

AMENDED FINAL PLAN OF REMEDIAL ACTION



CHRYSLER NEWARK ASSEMBLY PLANT SITE – OPERABLE UNIT 9
(-AKA- University of Delaware's Science, Technology and Advanced Research Campus)

*550 South College Avenue
Newark, Delaware*

*July 17, 2012
DNREC Project No. DE-0105*

This Amended Final Plan of Remedial Action (Final Plan) presents the Department of Natural Resources and Environmental Control's (DNREC's) intention to address environmental contamination at the Chrysler Newark Assembly Plant Site – Operable Unit 9.

DNREC issued public notice of the Amended Proposed Plan of Remedial Action (Amended Proposed Plan) for Operable Unit 9 (OU-9) of the Site on June 24, 2012 and opened a 20-day public comment period. The Amended Proposed Plan is attached. There were no comments from the public; therefore, the Amended Proposed Plan is adopted as the Amended Final Plan.

Approval:

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

Timothy T. Ratsep, Program Administrator
Site Investigation and Restoration Section



AMENDED PROPOSED PLAN OF REMEDIAL ACTION

**Chrysler Newark Assembly Plant Site – Operable Unit 9
(-AKA- University of Delaware’s Science, Technology and Advanced Research
(STAR) Campus)
Newark, Delaware
DNREC Project No. DE-0105**



June 2012

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

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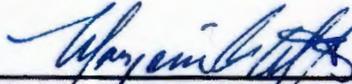
AMENDED PROPOSED PLAN OF REMEDIAL ACTION

Chrysler Newark Assembly Plant Site – Operable Unit 9
Newark, Delaware
DNREC Project No. DE-0105



Approval:

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

Approved by:

Marjorie A. Crofts, Director Division of Waste and Hazardous Substances
6.22.12
Date



What is the Amended Proposed Plan of Remedial Action?

The Proposed Plan of Remedial Action (Proposed Plan) summarizes the clean-up (remedial) actions that are being proposed to address contamination found at the Site. The Proposed Plan is issued to solicit public comment. A legal notice is published in the newspaper for a 20-day comment period. The Department of Natural Resources and Environmental Control (DNREC) considers and addresses all public comments received and subsequently publishes a Final Plan of Remedial Action (Final Plan) for the Site.

When new information regarding a release of contamination is identified at a Site after the Proposed Plan has been issued, an Amended Proposed Plan must be issued to once again solicit public comment. DNREC uses a comprehensive assessment, which includes the additional data, to develop the new proposal for remedial action at the Site.

What is the Chrysler Newark Assembly Plant Site (OU-9)?

The Site is the former location of the Chrysler Newark Assembly Plant. The Site is located at 550 South College Avenue in Newark and consists of two tax parcels: 18-039.009-002 and 18-036.00-002 (Figure 1). The nearest major intersection is South College Avenue (Route 896) and Mopar Drive. The Site is owned by 1743 Holdings, LLC, and has been designated as a Certified Brownfields Site. 1743 Holdings, LLC entered into a Brownfields Development Agreement (BDA) with DNREC to perform a Brownfield Investigation and address contamination determined to be present on the Site.

The Site has been divided into operable units or smaller areas to more easily manage its investigation and cleanup. **This Amended Proposed Plan specifically addresses Operable Unit 9 (OU-9) of the Site. OU-9 is approximately 29.5 acres in size, the boundaries of which are depicted on Figure 2.** The OU-9 portion is covered with the concrete floor slab of the former Assembly Building.

What happened at the Chrysler Newark Assembly Plant Site (OU-9)?

Prior to the 1950s, the Site was utilized for agricultural purposes. During the 1950s, a large vehicle assembly building was constructed wholly within OU-9 and was used for assembling military tanks. Most recently, the building was used for assembling cars and trucks. The former Main Assembly Building was expanded eastward in 1973 to connect with the Administrative Building. Vehicle assembly ceased on the Site in December 2008.

Why is an Amended Proposed Plan of Remedial Action necessary for the Chrysler Newark Assembly Plant Site (OU-9)?

Based on additional soil and groundwater characterization work performed after the issuance of the original Proposed Plan on April 12, 2012, the size of Area of Concern (AOC) 3-2 was discovered to extend further into OU-9 than previously determined. As a result, additional remedial actions for OU-9 are proposed in this Amended Proposed Plan to address the contamination identified most recently.

