



AMENDED PROPOSED PLAN OF REMEDIAL ACTION

601 Delaware Avenue Site
Wilmington, Delaware
DNREC Project No. DE-1779



October 2023

Delaware Department of Natural Resources and Environmental Control
Division of Waste and Hazardous Substances
Remediation Section
391 Lukens Drive
New Castle, Delaware 19720

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Site 601 Delaware Avenue
Wilmington, Delaware
DNREC Project No. DE-1779



Approval:

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

Approved by:

Qazi Salahuddin, Environmental Program Administrator
Remediation Section

10/10/2023

Date



What is the Amended Proposed Plan of Remedial Action?

This PPRA summarizes the proposed clean-up (remedial) actions to address contamination found at the 601 Delaware Avenue site. A legal notice is published in the newspaper for a 20-day comment period. DNREC then considers and addresses all public comments received and publishes a Final Plan of Remedial Action (FPRA), which is referred to as the “Final Plan” for the Site.

The Final Plan is being amended based on developer’s changed plan to redevelop the Site to a high-rise, high-density residential building, resulting in an alternative remedial action based on the HHRA.

The Final Plan for this Site was adopted on June 27, 2022. This Amended Proposed Plan of Remedial Action will replace the June 27, 2022 Final Plan.

What is the 601 Delaware Avenue Site?

The 601 Delaware Avenue Site (DE-1779) is located at 601 Delaware Avenue, Wilmington, DE 19801 within New Castle County (Figures 1, 2). According to county records, a building on the property was constructed in 1940 with its most recent usage being office space for Christiana Care Health System up until 2021. The property is approximately 0.19 acres in size and contains county tax parcel 26-028.30-222. Most of the property is still occupied by the presence of the building with the remainder of the area covered by asphalt-paved parking space and a small, landscaped bed. The surrounding area is densely-urbanized with mixed use, including office, retail, hotel, hospital, and residential space.

What Happened at the 601 Delaware Avenue Site?

From approximately 1887 until 1936, historical imagery indicates that its primary use was commercial and residential dwellings. A medical arts building is seen containing the current 6- story building footprint via imagery from 1936 on, suggesting that the residential buildings were demolished prior to 1936. However, given the density of the urban setting and poor resolution of the imagery, individual building use is not discernable, and therefore, the building is presumed to be commercial office space. Historical demolition of the former building on site suggests the potential for on-site disposal of demolition debris containing materials that are regulated. Although not identified on any historical imagery, there is potential for an out-of- service underground storage tank (UST) based on observed vent lines, as well as the age of the building and historically urban setting. In surrounding areas, historical documents indicate that the surrounding land is densely developed, consisting of a mixture of residential and commercial properties since 1887. There were several former automobile repair and sales businesses on adjacent properties to the south and east. The automobile businesses are presumed to have been removed prior to 1976.

Verdantas, LLC. (Verdantas), formerly operating under the name, Duffield Associates, Inc. (Duffield) of Wilmington, DE, performed a Phase I Environmental Site Assessment (ESA) of the site in May 2013. This ESA identified a potential recognized environmental condition (REC) associated with apparent undocumented USTs at the site, which were suspected to be related to a heating oil UST for two boilers located in a basement. Verdantas/Duffield also indicated that there was potentially hazardous historical fill at the site. During this ESA, Harvard Environmental, Inc. also performed an asbestos survey and identified asbestos-containing materials (ACMs) within the building. A Phase II was recommended to further evaluate the site.

Verdantas/Duffield completed a Phase II ESA in December of 2013. This ESA consisted of a geophysical survey aimed to detect the presence of any underground storage tanks (USTs). The geophysical survey was inconclusive, due to various obstructions and interfering metal. This ESA also consisted of the collection of six soil borings for visual and laboratory analysis.

Historical fill containing brick, coal, and slag from approximately 0 to 4 feet below ground surface (ft bgs) was identified. Laboratory analysis identified polynuclear aromatic hydrocarbons (PAHs) - a group of semi-volatile organic compounds (SVOCs) - and diesel range organics (DROs) at concentrations exceeding DNREC-RS Reporting Levels.

