FINAL PLAN OF REMEDIAL ACTION

KALMAR NYCKEL/CHALLENGE PROGRAM SITE – OPERABLE UNIT 3

1112 and 1124 East 7th Street — *November 2013*
Wilmington, Delaware — *DNREC Project No. DE-0339*

This Final Plan of Remedial Action (Final Plan) presents clean-up actions required by the Department of Natural Resources and Environmental Control (DNREC) to address environmental contamination at the Kalmar Nyckel/Challenge Program Site – Operable Unit 3 (OU-3).

DNREC issued public notice of the Proposed Plan of Remedial Action (Proposed Plan) for OU-3 of the Site on October 20, 2013 and opened a 20-day public comment period. The Proposed Plan is attached. There were no comments from the public; therefore, the Proposed Plan is adopted as the 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

November 13, 2013
Date

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PROPOSED PLAN OF REMEDIAL ACTION

Kalmar Nyckel/ Challenge Program Site
Operable Unit 3 (OU-3)
Wilmington, Delaware
DNREC Project No. DE-0339

October 2013

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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PROPOSED PLAN OF REMEDIAL ACTION

Kalmar Nyckel/ Challenge Program Site
Operable Unit 3 (OU-3)
Wilmington, Delaware
DNREC Project No. DE-0339

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

Approved by:

Timothy Ratsep, Environmental Program Administrator
Site Investigation & Restoration Section

October 15, 2013
Date

What is the 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. A legal notice is published in the newspaper to advertise the start of a 20-day public comment period. DNREC considers and addresses all public comments received and subsequently publishes a Final Plan of Remedial Action (Final Plan) for the Site.

What is the Kalmar Nyckel/Challenge Program Site?

The Kalmar Nyckel and Challenge Program Properties (the Site) are located on the 7th Street Peninsula at 1112 & 1124 East 7th Street, within the city limits of Wilmington, Delaware (Figure 1). The Site consists of two tax parcels (26-044.00-010 and 26-044.00-012), totaling approximately 3.36 acres (Figure 2). The nearest intersection to the Site is East 7th Street and North Claymont Street.

The property is owned by the City of Wilmington and leased to the Kalmar Nyckel Foundation. A portion of the Site is subleased to the Challenge Program. The Site currently houses the Challenge Program workshop/offices, the Kalmar Nyckel's offices, and gravel parking areas. It also includes a storage area for the materials from the Challenge Program's deconstruction of historic buildings. The Kalmar Nyckel Ship is docked here on the Christina River at various times throughout the year.

This Proposed Plan specifically addresses OU-3 of the Site, which consists of tax parcel 26-044.00-010 (Figure 2).

What happened at the Kalmar Nyckel/Challenge Program Site?

According to historical records, much of this portion of the East 7th Street Peninsula was used by the Jackson and Sharp American Car Foundry. Jackson and Sharp built and shipped railroad cars from the early to mid-1800s through the mid-1900s. At its peak, Jackson and Sharp owned over half of the East 7th Street Peninsula. Given the nature of industrial and commercial disposal practices before environmental regulation, the possibility exists for contamination to have migrated into the subsurface media from historic site uses or to have been deposited as part of the contaminated historic fill used to fill in the marsh areas on the 7th Street Peninsula.

What is the environmental problem on Operable Unit 3 of the Kalmar Nyckel/Challenge Program Site?

According to environmental investigations, the Kalmar Nyckel/Challenge Program Site has concentrations of metals (arsenic and lead) and polycyclic aromatic hydrocarbons (PAHs) in the soil that exceed both DNREC's unrestricted use (e.g. residential, recreational) and restricted use (e.g. commercial, industrial) criteria. Exposure to site soils containing these contaminants of concern (COCs) could pose an unacceptable risk to site users. Groundwater at the Site contains elevated concentrations of iron and manganese; however, site users do not drink the groundwater at the Site as public water is provided by the City of Wilmington. The contaminant load calculations, which are used to evaluate whether or not the groundwater discharge is impacting the quality of an adjacent water body, indicate that the contaminants are not unacceptably impacting the Christina River. Sediment samples collected from the Christina River alongside the Site contain elevated concentrations of various metals and PAHs above the sediment criteria. The surface water samples, that were also collected upstream and downstream of the Site, contain elevated concentrations of several metals. The comparable sediment and surface water quality of both upstream and downstream samples suggest that the Site is not the source of the metals and PAHs contamination in the Christina River.