What is the environmental problem at the Chrysler Newark Assembly Plant Site (OU-9)?

Multiple environmental investigations have been performed on the Site between 1985 and 2012. Numerous AOCs were identified across the Site based on previous site activities. The AOCs identified within or near OU-9 include: the former Executive Garage and the former MCI Tower (AOC-3-2), the former North Tank Farm and former Silver Brook valley which has been filled with ash and slag (AOC-3-1), and the former Paint Mix Building (AOC-4-1), located near the boundary of OU-9 in OU-4.

The following provides a summary of some investigations and findings in and around OU-9 over the past 5 years.

- 2008: ATC, an environmental consulting firm, conducted Phase I and Phase II investigations on the entire Site, on behalf of Chrysler. During the Phase II investigation, ten (10) soil samples and four (4) shallow groundwater samples were collected within the bounds of OU-9, specifically in the vicinity of the historic hydraulic lifts and wood block floor area. Arsenic and semi-volatile organics (SVOCs) benzo(a)pyrene and dibenz(a,h)anthracene were detected in excess of the Unrestricted Use Uniform Risk-Based Remediation Standards (URS). With regard to groundwater, only zinc was detected above the groundwater URS.
- 2010: Duffield Associates submitted a Limited Current Conditions Assessment (LCCA) to DNREC-SIRS. No soil or groundwater samples were collected within the bounds of OU-9. Five (5) existing shallow groundwater monitoring wells were sampled in the Former MCI Tower Area, located in OU-3, immediately adjacent to OU-9. Benzene, toluene, naphthalene, acetone, chloroethane, and aldrin were found to be present above the groundwater URS value.
- 2011: Duffield Associates conducted a Brownfield Investigation (BFI) consisting of soil and groundwater sampling on the OU-9 portion of the Site. The BFI was performed in three phases. Phase I included the installation and analysis of 90 GORE[®] Modules, the completion of 12 soil borings in an area suspected to contain ash and slag fill materials and the installation of five (5) monitoring wells. A total of 23 soil samples were analyzed. Phase II consisted of the completion of 22 soil borings at locations based on the analytic testing of the GORE[®] Modules and the installation of seven (7) shallow monitoring wells. A total of 45 soil samples were collected and analyzed. Phase III

consisted of the collection and analysis of the groundwater samples from the 12 monitoring wells installed during Phases I and II as well as from one (1) monitoring well installed during the OU-8 BFI.

- 2012: Duffield Associates conducted a Soil Vapor Assessment in the eastern area of OU-3 and OU-9. Chlorinated VOCs were found to be present in the sub-slab soil gas beneath the Administration Building portion of the Study Area. Naphthalene and chlorinated VOCs were reported as present at elevated concentrations in sub-slab soil gas in the southern and western portions of the Study Area. Given the lack of correlating detections inside the Administration Building, it was determined that the underlying slab effectively mitigates any vapor intrusion threat posed, therefore equivalent construction methods would be required to be used in the Administration Building Expansion proposed for construction beginning in 2012.
- 2012: Duffield Associates conducted an additional assessment of the Executive Garage area which indicated that the boundaries of AOC 3-2 extended beyond what was previously identified. Based on the additional data collected, it was determined that VOCs detected beneath the shallow groundwater table in soil and groundwater would potentially pose a vapor intrusion threat to building occupants should the shallow groundwater table drop drastically from its current depth, as documented to have happened during drought conditions observed in the 1960s.

What clean-up actions have been taken at the Chrysler Newark Assembly Plant Site (OU-9)?

Under Chrysler's ownership, limited subsurface environmental investigations were performed within or near OU-9, related to former above and underground storage tank areas. One such area was the Former MCI Tower Area, where contamination in soil and groundwater is likely associated with a former leaking underground gasoline storage tank. In 1990, a multi-phase extraction (MPE) system was installed in the MCI Tower Area to remove free-phase gasoline and gasoline related substances from soil and groundwater. The MPE system was shut down in 2001 after groundwater monitoring indicated that separate phase gasoline was no longer being detected in the shallow groundwater table.

What does the owner want to do at the Chrysler Newark Assembly Plant Site (OU-9)?

The entire Site is the location of the University of Delaware's Science, Technology and Advanced Research (STAR) Campus. Future development within OU-9 will likely include buildings, underground utilities, access roads and parking.

What clean-up actions are needed at the Chrysler Newark Assembly Plant Site (OU-9)?

