Final Restoration Plan and Environmental Assessment for the Sugar Creek Valley Natural Resource Damage Assessment at the Dover Chemical Corporation Site

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Prepared by:
U.S. Fish and Wildlife Service and Ohio Environmental Protection Agency

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ACRONYM LIST

Acronym	Definition
µg/kg	microgram per kilogram
1,2-DCB	1,2-dichlorobenzene
1,3-DCB	1,3-dichlorobenzene
1,4-DCB	1,4-dichlorobenzene
AOC	Administrative Order on Consent
Alpha BHC	Alpha-Hexachlorocyclohexane
CCl4	carbon tetrachloride
CD	Consent Decree
CEQ	Council of Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	Contaminants of Concern
DOI	Department of the Interior
DOJ	U.S. Department of Justice
Dover Chemical Corp.	Dover Chemical Corporation
Draft RP/EA	Draft Restoration Plan and Environmental Assessment
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPT Taxa	Ephemeroptera, Trichoptera, and Plecoptera Taxa
ESA	Endangered Species Act
ESL	Ecological Screening Level
FONSI	Finding of No Significant Impact
FS	Feasibility Study
Gamma BHC	Gamma-Hexachlorocyclohexane
HCB	Hexachlorobenzene
HEA	Habitat Equivalency Analysis
I-77	Interstate 77
IBI	Index of Biotic Integrity
ICI	Invertebrate Community Index
KRA	Key Restoration Area
MCB	Monochlorobenzene
MCL	maximum contaminant level
MIwb	Modified Index of Well-Being
NA	Not applicable
ND	non-detect
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
ng/kg	nanogram per kilogram
NR	not reported

Acronym	Definition
NRD	Natural Resource Damage
NRDA	Natural Resource Damage Assessment
NRDAR	Natural Resource Damage Assessment and Restoration
Ohio EPA	Ohio Environmental Protection Agency
OU	Operable Unit
PCDDs/PCDFs	polychlorinated dibenzodioxins and polychlorinated dibenzofurans
PEC	Probable Effects Concentration
Ppb	parts per billion
Ppt	parts per trillion
QHEI	Qualitative Habitat Evaluation Index
RCRA	Resource Conservation and Recovery Act
RD/RA	Remedial Design/Remedial Action
Remedial Site	Dover Chemical Corp. Remedial Site
RHPO	Regional Historic Preservation Officer
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
RSL	regional screening level
SCVAA	Sugar Creek Valley Natural Resource Assessment Area
Service	U.S. Fish and Wildlife Service
TCBA	tetrachlorobisphenol A
TCDD	2,3,7,8- tetrachlorodibenzo-p-dioxin
TCE	Trichloroethylene
TEC	Threshold Effect Concentration
TEF	Toxic Equivalency Factor
TEF-eq.	TEF equivalent concentrations
TEQ	toxic equivalent
TRV	Toxicity Reference Value
TTE	Total Toxicity Equivalent
TWC	The Wilderness Center
Trustees	U.S. Fish and Wildlife Service and Ohio Environmental Protection Agency, collectively
U.S. EPA	United States Environmental Protection Agency
WRLC	Western Reserve Land Conservancy
ww	wet weight

EXECUTIVE SUMMARY

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, 42 U.S.C. § 9601 *et seq*.) and its implementing regulations authorize federal and state agencies, as well as Indian tribes, to act as trustees of natural resources on behalf of the public. When hazardous substances are released into the environment and harm the public's natural resources, these trustees conduct assessments to determine the extent of injury, recover monetary and other damages from the responsible parties, and use these recovered damages to plan and implement restoration actions that will compensate the public for the loss of natural resources and the services they would have provided but for the hazardous substance releases. 42 U.S.C. § 9611(i).

The natural resource trustees for the Sugar Creek Valley Natural Resource Assessment Area (SCVAA) are the U.S. Department of the Interior (DOI or Department), acting through the U.S. Fish and Wildlife Service (Service) and the State of Ohio, acting through the Ohio Environmental Protection Agency (Ohio EPA) (collectively referred to as the "Trustees" or the "Trustee Council"). The Trustee Council prepared this Final Restoration Plan and Environmental Assessment (Final RP/EA) to identify and evaluate restoration projects at or in the vicinity of the SCVAA that are intended to restore, replace, rehabilitate and/or acquire the equivalent of natural resources and their services injured by releases of hazardous substances from Dover Chemical Corporation (Dover Chemical Corp. or DCC) in Dover, Ohio.

Through the CERCLA Natural Resource Damage Assessment and Restoration (NRDAR) process, the Trustees negotiated a combination restoration-based and cash settlement of $880,000.00 with DCC to restore, replace, rehabilitate and/or acquire the equivalent of natural resources and their associated service losses injured at the SCVAA. The Trustees determined that contamination was present in sufficient quantities to cause injury to ground water, surface water, sediment, and organisms living within, upon, or closely associated with those resources. The releases also adversely affected ecological services provided by injured resources (ground water, surface water, sediment, and related habitat).

Under the National Environmental Policy Act (NEPA; 42 U.S.C. § 4321 *et seq*.), federal agencies must identify and evaluate environmental impacts that may result from federal actions. This Final RP/EA describes the purpose and need for restoration, identifies, and evaluates potential restoration alternatives, including a No Action Alternative (Alternative One), summarizes the affected environment, and describes the potential environmental consequences of proposed restoration activities negotiated with DCC.

The restoration projects focus on restoring and acquiring the equivalent of the types of natural resources at and in the vicinity of the SCVAA. Public review of the restoration alternatives is an integral and important part of the restoration planning process and is consistent with applicable state and federal laws and regulations. Thus, the Trustees solicited public comments on the Draft RP/EA and have addressed comments received from the public in preparing this Final RP/EA, as appropriate, in response to the comments. For additional information on the terms of the proposed settlement, please see *United States of America and State of Ohio v. Dover Chemical*

Corporation. The proposed Consent Decree (CD) was made available for public review and comment for a period of 30-days on the Department of Justice website[1] with comments accepted until November 2, 2022.

The proposed restoration projects included ground water recharge protection, habitat improvement and preservation within the Sugar Creek watershed, and preservation or enhancement of habitat including stream, riparian, wetland, and mature forest environments outside the watershed to benefit trust resources. Nine Alternatives are presented in this Final RP/EA and were evaluated using CERCLA evaluation factors (43 CFR 11.82(d)).

Specifically, the nine Alternatives include:

1. Alternative One: No Action /Natural Recovery Alternative
2. Alternative Two: The Wilderness Center – Falcon Flats Restoration Project, Sugar Creek Watershed
3. Alternative Three: The Wilderness Center – Lash's Bog Enhancement and Restoration, Sugar Creek Watershed
4. Alternative Four: Sugar Creek Habitat Conservation Project, Sugar Creek Watershed
5. Alternative Five: Western Reserve Land Conservancy – Eastern Hellbender Project, Little Beaver Creek, Yellow Creek, Cross Creek, or Captina Creek Watersheds
6. Alternative Six: Trustee implemented ground water restoration, or protection project(s)
7. Alternative Seven: Joyce Hill Road SW Property Ground Water Recharge Project, Tuscarawas River Watershed
8. Alternative Eight: The City of Dover Wellhead Protection Project/Soccer Field Protection, Sugar Creek Watershed
9. Alternative Nine: City of Dover Canal Park Restoration and Enhancement Project, Sugar Creek Watershed

Having considered and addressed all public comments (Appendices D and E) the Trustees have determined that Alternatives Two, Three, Four, Five, and Six best address natural resource injuries and service reductions resulting from the release of hazardous substances within the SVCAA. Based on the Trustees' evaluation of the environmental consequences of all nine Alternatives, the NRDAR factors described in 43 C.F.R. § 11.82(d), the Trustees identified Alternatives Two, Three, Four, Five, and Six as their Selected Alternatives.

[1] www.justice.gov/enrd/consent-decrees

1 INTRODUCTION

1.1 Purpose and Need for Restoration

This Section identifies the Trustees' overall purpose and need for restoration. Since 2009, the Trustees have assessed injuries to natural resources under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, 42 U.S.C. § 9601, *et seq*.) and its implementing regulations (43 C.F.R. Part 11) for the Sugar Creek Valley Natural Resource Assessment Area (SVCAA) in Dover, Ohio (Figure 1.1). This regulatory natural resource damage assessment and restoration (NRDAR) process culminated in the identification, evaluation, and presentment of proposed restoration projects tailored to restore, replace, rehabilitate, and/or acquire the equivalent of injured natural resources, and the services they provide that were injured from releases within the SVCAA. The purpose of the Trustees' proposed action is the finalization of a restoration plan to identify, evaluate and select restoration projects tailored to restore, rehabilitate, replace, and/or acquire the equivalent of injured natural resources, including their supporting ecosystems, that were injured, lost, or destroyed due to releases of hazardous substances by DCC within the SCVAA. Inherent in this purpose is to identify the appropriate level and location of restoration activities to restore terrestrial, aquatic, and ground water resources and their services that were lost due to releases of hazardous substances by DCC. In doing so, the Trustees evaluated a suite of nine restoration alternatives presented in this plan, five of them preferred and three of them non-preferred, with an evaluation of each and justification for their designation as preferred or non-preferred. The need for these actions arises from the statutory requirement to use recovered NRDAR damages to restore, rehabilitate, replace, or acquire the equivalent of natural resources injured by releases of hazardous substances (42 U.S.C. § 9607(f)(1). Thus, this Final RP/EA describes actions to: 1) restore or rehabilitate injured natural resources to their baseline condition; and 2) replace or acquire the equivalent of natural resources (and the services they provide) injured or destroyed by hazardous substance releases.

This document also serves as an Environmental Assessment pursuant to the National Environmental Policy Act (NEPA) and its implementing regulations at 40 C.F.R. Part 1500 and 43 C.F.R. Part 46, summarizing the current environmental setting, describing the purpose and need for restoration, identifying potential alternative actions, assessing their applicability and their impact on the quality of the physical and biological environment.

1.2 Trustee Authority and NRDAR

Natural resource Trustees are authorized to act on behalf of the public to assess injuries to natural resources and natural resource services, and to recover damages resulting from those injuries.

The NRDAR process, formalized in the DOI regulations (43 C.F.R. Part 11) allows Trustees to pursue monetary and restoration-based claims against responsible parties to compensate the public for injuries to trust resources. NRDAR authorizes the Trustees to plan and implement actions to restore, replace, or rehabilitate the natural resources that were injured or lost as a result

of the release of a hazardous substance, or to acquire the equivalent natural resources or the services they provide CERCLA, 42 U.S.C. § 9601 *et seq*.; 43 C.F.R. Part 11.

The following authorities authorize federal, state, and tribal governments to act on behalf of the public as Trustees of natural resources:

- CERCLA
- Executive Order 12580 (52 Federal Register (FR) 2923 (January 23, 1987)), as amended by Executive Order 12777 (56 FR 54757 (October 22, 1991))
- National Contingency Plan (40 C.F.R. § 300.600 et seq.)
- Migratory Bird Treaty Act (MBTA), (16 U.S.C. § 703 et seq.)
- Bald and Golden Eagle Protection Act (BGEPA), (16 U.S.C. § 668 et seq.)
- Endangered Species Act (ESA), (16 U.S.C. § 1351 et seq.)
- Fish and Wildlife Coordination Act, (16 U.S.C. § 661 et seq.)

