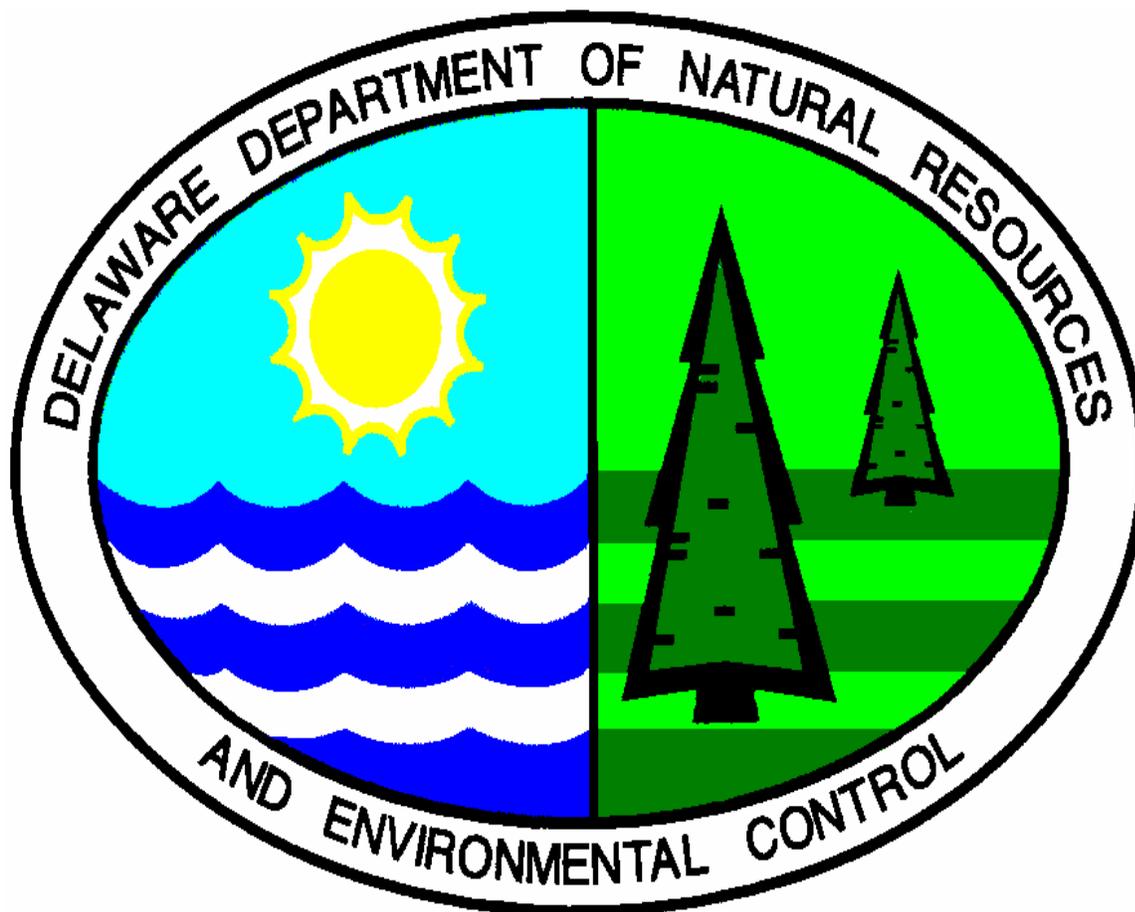


# **FINAL PLAN OF REMEDIAL ACTION**

**900 FRENCH STREET SITE  
Wilmington, Delaware**

**DNREC Project No. DE 1206**



**December 2001**

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

## TABLE OF CONTENTS

<b>I.</b>	<b>INTRODUCTION</b> .....	<b>1</b>
<b>II.</b>	<b>PURPOSE</b> .....	<b>1</b>
<b>III.</b>	<b>SITE DESCRIPTION AND HISTORY</b> .....	<b>2</b>
<b>IV.</b>	<b>INVESTIGATION RESULTS</b> .....	<b>2</b>
A.	General Information .....	3
B.	Site Fill Soils .....	3
C.	Groundwater .....	3
D.	Summary.....	3
<b>V.</b>	<b>REMEDIAL ACTION OBJECTIVES</b> .....	<b>4</b>
<b>VI.</b>	<b>FINAL PLAN OF REMEDIAL ACTION</b> .....	<b>5</b>
<b>VII.</b>	<b>PUBLIC PARTICIPATION</b> .....	<b>6</b>
<b>VIII.</b>	<b>DECLARATION</b> .....	<b>6</b>