Ten Bears completed a Phase I ESA in September 2021. No historical recognized environmental conditions (HRECs) or controlled recognized environmental conditions (CRECs) were identified at the site. Potential RECs that were identified include possible USTs, as well as historical fill, which was previously-documented to contain PAHs that exceeded DNREC reporting levels. Additional concerns included the previously-identified ACMs, the presumed presence of lead-based paint (LBP), and potential polychlorinated biphenyls (PCBs) content associated with the transformers on the site, which lacked placarding indicating PCB content. Ten Bears recommended entering the site into DNREC's Brownfields Program for further evaluation and remediation of the RECs, as well as for proper handling and disposal of contamination associated with ACMs, LBP, and PCBs during future demolition and renovation.

Upon entry of the property into the State of Delaware's DNREC Brownfields Program, Ten Bears conducted a Brownfield Investigation (BFI) in December of 2021 in order to further evaluate the extent of the RECs. Human Health Risk Assessment (HHRA) findings indicated acceptable risks for the current use of the property as an office building served with public drinking water. However, future redevelopment has the potential to cause unacceptable risk for potential residents and recreators. Potential future use of site groundwater for drinking water could result in unacceptable risk. Analytical results specific to the December 2021 BFI are discussed in sections below.

What are the Environmental Problem(s) at the 601 Delaware Avenue Site?

Elevated concentrations of hazardous substances were reported in the samples collected from soil, soil gas and ambient air, and groundwater.

- Soil: metals; SVOC compounds
- Soil gas and ambient air: VOC compounds
- Groundwater: metals; VOC compounds
- Surface water: N/A
- Sediment: N/A

SOILS

Ten soil borings (Figure 3) were implemented at the site. Soil sampling analytical data suggests impacts of various metals and semi-volatile organic compounds (SVOCs) on the site. Results from the BFI document prepared by Ten Bears reported instances of metals (arsenic, lead, mercury, and thallium) and SVOCs (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dienz(a,h)anthracene, and indeno(1,2,3-C,D)pyrene) exceeding DNREC-RS screening levels. Other tentatively-identified compounds (TICs) that were recorded as exceeding DNREC-RS screening levels consist of dibenzo(a,e)pyrene and nonane.

SOIL GAS AND AMBIENT AIR

Two active soil gas samples and one ambient air sample (Figure 3) were collected. Soil gas and ambient air sampling analytical data describes the presence of chloroform and tetrachloroethene that exceed the DNREC-RS screening levels.

GROUNDWATER

Ten Bears' March 2022 BFI report states that site currently falls within the City of Wilmington Groundwater Management Zone (GMZ). One groundwater monitoring well was installed on the site (Figure 3). Groundwater sampling analytical data reports impacts of various inorganic compounds, such as total (unfiltered) and dissolved (filtered) metals. Unfiltered metals that exceeded DNREC-RS screening levels include arsenic, cobalt, manganese, mercury, and thallium. Filtered metals that exceeded DNREC-RS screening levels include cobalt, manganese, and mercury. Only one organic compound was noted to be impacting the groundwater at the site, which was the VOC compound, chloroform

SURFACE WATER

No surface water bodies were located on or near the site, therefore, no surface water samples were collected during the brownfield investigation.

SEDIMENT

No surface water bodies were located on or near the site, therefore, no sediment samples were collected during the brownfield investigation.

What Clean-up Actions Have Been Taken at the 601 Delaware Avenue Site?

As of April 2022, there are not any known prior clean-up or interim work actions that have taken place at DE-1779.

What does the Owner Want to do at the 601 Delaware Avenue Site?

Tentatively, the prospective purchaser of the site was expected to redevelop the property into a surface parking lot, however, now the plan will be to redevelop the Site to a high-rise, high-density residential building, resulting in an alternative remedial action based on the HHRA.

What Additional Clean-up Actions are Needed at the 601 Delaware Avenue Site?