What does the owner want to do on Operable Unit 3 of the Kalmar Nyckel/Challenge Program Site?

The Site is a Certified Brownfields Site. The Kalmar Nyckel Foundation does not have specific redevelopment plans at this time; however, any future redevelopment will be buildings, parking, etc. associated with the Kalmar Nyckel educational programs.

What additional clean-up actions are needed on Operable Unit 3 of the Kalmar Nyckel/Challenge Program Site?

DNREC proposes the following remedial actions for the Site, all of which must be completed before a Certification of Completion of Remedy (COCR) can be issued:

1. Install clean utility corridors, meaning excavate existing site soils in areas where utilities are to be placed and backfill with DNREC-approved fill material after the placement of utilities, to eliminate exposure of future utility workers to existing contaminated site soils.

2. Cap the Site with at least one foot of clean fill over marker fabric or impervious material such as buildings, asphalt, or concrete to eliminate exposure of future site users to existing site soils.

3. Comply with the DNREC-approved Contaminated Materials and Water Management Work Plan (CMWMWP). The CMWMWP will provide guidance for future site users on how to safely handle any potentially-contaminated soil and groundwater with which they may come into contact at the Site.

4. Develop a Long-Term Stewardship (LTS) Plan to be approved by DNREC. The LTS Plan will detail the inspection schedule to be followed in order to ensure the long-term integrity of the remedy.

5. 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:

   a. Interference with Remedy. There shall be no digging, drilling, excavating, grading, constructing, earth moving, or any other land disturbing activities at depths greater than 1 foot on the Property or directly beneath impervious surfaces including any repair, renovation or demolition of the existing structures on the on the Property without the prior written approval of DNREC-SIRS;

   b. 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;

   c. Compliance with Long-Term Stewardship Plan. Perform all work required by the Long-Term Stewardship Plan ("LTS Plan"), as issued, approved, modified or amended by DNREC;

   d. Compliance with Contaminated Material and Water Management Work Plan. Perform all work required by the Contaminated Materials and Water Management Work Plan ("CMWMWP"), as issued, approved, modified or amended by DNREC;

How can I find additional information on the Amended Proposed Plan for Operable Unit 3 of the Kalmar Nyckel/Challenge Program Site?

The complete file on the Site, including the Site-Specific Assessment, Supplemental Risk Report, and 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/

How can I comment on the Amended Proposed Plan for Operable Unit 3 of the Kalmar Nyckel/Challenge Program Site?

The 20-day public comment period begins on October 20, 2013 and ends at close of business (4:30 pm) on November 12, 2013. Please send written comments to the DNREC office at 391 Lukens Drive, New Castle, DE 19720 to Lindsay Hall, Project Officer, or Robert Newsome, Public Information Officer.

