

**FINAL PLAN OF REMEDIAL ACTION****P&C Roofing Site**  
(Including former Riverwalk Phase V and VI)

720 Justison Street  
Wilmington, Delaware

January 27, 2009  
DNREC Project No. DE-1158

This Final Plan of Remedial Action (Final Plan) presents the Department of Natural Resources and Environmental Control's (DNREC's) requirements to address environmental contamination at the P&C Roofing site (Site).

DNREC issued public notice of the Proposed Plan of Remedial Action (Proposed Plan) for the Site on December 22, 2008 and opened a 20-day public comment period. The Proposed Plan is attached. There were no comments or questions from the public. Therefore, the Proposed Plan is adopted as the Final Plan.

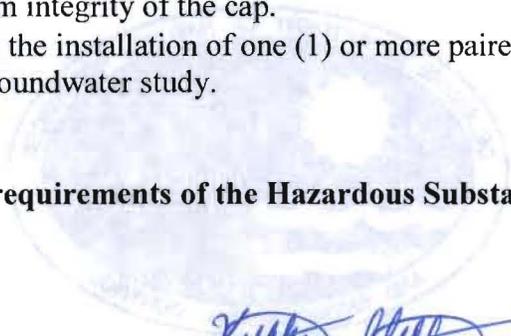
Final Plan will consist of the following requirements:

- Capping the site with asphalt and the building or a minimum of two feet of DNREC-approved fill in the landscaped areas.
- If contaminated soil hot-spots or any additional underground storage tanks (USTs) are identified during construction activities, they will be removed and properly disposed or capped as determined by DNREC. These measures will prevent human exposure to the contaminated soil and groundwater at the Site.
- During Site construction, protect site workers by properly managing the soil and groundwater according to the DNREC-approved Contaminated Material and Water Management Work Plan (CMWMWP), and the Site Specific Health and Safety Plan (HASP).
- Site owner will record an environmental covenant consistent with Delaware's Uniform Environmental Covenants Act, UECA (Title 7, Del. Code Chapter 79, Subtitle II). The environmental covenant will include: limit to commercial development, prohibit land disturbing activities without DNREC's prior written approval except in landscaping areas, and will prohibit the installation of any wells without DNREC's prior written approval and the use of any groundwater at the Site.

- Implement a DNREC-approved Operation and Maintenance (O&M) Plan to detail the procedures and practices to be followed in order to minimize damage to the cap and to promote the long-term integrity of the cap.
- DNREC may require the installation of one (1) or more paired wells as part of an ongoing Wilmington Area Groundwater study.

**Approval:**

**This Final Plan meets the requirements of the Hazardous Substance Cleanup Act.**



Kathleen Stiller, Program Manager II  
Site Investigation and Restoration Branch

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## PROPOSED PLAN OF REMEDIAL ACTION

P&C Roofing Site  
(Including former Riverwalk Phase V and VI)  
Wilmington, Delaware  
DNREC Project No. DE-1158



December 2008

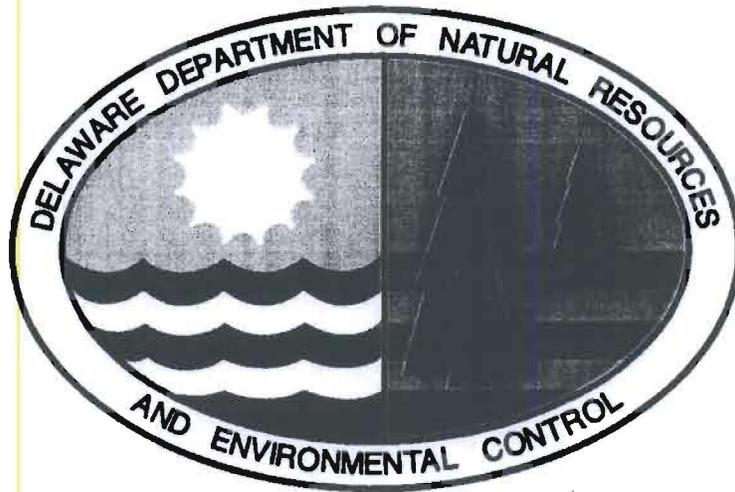
Delaware Department of Natural Resources and Environmental Control  
Division of Air and Waste Management  
Site Investigation & Restoration Branch  
391 Lukens Drive  
New Castle, Delaware 19720

