FINAL PLAN OF REMEDIAL ACTION

NVF-YORKLYN OPERABLE UNIT #2

1166 Yorklyn Road *July 2015*
Yorklyn, Delaware *DNREC Project No. DE-0071*

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 NVF-Yorklyn Site - Operable Unit #2.

DNREC issued public notice of the Proposed Plan of Remedial Action (Proposed Plan) for the Site on July 8, 2015 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

July 28, 2015
Date

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PROPOSED PLAN OF REMEDIAL ACTION

NVF-Yorklyn Operable Unit #2
Yorklyn, Delaware
DNREC Project No. DE-0071

July 2015

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

NVF-Yorklyn Operable Unit #2
Yorklyn, Delaware
DNREC Project No. DE-0071

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

Approved by:

Paul Will for T.R.

Timothy Ratsep, Environmental Program Administrator
Site Investigation & Restoration Section

July 2, 2015

Date

NVF-Yorklyn OU-2

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

What is the NVF-Yorklyn Site?

The NVF-Yorklyn Site is located at 1166 Yorklyn Road in Yorklyn, New Castle County, Delaware, approximately two miles south of the Pennsylvania and Delaware state line. Currently, the Site consists of six tax parcels (0800100022, 0800100023, 0800100024, 0800400148, 0800400270 and a portion of 0700900027) totaling approximately 19 acres. The Site lies along the southern bank of the Red Clay Creek, and was formerly owned and operated by National Vulcanized Fiber. Surrounding properties are a mix of undeveloped, residential and commercial properties. The Site itself consists of abandoned manufacturing facilities, most of which are planned for demolition (Figure 1).

Topography at the Site ranges from gently to steeply sloping. The lowest elevation is generally located near Yorklyn Road and Red Clay Creek. Surface water drains towards Red Clay Creek which is located north of the Site. An unnamed tributary (also referred to as the onsite ditch), located east of Yorklyn Road, flows through the Site in a northeasterly direction toward Red Clay Creek.

For purposes of environmental cleanup and redevelopment, the Site has been divided into three operable units (OUs). OU-1 is comprised of the majority of the former site buildings. OU-2 is comprised of former Mill #6 and surrounding lands and OU-3 is comprised of former Mill #1 and surrounding lands (Figure 2). This Proposed Plan of Remedial Action is for OU-2 only. Proposed Plans of Remedial Action will be developed for OU-1 and OU-3 separately.

What happened at the NVF-Yorklyn Site (including OU-2)?

The Site has been used historically for paper making, paper vulcanization (with zinc chloride) and for associated zinc reclamation. National Vulcanized Fiber went bankrupt in 2008/2009. The properties were subsequently purchased by a private developer who partnered with the State of Delaware for clean-up/redevelopment of the properties. Although the plant is no longer actively producing vulcanized paper products, the zinc reclamation equipment is currently being operated by the State of Delaware for reclaiming zinc from groundwater beneath the former plant sites.

What is the environmental problem at the NVF-Yorklyn Site?

Many previous environmental investigations have occurred at the Site between 1986 and 2014, and are summarized in the 2015 Remedial Investigation Report. During these investigations, regulated compounds including volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides and metals were detected in soil, groundwater and/or sediment. These contaminants are attributed to historic operations at the Site. Asbestos containing materials (ACMs) have also been documented within the older buildings and structures at the Site. As noted above, DNREC is currently operating a zinc groundwater recovery system at the NVF-Yorklyn Site to reduce discharge of zinc to the adjacent Red Clay Creek.

Specifically within OU-2, and as summarized in the 2015 Remedial Investigation Report, polynuclear aromatic hydrocarbons (PAHs) were detected three areas of OU-2 site soils at concentrations that exceeded human health remedial goal objectives (RGOs) established through a site specific risk assessment. In addition, several metals were detected in soil samples that exceed RGOs developed for protection of ecological receptors in the onsite ditch and Red Clay Creek. In addition, several metals, including zinc, were detected in shallow groundwater beneath the Site at concentrations that exceed human health and ecological RGOs. Lastly, potential ACMs have been identified inside the interior of the Mill #6 structure.

What clean-up actions have been taken at the NVF-Yorklyn Site (including OU-2)?

Several Interim Action (IA) activities have taken place at the NVF-Yorklyn Site (including all OUs) between 2012 and 2015. These include removal and disposal of:

- 277,490 pounds of zinc chloride containing solid waste and old tanks
- 60,740 pounds of sodium hydroxide solid waste
- 2,382 pounds of hydrochloric and sulfuric acid waste
- 10 pounds of mercury containing solid waste
- 23,460 pounds of soda ash
- 2,800 pounds of corrosive acidic waste
- 55 gallons of hypochlorite
- 800 pounds of paint related waste
- 300 pounds of aluminum nitrate
- 15.69 tons of treated timber waste

Continued operation of the groundwater zinc recovery system has also removed over 70,000 pounds of zinc from shallow groundwater since 2008.

Specific to OU-2, the following interim actions have occurred:

- Relocation of 2,500 cubic yards of PAH contaminated soil to a repository within NVF-Yorklyn OU-1.

