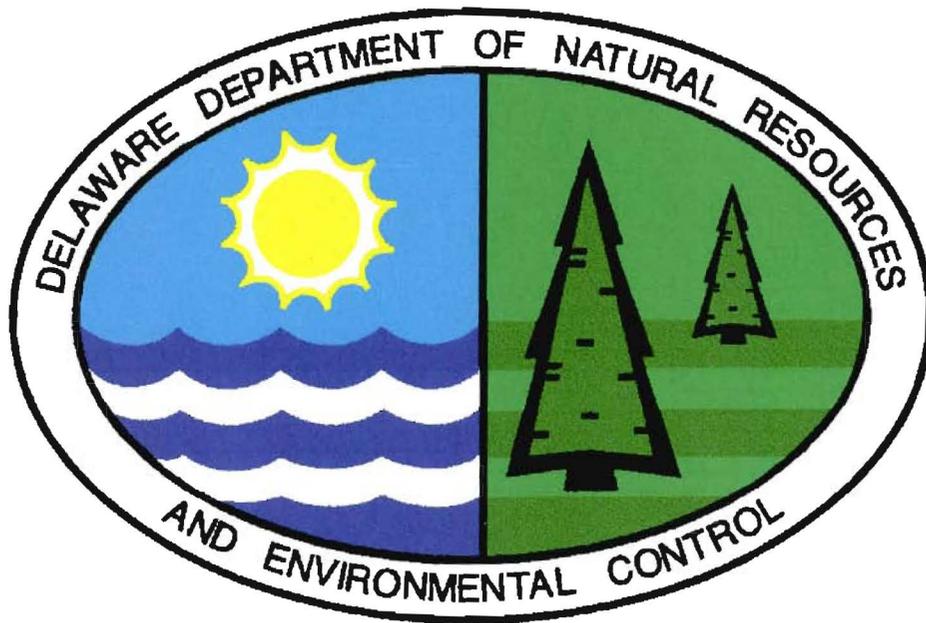


Final Plan of Remedial Action

**Del Chapel Place – Operable Unit III
Newark, Delaware**

DNREC Project No. DE-1125



August 2000

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

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I INTRODUCTION

This document is intended to evaluate the remedial action objectives of the Del Chapel Place property, along the western parcel, Operable Unit III, on the basis of the investigation and findings for shallow soils.

The Del Chapel Place property occupies approximately 21 acres along Delaware Avenue in Newark, Delaware. The property is comprised of an eastern parcel (11.4 acres) designated as Operable Unit II (“OU2”) and an adjacent parcel (8.5 acres) designated as Operable Unit III (“OU3”) along the western side of the Penn Central right-of-way. The investigation of OU2 was completed and the established remedial action objectives were achieved under the oversight of the Department of Natural Resources and Environmental Control’s Site Investigation and Restoration Branch (“DNREC-SIRB”) in accordance with the Delaware Regulations Governing Hazardous Substance Cleanup (“Regulations”). The Final Plan of Remedial Action for OU II, which designates the selected procedures and stipulations concerning current and future activities of OU2, was issued March 23, 2000.

Courtyard Communities, L.L.C. plans development of a residential complex for University of Delaware students on the property of OU2 and OU3. Due to findings of site-related contamination during the Brownfields Preliminary Assessment II (“BPA II”) investigation, conducted by the DNREC-SIRB, Courtyard Communities, L.L.C. agreed to further characterize the potential risks posed to the public health and the environment through the Voluntary Cleanup Program (“VCP”).

In June 1998, Courtyard Communities, L.L.C. entered into a VCP Agreement with the DNREC-SIRB to perform a Facility Evaluation (“FE”) of the Del Chapel Place property. Courtyard Communities, L.L.C. contracted with Environmental Alliance to conduct the FE. The purpose of the FE was to: 1) understand the nature and extent of any soil or groundwater contamination at the site, 2) evaluate risks to the public and environment associated with identified contamination, and 3) determine if further response action is necessary. The Department has determined that the FE completed for this site meet the requirements established for a Remedial Investigation (RI) in the Regulations.