DNREC proposes the following remedial actions for the site, which need to be completed before a Certificate of Completion of Remedy (COCR) can be issued:

1. Submittal and approval of a Remedial Action Work Plan (RAWP) to DNREC-RS.
2. The Site will undergo a combination of the placement of a two-foot soil, stone, or impervious cap/cover or building structures over impacted areas to restrict access to underlying soil and mitigate potential soil exposure.
3. A Contaminated Materials Management Plan (CMMP) must be prepared and implemented to ensure that contaminated materials are appropriately managed and/or disposed off-site, as well as a Health and Safety Plan (HASP) for site workers and the public during remedial activities. These plans and their implementation shall be subject to DNREC approval and oversight. The CMMP must be submitted to DNREC within 60 days of the issuance of the Final Plan of Remedial Action. A Construction Completion Report (CCR) documenting work completion in accordance with the approved CMMP is required following earth-moving construction.
4. An Environmental Covenant (EC), consistent with Delaware's Uniform Environmental Covenants Act (7 Del.C. Chapter 79, Subchapter II) must be recorded in the Office of the New Castle County Recorder of Deeds. The EC document must include the following activity and/or use restrictions:
 - [a.] Limitation of Groundwater Withdrawal. No groundwater wells shall be installed and no groundwater shall be withdrawn from any well on the Property without the prior written approval of DNREC-RS and DNREC Division of Water.
 - [b.] Soil Disturbances and Relocations. DNREC notification and approval prior to any future disturbances and relocation of subsurface soils.

[c.] Compliance with Contaminated Materials Management Plan (CMMP). All work required by the CMMP must be performed to DNREC's satisfaction in accordance with the Plan.

5. Preparation and implementation of a site-specific Long-Term Stewardship (LTS) Plan which shall be submitted to DNREC for approval within 60 days of DNREC's approval of the RAWP. The LTS plan will detail cap monitoring requirements and schedule to be followed in order to monitor the integrity of the site capping components.
6. Submittal of a Remedial Action Completion Report (RACR) to DNREC-RS within 60 days of the completion of the required remedial actions.
7. A request for a Certificate of Completion of Remedy (COCR) must be submitted to DNREC within 60 days of the approval of the RACR.

What are the Long-term Plans for the Site After the cleanup?

The Site will be redeveloped to a high-rise, high-density residential building.

How can I Find Additional Information or Comment on the Proposed Plan?

The complete file on the Site including the Remedial Investigation Report and various other reports are available at the DNREC field office, 391 Lukens Drive in New Castle, 19720.