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. Maintain existing physical barriers in AOC 3-1, AOC 3-2, and AOC 4-1 that are in place limiting human contact with soils. When earth-disturbing activities are performed within AOC 3-1, AOC 3-2 or AOC 4-1, a replacement barrier of either impervious material (e.g. building foundation, asphalt or concrete) or an one foot clean soil cap with marker fabric placed beneath it must installed;
2. Design and implement a soil vapor extraction and air sparging system within the bounds of AOC 4-1 to promote the removal of LNAPL and organic substances of concern from soil, groundwater and soil gas;
3. Design and install a vapor barrier system beneath any continuously-occupied structures constructed on OU-9 within a 100 foot radius of the boundaries of AOC 3-2 and AOC 4-1;
4. Develop a DNREC-approved Contaminated Materials Management Plan (CMMP) to provide guidance on how to safely handle any potentially-contaminated soil and groundwater encountered within OU-9;
5. Develop and implement a DNREC-approved Long-Term Stewardship (LTS) Plan. The LTS Plan will detail: 1) the groundwater monitoring network and schedule to be followed in order to monitor the attenuation of the groundwater COCs, as well as, the depth to the groundwater table within OU-9, and 2) the inspection schedule to be followed in order to ensure the long-term integrity of the remedy;
6. Record an Environmental Covenant, consistent with Delaware's Uniform Environmental Covenants Act (Title 7, Del. Code Chapter 79, Subtitle II) (UECA), in the office of the Recorder of Deeds to include the following:
 - Restrict land use to non-residential (e.g. commercial/industrial);
 - Prohibit interference with remedy;
 - Prohibit land-disturbing activities within the bounds of AOC 3-1, AOC 3-2, and AOC 4-1 without prior written approval by DNREC;
 - Prohibit modification to ground level building slabs or flooring where vapor intrusion systems have been installed without the prior written approval of DNREC;
 - Prohibit the installation of groundwater wells for drinking water purposes without the prior written approval of DNREC;
 - Identify the Site as located within a Groundwater Management Zone (GMZ);
 - Comply with the Long-Term Stewardship Plan; and
 - Comply with the CMMP.

What are the long term plans for the Chrysler Newark Assembly Plant Site (OU-9 after the cleanup?)

In OU-9, the Site use will be restricted to non-residential (commercial/industrial) purposes in accordance with the recording of an environmental covenant. All other requirements set forth in the environmental covenant shall be adhered to; including performance of future site work in accordance with the CMMP.

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

The complete file on the OU-9 of the Site, including the Brownfield Investigation Report, supplemental Executive Garage Assessment and addendum, and various other reports are available at the DNREC office, 391 Lukens Drive in New Castle, 19720. Most documents are also found on: <http://www.nav.dnrec.delaware.gov/DEN3/>

The 20-day public comment period begins on June 25, 2012 and ends at close of business (4:30 pm) on July 16, 2012. Please send written comments to the DNREC office at 391 Lukens Drive, New Castle, DE 19720 to Lindsay Hall or Wendy March, Project Managers, or Robert Newsome, Public Information Officer.