Figure 1: Site Location Map
Figure 2: Site Layout Map

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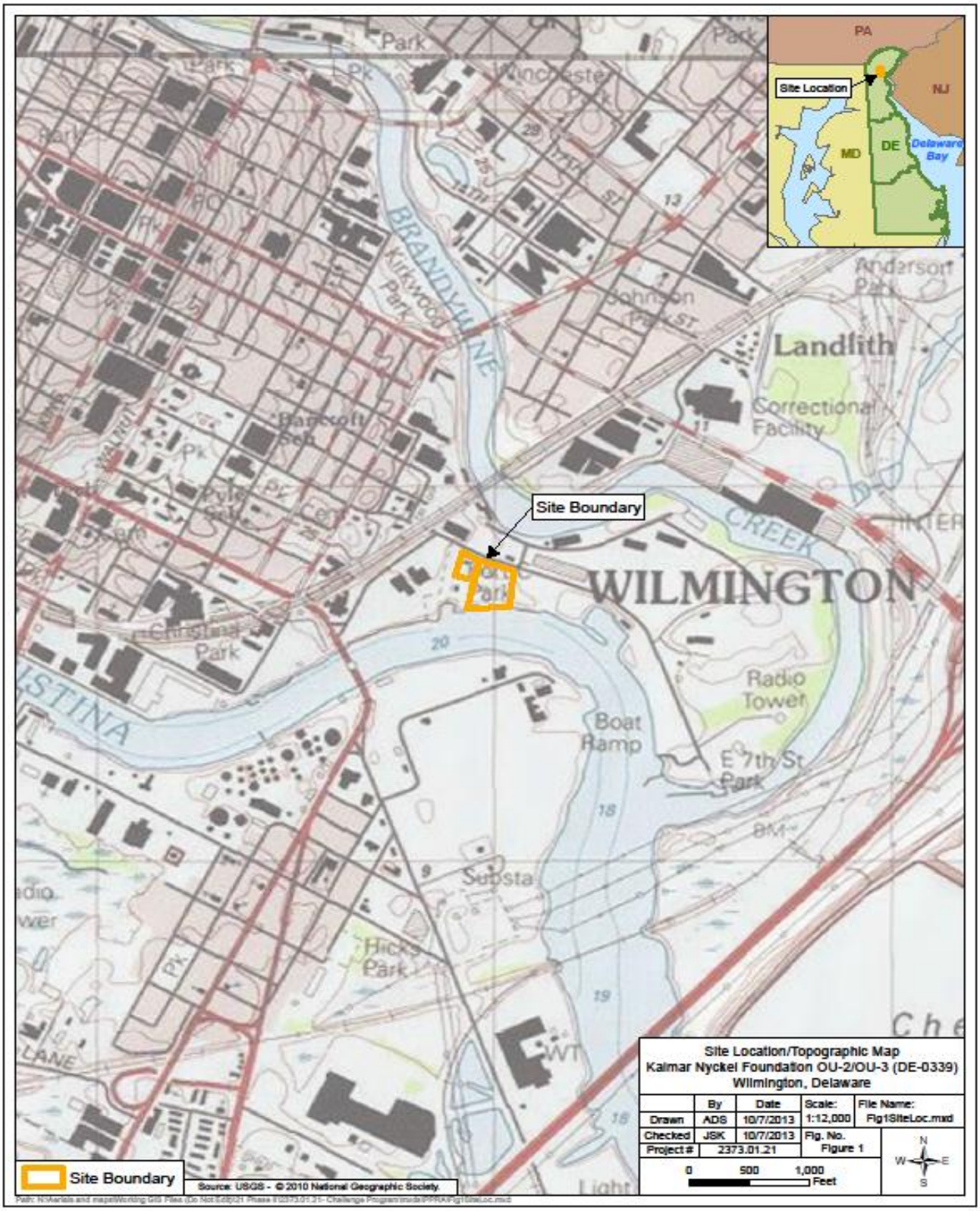
PA
NJ
MD
DE
Delaware Bay
Site Location
Site Boundary
WILMINGTON
Landlith
Correctional Facility
Radio Tower
Boat Ramp
E 7th St Park
Site Location/Topographic Map
Kalmar Nyckel Foundation OU-2/OU-3 (DE-0339)
Wilmington, Delaware
By
Date
Scale:
File Name:
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ADS
10/7/2013
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Fig. No.
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Figure 1
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Site Boundary
Source: USGS - © 2010 National Geographic Society