The Trustees for this NRDAR are as follows: The President has designated the Secretary of the U.S. Department of the Interior (DOI) as a federal trustee for natural resources. Executive Order 12777, 56 Fed. Reg. 54757 (Oct. 22, 1991). The Secretary of DOI acts as a trustee for natural resources belonging to, managed by, controlled by, or appertaining to the United States, including its supporting ecosystems. The DOI official delegated to act on behalf of the Secretary is the Authorized Official (AO) and Regional Director for FWS Midwest Region 3. 42 U.S.C. § 9607(f) and 40 C.F.R. § 300.600(b)(2). The AO represents the interests of the DOI, including all Bureaus that may be affected by an NRDA claim. Pursuant to 42 U.S.C. § 9607(f)(2)(B), the Governor of Ohio formalized designation of the Director of Ohio EPA as the state's designated natural resource Trustee on June 30, 2011.

A Memorandum of Understanding (MOU) was executed in July 2009 by the Service and Ohio EPA formalizing the collaborative process among the state and federal Trustees for the SCVAA. Thereafter, the Trustees have collectively referred to themselves as the Trustee Council. The Trustee Council responsibilities outlined in the MOU include but are not limited to: assessment of injury to natural resources, restoration planning, developing the cost of restoration, replacement, rehabilitation, and/or acquisition of the equivalent natural resources, and coordination with response actions.

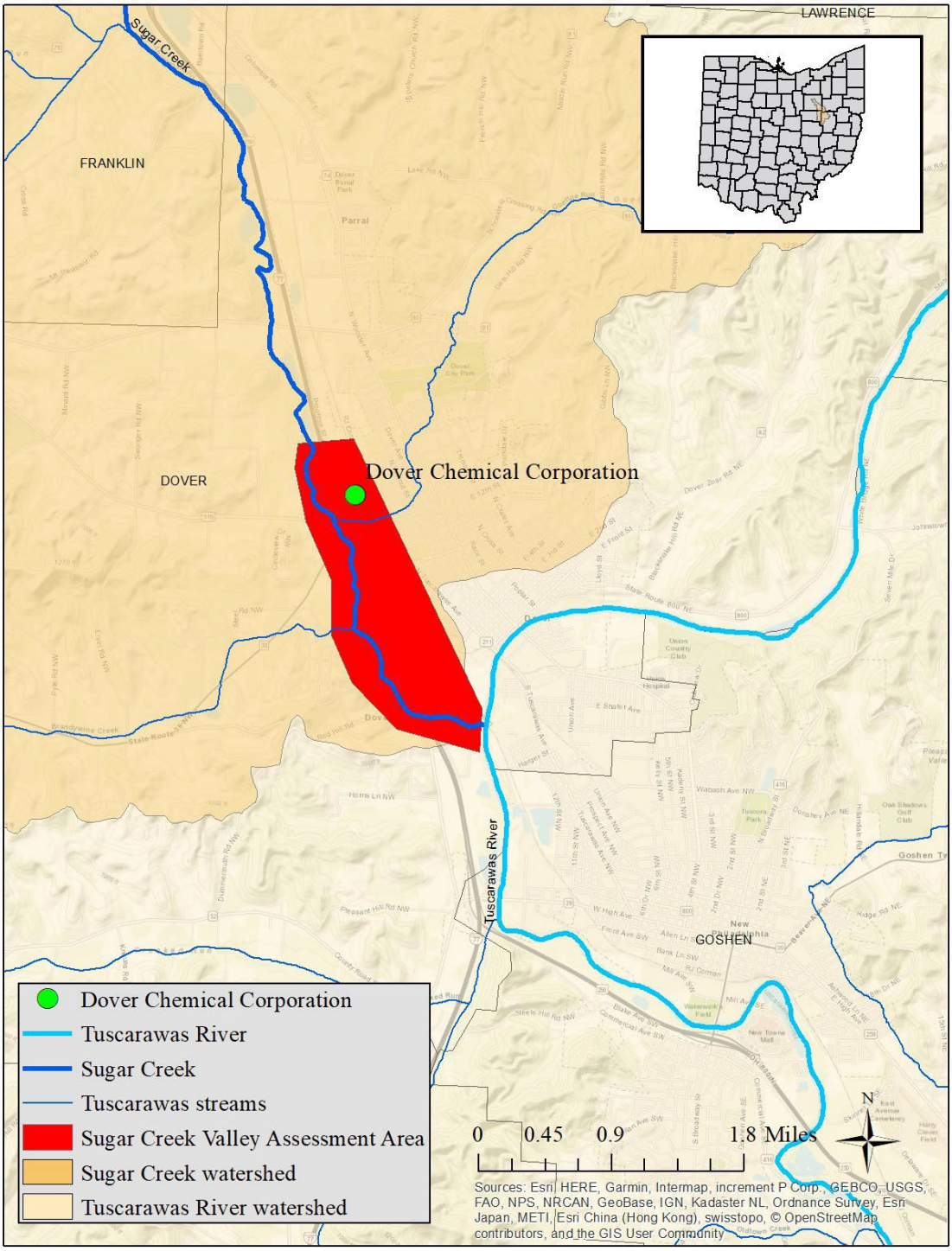

Figure 1.1: Dover Chemical Corp. is located within the Sugar Creek Watershed near Dover, Ohio. The Sugar Creek Valley Natural Resource Damage Assessment Area (SCVAA) includes approximately 683 acres of land, which includes Sugar Creek from approximately river mile two to river mile zero, the confluence with the Tuscarawas River (red color on Figure 1.1).

Figure 1.2: Approximate extent of ground water contamination within the Sugar Creek buried valley aquifer and the approximate area where ground water injury was assessed based on the extent of contamination within the Sugar Creek buried valley aquifer that extends approximately one and one-quarter miles south of Dover Chemical Corp. and encompasses approximately 174 acres.

Under CERCLA, the parties responsible for releases of hazardous substances may be invited to participate in a cooperative NRDA process (43 C.F.R. § 11.32(a)(2)). Although the final authority regarding determinations of injury and restoration rests solely with the Trustees, cooperative assessments can be beneficial to the public by reducing duplication of effort, expediting the assessment, and implementing restoration earlier than might otherwise be the case. A Notice of Intent to Perform an Assessment was sent to Dover Chemical Corp. on January 12, 2010, inviting DCC to cooperate with the Trustees in the assessment process. DCC declined to participate in the assessment of natural resource injuries. The Trustees completed a Final Assessment Plan in 2011 (Ohio EPA & Service, 2011). Although DCC did not agree to participate in the assessment of natural resource injuries, Dover Chemical Corp. has worked cooperatively with the Trustees to develop restoration alternatives presented in this Final RP/EA.

1.3 Summary of Proposed Settlement

The Trustees have reached a proposed settlement of natural resource damage claims with Dover Chemical Corp. The proposed settlement includes a monetary component whereby DCC will pay the State Trustee $880,000.00 to address ground water injuries and complete a restoration-based suite of projects to compensate for joint Federal and State ecological injuries[2].

This Final RP/EA describes the restoration-based projects that DCC would implement with Trustee oversight, and the funding that Dover Chemical Corp. would provide to the Trustees to achieve protection and possible restoration of ground water resources through future Trustee implemented ground water restoration or recharge protection projects. The Draft RP/EA and a Consent Decree (CD) with the terms of the proposed settlement were noticed to the public for comment, and the proposed CD is subject to approval by the U.S. District Court.

Regarding the Restoration Plan, the public comment period closed on November 2, 2022, after a 30-day period. The Trustees have addressed the comments provided from the sole commenter, the City of Dover, on the Draft RP/EA in preparing this Final RP/EA. The Trustees have prepared a responsiveness summary to the comments received from the City of Dover during the solicitation period that is included as Appendix E in this document. After careful review and response to those public comments, the Trustees have made modifications and clarifications to address those comments before finalizing the Final RP/EA and have identified the Selected Restoration Projects.

The comment period for the proposed Consent Decree closed on November 2, 2022. Comments were received from the City of Dover and the U.S. Department of Justice (DOJ) is currently reviewing said comments. If appropriate upon completion of responses to comments, the DOJ will file a motion asking the U.S. District Court for approval to enter the settlement. Once the U.S. District Court approves the settlement, the Trustees will oversee implementation and

[2] as defined in 43 C.F.R. § 11.14(v): a measureable adverse change, either long- or short-term, in the chemical physical quality or the viability of a natural resource resulting either directly or indirectly from exposure to a discharge of oil or release of a hazardous substance, or exposure to a product of reactions resulting from the discharge of oil or release of a hazardous substance

approval of the selected restoration-based projects by Dover Chemical Corp. and use the $880,000.00 funding from DCC to implement ground water restoration projects.

The CD provides for the following restoration projects:

- Dover Chemical Corp. will fund and complete three restoration-based projects in Stark County, Ohio and one project in Columbiana, Jefferson, and/or Belmont Counties, Ohio that are described in this Final RP/EA and the Restoration Statements of Work attached as Appendix C to the Consent Decree. The counties are encompassed by the Sugar Creek and Tuscarawas River watersheds.
- Dover Chemical Corp. will pay $880,000.00 to the State of Ohio for the implementation of one or more ground water restoration or recharge protection project(s).
- Dover Chemical Corp. will pay the Trustees $103,500.00 distributed evenly between the Service and Ohio EPA for future oversight costs. Future oversight costs will be incurred after settlement for review and approval of restoration work plans, implementation and oversight of restoration projects, and monitoring and evaluation of restoration project performance for the duration specified in the work plans.

1.4 Dover Chemical Corp. Remedial Site History including Removal and Remediation Actions

Operations at Dover Chemical Corp. have resulted in decades of releases of hazardous substances to the Sugar Creek buried valley aquifer, Sugar Creek, its associated wetlands, supporting habitat and the surrounding ecosystem. The SCVAA serves as the geographic basis for the injury assessment and is defined as the DCC property, and the area or areas within which natural resources have been affected, either directly or indirectly, by the release of a hazardous substance. The SCVAA includes approximately 683 acres of land, which includes Sugar Creek from approximately river mile two to river mile zero, the confluence with the Tuscarawas River (Figure 1.1). The SCVAA also includes the area where ground water injury was assessed based on the extent of contamination within the Sugar Creek buried valley aquifer that extends approximately one and one-quarter miles south of Dover Chemical Corp. and encompasses approximately 174 acres (Figure 1.2). Hazardous substances released include chlorobenzenes; carbon tetrachloride (CCl4); polychlorinated dibenzodioxins and polychlorinated dibenzofurans ([PCDDs/PCDFs], a group of compounds referred to collectively as "dioxins"); and other chemicals. Released hazardous substances were detected in ground water, soils, sediments, surface water, and biota. Response actions at the United States Environmental Protection Agency (USEPA) remedial site included: hazardous material removal, soil removal and stabilization, pump and treat ground water system (“on-site”), soil vapor extraction systems, in-situ chemical oxidation and aerobic amendment injections (to address an “off-site” plume) and monitored natural attenuation. The released hazardous substances injured natural resources including ground water, surface water (including wetlands), biota, and ecological habitats (riparian and upland). In addition to freshwater fish and migratory bird species, specific threatened and endangered species injured or potentially injured include the federally endangered Indiana bat

(*Myotis sodalis*), the federally endangered Northern long-eared bat (*Myotis septentrionalis*), the proposed as federally endangered tricolored bat (*Perimyotis subflavus*), and the state endangered Eastern Hellbender (*Cryptobranchus alleganiensis*).