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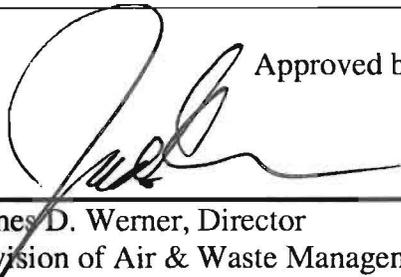
# PROPOSED PLAN OF REMEDIAL ACTION

P&C Roofing Site  
Wilmington, Delaware  
DNREC Project No. DE-1158



**Approval:**

This Proposed Plan meets the requirements of the Hazardous Substance Cleanup Act.

	Approved by:
<hr/>	
James D. Werner, Director Division of Air & Waste Management	
16 Dec 2008	
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Date	



**What is the P&C Roofing Site?**

The P&C Roofing Site (Site) is a Brownfield property located in Wilmington, Delaware and is comprised of 3 tax parcels. The western portion of the property was formerly addressed by DNREC as a separate site (DE-1164, Riverwalk Phase V & VI). The remedial actions for eastern portion of the Riverwalk Phase V and VI were addressed in the Riverwalk Phase V and VI Final Plan of Remedial Action published on February 2000. The P&C Roofing warehouse formerly occupied the site (Figure 1).

The Site is bordered by restaurants to the North, the Christina River to the East, a vacant lot to the South (HSCA Site, 900 South Madison St., DE-1415), and South Justison Street (formerly South Madison) to the West. 900 South Madison St. is in the investigation phase. The Site is currently vacant. The Big Fish Grill is planning to construct a one story restaurant building and a parking lot for the building (Figure 2). The Riverfront Development Corporation is the current owner of the Site.

**Tax Parcel Numbers:** 2604900015, 2604900005, and 2604900023

**Address:** 720 Justison Street, **Nearest major intersection:** Beech Street and Justison Street

**Area:** Approximately 2.4 acres

**Surrounding Property:** Surrounding land use is commercial

**Zoning:** W-2 Waterfront Manufacturing/Commercial

**Site Utilities:** City water and sewer

**Surface water:** less than 5 feet from the eastern edge of the property.

**Topography:** Relatively flat

**Groundwater:** The groundwater appears to flow to the northwest away from the Christina River. On the eastern half of the Riverwalk Phase V and VI, the groundwater may flow toward the Christina River.

**What are the former uses at the Former P&C Roofing Site?**

The Site is located in an area of Wilmington that has been in continuous industrial use since the late 1700s. Review of historical information showed that the Site was maintained as a ship building yard and rail car repair facility, a U.S. Naval Training Center, and a beer distributor. The site was most recently occupied by P&C Roofing, Inc., a roofing contractor.

**What are the environmental problems at the Former P&C Roofing Site?**

The Site soil is contaminated with metals and polynuclear aromatic hydrocarbons (PAHs) which are present above DNREC-SIRB restricted use (commercial) standards. The contamination resulted from the past industrial use of the Site along with the fill material brought into the Site in the past. Metals that exceeded DNREC's commercial standard in soil include arsenic and lead in the subsurface soil. PAHs that exceeded the commercial standard in surface soil included

benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene. PAHS that exceeded the commercial standard in subsurface soil include benzo(a)pyrene, dibenz(a,h)anthracene. In groundwater, arsenic, iron, and manganese were detected above DNREC standards. However, groundwater is not being used at the Site and the Site is located in a groundwater management zone (GMZ) which prohibits the installation and use of drinking water wells. The evaluation of potential impact of groundwater contamination discharging to surface water (Christina River) indicated that the river will not be impacted. Evaluation of the potential intrusion of subsurface vapors from groundwater and soil into the future building indicated that it will not exceed the DNREC standard.

Environmental investigations that were performed at the Site include a Brownfield Preliminary Assessment II in September 1999 on the Dravo Shipyard (P&C Roofing, Inc.) (DE-1158), which constitutes part of the Site; and a Site Specific Assessment of P&C Roofing (DE-1158) conducted at the Site in January 2008. In addition, two 1,000-gallon gasoline underground storage tanks (UST) were removed from the Site in April 2008. DNREC Tank Management Branch issued a No Further Action letter on April 15, 2008 related to the removal the USTs on the Site.