Figure 1

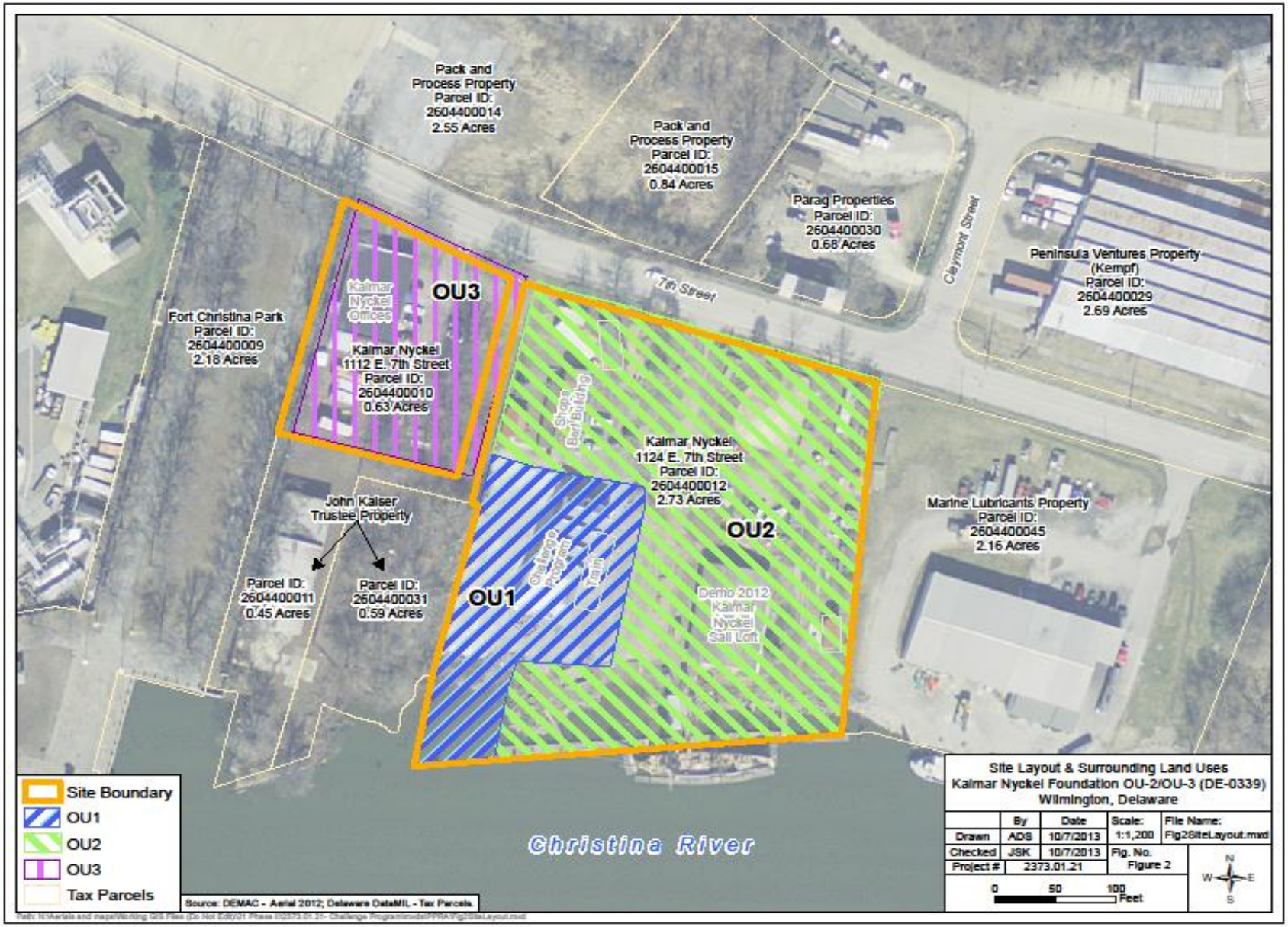
Pack and Process Property Parcel ID: 2604400014 2.55 Acres
Pack and Process Property Parcel ID: 2604400015 0.84 Acres
Parag Properties Parcel ID: 2604400030 0.68 Acres
Claymont Street
Peninsula Ventures Property (Kempf) Parcel ID: 2604400029 2.69 Acres
7th Street
Fort Christina Park Parcel ID: 2604400009 2.18 Acres
Kalmar Nyckel Offices
OU3
Kalmar Nyckel 1112 E. 7th Street Parcel ID: 2604400010 0.63 Acres
Shop in Bert Building
Kalmar Nyckel 1124 E. 7th Street Parcel ID: 2604400012 2.73 Acres
OU2
Marine Lubricants Property Parcel ID: 2604400045 2.16 Acres
John Kaiser Trustee Property
Parcel ID: 2604400011 0.45 Acres
Parcel ID: 2604400031 0.59 Acres
OU1
Challenge Program Trailer
Demo 2012 Kalmar Nyckel Sail Loft
Christina River
Site Boundary
OU1
OU2
OU3
Tax Parcels
Source: DEMAC - Aerial 2012; Delaware DataMIL - Tax Parcels
Site Layout & Surrounding Land Uses
Kalmar Nyckel Foundation OU-2/OU-3 (DE-0339)
Wilmington, Delaware
By Date Scale: File Name:
Drawn ADS 10/7/2013 1:1,200 Fig2SiteLayout.mxd
Checked JSK 10/7/2013 Fig. No. Figure 2
Project # 2373.01.21
0 50 100 Feet
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Figure 2

Glossary of Terms Used in this Proposed Plan

Brownfield	Property that is vacant or underutilized because of the perception or presence of an environmental problem
Certified Brownfield	A Brownfield that DNREC has determined is eligible for partial reimbursement 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 and Water Management Plan	A written plan specifying how potentially contaminated materials and water at a Site will be sampled, evaluated, staged, transported and disposed of properly should they be encountered during future site activities
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.
Risk	Likelihood or probability of injury, disease, or death.
Restricted Use	e.g. 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
Unrestricted Use	e.g. Residential setting