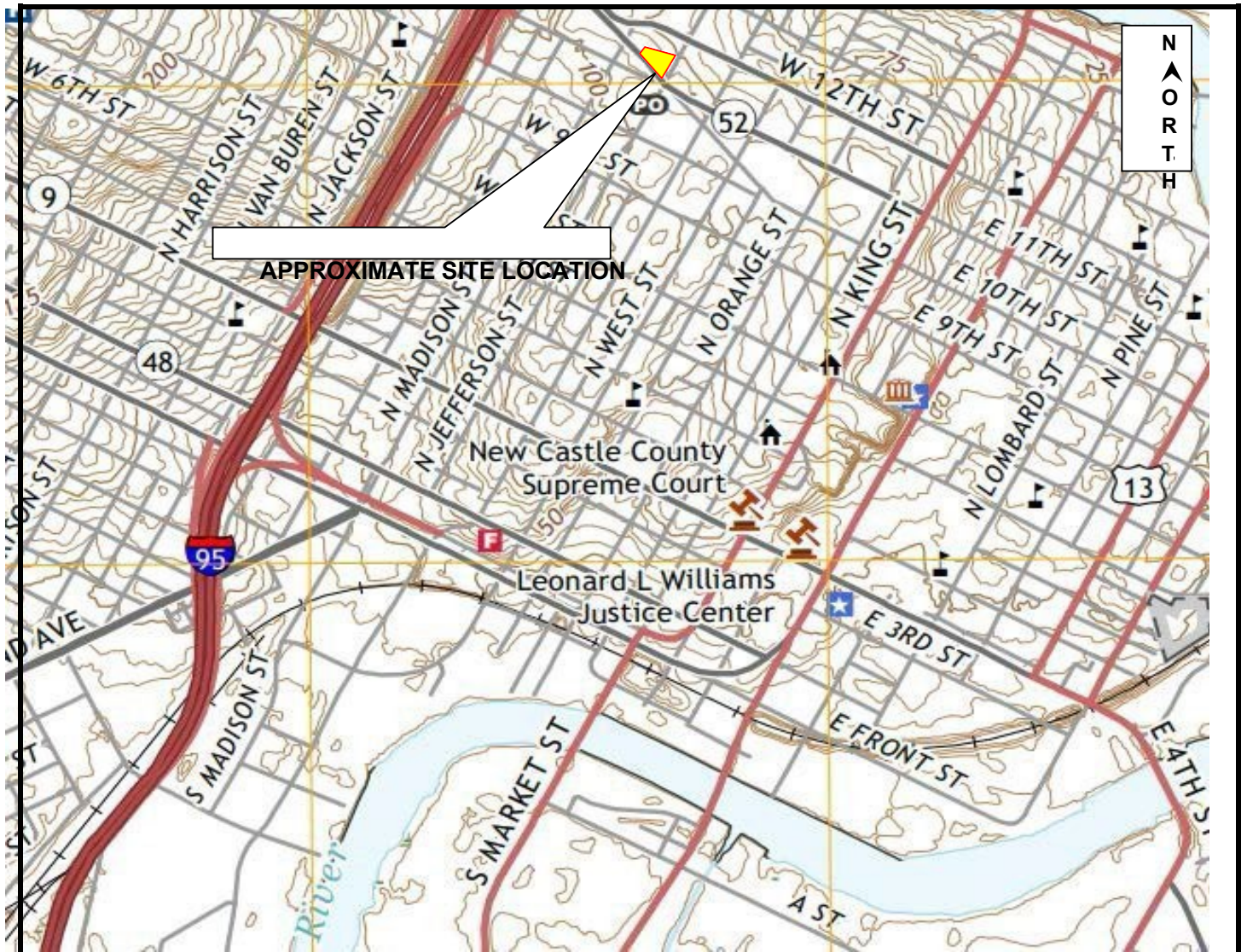
Most documents are also found on:

[Delaware Environmental Navigator Home](#)

The 20-day public comment period begins on October 15, 2023 and ends at close of business (4:30pm) on November 6, 2023. Please send written comments to the DNREC office at 391 Lukens Drive, New Castle, DE 19720 to Shahroze Ali, Hydrologist I (Project Officer) or via email to: shahroze.ali@delaware.gov

- Figure 1: Site Location
- Figure 2: Site Aerial Photograph
- Figure 3: Soil, Air, and Water Sampling Locations
- Appendix A: Glossary of Terms

Figures



NOTE:
 THIS LOCATION SKETCH WAS ADOPTED FROM THE USGS TOPOGRAPHIC MAP,
 7.5 MINUTE SERIES, FOR WILMINGTON_SOUTH, DELAWARE (2019)

FIGURE 1 - SITE LOCATION SKETCH

601 DELAWARE AVENUE SITE (DE-1779)

WILMINGTON, NEW CASTLE COUNTY, DELAWARE



Ten Bears Environmental Associates Co.,
 1080 South Chapel Street, Suite 200
 Newark, DE 19702
 Phone: (302) 731-8633

| | |
|------------------------|-----------------------|
| DATE: 10/12/2021 | JOB NUMBER: 21-2174.C |
| DRAWN BY: BMF | SCALE: NTS |
| CHECKED BY: RCG | FIGURE NO: 1 |
| FILE NO: 21-2174.C-FIG | SHEET 1 OF 1 |



APPROXIMATE SITE BOUNDARY

300 ft

NOTE:

This sketch was adapted from Google Earth (2020)