These investigations indicated that surface soil (0-2 feet depth) at the Site is contaminated with the PAHs benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene above DNREC standards for a commercial (non-residential) use of the property. For subsurface soil (at depth greater than 2 feet), arsenic and lead and PAHs including benzo(a)pyrene, and dibenz(a,h)anthracene were detected over DNREC standards for a commercial (non-residential) use. These contaminants would only pose a human health risk above DNREC standards if not addressed by remedial actions. Groundwater from the site showed presence of iron and manganese in all three wells over DNREC standards, and arsenic in only one well (GW-5) over DNREC standards.

**What does the owner want to do at the P& C Roofing Site?**

The Riverfront Development Corporation is planning to redevelop the Site into a restaurant and a parking lot. The development plan is included as Figure 2.

The development plan includes site grading, installing utilities (i.e. water, gas, electric), paving, installation of piles, pile caps, footers, construction of hardscape (sidewalks and brick areas), building construction and landscaping.

**What clean-up actions have been taken at the P&C Roofing Site?**

The following interim actions have been completed to date:

- Two – 1,000 gallon underground storage tanks were removed and DNREC issued a No Further Action letter on April 15, 2008.

**What additional clean-up actions are needed at the P&C Roofing Site?**

The proposed remedy for the Site includes:

- Capping the Site with asphalt and the building or a minimum of two feet of DNREC-approved fill in the landscaped areas.

- If contaminated soil hot-spots or any additional USTs are identified during construction activities, they will be removed and properly disposed or capped as determined by DNREC. These measures will prevent human exposure to the contaminated soil and groundwater at the Site.
- During Site construction, protect site workers by properly managing the soil and groundwater according to the DNREC approved documents listed below.

The following cleanup actions are proposed for the Site:

1. The surface of the Site will be covered with a cap which may consist of buildings, pavement, or a minimum of two feet of DNREC-approved clean fill material in the landscaped areas. Portions of the Site may be covered with two feet or more of fill for construction purposes; however, this will not be considered as a required remedy for reimbursement purpose.
2. All construction and redevelopment work will be performed in accordance with a DNREC-approved Contaminated Material and Water Management Work Plan (CMWMWP), and the Site Specific Health and Safety Plan (HASP), which addresses the proper handling, removal and disposal of excavated contaminated material.
3. Any contaminated soil hot-spots that are identified during construction activities will be removed or capped as determined by DNREC. Any USTs that are identified will be removed in accordance with DNREC guidance.
4. A DNREC-approved Operation and Maintenance (O&M) Plan will be established and implemented within ninety (90) days following construction completion. The O&M Plan will detail the procedures and practices including regular inspections to minimize the potential for disturbing the cap and to promote the long-term integrity of the cap.
5. A Ground Management Zone (GMZ) is already in place for the City of Wilmington (July 2007). The Site is within the City of Wilmington boundary limits. The GMZ will prohibit the installation of any water wells on, or groundwater usage at the Site without prior written approval from DNREC. In addition, the City prohibits drinking water wells to be installed within the City limits.
6. Site owner will record an environmental covenant consistent with Delaware's Uniform Environmental Covenants Act, UECA (Title 7, Del. Code Chapter 79, Subtitle II). The environmental covenant will limit land use to non-residential development, prohibit land disturbing activities without DNREC's prior written approval except in landscaping areas, and prohibit the installation of wells and use of any groundwater at the Site.
7. DNREC may require the installation of 1 or more paired wells as part of an ongoing Wilmington Area Groundwater study.

**What are the long term plans for the Site after the cleanup?**

The future commercial use of the property is a restaurant. After construction, the following will be completed for the Site: restricting the Site use to non-residential (unless approved in advance by DNREC); preventing the use of groundwater for potable use; restricting land disturbance activities without DNREC's prior approval and compliance with DNREC-approved Operation and Maintenance Plan (O&M) plan. Under the O&M Plan, the Site will be periodically inspected to ensure that the cap is in good condition and that land use is consistent with the restrictive covenant.

DNREC plans to issue a Certificate of Completion of Remedy for the Site after the remedy is in place, the redevelopment of the property, and the implementation of the uniform environmental covenants at the Site.