## LIST OF FIGURES

FIGURE 1:	SITE LOCATION .....	7
-----------	---------------------	---

## **I. INTRODUCTION**

The 900 French Street Site (“Site”) is located in the southern half of the city block bounded by Ninth, Tenth, French and Walnut Streets in Wilmington, New Castle County, Delaware (Figure 1). In order to determine the potential for environmental liability prior to the purchase of the Site, Bracebridge Corporation (“Bracebridge”) and Corporate Property Services (“CPS”) entered into the Department of Natural Resources and Environmental Control, Site Investigation and Restoration Branch’s (“DNREC-SIRB’s”) Voluntary Cleanup Program (“VCP”) Agreement under the provisions of the Delaware Hazardous Substance Cleanup Act, 7 Del. C. Chapter 91 (“HSCA”). Through a VCP Agreement, Bracebridge/CPS agreed to investigate the potential risks posed by the Site to public health, welfare and the environment. Bracebridge/CPS contracted Duffield Associates, Inc. to perform a Facility Evaluation (“FE”) of the Site.

## **II. PURPOSE**

The purpose of the FE was to: 1) determine 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 any identified contamination, and 3) perform, if necessary, a Feasibility Study (“FS”) that would identify and recommend a Remedial Action, if required by DNREC-SIRB. DNREC-SIRB considers the data and information generated from the FE and the previous investigations of the Site, to meet the criteria of a Remedial Investigation (“RI”). The potential purchaser of the property desires to obtain a Certification of Completion of Remedy from DNREC-SIRB upon completion of all required tasks.

This document is the DNREC-SIRB’s Final Plan of Remedial Action (“Final Plan”) 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 HSCA and the Regulations Governing Hazardous Substance Cleanup (“Regulations”). It presents the DNREC-SIRB’s assessment of the potential health and environmental risks posed by the Site.

In October, 2001, DNREC-SIRB issued the Proposed Plan Of Remedial Reaction (“Proposed Plan”) for the Site based on the previous investigations. As described in Section 12 of the Regulations, DNREC-SIRB provided notice to the public and an opportunity for the public to comment on the Proposed Plan. At the comment period’s conclusion, DNREC-SIRB reviewed and considered all of the comments received and then issued this Final Plan. The Final Plan designates the selected remedy for the Site. The Proposed Plan, the previous investigations of the Site, the comments received from the public, DNREC-SIRB’s responses to those comments, and the Final Plan will constitute the Remedial Decision Record for the Site.

Section III presents a summary of the Site description, history and previous investigations of the Site. Section IV provides a description of the Remedial Investigation results. Section V presents a discussion of the Remedial Action Objectives. Section VI presents the Final Plan of Remedial Action. Section VII discusses public participation requirements and Section VIII presents the Director’s Declaration.

### **III. SITE DESCRIPTION AND HISTORY**

The Site is located in the southern half of the city block bounded by Ninth, Tenth, French, and Walnut Streets in Wilmington, New Castle County, Delaware.

The Site consists of approximately 0.9 acres (Tax Parcel #26-035.20-190). The Site has a history of mixed uses including residential and commercial. The Site is bounded to the north by a new office building at 920 French Street (Tax Parcel # 26-035.20-172), to the east by Walnut Street, to the south by Ninth Street and to the west by French Street.

The Site is currently owned by Bracebridge/CPS and is slated for redevelopment as a parking lot or parking garage by Bracebridge/CPS. Bracebridge/CPS entered into a VCP Agreement with DNREC-SIRB to conduct an investigation and cleanup of the Site.