Figure 1: Site Location Map

Figure 2: OU-9 Location Map

Figure 3: OU-9 Groundwater Contour Map

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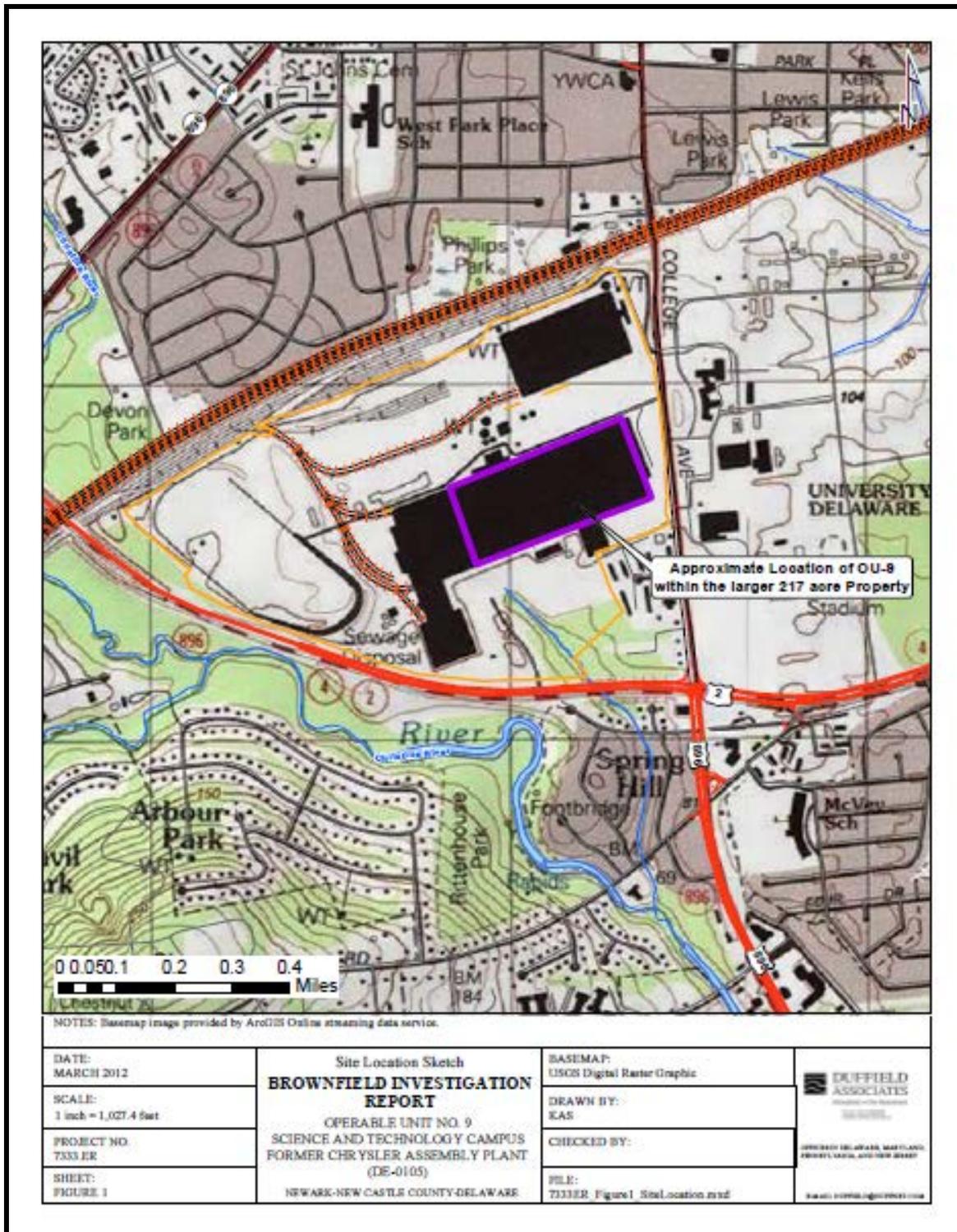