**How can I find additional information or comment on the Proposed Plan?**

The complete file on the Site including the Brownfields Remedial Investigation is available at the DNREC office, 391 Lukens Drive in New Castle. Most documents are also found on:

<http://www.dnrec.state.de.us/dnrec2000/Divisions/AWM/sirb/>

The 20-day public comment period begins on December 22, 2008 and ends at close of business (4:30 pm) on January 12, 2009. Please send written comments to the DNREC office or call Rick Galloway, Project Manager, at: 302-395-2600.

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**Glossary of Terms  
Used in this Proposed Plan**

<b>Brownfield</b>	Property that is vacant or underutilized because of the perception or presence of an environmental problem.
<b>Certified Brownfield</b>	A brownfield that DNREC has determined is eligible for partial funding through the Delaware Brownfields Program.
<b>Contaminant of Concern (COC)</b>	These are potentially harmful substances at concentrations above acceptable levels (eg metals and PAH).
<b>Certificate of Completion of Remedy (COCR)</b>	A formal determination by the Secretary of DNREC that remedial activities required by the Final Plan of Remedial Action have been completed.
<b>*Exposure</b>	Contact with a substance through inhalation, ingestion, or direct contact with the skin. Exposure may be short term (acute) or long term (chronic).
<b>Final Plan of Remedial Action</b>	DNREC's proposal for cleaning up a hazardous site after it has been reviewed by the public and finalized.
<b>Hazardous Substance Cleanup Act (HSCA)</b>	Delaware Code Title 7, Chapter 91. The law that enables DNREC to identify parties responsible for hazardous substances releases and requires cleanup with oversight of the Department.
<b>Human Health Risk Assessment (HHRA)</b>	An assessment done to characterize the potential human health risk associated with exposure* to site related chemicals.
<b>Proposed Plan of Remedial Action</b>	A plan for cleaning up a hazardous site submitted by DNREC and subject to public comments.
<b>Risk</b>	Likelihood or probability of injury, disease, or death.
<b>Risk Assessment Guidance for Superfund (RAGS)</b>	An EPA guidance document for superfund sites
<b>Site Specific Assessment (SSA) and Site Inspection (SI)</b>	Environmental studies of a site including sampling of soils, groundwater, surface water, sediment and/or wastes on the property.

## **What is a *Proposed Plan*?**

A Proposed Plan of Remedial Action (Proposed Plan) is a summary of how DNREC plans to clean up a contaminated site. A Final Plan of Remedial Action (Final Plan) is the adoption of the Proposed Plan, after all comments made by the public within the comment period of twenty days have been considered and addressed by DNREC.

The Delaware State Legislature passed the Hazardous Substance Cleanup Act (HSCA) in 1990. The Legislature made sure that members of the public would be informed about environmental problems in their own neighborhoods and have a chance to express their opinion concerning the clean up of those environmental problems before DNREC takes action.

After DNREC studies a site, it summarizes the problems there and proposes one or more possible solutions in a Proposed Plan. The Proposed Plan contains enough information to allow lay persons to understand the site. More detailed information can be found in the reports and documents approved by DNREC. All of the documents and reports created by DNREC or consultants during the course of the investigation of the site are available to the public at the offices of DNREC-SIRB or at DNREC's website:

<http://www.dnrec.state.de.us/dnrec2000/Divisions/AWM/sirb/sitefiles.asp>

DNREC issues the Proposed Plan by advertising it in at least one newspaper in the county where the site is located. The legal notices for the Proposed Plans and the Final Plans usually run on Wednesdays or Sundays in the legal classified section of the News Journal and/or the Delaware State News. The public comment period begins on the day (Wednesday), or the day after (Sunday) the newspaper publishes the legal notice for the Proposed Plan.

DNREC frequently holds public meetings during the comment period. Those meetings are usually held near the site in the evening. Citizens can request a public meeting if DNREC did not already schedule one.

Comments are collected at the public meetings, by phone or in writing. DNREC considers all comments and questions from the public before the Proposed Plan is finalized and adopted as a Final Plan.