1.4.1 *Site Overview*

The Dover Chemical Corp. Remedial Site (Remedial Site) is an operational manufacturing facility that has a long history of enforcement and remedial activities associated with ground water contamination.

The Remedial Site[3] is in Dover, Ohio and comprises four parcels that are approximately 60 acres. The Remedial Site consists of a main facility area east of Interstate 77 (I-77) along with an abandoned canal/lagoon area and a wooded low-lying area west of I-77, including an active chemical manufacturing facility owned by Dover Chemical Corp. and two undeveloped properties (Figure 1.1; Figure 1.2). The Remedial Site is on the east bank of Sugar Creek, approximately 1 mile north of the confluence with the Tuscarawas River. Land use surrounding the facility is varied and includes industrial, commercial, and residential areas. Industrial facilities are located to the north and south of the Remedial Site. Several blocks of residences are located east of the Remedial Site and extend to the north and south.

Dover Chemical Corp. operations resulted in decades of releases of organic compounds to the ground surface and ultimately to the ground water. The compounds released on-property included chlorobenzenes; CC14; PCDDs/PCDF; and other chemicals.

The (USEPA) designated two Operable Units (OUs) that require cleanup. The two OUs are:

- OU1: Dover Chemical Corp. Superfund Site, also referred to as "on-site", which is undergoing a removal action pursuant to a 2000 Administrative Order on Consent (AOC)
- OU2: The "off-site ground water plume", which extends from the southern boundary of OU1 and is subject to a 2018 Remedial Design/Remedial Action Consent Decree (RD/RA CD).

USEPA and Ohio EPA oversee Remedial Site actions addressed by Dover Chemical Corp.

1.4.2 *Background*

Dover Chemical Corp. began operation in 1951. In 1975, ICC Industries4 acquired Dover Chemical Corp. DCC produced chlorinated organic compounds, including dichlorobenzene, trichlorobenzene, tetrachlorobisphenol A (TCBA), and dihydroxybenzophenone by-products (later replaced with chlorinated paraffin by-products). These products are used in manufacturing

[3] U.S. EPA Dover Chemical Remedial Site Website
[4] ICC Industries Website

as high-pressure lubricants, plasticizers, and flame retardants for vinyl products, as well as phosphites (used for temperature, light, and color stabilization of plastics).

In the early 1960s, Dover Chemical Corp. placed approximately 4,000 gallons of mixed chlorinated benzene by-products in a wetland area in the southwest corner of the property and buried ten drums of chlorinated paraffin by-products in the east central portion of the property.

In 1981, Dover Chemical Corp. removed 975 tons of waste material from the Remedial Site and surrounding contaminated soil to a landfill permitted under Subtitle C of the Resource Conservation and Recovery Act (RCRA). Following the 1981 removal action, Dover Chemical Corp. conducted an environmental investigation and drafted a Feasibility Study (FS) that was submitted to USEPA and the Ohio EPA in April 1986. Both US EPA and Ohio EPA rejected the report and requested additional data to complete the Remedial Investigation/FS (RI/FS).

Since 1981, multiple environmental investigations were conducted at the Remedial Site to assess contamination and harm to the environment and public health. These investigations identified high concentrations of hazardous substances in soil on-site and in ground water both on-property and off-property. Substances identified on-site include: CCl4, chloroform, monochlorobenzene (MCB), 1,2-dichlorobenzene (1,2-DCB), 1,3-dichlorobenzene (1,3-DCB), 1,4-dichlorobenzene (1,4-DCB), 1,2,4-trichlorobenzene, dioxins, furans, hexachlorobenzene (HCB), and trichloroethylene (TCE). Off-property ground water sampling at the time found that similar chlorobenzene compounds had migrated off property and created a large down-gradient ground water plume of contamination. On October 23, 1981, US EPA issued a RCRA Order to require Dover Chemical Corp. to study and address soil and ground water contamination at the Remedial Site.

After completing the study, Dover Chemical Corp. removed approximately 46,800 cubic yards of contaminated soil and waste from the Remedial Site. In 1982, organic compounds were detected in a water supply well located on the Dover Chemical Corp. property. As a result of this finding, Dover Chemical Corp. initiated additional investigations in 1983 to better define the nature and extent of soil and ground water contamination associated with the Remedial Site. Between 1983 and 1986, Dover Chemical Corp. conducted several additional voluntary investigations and installed ground water monitoring wells around the Remedial Site. The investigations revealed additional locations of ground water and soil contamination along with indications that contaminated ground water had migrated southward beyond the boundary of the Dover Chemical Corp. property.

In 1986, Dover Chemical Corp. submitted a draft FS to USEPA and Ohio EPA. USEPA determined additional investigation was required to establish the nature and extent of the contamination associated with releases at the property. Based on information gathered from all the years of investigative work conducted at the Remedial Site, four areas of concern were identified as follows:

- Facility area soils
- Lagoon and canal area soils
- Plant area ground water

• Off-Property ground water plume

In 1988, Dover Chemical Corp. and USEPA entered into an AOC under CERCLA Section 104 to complete the RI/FS. During the RI, Dover Chemical Corp. detected PCDDs and PCDFs in soils both on and off the site. Under an interim action AOC, issued by U.S. EPA in June 1991 under CERCLA Section 106, the company removed these contaminated soils, transported them to a hazardous waste facility regulated under RCRA Subtitle C, and stabilized the areas; this work was completed in October 1992.

During the RI additional chemicals of concern (dioxins and BHC) were discovered in soils on-site. The scope of the 1988 RI was expanded to include the characterization of the environmental media at the Remedial Site for these additional constituents. Based on the concentrations of the additional chemicals found, the USEPA requested that Dover Chemical Corp. conduct an interim removal action on-site to reduce the mobility and potential for contact with facility area soils containing dioxins. On July 12, 1991, Dover Chemical Corp. and USEPA entered into an AOC to conduct interim soil cleanup on-site and at adjacent off-site roadways used by Dover Chemical Corp. truck traffic. The interim soil cleanup was completed in 1994 and was conducted to mitigate direct human exposure and included the following:

- Excavation and removal of off-site soils above the USEPA residential area soil cleanup standards for dioxin (1 microgram per kilogram (µg/kg)) and securing on- site soils.
- Capping active facility areas.
- Securing inactive areas with contaminant levels above the soil cleanup standards by installing snow fencing to prevent access.
- Fencing the entire facility area to maintain security and prevent unauthorized access.
- Reducing the average dioxin soil concentration on the Armory property adjacent to the Remedial Site to below the soil cleanup standard by removing the soil in area M and adding 6 inches of clean fill and paving the area.
- Removing soil above the soil cleanup standard for dioxin and installing a parking lot and topsoil to the east of Building 31.

In June 1991, USEPA detected organics, including TCE, chlorobenzene, dichlorobenzenes, and trichlorobenzenes, in on-site monitoring wells. Approximately 27,000 people rely on wells within 4 miles of the Remedial Site for drinking water, including 13,000 people serviced by the City of Dover municipal wells, one of which is located 1,100 feet from the Remedial Site, and 16,000 people serviced by the New Philadelphia municipal well field, 3.9 miles from the Remedial Site.

In 1993, US-EPA proposed the Remedial Site to the National Priorities List. The Site has not been finalized on the list.

In 1994, Dover Chemical Corp. submitted an expanded RI/FS. USEPA did not approve the risk assessment portion of the 1994 RI/FS and conducted an independent Site risk assessment. In August 1999, USEPA determined that a non-time critical removal action would be appropriate to address the facility area soils, lagoon and canal area soils, and the facility area ground water to prevent and mitigate further releases of hazardous substances to the environment. On October 20, 2000, Dover Chemical Corp. and USEPA entered into an AOC requiring Dover Chemical Corp.to conduct a non-time critical removal action on identified on-site areas. Between 2000 and 2008 Dover Chemical Corp. investigated the off-Property ground water plume south of the facility. The plume was evaluated consistent with the 1988 RI/FS AOC. In June 2014, USEPA found that Dover Chemical Corp. had completed the Response Action for the facility area soil, and lagoon area and canal soils/sediments portions of the 2000 AOC issued for the Dover Chemical Corp. Remedial Site.

In accordance with a 2000 AOC, Dover Chemical Corp. is addressing contaminated on-site ground water with a pump and treat system. The system captures contaminated water, which is then treated and ultimately discharged to a nearby surface water body under a National Pollutant Discharge and Elimination System permit. To address contaminant source areas on the Remedial Site, Dover Chemical Corp. also installed soil vapor extraction systems that reduce soil gas contamination and prevent additional ground water contamination at two locations.

A 2015 Record of Decision issued by USEPA included a remedy to address off-site ground water contamination (OU2). The remedy includes In-Situ Chemical Oxidation injections to transform ground water contaminants to less harmful chemicals, injections of an aerobic amendment to reduce toxicity of contaminants and monitored natural attenuation. In 2018, a RD/RA CD was entered by the Court for response actions and costs relating to OU2. Dover Chemical Corp. agreed to perform RD/RA for OU2, estimated to cost $7.4 million. Dover Chemical Corp. also agreed to pay past and future response costs incurred by USEPA. Dover Chemical Corp. completed pre-design field work in 2018 and in 2020 submitted a report summarizing the soil and ground water investigations performed and the next steps in the remedial design for OU2. Additional information on the off-property remediation can be found in the 2015 Record of Decision5.

1.5 NRDAR Relationship to Remedial Activities

Natural resource damages are residual to response actions. 43 C.F.R. §11.84(c)(2). As described in Section 1.2, NRDAR is a process that is authorized in addition to the CERCLA remedial process conducted by regulatory agencies like Ohio EPA and USEPA, but with different emphasis and goals. Remedial action (clean-up) objectives are risk-based and are developed to protect human health and the environment from further unacceptable harm. In comparison, CERCLA also authorizes the Trustees to recover damages for injuries to, destruction of, and loss of natural resources and their services resulting from releases of hazardous substances into the environment and to restore, rehabilitate, replace and/or acquire the equivalent of the injured natural resources and their services. Losses resulting from natural resource exposure to released hazardous substances are estimated over time until the resource(s) is restored. These losses can

[5] 2015 Record of Decision

extend beyond the date of remedy completion if contaminants will be left in the environment at levels injurious to natural resources. There are components of NRDAR and remedial processes that may overlap. For example, remedial decisions can include consideration of restoration objectives identified by the NRDAR process. Both processes require an understanding of the complete nature and extent of contamination. Remedial work may partially or completely restore or rehabilitate injured natural resources, and thus, NRDAR considers the remedial action in its calculation of resource injuries. For example, the process used in the SCVAA NRDAR included the estimated time for the remedial action to return the ground water to baseline (free of contamination) conditions. However, in some instances, remedial actions may also cause "collateral injury" to habitat, and under the NRDAR process, the Trustees are authorized to quantify and restore this remedy-induced injury through the NRDAR process.