This document is the DNREC-SIRB’s Final Plan of Remedial Action for shallow soils at the site’s western parcel, OU3. It is based on the results of previous investigations performed at the site. As a separate operable unit, ground water and surface water will continue to be monitored with DNREC-SIRB oversight in accordance with the approved monitoring program. This Final Plan is issued under the provisions of the Delaware Hazardous Substance Cleanup Act (“HSCA”) and the Regulations Governing Hazardous Substance Cleanup. It presents the Department’s assessment of the potential human health and environmental risk posed by the site.

Section II presents a summary of the site description, site history, and previous investigations of the site. Section III provides a description of the investigation results. Section IV presents a discussion of the remedial action objectives. Section V presents the proposed remedial action.

Section VI discusses public participation requirements. Section VII presents a description of the Final Plan of Remedial Action. Section VIII presents the Director's declaration.

The DNREC-SIRB provided public notice and a 20-day public comment period on the Proposed Plan in accordance with Section 12 of the Regulations. No written comments were received from the public. A public hearing was held on July 27, 2000 at Girls Inc. in Newark, Delaware. The Department addressed all public comments at the hearing. The Final Plan, which designates the selected procedures and stipulations concerning current and future activities, the Proposed Plan, comments received, the Department's response to 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.

II SITE DESCRIPTION AND HISTORY

The western parcel (OU3) extends from the Penn Central right-of-way, west toward South Chapel Street, and toward the south next to the Christina School District property. A small stream flows across the southern portion of the eastern parcel (OU2). The origin of the stream is from two culverted drains beneath the adjacent western parcel (OU3) and from along the Penn Central right-of-way to the north.

The western parcel was comprised of older industrial buildings with facility operations dating back to 1907. Continental Fiber/Continental Diamond Fiber Company occupied the property from that time until 1952. The Budd Company occupied the property from 1952 to 1972. The building later became a rental complex leasing a portion to the Keene Corporation and also the Helix Corporation until approximately 1982.

To date, the investigations conducted by the DNREC-SIRB and Environmental Alliance for the past two years encompassed all environmental media potentially impacted by the former facility operations on the OU3 parcel. This media includes soil, ground water, surface water, and sediment.

III INVESTIGATION RESULTS

During the DNREC-SIRB BPA II, site characterization was conducted for the entire property which included parcels OU2 and OU3. Results of a BPA II, conducted by DNREC-SIRB in June 1997, were used to focus the scope of the Facility Evaluation ("FE") for OU2. The OU2 FE findings were presented in the Facility Evaluation Report, Del Chapel Place: OU-2, Newark, Delaware, dated November 16, 1998.

Based on the BPA II, the FE was conducted at the eastern parcel (OU2) to further characterize all environmental media, verify previous investigative data, and determine potential impact from historical industrial land use of both parcels.

As proposed in the FE Scope of Work for OU2, the surface water sample results verified previous investigation results indicating elevated levels of zinc and detectable concentrations of trichloroethene. Groundwater sampling results during this FE also verified previous investigation results detecting elevated concentrations of volatile organic compounds (“VOCs”) and metals. Results from the soil investigation also identified minor concentrations of metals on the eastern parcel (OU2).

Based on the site history and previous investigations that lead to the Final Plan of Remedial Action for the eastern parcel (OU2), a Facility Evaluation was also conducted for OU3 following a scope of work approved by the DNREC-SIRB on November 16, 1998. The scope of work was subsequently expanded to include additional work plan addenda. The objective of the work plan addenda was to further characterize the site, monitor demolition activities and to further delineate identified areas of concern. Areas of concern were addressed as an interim measure to remove contaminated soil or water that could pose a risk to site workers, the public, or the environment. Areas addressed as interim removals include:

- Former drum storage area,
- Underground storage tank areas (3 areas),
- Southern total petroleum hydrocarbon (“TPH”) area,
- Volatile Organic Compounds (VOC) impacted area,
- Areas of proposed utility lines,
- Construction debris area,
- Metals and Semi-Volatile Organic Compounds (“SVOC”)-impacted areas,
- Buried drum area,
- Additional excavation at the former drum storage area.

The scope of work for addressing areas of concern through interim measures at OU3 was approved by the DNREC-SIRB. These areas of concern were approved as they were identified during the investigation process. Excavated material in the form of soil contaminated with petroleum, metals, VOC’s and soil mixed with construction debris was manifested and taken to an appropriate facility for proper disposal. The total soil mass removed from OU3 during the interim action was approximately 3,655 tons.