Ten Bears Environmental Associates Co.,
 1080 South Chapel Street, Suite 200
 Newark, DE 19702
 Phone: (302) 731-8633

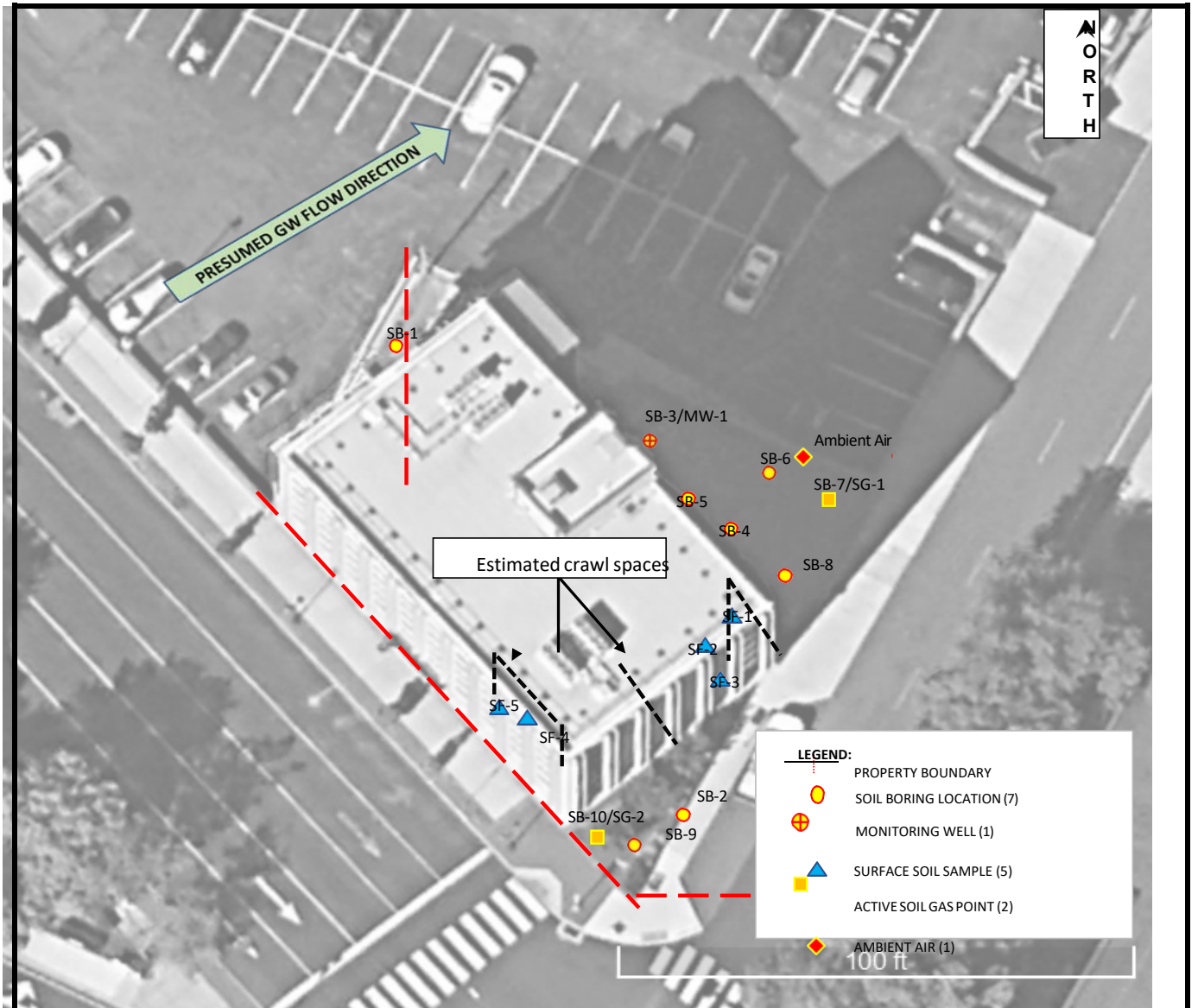
FIGURE 2 - SITE AERIAL PHOTOGRAPH

601 DELAWARE AVENUE SITE (DE-

1779)