The goals of the NRDAR process are to:

- Quantify the injuries to wildlife, habitat, ground water, and lost human use of those resources, 43 C.F.R. §11.62(b)(c)(f).
- Determine the amount of restoration necessary to restore the resources and compensate the public for the injuries and losses, 43 C.F.R. §11.70.
- Develop and implement an appropriate Restoration Plan with a reasonable number of alternatives for the restoration or rehabilitation of injured natural resources or the replacement and/or acquisition of equivalent natural resources, 43 C.F.R 11.82(b)(1).

1.6 Compliance with NEPA and Other Applicable Laws

All selected alternatives must comply with all applicable federal, state, Tribal and local laws, polices and regulations. Any necessary permitting will be undertaken during specific restoration project planning stages and will be completed early in the project planning process. State permits required to implement certain activities within a proposed restoration project will be acquired, dependent upon the exact nature of proposed work. Proposed restoration activities in wetland and floodplain habitats must meet the requirements of the U.S. Army Corps of Engineers Nationwide and/or General Permits and a Section 401 Water Quality Certification from the State of Ohio.

Federal natural resource and environmental laws, orders, and regulations considered during the development of this Final RP/EA include, but are not limited to, the following acts and their implementing regulations: National Environmental Policy Act; Clean Water Act; Endangered Species Act of 1973; National Historic Preservation Act of 1966; Migratory Bird Treaty Act of 1918; and Fish and Wildlife Coordination Act of 1934. An explanation of how compliance will be met for several major statutes is described below.

1.6.1 *National Historic Preservation Act*

The National Historic Preservation Act (NHPA) established a process to preserve historical and archaeological sites affected by projects directed or funded by the federal government.

Compliance with the NHPA will be undertaken through consultation with the Regional Historic Preservation Officer (RHPO). If an eligible historic property or archeological resource is within the area of one of the proposed restoration alternatives, then an analysis would be made to determine whether the alternative would have an adverse effect on historic properties or archaeological resources. The Trustees do not anticipate any adverse effects on historic properties or archaeological sites, but if an alternative has the potential to have an adverse effect on either of these types of sites, then the appropriate agency would consult with the RHPO to minimize the adverse effect.

Cultural resources are those parts of the physical environment, natural and built, that have cultural value to some socio-cultural groups and human social institutions. Cultural resources include historic sites, archeological sites and associated artifacts, sacred sites, traditional cultural properties, cultural items, and buildings and structures. Most cultural resources concerns can be identified through the Section 106 process of the NHPA. Absent objections from Historic Preservation Officers or from other interested persons (36 C.F.R. §§ 800.2(c)(3), (4), and (5)), the NHPA has legal standing in land acquisition projects, projects involving ground disturbance, and projects impacting buildings and structures 50 years and older.

Compliance: The RHPO evaluated the selected alternatives for impacts to historic properties or archeological resources.

1.6.2 *Endangered Species Act*

The federal Endangered Species Act (ESA; 16 U.S.C. § 1531, *et seq*., 50 C.F.R. Parts 17, 222, 224) directs all federal agencies to conserve threatened and endangered (T&E) species and their habitats and encourages such agencies to utilize their authority to further these purposes. Under the ESA, the National Oceanic and Atmospheric Administration - National Marine Fisheries Service and FWS publish lists of endangered and threatened species. Section 7 of the ESA requires that federal agencies consult with these agencies to minimize the effects of federal actions on endangered and threatened species. Intraservice consultation will occur for projects that may affect listed species.

Compliance: Ohio Ecological Services Field Office staff evaluated the selected alternatives for impacts to federally-listed threatened and endangered species.

1.6.3 *NEPA*

Actions undertaken by the Trustees to restore natural resources or services under CERCLA and other federal laws are subject to NEPA, 42 U.S.C. § 4321, *et seq*., and the regulations at 40

C.F.R. Parts 1500 through 1508[6]. NEPA requires agencies proposing federal actions to take a "hard look" at the environmental effects of their proposed actions. NEPA outlines the responsibilities of federal agencies, including environmental documentation. In general, a federal agency contemplating implementation of a major federal action must produce an environmental impact statement (EIS) if the action is expected to have a significant effect on the quality of the human environment. When it is uncertain whether a contemplated action is likely to have significant environmental impacts, the federal agency prepares an EA to evaluate the need for an EIS. If the EA demonstrates that the proposed action will not significantly impact the quality of the human environment, the agency issues a Finding of No Significant Impact (FONSI), which satisfies the requirements of NEPA, and no EIS is required to be prepared.

Compliance: In accordance with NEPA and its implementing regulations, this Final RP/EA summarizes the affected environment for the selected restoration actions and their alternatives (Alternatives 1 through 9), describes the purpose and need for restoration actions, identifies a reasonable range of alternatives, assesses the environmental consequences of the selected restoration actions and their alternatives, including cumulative impacts, and summarizes the opportunity the Trustees provided for public participation in the decision-making process.

Additionally, through study and experience, agencies may identify activities that do not need to undergo detailed environmental analysis in an EA or an EIS because the activities do not individually or cumulatively have a significant effect on the human environment. Agencies can define categories of such activities, called categorical exclusions, in their NEPA implementing procedures to reduce unnecessary paperwork and delay. Alternatives 4 and 5 meet the criteria for categorical exclusions and Alternatives 2 and 3 require an EA, which is provided herein. The categorical exclusion forms are provided in Appendix H of this Final RP/EA.

After conducting the NEPA analysis, the Trustees conclude that the impacts associated with the restoration actions identified herein do not meet the threshold requiring an EIS. A Finding of No Significant Impact (FONSI) is included in Appendix I.

1.7 Public Participation

The DOI NRDAR regulations require public participation and review as integral parts of the restoration planning process. In addition, NEPA and its implementing regulations require that

[6] The Council on Environmental Quality (CEQ) on July 16, 2020 issued a Federal Register final rule updating its regulations for federal agencies to implement NEPA. (85 Fed. Reg. 43304 (July 16, 2020)). The goal of these amendments to the CEQ regulations (amended regulations) are to reduce paperwork and delays, and to promote better decisions consistent with the policy set forth in section 101 of NEPA. The effective date of these amended regulations was September 14, 2020. However, for actions that began before September 14th, agencies may continue with the regulations in effect before September 14th because applying the amended regulations would cause delays to the ongoing process and would be inefficient. Based on Executive Order 13990 (January 20, 2021), CEQ is now engaged in a comprehensive review of the 2020 rule. CEQ issued an interim final rule on June 29, 2021 which extended the deadline by two years for Federal agencies to develop or update their NEPA implementing procedures to conform to the CEQ regulations.

federal agencies fully consider the environmental impacts of their proposed decisions and that such information is made available to the public.

The Draft RP/EA was released to the public for a 30-day public comment period from October 3, 2022 through November 2, 2022 in accordance with 43 C.F.R. §11.81(d)(2). The Trustees announced the availability of the Draft RP/EA through an October 3, 2022 press release[7], a posting on the Service's webpage for this NRDAR case, and through direct outreach to interested parties and stakeholders including the City of Dover and Dover Chemical Corp. The Trustees received several comments from one commenter, the City of Dover, on the Draft RP/EA; public comments and the Trustees' responses have been included as an appendix of this document (Appendices D and E). After reviewing and responding to public comments, and including clarifications and modifications, the Trustees determined it is appropriate to proceed with the Selected Alternatives, as described herein.

The Final RP/EA, and associated FONSI, will be made available to the public on the website for the Dover Chemical Corporation Sugar Creek Natural Resource Damage Assessment and Restoration website[8] for the NRDAR case. Notification of the availability of the Final RP/EA and FONSI will be made by directed outreach to the City of Dover and Dover Chemical Corporation.

For additional information, contact Brian Tucker of Ohio EPA or Deborah Millsap of the Service (contact information below):

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As restoration progresses, the Trustees may amend the Final RP/EA if significant changes are made to the types, scope, or impact of the projects.

[7] https://www.justice.gov/opa/pr/justice-department-us-fish-and-wildlife-service-and-state-ohio-reach-natural-resource-damages

[8] https://www.fws.gov/project/dover-chemical-corporation-sugar-creek-natural-resource-damage-assessment-and-restoration

1.8 Administrative Record Index

Pursuant to 43 C.F.R. § 11.91(c), the Trustees maintain a publicly available Administrative Record Index for the Dover Chemical Corp. NRDAR, including restoration planning activities. The Administrative Record is located at the following website:

Dover Chemical/Sugar Creek, Ohio Natural Resource Damage Assessment and Restoration | U.S. Fish & Wildlife Service (fws.gov)

1.9 Organization of the Final RP/EA

- Chapter 2 describes the injury assessment strategy, assessments conducted for ground water resources, ecological resources, and restoration project scoping.
- Chapter 3 describes the affected environment for the area in which injury was assessed as well as the expanded area in which proposed restoration actions could occur.
- Chapter 4 describes the restoration alternatives.
- Chapter 5 evaluates the restoration alternatives, including their environmental impacts and their relationship to the Trustees' restoration criteria.
- Chapter 6 describes the reasons for selecting the alternative for restoration of natural resources and human uses of natural resources.
- Chapter 7 lists the preparers of this document and other agencies, and persons consulted.

2 INJURY ASSESSMENT AND QUANTIFICATION

The goal of the injury assessment is to determine the nature and extent of injuries to natural resources to quantify the resulting ecological service losses and provide a basis for determining the needed scale and types of restoration actions.

Injury has occurred when a natural resource's viability or function is impaired such that the type and/or magnitude of services provided by that natural resource is reduced as a result of contamination (43 C.F.R. § 11.14 (v)). Determination of injury requires documentation that: (1) there is a viable pathway for the released hazardous substance from the point of release to a point at which natural resources are exposed to the released hazardous substance, and (2) injury of exposed natural resources (*e.g.*, surface water, sediment, soil, ground water, biota) has occurred as defined in 43 C.F.R. § 11.62.

The natural resources listed in Chapter 2 provide a variety of services. Services are "the physical and biological functions performed by the resource, including the human uses of those functions, [that result from the resource's] physical, chemical, or biological quality" (43 C.F.R. § 11.14 (nn)). For example, ecological services provided by benthic invertebrates and mussels include foraging opportunities for fish and birds, nutrient cycling, and water filtration. Wetland soils provide services by supporting healthy vegetation and diverse plant communities that in turn provide animals with foraging opportunities, nesting or denning areas, and protective cover.