Ground water samples were collected prior to the demolition of the buildings. Based on the overall assessment of ground water at the site, a release of select constituents of metals (zinc) and VOC’s (trichloroethene, tetrachloroethene, and acetone) have been detected at concentrations exceeding the DNREC Remediation Standards Guidance.

Surface water sample results obtained from the unnamed tributary located on OU2 indicate the presence of constituents (zinc, tetrachloroethene, trichloroethene, and carbon tetrachloride) exceeding the DNREC Remediation Standards Guidance. These contaminants were also identified in soils and groundwater during the investigation of the western parcel (OU3).

Based on the overall assessment of site ground water and surface water, a DNREC-SIRB approved ground water/surface water-monitoring program will be implemented. This monitoring program consists of establishing a monitoring well network, a frequency for sample collection and a list of analytical parameters. The monitoring results will be assessed and further

action for ground water and surface water media will be addressed as a separate operable unit for this site, encompassing OU2 and OU3.

The shallow soils (i.e above the water table) for the western parcel will be the only media addressed in this Final Plan of Remedial Action for OU3. In a letter to Ambling Development, Co., regarding the FE Report for OU3 dated July 5, 2000, the DNREC-SIRB indicated implementation of additional assessment and monitoring would be required for ground water and surface water. The data has demonstrated risks below 1×10^{-05} for all constituents of concern in the soil when evaluated for the potential ingestion exposure pathway.

IV REMEDIAL ACTION OBJECTIVES

According to HSCA Regulation 8.4(1), remedial action objectives must be established for all Plans of Remedial Action. The remedial action will be evaluated for soil only, utilizing the qualitative and quantitative objectives and the following considerations:

- The site land use is expected to be a residential housing complex with paved parking areas, and
- The risk to human health.

QUALITATIVE REMEDIAL OBJECTIVES:

Based on the above considerations, the following qualitative objective was developed:

- Control human contact (dermal and ingestion) with contaminated soil, if any.

QUANTITATIVE REMEDIAL OBJECTIVES:

Based on the above qualitative remedial action objective, the following quantitative remedial action objective was developed:

- Prevent human contact with soil having constituents which exceed 10 E-05 cumulative cancer risk.

V PROPOSED REMEDIAL ACTION PLAN

Since the soil contaminants do not exceed 10 E-05 cancer risk, the Department of Natural Resources and Environmental Control's recommendation for the western parcel (OU3) is to propose no further action for shallow soils only and to address groundwater and surface water with the following stipulations:

1. Site activities will not inhibit the ongoing monitoring program or any proposed investigation of the ground water and stream area, or any future proposed remedial action, if necessary, for the ground water and stream.
2. Ground water withdrawal from the unconfined aquifer will be restricted for both OU2 and OU3.

VI PUBLIC PARTICIPATION

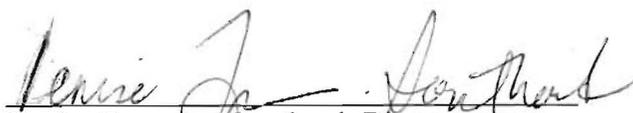
The Department of Natural Resources and Environmental Control, Site Investigation and Restoration Branch advertised a public hearing addressing this Proposed Plan on July 7, 2000 and held a public hearing on July 27, 2000 at Girls Inc., 489 Wyoming Road in Newark, Delaware. Pursuant to 7 Del. C. § 9107(e)(2), DNREC-SIRB invited written comments on this Proposed Plan. The public comment period began on Friday, July 7, 2000 and ended following the public hearing on July 27, 2000. No written comments from the public were received. DNREC-SIRB answered all public comments at the hearing. For additional information, contact Zsolt Haverland at (302) 395-2600.

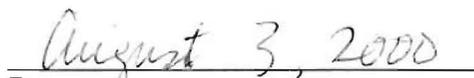
VII FINAL PLAN

Secretary's Order No. 2000-A-0037 was issued on July 31, 2000 adopting the Proposed Plan of Remedial Action for OUII as the Final Plan of Remedial Action for OUIII.

VIII DECLARATION

This Final Plan of Remedial Action for the Del Chapel OUIII 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