- Offsite disposal of 500 tons of PAH contaminated topsoil.
- Removal of zinc contaminated solid waste/tanks from one process area inside the Mill #6 building.

What does the owner want to do at the NVF-Yorklyn OU-2 Site?

The owner wants to utilize the OU-2 portion of the former NVF-Yorklyn Site for residential purposes. It is still unknown whether the existing building structure will be demolished or rehabilitated.

What additional clean-up actions are needed at the NVF-Yorklyn OU-2 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. Properly remove and dispose of all Asbestos Containing Materials (ACM) from the interior/exterior of Site structures prior to demolition/rehabilitation.

2. During demolition and/or rehabilitation activities, eliminate the pathway of surface soil to the adjacent onsite ditch and Red Clay Creek in order to protect ecological receptors.

3. 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 within 60 days of DNREC issuing the Final Plan of Remedial Action for NVF-Yorklyn OU-2. The Environmental Covenant will include the following:

    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-SIRS and DNREC Division of Water;

4. During demolition and/or rehabilitation activities, implement the DNREC approved Contaminated Materials Management Plan (prepared by Black & Veatch dated December 2013) for the Site if unknown conditions are encountered during site demolition/ rehabilitation activities.

5. Since items 1, 2 and 4 above will be accomplished during the course of normal demolition/rehabilitation activities at the Site under the CMMP and Sediment and Stormwater Permit, a request for a Certification of Completion of Remedy (COCR) should be submitted to DNREC within 60 days after recording the Environmental Covenant.

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

The Site will be utilized for residential purposes.

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

The complete file on the Site including the April 2015 Remedial Investigation Report and the various other historic 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 July 8, 2015 and ends at close of business (4:30 pm) on July 27, 2015 Please send written comments to the DNREC office at 391 Lukens Drive, New Castle, DE 19720 to John G. Cargill, Project Officer or Robert Newsome, Public Information Officer.

Figure 1: NVF-Yorklyn Site Layout Map
Figure 2: NVF-Yorklyn Operable Units

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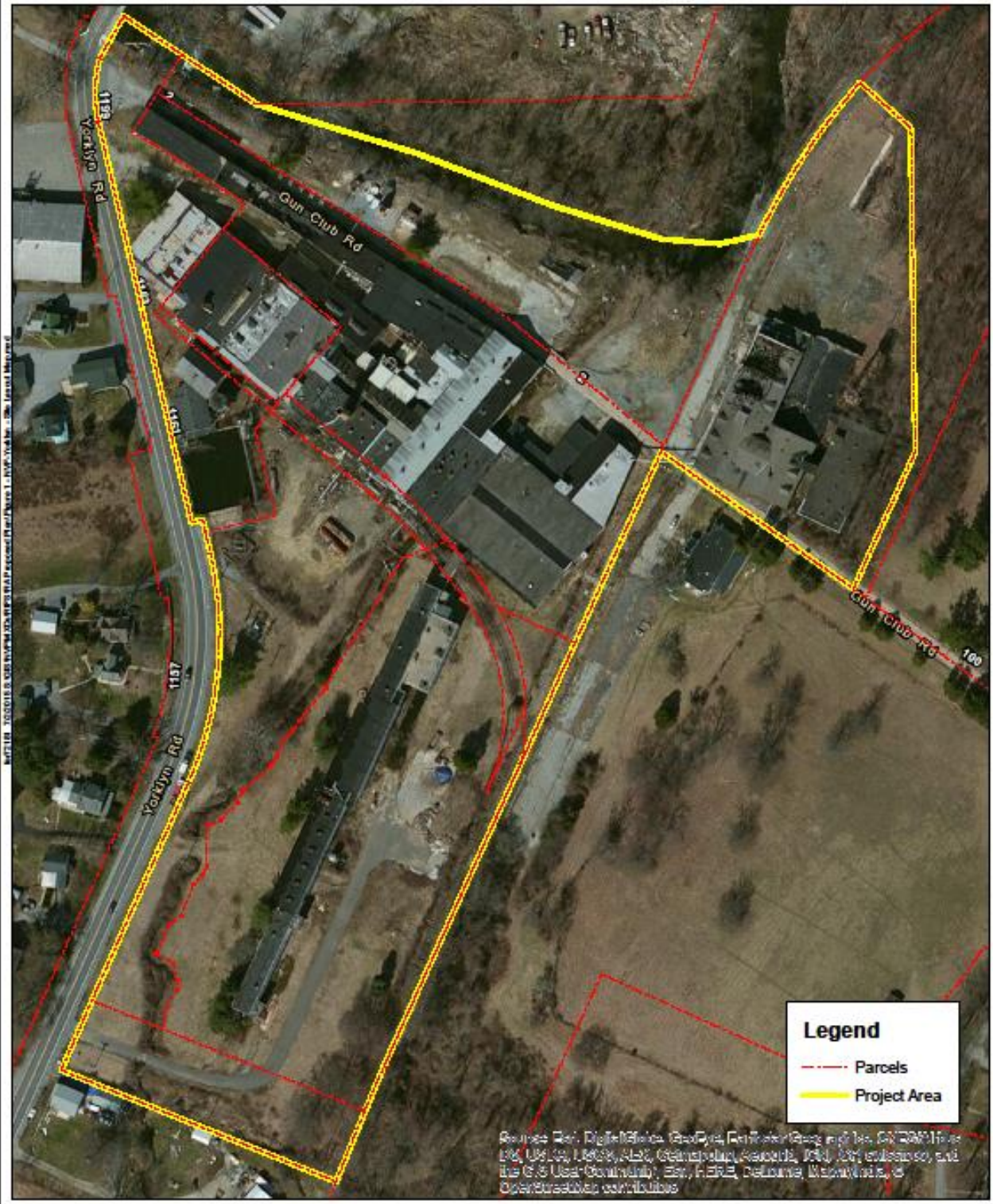