2.1 Assessment Area

The SCVAA encompasses approximately 683 acres of land, which includes Sugar Creek from the confluence (river mile zero) with the Tuscarawas River and upstream approximately two miles. SCVAA also includes ground water in the Sugar Creek buried valley aquifer that extends approximately one and one-quarter miles south of Dover Chemical Corp. and encompasses approximately 174 acres (Figure 1.1 and Figure 1.2).

2.2 Contaminants of Concern

As described in Section 1.4, hazardous substances either used or produced by Dover Chemical Corp. have been identified at the Remedial Site and in ground water migrating off-site.

Additionally, contaminants of concern (COCs) released by Dover Chemical Corp. have been detected in surface water and contributed to ecological losses. A discussion of COCs associated with ground water and ecological losses follows and a list of COCs is included in Section 3.2.

Dover Chemical Corp. released a variety of COCs that injured ground water and biological resources over a span of decades (Westin, 1991; Ohio EPA, 1983, Ohio EPA, 1988; Ohio EPA, 1992; Ohio EPA, 1998, Ohio EPA 2012).

PCDDs and PCDFs are organic compounds consisting of two benzene rings joined by either two or one oxygen bridges, respectively, and with one to eight chlorine atoms substituted for hydrogen atoms on the rings. Based on the number and arrangement of chlorine atoms, 75 different PCDDs and 135 different PCDFs exist. For most species of organisms tested, 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD) is the most toxic of these compounds. Compounds with the

same or similar mode of action as TCDD are considered dioxin-like compounds. Since the chemicals have a similar mode of action, it is necessary to consider the sum or class of compounds together for toxicity purposes. Since TCDD is the most toxic of these compounds, it is used to calculate the relative potency of individual PCDDs, PCDFs and other compounds that have the same mechanism of action. From the relative potency, the concentration of individual compounds can be expressed as the toxic equivalent (TEQ) to TCDD. Based on the assumption of additive toxicity for compounds with this mechanism of action, the toxicity of the individual compounds in a mixture can be summed to calculate the total TEQ of the mixture[9].

Table 2.1: COCs associated with ground water and ecological losses in the SCVAA.

COC	**CAS number(s)**
Carbon tetrachloride (CCl4)	56-23-5
Chloroform	67-66-3
1,2,4-Trichlorobenzene	120-82-1
Benzene	71-43-2
Monochlorobenzene (MCB)	68411-45-0
1,2-Dichlorobenzene (1,2-DCB)	95-50-1
1,3-Dichlorobenzene (1,3-DCB)	543-73-1
1,1-Dichloroethene	75-35-4
1,4-Dichlorobenzene (1,4-DCB)	106-46-7
Dioxins/Furans	Multiple
Hexachlorobenzene (HCB)	118-74-1
Trichloroethylene (TCE)	79-01-6
Alpha-Hexachlorocyclohexane (Alpha BHC)	319-84-6
Gamma-Hexachlorocyclohexane (Gamma BHC)	58-89-9

[9] Ohio EPA (2012) reported the sum of dioxin-like compounds as the -TCDD Total Toxicity Equivalent (TTE) calculated according to OAC 3745-2-07. Weston (1992) reported a similar summation result, termed TEF equivalent concentrations (TEF-eq.) for sediment and fish tissue.

PCDDs and PCDFs have very low solubility in water, so in the environment they are generally associated with organic material in sediments and soils, and with lipids and membranes in biota. In biota, PCDDs and PCDFs bioaccumulate (build-up in tissues) and can build-up to a greater degree (biomagnify) in upper trophic level organisms such as fish, birds, and mammals. PCDDs and PCDFs are toxic at extremely low concentrations. Acute effects may include the death or reduced growth of plants, birds, fish, and other animals. Chronic (long term) effects on animals can include immunotoxicity, weight loss, hepatotoxicity, dermal toxicity, gastric lesions, altered feeding and reproductive behavior, teratogenicity, and carcinogenicity. (Eisler et al., 1986).

Reproductive and teratogenic effects can include embryo death, edema, gastroschisis, deformities of the jaw or beak, cardiac malformations and function, and loss of visual acuity (Nosek et al., 1992; Henshel et al., 1997; Henshel et al., 2004). In humans, exposure can lead to skin lesions; altered liver function; impairment of the immune system, nervous system, endocrine system, and reproductive functions; and death (WHO, 2005).

Fish exposed to PCDDs and PCDFs also exhibit skeletal deformities, mouth and jaw malformations, tumors and lesions of the mouth and skin (Walker & Peterson, 1992; Walker & Peterson, 1994; Walker et al., 1994), increased liver weights, suppression of the immune system, especially thyroid metabolism, and reproductive impairment including intersex (Blazer et. al, 2013). General information on potential effects of the hazardous substances detected can be found in the Agency for Toxic Substances and Disease Registry fact sheets[10] and the U.S. EPA ECOTOX database[11].

HCB is a byproduct of the manufacture of a variety of organic chemicals and was used as a pesticide until 1965. In 1984, USEPA banned its use in the United States. HCB is persistent (does not degrade easily) and bioaccumulative (builds-up in tissues) and tends to accumulate in lipids in biota. Long-term exposure in humans may result in liver disease, reproductive effects, toxicity to the nervous system, and is classified as a probable human carcinogen (USEPA, 1992; Moermond & Verbruggen, 2011).

2.3 Temporal Scope

Dover Chemical Corp. has operated its facility since 1950, at which time natural resource exposure to hazardous substances likely began. Damages are calculated beginning in 1981, in accordance with the enactment of CERCLA in December 1980 and are estimated until baseline conditions are achieved from either remediation and/or natural processes.

2.4 Pathways

Pursuant to 43 C.F.R. § 11.14 (dd), a pathway is defined as: The route or medium through which a hazardous substance is or was transported from the source of the discharge or release to the injured resource.

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[10] www.atsdr.cdc.gov

[11] www.epa.gov/ecotox

PCDDs and PCDFs were detected above background in the SCVAA surface waters, sediment, and biota and have reached natural resources by several pathways including ground water, movement in surface water, sediment, and through the biotic food web (Weston, 1992; Ohio EPA, 1992; Ohio EPA, 1995; Ohio EPA, 2012) (Figure 2.1).

2.5 Baseline

To measure injuries, and therefore determine damages and restoration activities, the baseline conditions (*i.e.*, physical, chemical, and biological conditions prior to the release of hazardous substances) of the affected resources and associated services must be established. Baseline is "the condition or conditions that would have existed at the assessment area had the…release of the hazardous substance…not occurred" (43 C.F.R. § 11.14 (e)). For this Final RP/EA, the Trustees focused on the injury that surface water and sediment contamination had on flora and fauna through primary and secondary exposure. As such, they established baseline for the SCVAA using data from upstream of the Dover Chemical Corp. as well as reference invertebrate and fish community data from comparable streams in the state of Ohio. Ground water baseline was based on the pre-release condition of no organic contamination detectable in the aquifer or ground water samples.

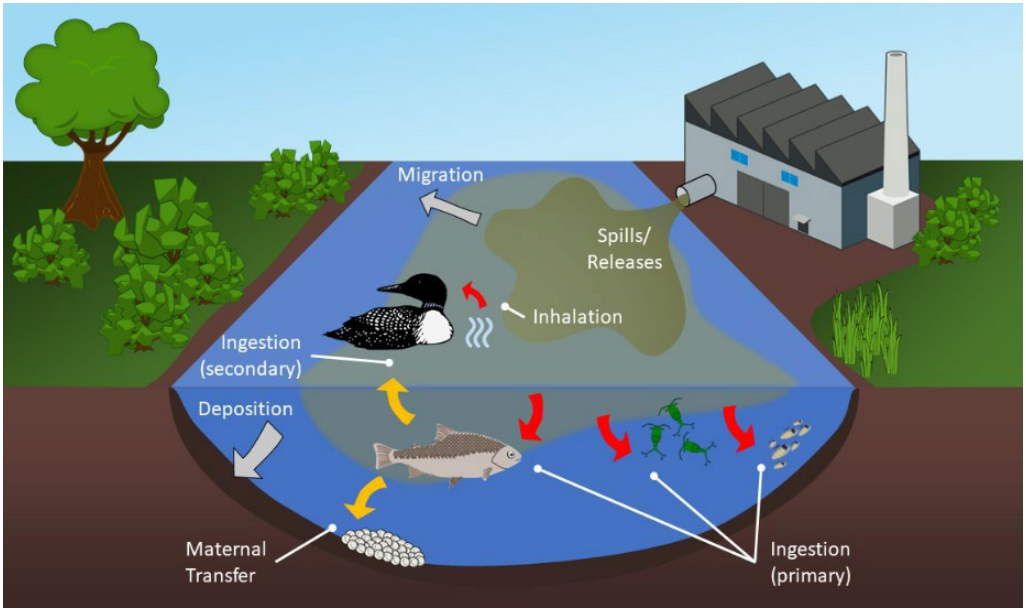

Figure 2.1: Example pathways and exposure routes for Sugar Creek

2.6 Summary of Injury Assessment

An NRDA was commenced by the Trustees in early 2009, completing several NRDA milestone documents pursuant to 43 C.F.R. Part 11. The Trustees prepared a Pre-Assessment Screen and Determination in January 2010. A Notice of Intent to Perform an Assessment was sent to DCC on January 12, 2010 (discussed below), inviting them to participate in the assessment. Dover declined to participate. The Draft Assessment Plan and the Draft Study Plan (Trustees, 2010) were noticed to the public for review and comment in June 2010. The Trustees did not receive comments and finalized the Assessment Plan in October 2011.

The NRDA focused on ground water, surface water and biological injuries to Sugar Creek and its associated habitats to determine the nature and extent of injuries to natural resources and the services[12] they provide.

In its injury determination phase, the Trustees evaluated natural resource injuries based upon the regulatory definitions provided below. The Trustees determined the following injuries and related service losses occurred from releases from Dover Chemical Corp.

1. Surface Water Resources

    - Concentrations and duration of hazardous substances sufficient to have caused injury to ground water, air, geologic, or biological resources, when exposed to surface water [43 C.F.R. § 11.62(b)(1)(v)].

2. Sediment Resources

    - Concentrations and duration of hazardous substances sufficient to cause injury to biological resources, ground water, or surface water resources that are exposed to sediments [43 C.F.R. § 11.62(b)(1)(v); 11.62(e)(11)].

3. Ground water Resources

    - Concentrations and duration of hazardous substances in excess of drinking water standards as established by Sections 1411 - 1416 of the Safe Drinking Water Act, or by other federal or state laws or regulations that establish such standards for drinking water, in ground water that was potable before the release [43 C.F.R. § 11.62(c)(1)(i)]

    - Concentrations and duration of hazardous substances sufficient to have caused injury to surface water, when exposed to ground water [43 C.F.R. § 11.62(c)(1)(iv)].

4. Biological Resources

    - Concentrations of a hazardous substances sufficient to cause the biological resource or its offspring to have undergone at least one of the following changes in viability: death, disease, behavioral abnormalities, cancer, physiological malfunctions (including malfunctions in reproduction), or physical deformations [43 C.F.R. § 11.62(f)(1)(i)].

