was detected. In May 1998, approximately 3,000 cubic yards of suspected petroleum contaminated soil was excavated and sent off site for thermal treatment. Soil was removed to approximately 18 feet below grade. The excavated area was then backfilled with clean select material.

To confirm that the petroleum impacted soil was removed, EA conducted a soil sampling investigation in July 1998. The samples were analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX), gasoline range organics (GRO), and diesel range organics (DRO). However, the laboratory analyst revealed that the BTEX, GRO, and DRO detected in the samples appeared to be a pesticide rather than a petroleum hydrocarbon.

Subsequent investigations were conducted in August 1998 and January 1999 to further delineate the nature and extent of the pesticide contamination.

## III. INVESTIGATION RESULTS

As a result of the July 1998 investigation, a distinctive black soil layer was identified and suspected of containing the pesticide contamination. Additional investigations were conducted in August 1998 and January 1999 to further delineate the nature and extent of the pesticide contamination. The results of those investigations indicated that the contamination was confined to the black soil layer located approximately four to six feet below grade.

The nature and extent of the contamination is detailed in EA's March 1999 *Soil Characterization Analytical Results Summary, Former Texaco Station, Naamans Road, Wilmington, Delaware*.

#### IV. REMEDIAL ACTION OBJECTIVES

DNREC considers the data and information generated in the previous investigations of the Site to meet the criteria of a Remedial Investigation (RI), and hereby adopts the previous investigations as the RI. According to Section 8.4 (1) of the Regulations, site-specific remedial action objectives must be established for all Plans of Remedial Action.

Qualitative objectives describe, in general terms, what the ultimate result of the remedial action at the facility should be. Considering the Site will be used as a wetland mitigation area, the qualitative objectives are to protect the wetland ecosystem from the effects of pesticides in the soil. Additionally, DNREC-SIRB seeks to minimize risk to site users such as construction workers and visitors by preventing human contact (dermal, inhalation, or ingestion) with contaminated soil.

Quantitative objectives define specific levels of remedial action to achieve protection of human health and the environment. Based on the qualitative objectives, the quantitative objectives are to ensure that soil containing pesticide contamination above the Delaware Uniform Risk Based Remediation Standards (URS) for protection of human health is removed. The URS values for protection of human health for the contaminants of concern in a non-critical water resource area with unrestricted use are:

Contaminant of Concern	Uniform Risk Based Standard For Protection of Human Health In soil (mg/kg)
Alpha-BHC (a.k.a. HCH-alpha)	0.1
Beta-BHC (a.k.a. HCH-beta)	0.4
Gamma-BHC (a.k.a. HCH (Lindane) gamma)	0.5
DDD	3.0
DDE	2.0
DDT	2.0

With regard to protection of the environment, DNREC-SIRB's concern is that ecologically sensitive receptors might come in contact with potentially contaminated *sediment* in the proposed wetland mitigation area. In these areas the practical quantitation limits for the contaminants of concern were utilized.

#### V. INTERIM RESPONSE ACTION

Based on the findings of the previous investigations, DelDOT proposed to address the contamination by removing it. DNREC-SIRB concurred and decided to address the soil removal as an interim response activity. The interim response activity was performed in compliance with Subsection 8.2 of the Regulations.

The soil removal was performed in accordance with the Interim Response Action Work Plan dated April 20, 1999.



**Figure 1: Site Map**

Prepared by EA Engineering, Science, and Technology, Inc.  
September 1998.

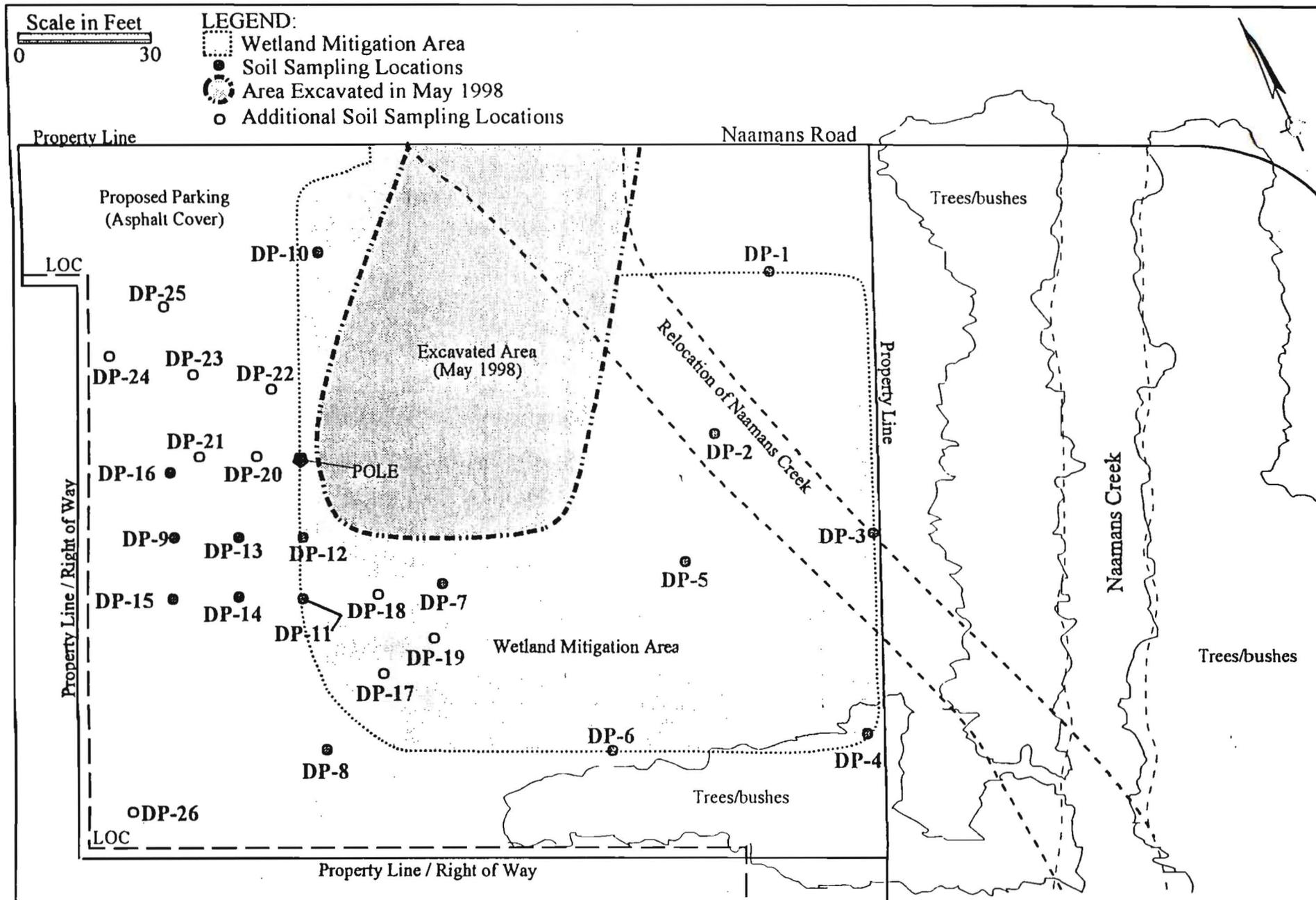


Figure 1. Site map of the former Texaco property, Naamans Road, Wilmington, Delaware showing the area of excavation in May 1998, and soil sampling locations.