#### *Site and Project History*

The Site was previously occupied by a series of residential houses, small commercial operations and parking lots. Historic research indicates that residential buildings and some small commercial buildings were present on the Site from 1884 through 1972. The remainder of the Site consisted of bituminous concrete and crushed stone covered parking lots. Most recently, the Site was used as a parking lot.

In order to obtain a Certification of Completion of Remedy, CPS and Bracebridge entered into a VCP Agreement with DNREC-SIRB to perform the FE. The objectives of the FE were to evaluate the soil and/or groundwater at the Site.

### **IV. INVESTIGATION RESULTS**

DNREC-SIRB conducted a review of past investigations prepared for the Site. After review of the work conducted, DNREC-SIRB worked with Duffield Associates, Inc., the consultant for Bracebridge/CPS, to develop a FE Work Plan to address the following:

- Determine the presence or absence of contaminants in the historic fill and groundwater, and if present, determine if the contaminants pose any unacceptable risks; and
- Determine the presence or absence of a source of contamination in the underlying soils and structure, and, if present, remove the source.

The FE Work Plan called for Duffield to perform the following tasks:

- Re-sample and analyze the Site fill soils;
- Sample groundwater beneath the Site;

- Develop a profile of the volume of material impacted;
- Perform a risk assessment, if necessary, of both human health and/or ecological risks; and
- Perform an FS, if the Site posed an unacceptable risk to human health and the environment and, to evaluate ways to correct these risks.

DNREC-SIRB considers the data and information generated in the previous investigations of the Site to meet the criteria of a Remedial Investigation (“RI”). The following is a brief summary of the results of the investigations for the Site:

#### **A. General Information**

All surrounding buildings and structures are currently connected to public water and wastewater systems.

An office building is currently under construction on the adjacent parcel at 920 French Street.

#### **B. Site Fill Soils**

Subsurface evaluation of the Site revealed the presence of buried debris and historic fill material that appeared to be associated with the demolition of the former buildings. Petroleum hydrocarbons were detected in fill soils, presumably associated with the former above ground fuel oil storage tanks found buried on the Site during excavation of the adjacent property. Elevated concentrations of metals and polynuclear aromatic hydrocarbons (“PAHs”) were reported throughout the fill material.

#### **C. Groundwater**

The results of groundwater sampling at the Site indicated that groundwater beneath the Site contains concentrations of aluminum, iron and manganese which exceed the DNREC-SIRB Uniform Risk-Based Standards (“URS”) for groundwater. All three metals were also detected in native soils beneath the fill materials and likely represent natural background conditions.

#### **D. Summary**

The results of the investigations indicated that the Site contains elevated concentrations of antimony, arsenic, beryllium and lead in the fill soils, which exceeded the URS for unrestricted use. PAH compounds also were detected in Site fill soils at concentrations that exceeded the URS for unrestricted use. Petroleum containing tanks were discovered within the fill material, and petroleum impacted soils were detected in areas of the Site. Buried debris and historic fill material associated with former building demolition, which was observed to depths ranging from 0.5 to 14 feet below the ground surface, are present in the soils beneath the eastern portion of the Site. In addition, buried debris and ash were observed to depths of up to six (6) feet below ground surface. Based on the presence of buried building demolition debris, additional

underground storage tanks or asbestos containing material (ACM) may be present beneath the surface of the Site.

The VCP Agreement with Bracebridge/CPS provided that, if during the course of investigation, means became apparent to reduce the contamination or prevent its spread, then appropriate action would be taken immediately.

Therefore, Bracebridge/CPS has proposed the following remedial action:

- **Removal of Regulated Fill Soils**: All contaminated fill soils will be removed from the Site and disposed of properly in accordance with all local, state and federal regulations.

Duffield performed a health risk assessment to evaluate the possible effects on human health from the use of the Site consistent with the objectives discussed above.

The risk evaluation evaluated whether there were possible health risks and/or environmental impacts from the release of hazardous substances from the Site. Given that all the residents in the immediate area are connected to municipal water supply and the proposed remedial action will remove all soil contamination, there will be no completed pathway for exposure for any potential ecological or human receptors in the area.