The Trustees also reviewed site-specific injury studies as well as other existing information, including remedial investigation data, ecological risk assessments, and scientific literature. Based on information from these sources and with an understanding of the function of the terrestrial and aquatic ecosystems in the SCVAA, the Trustees determined the injury and expected magnitude and severity of effects of PCDDs, PCDFs, and HCB, released from Dover Chemical Corp., on natural resources.

[12] Services means the physical and biological functions performed by the resource including the human uses of those functions. These services are the result of the physical, chemical, or biological quality of the resource.

2.7 Injury Evaluation of Resource Service Losses

Each of the natural resources exposed to and potentially injured by the release of hazardous substances, including ground water, surface water, sediment, and the organisms that utilize the riverine and associated wetland and floodplain or upland habitats (*e.g.*, fish, birds, reptiles, amphibians, mammals), is a natural resource. Over the years, these natural resources have been or likely have been, exposed to hazardous substances, including chlorobenzenes, PCDDs, and PCDFs released from Dover Chemical Corp. and have suffered adverse effects from the contaminants themselves.

Injured natural resources within the assessment area sustained some losses in ecological services due to contamination. As described in 51 Fed. Reg. 27674, 27886 (Aug. 4, 1986): "a service refers to any function that one natural resource performs for another or for humans. Within the nonhuman part of an ecosystem, plants provide habitat and food for animals, one animal may provide or serve as food for another, or water may be used by fish for support, respiration, and many other functions. This list could be expanded to describe almost any interaction between species or between physical and biological levels. Among these services are the uses that humans make of natural resources." A reduction in the ability of an injured resource to provide these services (such as food for a higher trophic level), as compared to the baseline level of services or that which existed but for the contamination, is considered a service loss. Trustees quantified the severity and magnitude of these potential losses, where possible, to establish a basis for scaling restoration and determining damages. In the sections below, the methodologies and assumptions used to quantify injury for representative natural resources are discussed, and assessment results are summarized.

To address the wide range of injury and service losses at the site, the Trustees developed a multi-pronged approach to damages determination: (1) for the losses of aquatic, riparian, and upland resources, the Trustees' general approach was to first confirm injury to natural resources, and then estimate the ecological losses through the use of habitat equivalency analyses; (2) for the losses of ground water resources and resulting required compensation, Ohio EPA employed a method of estimating lost ground water use and required acreage that would produce an equal volume of ground water through precipitation and infiltration, equal to the injured ground water volume. Ohio EPA estimated the injured volume of ground water as the initial static volume plus annual recharge over 30 years. Compensatory acreage is the area that would produce a similar volume of ground water. This approach was selected as being the appropriate model and was based on balancing the data needs for the approaches, reliability and reproducibility of the estimates, and value of the ground water resource. (Ohio EPA & Service, 2011).

2.7.1 *Studies and data used for injury assessment*

A summary table of the studies and type of matrices or resources studied (ground water, surface water, sediment, fish tissue, QHEI, ICI, IBI, and MIwb) used for this assessment is provided below.

Table 2.2: Studies and data used in the injury assessment of the Site includes: ground water (G), surface water (SW), sediment (S), fish tissue (F), QHEI, ICI, IBI, and the MIwb. An (X) indicates that investigator collected data for the matrix during the study. NA=Not applicable.

Reference	Data collection year(s)	G	SW	S	F	QHEI	ICI	IBI	MIwb
Weston, 1992	1991-1992	X	X	X	X	NA	NA	NA	NA
Ohio EPA, 1992	1991	NA	NA	NA	NA	X	X	X	X
Ohio EPA, 1995	1994	NA	NA	NA	X	NA	NA	NA	NA
Ohio EPA, 2000	1998	NA	NA	NA	NA	X	X	X	X
Ohio EPA, 2012	2010	NA	NA	X	X	X	X	X	X
TRC, 2015	2014	X	NA	NA	NA	NA	NA	NA	NA
DCC, 2020	2020	X	NA	NA	NA	NA	NA	NA	NA

2.7.2 *Criteria, Screening Levels, Toxicity Reference Values*

In accordance with the definitions in Section 3.6, the Trustees used the following criteria, screening levels, and toxicity reference values for injury assessment.

- Maximum Contaminant Level (MCL): is the highest level of a contaminant that is allowed in drinking water. Concentrations of chemicals in ground water or in surface water that was potable before the release of hazardous substances, were compared to U.S. EPA MCLs to assess injury. MCLs for Gamma-BHC, CCl4, and 1,4-DCB were used in this assessment (U.S. EPA, 2018).
- Aquatic life criteria: Biological community metrics for fish (IBI and MIwb) and invertebrates (ICI) were used to assess the biological community (IBI, MIwb, and ICI were described in more detail in Section 2.2).
- Sediment ecological screening level: U.S. EPA Region 5 RCRA ecological screening levels (ESLs) for sediment (U.S. EPA, 2003) were used assess sediment for injuries.
- Consensus based sediment quality guidelines
    - The Probable Effect Concentration (PEC) is a concentration above which adverse effects are expected to occur in sediment-dwelling species (MacDonald et al., 2000). PECs were used to assess sediment for injuries.
    - Threshold Effect Concentration (TEC) is a concentration below which adverse effects to sediment-dwelling species are not expected to occur (MacDonald et al., 2000). TECs were used to assess sediment for injuries.
- Fish Tissue Wildlife Toxicity Reference Value (TRV)
    - Dioxins: The New York State Department of Environmental Conservation developed a fish flesh criterion for non-carcinogenic dioxin of 3 ng/kg protective of piscivorous (fish-eating) wildlife (Newell et al., 1987). The Michigan

Department of Environment, Great Lakes, and Energy also developed a range of fish tissue TRVs (4.5 ng/kg to 10 ng/kg) estimated to cause adverse effects on reproduction and/or development in the bald eagle, colonial nesting birds, and mink/otter populations (Bush et al., 2020).

- HCB: The New York State Department of Environmental Conservation developed a fish flesh criterion for non-carcinogenic HCB of 0.33 mg/kg (330 µg/kg; Newell et al., 1987).
- Heptachlor epoxide: The New York State Department of Environmental Conservation developed a fish flesh criterion for non-carcinogenic heptachlor epoxide of 0.2 mg/kg (200 µg/kg; Newell et al., 1987).

2.7.3 *Ground water Resources*

Ground water plume and hazardous substance concentrations

The ground water contaminant plume created by Dover Chemical Corp. originates at the Dover Chemical Corp. site and extends approximately 6,800 feet (1.3 miles) south toward the Tuscarawas River (Figure 1.2). At the widest point, the plume is approximately 1,200 feet wide. Within the vertical Sugar Creek buried valley aquifer profile, at the depths where contamination has been detected, the plume is approximately 30 feet thick. For the purpose of this injury assessment, the entire ground water plume is injured and includes both U.S. EPAs OU1 (on-site plume) and OU2 (off-site plume).

TRC (2015) and DCC (2020) summarized ground water contaminant concentrations in the plume. Ground water exceeded MCLs or RSLs for the following chemicals: dioxin, Alpha-BHC, Gamma-BHC, CCl4, chloroform, TCE, MCB, 1,2-DCB, 1,3-DCB, and 1,4-DCB (Table 2.3).

Since ground water exceeds MCLs or RSLs (drinking water standards) for hazardous substances, the Trustees conclude that ground water in the SCVAA was injured.

Furthermore, ground water may also be injured when the releases of hazardous substances require institutional controls that prevent the future use of the ground water, constituting an unavoidable injury as a result of a response action [43 C.F.R. § 11.15(a)(1)]. Such institutional controls at Dover Chemical Corp. were implemented in the form of an environmental covenant in 2006 based on the ROD with U.S. EPA. While the pump and treat system prevents the on-site plume of OU1 from migrating off-site, the institutional control prevents the future use of the ground water since it is pumped, treated, and eventually discharged to surface water.

Summary of Ground Water Assessment Results

Using best professional judgment together with on-site studies, remedial data, and scientific literature, the Trustees concluded that injuries occurred to ground water.

Ground water exceeded MCLs for the following chemicals: dioxin, Alpha-BHC, Gamma-BHC, CCl4, chloroform, TCE, MCB, 1,2-DCB, 1,3-DCB, and 1,4-DCB (Table 2.3)

- Since ground water exceeds MCLs (drinking water standards) for hazardous substances, the Trustees conclude that ground water in the SCVAA was injured.
- Institutional controls on-site prevent the future use of the ground water, resulting in an NRDAR ground water injury.

Table 2.3: Ground water contaminant concentrations and acceptable drinking water levels including U.S. EPA maximum contaminant levels (MCLs). Samples that exceed the MCL are marked with a dagger (†) and red shading. Data from TRC (2015) and DCC (2020). NR = Not Reported.

COC	MCL	Maximum Concentration 2004-2014	Location/well of Maximum Concentration 2004-2014	Maximum Concentration 2019-2020	Location/well of Maximum Concentration 2019-2020
Dioxin (TEQ*; pg/l)	30	9,000†	5AR	NR	NR
Alpha-BHC (µg/l)	0.07	2.7†	5AR	NR	NR
Gamma-BHC (µg/l)	0.2	0.29†	11A	NR	NR
CCl4 (µg/l)	5	110,000†	6AR	1,900†	6AR
Chloroform (µg/l)	80	130,000†	6AR	2,100†	6AR
TCE (µg/l)	5	510†	11A	110†	38B
MCB (µg/l)	100	7,000†	43A	870†	74-B
1,2-DCB (µg/l)	600	28,000†	43A	1,500†	43A
1,3-DCB(µg/l)	600	5,900†	11A	690†	71B
1,4-DCB(µg/l)	75	25,000†	11A	1,900†	73B

*TEQ - Toxicity Equivalent (using International Toxicity Equivalent Factors). TEQ calculated with EMPCs and estimated detection limits (EDLs).

2.7.4 *Ground water Scaling Methodology Results*

The Ohio EPA has developed simplified methods for estimating natural resource damages and compensatory acreages for ground water injuries resulting from releases of hazardous substance and/or petroleum in an effort to promote settlements of NRD liability. Presently, project-based settlements, which may include enhanced remedies at cleanup sites, are preferred for settling NRD cases. NRDs can be calculated using other approved approaches (*e.g.*, Type B NRDA, 43 C.F.R. part 11, subpart E).

The ground water scaling methods consists of three basic parts:

1. Calculate a volume of water over time that has been injured or is no longer usable.
2. Estimate a dollar value for injured and lost water usage based on market value.

3. Provide an alternative approach for developing compensatory acreages that would produce an equal volume of ground water through recharge.

This method utilizes simplified and reasonable assumptions for the benefit of developing an equitable damage or compensatory acreage estimate. Some examples of the simplified assumptions include:

1. The plume size is estimated using baseline (*e.g.*, background, non-detect) conditions. This is in contrast to basing potential losses on restrictions identified by Ohio well siting rules (Ohio Administrative Code 3745-9-04). Using the Ohio well siting rules may likely identify a larger area that would be precluded from use for new well installation. Therefore, a greater volume of unusable ground water would be estimated as being injured.