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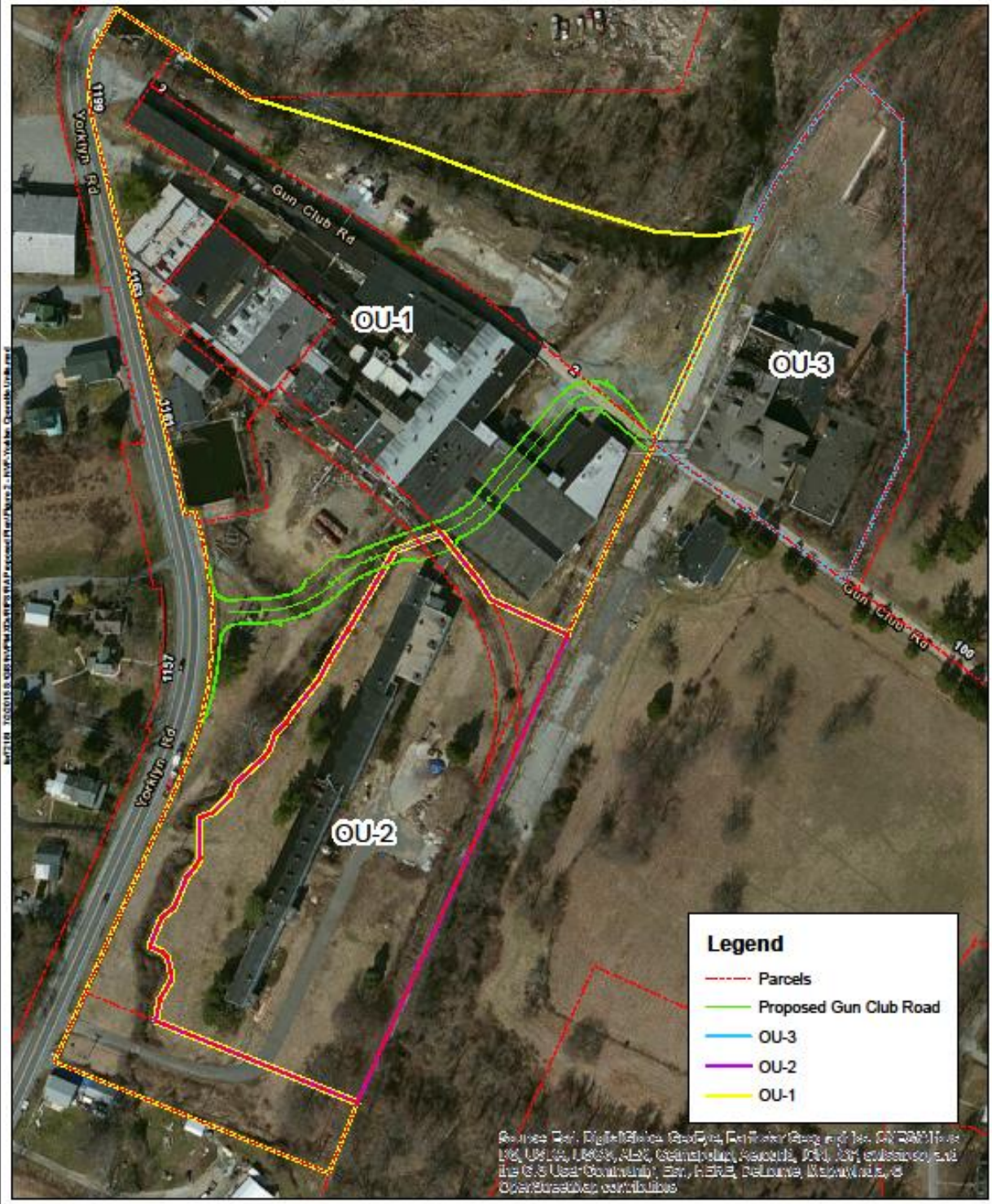
Feet

State Plane DE (feet)

NVF-Yorklyn - Site Layout Map
NVF Site (DE-0071)
Yorklyn, DE

Figure 1



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0 100 200

Feet

State Plane DE (feet)

NVF-Yorklyn Operable Units
NVF Site (DE-0071)
Yorklyn, DE

Figure 2

Glossary of Terms Used in this Proposed Plan

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	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.
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.
Risk	Likelihood or probability of injury, disease, or death.
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
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