## V. REMEDIAL ACTION OBJECTIVES

According to Section 8.4 (1) of the Regulations, site-specific Remedial Action Objectives (“RAOs”) must be established for all plans of Remedial Action. The Regulations provide that DNREC-SIRB set objectives for land use, resource use, and cleanup levels that are protective of human health and the environment.

Qualitative objectives describe, in general terms, what the ultimate result of the remedial action, if necessary, should be. The following qualitative objectives are determined to be appropriate for the Site:

- Prevent residential exposure to impacted media;
- Minimize potential exposure to Site substances of concern for construction workers at the Site;
- Prevent environmental impacts due to impacted medi;, and
- Continue the use of public water for all purposes to the surrounding community.

These objectives are consistent with the current commercial use of the Site in an urban setting, New Castle County zoning policies, state regulations governing water supply, and worker health and safety.

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 will be to ensure that future Site users such as Site workers, construction workers, visitors, and trespassers do not come in contact with soils that contain elevated levels of metals and PAHs above established unrestricted URS values.

Based on the qualitative objectives, the quantitative objectives are:

1. Prevent human exposure to soils and groundwater contaminated by VOCs, PAHs, and metals that would result in a carcinogenic risk exceeding  $1 \times 10^{-5}$  or a hazard index of 1.0.
2. Prevent discharge of groundwater contaminated by metals into the Brandywine Creek or Christiana River above Delaware Surface Water Quality Standards.

The only compounds that pose a potential hazard that were detected in groundwater are aluminum, iron and manganese. All three metals were also detected in the native soil beneath the fill material at the Site. Therefore, aluminum, iron and manganese in the groundwater may be attributable to man-made activities, as well as natural-sources. However, the groundwater at the Site is not used for drinking and there are no drinking water sources, including water supply wells or surface intakes, within a one half mile of the property. Based on this information, the aluminum, iron and manganese concentrations in the groundwater, regardless of their source, do not pose a risk to public health.

However, the quantitative objective for groundwater is to prevent future use. The study concludes that the groundwater at the Site should not be used for potable water sources. If the area was going to be developed as a source of drinking water, then groundwater would have to be treated for aluminum, iron and manganese for aesthetic reasons prior to distribution to the public. The nearest environmental receptor is the Brandywine Creek, located approximately 2,000 feet northeast of the Site and the Christiana River, located approximately 3000 feet south of the Site. All fill material is proposed to be removed from the Site, eliminating any source attributable to man-made activities.

## **VI. FINAL PLAN OF REMEDIAL ACTION**

As stated in Section III of this Final Plan, the soil at the Site contains elevated levels of some PAHs, petroleum compounds and metals. The Site is slated for development as a parking lot or parking garage by CPS and Bracebridge, and will consist of a paved parking area or other concrete structure. CPS and Bracebridge desire a Site unencumbered with land-use deed restrictions. Therefore, the Final Plan for the 900 French Street Site calls for the following:

- Excavation and proper disposal at an approved facility of soil and substances above the URS for unrestricted use, including any buried fuel oil storage tanks and ACM as encountered.

- Confirmatory sampling and analysis of soils at the bottom of the excavation to demonstrate attainment of remedial objectives.
- Placement of a Groundwater Management Zone (“GMZ”) and deed restriction at the Site to prevent future use of the groundwater beneath the Site without prior approval of DNREC-SIRB and the DNREC Division of Water Resources.

## **VII. PUBLIC PARTICIPATION**

The Department actively solicited public comments or suggestions on the Proposed Plan and welcomed opportunities to answer questions. The public comment period for the Proposed Plan began on Sunday, October 21, 2001, and concluded at the close of business (4:30 p.m.) Monday, November 12, 2001. No comments from the public were received by DNREC-SIRB.

## **VIII. DECLARATION**

This Final Plan of Remedial Action for the 900 French Street Site is protective of human health, welfare and the environment and is consistent with the requirements of the Delaware Hazardous Substance Cleanup Act.

\_\_\_\_\_  
John Blevins  
Director, Division of Air and Waste Management

\_\_\_\_\_  
Date

LJJ:dw  
LJJ01099.doc  
DE 1206 II B8

**Figure 1: Site Location**