2. Time of injury is estimated to generally be a maximum of 30 years. This is in contrast to the injury beginning at the date of release or 1981 (whichever is less if the release began prior to 1981) and continuing until the ground water is restored, or in perpetuity if the ground water cannot be returned to baseline conditions. This simplification was included as an effort to keep dollar and resource values similar to present day value.

3. Injured water volume estimates are the lowest of three methods evaluated by Ohio EPA. Total static water volumes and potentially extractable water volumes methods both produce considerably larger volumes of injured ground water when compared to the initial static water volume plus annual recharge used in this guidance.

4. Generic physical characteristics of aquifers are used in this method as compared to detailed evaluations required by more sophisticated modeling techniques.

5. This method generally produces the lowest water volume estimates of the three approaches evaluated. The preferred method of an initial static volume plus annual recharge was selected as being the appropriate model and was based on balancing the data needs for the approaches, reliability and reproducibility of the estimates, and value of the ground water resource.

6. The average local water prices are divided in half when dollar estimates are derived for damage estimates. This reduction in consumer price reflects the cost of extraction, treatment, delivery, and maintenance of water systems.

The land surface area of over 7.5 million square feet (~174 acres) was calculated based on the area where the plume reaches non-detect values for volatile organic chemicals (baseline). At any point in time, the Dover Chemical Corp. plume is injuring nearly 400 cubic feet of ground water in the Sugar Creek buried valley aquifer. The state estimates its ground water resource damages to be 563 acres when estimating acres to produce an equal volume of injured ground water.

2.7.5 *Aquatic Resources*

Surface Water and Sediment

Weston (1992) measured concentrations of PCDD/PCDF, BHC, and HCB in surface water of Sugar Creek in 1991. TEF equivalent concentrations were detected in all samples and were elevated downstream (Station 1 and 2) of Dover Chemical Corp. compared to samples collected upstream of DCC on Sugar Creek (Station 3; Table 2.4).

Weston (1992) also measured concentrations of PCDD/PCDF, BHC, and HCB in sediments of Sugar Creek, Goettge Run[13], and Dover Chemical Corp. lagoons in 1991 (Table 2.5). Alpha BHC and HCB were non-detect or qualified estimates below the reported quantification limit in all samples. TEF-eq concentrations were detected in all Sugar Creek and Goettge Run samples and the lowest concentrations were found at Goettge Run and Station 3 (upstream of Dover Chemical Corp.). None of the sediment samples collected in 1991 exceeded the PCDDs Ecological Screening Level of 11 ppt (U.S. EPA 2003).

Ohio EPA (2000) measured a selection of organic compounds in Sugar Creek surface water in 1998. Organic analysis revealed BHC (0.012 ug/l) and atrazine (0.72 ug/l) present at levels just slightly above detection levels at RM 3.64 (upstream of site). At RM 1.83 (downstream of site), various isomers of BHC were detected (0.0072-0.012 µg/L). Heptachlor epoxide (0.0029 ug/l), atrazine (0.21 ug/l), and bis(2-ethylhexyl)phthalate (0.88 ug/l) were also detected at RM 1.83.

Ohio EPA (2012) reported concentrations of chlorinated pesticides, PCBs, (Table 2.6) and dioxins (Table 2.7) in sediment samples from Sugar Creek upstream (RM 3.4) and downstream of the site (RM 1.9 and RM 1.3) collected in 2010. For dioxin-like compounds, TTEs were calculated from sediment samples taken from Sugar Creek.

Beta BHC exceeded the U.S. EPA ESL at Sugar Creek RM 1.9 (downstream of Dover Chemical Corp.). Total PCBs exceeded the MacDonald (2000) TEC at Sugar Creek RM 1.3 (downstream of Dover Chemical Corp.; Table 2.6). Individual samples and average TTE concentrations exceeded the ESL for PCDDs (11 ppt; U.S. EPA 2003) at both locations on Sugar Creek downstream of Dover Chemical Corp. (Table 2.7).

Sugar Creek sediment samples downstream of Dover Chemical Corp. had elevated concentrations of hazardous substances when compared to the upstream site. Samples collected downstream of Dover Chemical Corp. exceeded literature-based, peer-reviewed PECs, TECs, and ESLs, indicating that hazardous substances have been present at concentrations in sediment sufficient to cause direct toxicity to trust resources. Therefore, based on best professional judgement, documented concentrations of hazardous substances in surface water and sediment, and exceedances of ESLs, PECs, and TECs, injury has occurred to surface water (including sediment) resources in the SCVAA.

[13] Goettge Run is a tributary of Sugar Creek which enters Sugar Creek downstream of Dover Chemical around Sugar Creek River Mile 1.8.

Table 2.4: Surface water results from Weston (1992) for Sugar Creek (SC) sampling stations upstream and downstream of Dover Chemical Corp. Results are in parts per billion (ppb) or parts per trillion (ppt), as indicated. PCDD/PCDF is reported as TEF-eq. calculated for dioxin-like compounds. Results for Station 1 are reported as the averages of two duplicate samples. NR = not reported/measured. ND = non-detect.

Site	Alpha BHC (ppb)	HCB (ppb)	PCDD/PCDF (TEF-eq.; ppt)
SC Station 3 (upstream)	ND	ND	0.0011
SC Station 2 (downstream)	NR	NR	0.1714
SC Station 1 (downstream)	0.075	0.011*	0.01685

*Concentration was estimated.

Table 2.5: Sediment results from Weston (1992) for Sugar Creek (SC), Goettge Run, and the lagoon sampling stations upstream and downstream of Dover Chemical Corp. Results are in parts per trillion (ppt). TEF-eq. results for Station 1 are reported as the average of two duplicate samples. Two duplicate results are presented for Alpha BHC and HCB for Station 1. NR = not reported/measured. ND = non-detect. <RQL = less than the reported quantification limit.

Site	Alpha BHC (ppt)	HCB (ppt)	PCDD/PCDF (TEF-eq.; ppt)
SC Station 3 (upstream)	ND	ND	0.1097
Lagoon Station	ND	ND	NR
Goettge Run Station	ND	ND	0.0041
SC Station 2 (downstream)	NR	NR	0.2880
SC Station 1 (downstream)	ND ; <RQL*	ND ; <RQL*	0.1144

*Qualified estimate, below the reported quantification limit of 790 ppt.

Sugar Creek Benthic Invertebrate Community

In 1991, Ohio EPA documented (Ohio EPA, 1992) a thick layer (up to 2 feet in depth) of fine-grained material covering the stream bottom in Sugar Creek for at least 1.5 miles downstream of Dover Chemical Corp. that was not evident in Sugar Creek upstream. Ohio EPA (1992) also documented significantly lower macroinvertebrate community scores downstream of Dover Chemical Corp. (ICI = 4–8, "poor") compared to the upstream score (ICI = 36, "good"). Upstream of Dover Chemical Corp., on Sugar Creek, Ohio EPA found 33 macroinvertebrate taxa, including nine sensitive Ephemeroptera, Trichoptera, and Plecoptera (EPT Taxa), which indicates good water quality conditions. Downstream of Dover Chemical Corp., on Sugar Creek, total taxa richness was ten and EPT taxa richness was zero, indicating poor water quality conditions downstream (Ohio EPA, 1992).

In 1998, the macroinvertebrate community composition upstream of the Dover Chemical Corp. was "very good" (ICI = 42). Macroinvertebrate community composition was slightly lower downstream of the Dover Chemical Corp. and was considered "good" (ICI = 36–38). These downstream scores were a substantial improvement from scores documented in 1991. Ohio EPA also documented marginal improvement in the sediments and substrate downstream of Dover Chemical Corp., but they were still considered "atypical and effervesced an organic odor when disturbed" (Ohio EPA, 2000).

In 2010, the Sugar Creek macroinvertebrate community upstream of Dover Chemical Corp. (RM 3.4) was determined to be "exceptional" (ICI = 50). Both downstream sampling locations were determined to be "low" to "fair" (ICI = 14–18). Species present were pollution tolerant with low numbers of EPT taxa. EPT taxa richness declined from 16 upstream to 2–4 at the downstream sites. The percentage of macroinvertebrates tolerant of pollution in the quantitative sample rose from 0.9% upstream of the Dover Chemical Corp. to 10.4% and 14.9% downstream. Additionally, the upstream site had 3,206 organisms per square foot while the downstream sites had 353 and 207 organisms per square foot. These results correlated strongly with Ohio EPA and Dover Chemical Corp. effluent toxicity test results which documented adverse effects to the invertebrate test organism.

Based on best professional judgement, sediment contaminant concentrations that exceeded thresholds that could cause injury to benthic organisms, and the documented reduction in macroinvertebrate species richness and lack of sensitive EPT taxa (compared to baseline conditions upstream), the Trustees conclude that injury has occurred to the benthic invertebrate community in the SCVAA.

Sugar Creek Fish Community

In 1983, 1988, and 1991, fish communities in Sugar Creek upstream of the Dover Chemical Corp. were reflective of "good" water quality conditions with an IBI range of 46–52 and a MIwb range of 8.7–9.3. Impairment was not documented in the fish communities of Sugar Creek upstream of Dover Chemical Corp. (Ohio EPA, 1992). In 1991, fish communities downstream of Dover Chemical Corp. exhibited "fair" to "poor" results (IBI = 32–47; MIwb = 5.8–7.9). The bottom sediments immediately downstream from the Dover Chemical Corp. were severely embedded with a fine-grained silt/clay/organic material. Ohio EPA concluded that Dover Chemical Corp. was the cause of the degradation (Ohio EPA, 1992). The material had a significant deleterious effect on bottom dwelling fish sensitive to stream siltation. There were also documented fish kills in lower Sugar Creek in 1988, 1989, and 1990 (Ohio EPA, 1992).

In 1998, "marginally good" fish community composition (IBI=37; MIwb=8.2) on Sugar Creek was recorded upstream from the Dover Chemical Corp. with 19–26 species documented.

Downstream of Dover Chemical Corp., a "fair" IBI score (35) and a "poor" MIwb (5.8) score was reported with only 12–19 species recorded. The fish community failed to achieve the warmwater habitat biocriteria downstream from the Dover Chemical Corp. (Ohio EPA, 2000).

Ohio EPA surveys in 2010 found fish community composition criteria upstream of Dover Chemical Corp. (RM 3.4) on Sugar Creek was "very good" (IBI = 47 and MIwb = 9.0; Ohio EPA 2012). Downstream of Dover Chemical Corp. fish communities were considered "marginally good" to "very good" (IBI = 42–47 and MIwb = 8.5–8.6) and showed improvement from fair conditions previously documented (Ohio EPA 2012). The siltation and embeddedness documented in 1991 (Ohio EPA, 1992) improved, which likely had a positive influence on the fish community. While the overall IBI and MIwb scores were sufficient to meet fish biological criteria, fish biomass declined notably downstream from Dover Chemical Corp. and the decline was primarily associated with insect feeding suckers. Sucker biomass upstream (16.9 kg/km) declined at the downstream sites (1.6–2.2 kg/km) and was correlated with a decline in benthic invertebrate abundance discussed in the previous section. The impairment of the macroinvertebrate community significantly reduced the available food source for bottom-feeding insectivorous fish such as suckers (Ohio EPA, 2012).