WILMINGTON, NEW CASTLE COUNTY, DELAWARE

| | |
|------------------------|-----------------------|
| DATE: 10/12/2021 | JOB NUMBER: 21-2174.C |
| DRAWN BY: BMF | SCALE: AS SHOWN |
| CHECKED BY: RCG | FIGURE NO: 1 |
| FILE NO: 21-2174.C-FIG | SHEET 1 OF 1 |



NOTE:
THIS LOCATION SKETCH WAS ADAPTED FROM
A 2020 GOOGLE EARTH AERIAL PHOTOGRAPH

FIGURE 3 - BFI SAMPLE COLLECTION LOCATIONS

601 DELAWARE AVENUE SITE (DE-1779)

WILMINGTON, NEW CASTLE COUNTY, DELAWARE



Ten Bears Environmental Associates Co.,
1080 South Chapel Street, Suite 200
Newark, DE 19702
Phone: (302) 731-8633

| | | | |
|-------------|----------------|--------------|-----------|
| DATE: | 12/11/2021 | JOB NUMBER: | 21-2174.C |
| DRAWN BY: | BMF | SCALE: | AS SHOWN |
| CHECKED BY: | RCG | FIGURE NO: | 4 |
| FILE NO: | 21-2174.C-FIGS | SHEET 1 of 1 | |

Appendix A

Glossary of Terms Used in this Proposed Plan

| | |
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| Brownfield | A property, expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant |
| Brownfield Investigation (BFI) or Remedial Investigation (RI) | Evaluation and reporting of a release or imminent threat of release of a hazardous substance at a facility or site to determine the nature, extent, and impact of the release and the collection of data necessary to conduct a feasibility study of remedial alternatives, as needed. This is a thorough environmental study of a site which includes: 1) sampling of site environmental media and/or wastes on the property, and 2) conducting a preliminary risk assessment using the data collected to determine the risk posed to human health and the environment. |
| Brownfields Program (DNREC) | Remedial process established by the DNREC under 7 Del.C. Ch.91, into which a party enters into, provided the application is approved by the Department, for the purpose of conducting a remedy at a facility or site. |
| Certification of Completion of Remedy (COCR) | A formal determination by the Secretary of DNREC that remedial activities required by the Final Plan of Remedial Action have been completed. |
| Contaminated Materials Management Plan (CMMP) | A written plan specifying how potentially contaminated material at a site will be sampled, evaluated, staged, transported, and disposed of properly. |
| DNREC-RS | Remediation Section (RS) of DNREC, which oversees cleanup of sites that were contaminated as a result of past use. |
| Environmental Covenant (EC) or Deed Restriction | Placed on a site to reduce the potential for exposure to contaminants by restricting land use, land disturbance, and/or groundwater use. Can also potentially require ongoing maintenance of the remedy or other institutional controls. |
| Exposure | Contact with a substance through inhalation, ingestion, or direct contact with the skin. Exposure may be short term (acute) or long term (chronic). |
| Groundwater Management Zone (GMZ) | Includes a map and associated restrictive language to define the area in which DNREC will restrict water supply wells. |
| Final Plan of Remedial Action (FPRA) | DNREC's adopted plan for cleaning up a hazardous site. |

| | |
|--|--|
| Proposed Plan of Remedial Action (PPRA) | DNREC's proposed plan for cleanup up a hazardous site. |
| Remedial Action | The containment, contaminant mass or toxicity reduction, isolation, treatment, removal, cleanup, or monitoring of hazardous substances release into the environment, or the taking of such other actions, including natural resource damage restoration and replacement, as may be necessary to prevent, minimize or mitigate harm or risk of harm to the public health or welfare, or the environment, which may result from a release or imminent threat of a release of hazardous substances. |
| Risk | Likelihood or probability of injury, disease, or death. |