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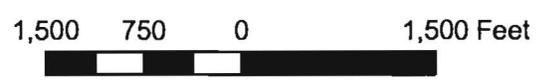
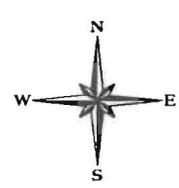


**FIGURE 1**  
**Site Location/Topographic Map**  
 USGS Topographic Quadrangle, Wilmington South, 1993

720 South Justison Street

Wilmington, Delaware

File: 0992.20.21



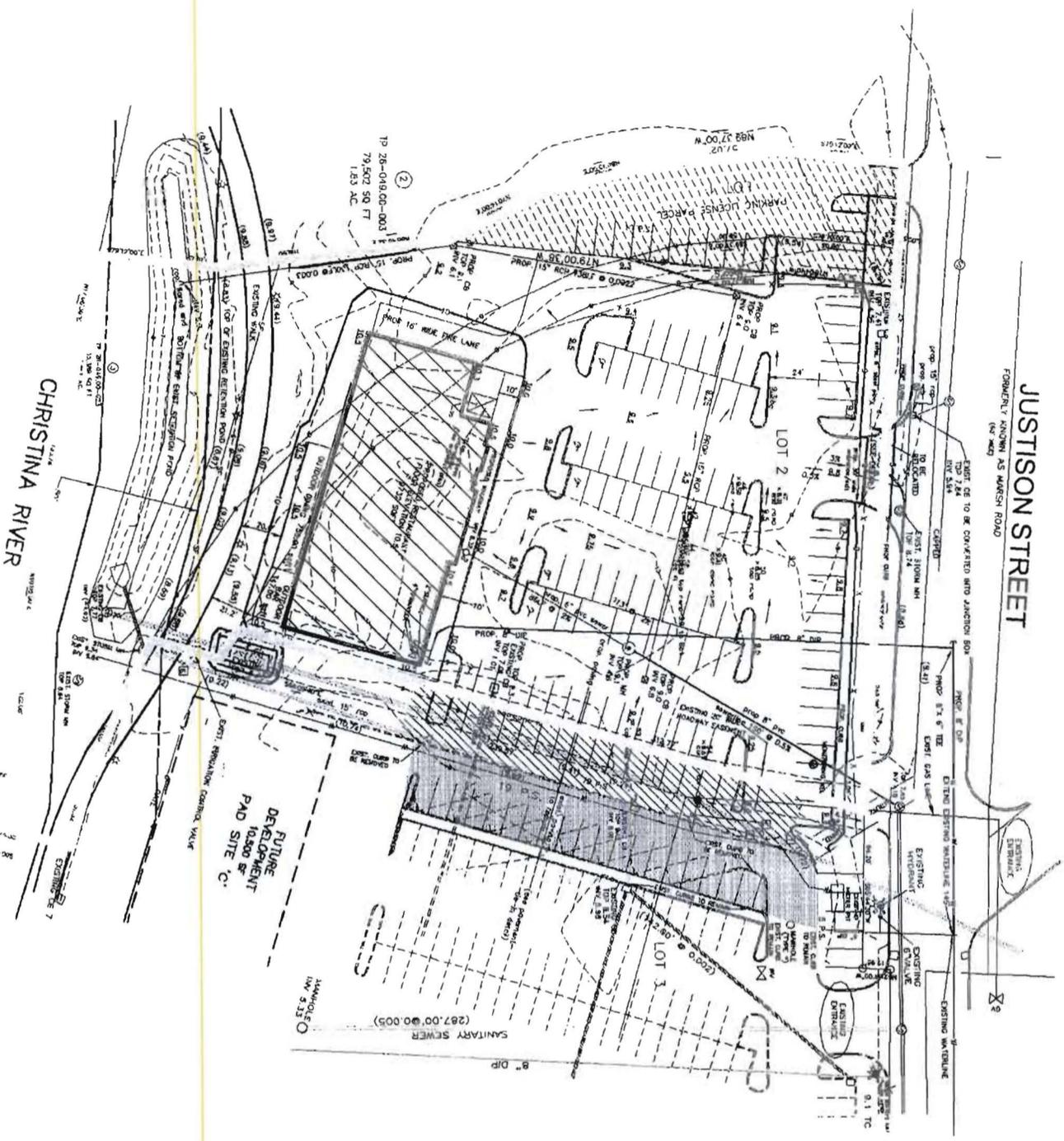


Figure 2  
 Site Development Plan  
 Former P&C Roofing Site  
 Wilmington, Delaware

Legend  

 Proposed Building Outline  
 Property, Jndary