Figure 1

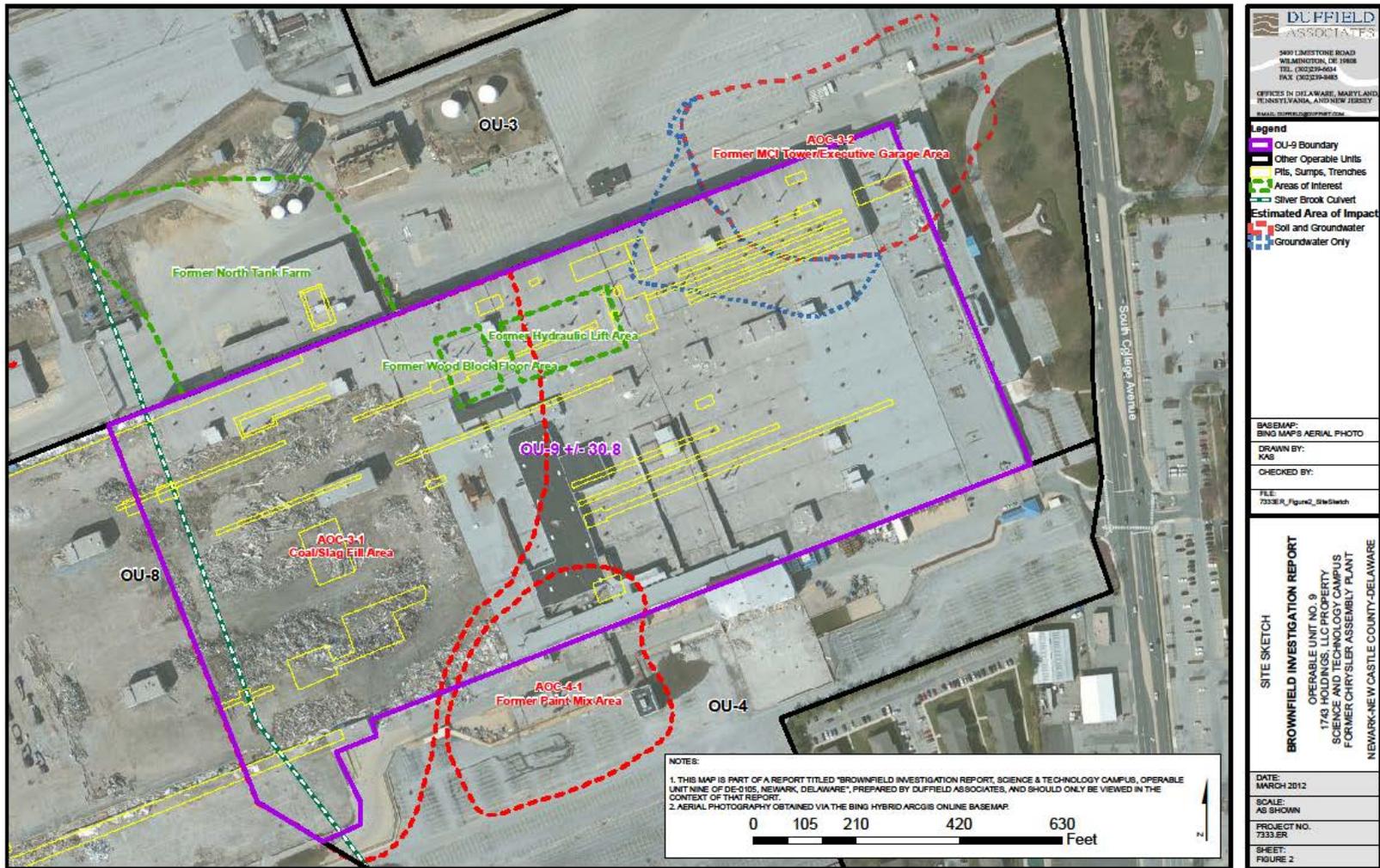


Figure 2

Glossary of Terms Used in this Proposed Plan

Air Sparging	Injection of air into the ground subsurface to promote the volatilization (evaporation) of volatile organic compounds for subsequent removal.
Area of Concern (AOC)	A discrete section of the Site representing the local bounds of contamination in soil and/or ground water.
Brownfield Development Agreement (BDA)	This legal agreement is between a potential developer of a Delaware-certified Brownfields Site and the DNREC. The developer agrees to investigate and cleanup a Brownfields property under the oversight of the Department in exchange for liability protection.
Brownfield Investigation (BFI)	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.
Certified Brownfield	A Brownfield that DNREC has determined is eligible for partial funding through the Delaware Brownfields Program
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.
Contaminant of Concern (COC)	Potentially harmful substances at concentrations above acceptable levels.
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.
Exposure	Contact with a substance through inhalation, ingestion, or direct contact with the skin. Exposure may be short term (acute) or long term (chronic).
Final Plan of Remedial Action	DNREC's adopted plan for cleaning up a hazardous site.
Groundwater Management Zone	A geographical area where DNREC restricts drilling for ground water because it is contaminated
Hazardous Substance Cleanup Act (HSCA)	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.
Human Health Risk Assessment (HHRA)	An assessment done to characterize the potential human health risk associated with exposure* to site related chemicals.
Preliminary Risk Assessment	A quantitative evaluation of only the most obvious and likely risks at a site
Risk	Likelihood or probability of injury, disease, or death.
Restricted Use	Commercial or Industrial setting
SIRS	Site Investigation Restoration Section of DNREC, which oversees cleanup of sites that were contaminated as a result of past use, from dry cleaners to chemical companies
Soil Vapor Extraction	Capture and removal of soil vapor resulting from the

	volatilization (evaporation) of volatile organic compounds in soil and groundwater
Uniform Risk-Based Remediation Standards (URS)	A set of concentration criteria for various contaminants potentially present in site media that are developed for protection of human health and the environment
Vapor Barrier System	A liner is placed beneath a building foundation to trap any soil vapor, along with a piping system that will divert the soil vapor so that it vents outside of the structure. The piping is designed to allow for future access to test the integrity of the system components.