Based on best professional judgement, macroinvertebrate abundance (fish food source), and documented declines in fish communities and biomass at downstream locations, the Trustees believe that injury has occurred to the fish community in the SCVAA.

Sugar Creek and Lagoon Fish Tissue and Piscivorous Wildlife

Weston (1991) reported concentrations of HCB, and PCDDs/PCDFs in fish tissue from Sugar Creek Station 3 (upstream of Dover Chemical Corp.) and two downstream locations (Stations 1 and 2) along Sugar Creek and from the lagoon at Dover Chemical Corp. Hogsucker samples from locations downstream exceeded the 330 µg/kg TRV for HCB (Newell et al., 1987). All but one sample from the lagoon and in Sugar Creek downstream of Dover Chemical Corp. exceeded TRVs for dioxins (Newell et al., 1987; Bush et al., 2020) (Table 2.8). The hogsucker sample from the upstream location also exceeded the TRVs for dioxins. Northern Hogsuckers are predaceous bottom-feeders who prey on benthic insects and snails. Northern Hogsuckers may travel an average 0.425–0.812 kilometers up or downstream during their lifecycle (Matheney & Rabeni, 2011). Both hogsuckers and bass species would likely have foraged above and below the Dover Chemical Corp. outflow and thus been exposed to contaminants.

In 1994, Ohio EPA collected and analyzed fish fillet data from Sugar Creek. HCB concentrations in fish fillet samples taken from Sugar Creek downstream (RM 0.6) of Dover Chemical Corp. were 80–113 µg/kg which was elevated compared to upstream concentrations (2.6–3.1 µg/kg; Table 2.9). TTE levels upstream of Dover Chemical Corp. were 0.192. TTE levels below Dover Chemical Corp. at RM 0.6 were 8.7 and 2.066 for common carp and smallmouth bass, respectively (Ohio EPA, 1995). A comparison to TRVs was not made since these are fillet data (and not whole fish that wildlife species would consume). Fillet data is provided here for qualitative purposes only.

Table 2.6: Select chemical parameters measured in samples collected by Ohio EPA from surficial sediments in Sugar Creek and the Tuscarawas River, August 2010. Consensus-based sediment quality guidelines (MacDonald, et.al. 2000) and ecological screening levels (U.S. EPA, 2003) were used for assessment. Values denoted with † symbol exceed the Probable Effect Concentration (PEC). Values denoted with ‡ symbol exceed the Threshold Effect Concentrations (TEC). Values denoted with * symbol exceed the U.S. EPA ESLs. Results are reported as µg/kg dry weight and are based on average values calculated from multiple samples collected at each biological monitoring station.

Site	Aldrin	Alpha BHC	Beta BHC	Gamma BHC	Oxychlordane	HCB	Heptachlor	Heptachlor epoxide	Total PCBs
SC RM 3.4	ND	ND	0.058	0.034	ND	0.391	ND	ND	20.487
SC RM 1.9	0.05	3.134	50.512*	0.451	0.339	2.346	0.081	0.315	46.77
SC RM 1.3	0.294	0.24	0.492	0.062	ND	3.794	0.295	1.178	81.599‡
TR RM 58.1	1.317	0.375	ND	ND	28.498†	1944.308*	5.043*	9.179‡	822.37†
TR RM 57.8	1.822	0.162	0.236	0.084	0.989	145.311*	0.31	29.169†	156.645‡

Table 2.7: 2,3,7,8-TCDD total toxicity equivalent (TTE) calculations of sediment samples collected by Ohio EPA from surficial sediments in Sugar Creek and the Tuscarawas River, August, 2010. TTEs are represented in parts per trillion (ppt). Four to five individual sediment samples were collected from each biological sampling location, and the TTE for each sample is presented in this table. Values denoted with asterisk (*) symbol exceed the PCDDs ESL of 11 ppt. NR = Not Reported. DUP = duplicate sample

Site	Sample 1 TTE (ppt)	Sample 2 TTE (ppt)	Sample 3 TTE (ppt)	Sample 4 TTE (ppt)	Sample 5 TTE (ppt)	Average TTE (ppt)
SC RM 3.4	0.35	0.97	3.69	3.70	0.43	1.83
SC RM 1.9	245.62*	10.12	9.84 (dup)	0.27	6.45	54.30*
SC RM 1.3	7.95	34.31*	7.0	38.14*	NR	21.85*
TR RM 58.1	45.62*	9.91	10.67	30.09*	3.28	19.91*
TR RM 57.8	7.77	1.27	5.04	5.82	0.48	4.08

* Exceeds U.S EPA ESL
† Exceeds PEC
‡ Exceeds TEC

Table 2.8: Weston (1992) whole fish (and one fillet) tissue results collected from Sugar Creek (SC) upstream and downstream of Dover Chemical Corp. Values denoted with † symbol are values that exceed the TRVs derived by Newell et al. (1987) and/or Bush et al. (2020). ND = non-detect. NR = not reported.

Site	Species	Alpha BHC (µg/kg)	HCB* (µg/kg)	PCDD/PCDF (ppt)
SC Station 3 (upstream)	Bass	ND	25	0.6184
SC Station 3 (upstream)	Hogsucker	ND	65	6.4116†
Lagoon Station	Walleye	NR	NR	70.6733†
Lagoon Station	Walleye (fillet)	NR	NR	5.4360†
Lagoon Station	Hogsucker	NR	NR	112.2823†
SC Station 2 (downstream)	Hogsucker	ND	730†	32.3531†
SC Station 1 (downstream)	Bass	ND	280	1.6429
SC Station 1 (downstream)	Hogsucker	ND	560†	5.0889†
SC Station 1 (downstream)	Bass	ND	290	13.5543†

* Weston et al. (1992) uses the acronym HBC for hexachlorobenzene. HCB is used for consistency with the rest of the document and the Ohio EPA reports.
† Value exceeds the TRVs derived by Newell et al. (1987) and/or Bush et al. (2020).

Table 2.9: Concentrations of HCB, heptachlor epoxide, and dioxin TTEs for composite fillet samples collected from Sugar Creek (SC; upstream and downstream of Dover Chemical Corp.) in 1994 (Ohio EPA 1995). A comparison to TRVs was not made since these are fillet data (and not whole fish that wildlife species would consume). RM= River Mile

Site	Species	HCB (µg/kg ww)	Heptachlor epoxide (µg/kg ww)	TTEs (ppt)
SC RM 3.7 (upstream)	Common carp	2.6	<1.6	0.177
SC RM 3.7 (upstream)	Smallmouth bass	3.1	<1.7	0.192
SC RM 0.6 (downstream)	Common carp	113	<1.7	8.737
SC RM 0.6 (downstream)	Smallmouth bass	80	2.7	2.066

In 2010, the Trustees (Ohio EPA, 2012) collected and analyzed whole body fish samples from Sugar Creek. Samples collected from Sugar Creek upstream of the Dover Chemical Corp. did not exceed TRVs for piscivorous wildlife (Table 2.10). Chemical concentrations in fish samples were elevated downstream of Dover Chemical Corp. (Table 2.10). All downstream samples exceeded the dioxin TRVs. One common carp sample from RM 1.3 (downstream of site) exceeded the TRVs for HCB and heptachlor epoxide (Table 2.10; Ohio EPA, 2012).

Data collected in 2014, by the Trustees and USGS, indicated improved conditions, but were still above the 3 ng/kg criteria. PCDDs and PCDFs and HCB in fish samples from Sugar Creek were elevated downstream of the Dover Chemical Corp. at TTEs of 3.82 ng/kg and 5.96 ng/kg respectively, when compared to the upstream (TTE 0.141ppt.)

HCB, PCDD, and PCDF are bioaccumulative (capable of building-up in tissues) contaminants that biomagnify in the food web (build-up to a higher degree in higher trophic levels). These contaminants were detected in whole fish samples collected from the SCVAA in 1991 (Weston, 1992), 1994 (Ohio EPA, 1995) and 2010 (Ohio EPA, 2012). COC concentrations were not measured in avian or mammalian matrices (*e.g.*, tissue or blood); however, COC concentrations were measured in whole fish which are diet items of piscivorous wildlife. The concentrations found in whole fish samples collected from the downstream locations exceeded TRVs for piscivorous wildlife. Furthermore, injury to fish communities (as documented in the previous section) results in a reduced availability of fish prey abundance for piscivorous wildlife in the SCVAA. Injury to aquatic fish communities discussed earlier provides evidence that food sources available to piscivorous species foraging in the SCVAA have been reduced. The Trustees believe that this information suggests injury to piscivorous wildlife in the SCVAA.

Table 2.10: Chemical analysis results for whole body fish samples collected from Sugar Creek (SC; upstream and downstream of Dover Chemical Corp.) in 2010 (Ohio EPA 2012). Results are presented as µg/kg wet weight (ww) for HCB, Heptachlor epoxide, and total PCBs. TTEs were calculated for dioxin-like compounds and presented as parts per trillion (ppt). Values denoted with * symbol are values that exceed the TRVs derived by Newell et al. (1987) and Bush et al. (2020). ND = non-detect. NR = not reported.

Location	**Species**	***n***	**HCB (µg/kg ww)**	**Heptachlor epoxide (µg/kg ww)**	**TTEs (ppt)**
SC RM 3.4 (upstream)	Common carp	3	3.43–18.2	37.068–73.269	ND–0.01
SC RM 3.4 (upstream)	Smallmouth bass	2	0.079–2.587	32.354–43.589	ND–0.22
SC RM 1.9 (downstream)	Common carp	2	81.032–87.561	26.174–55.323	4.77–10.97*
SC RM 1.9 (downstream)	Smallmouth bass	2	90.089–91.623	51.132–91.48	12.79–32.11*
SC RM 1.3 (downstream)	Common carp	3	93.095–1,238.166*	1.15–1,052.345*	4.25–10.45*
SC RM 1.3 (downstream)	Smallmouth bass	2	58.249-66.304	51.755–93.262	25.93–31.09*

* Value exceeds the TRVs derived by Newell et al. (1987) and/or Bush et al. (2020).

Threatened and Endangered Species

The ESA of 1973 (16 USC Section §1531 et seq.) directs the Trustees to protect and conserve listed endangered and threatened animals. The SCVAA and Remedial Site have been documented to be within the range of the federally endangered Indiana bat, the federally endangered northern long-eared bat, the federally proposed for listing tricolored bat, and the state of Ohio endangered eastern hellbender salamander.

Indiana bats and tricolored bats forage on flying insects. Four orders of insects primarily contribute to their diet including: Coleoptera (beetles), Diptera (true flies), Lepidoptera (moths and butterflies), and Trichoptera (caddisflies) (summary in Service, 2007). All caddisfly species spend their larval stages in aquatic habitats. Some species of beetles, true flies, moths, and butterflies have aquatic life stages. Aquatic-based insects dominated diets of Indiana bats in studies within the northern part of their range and this indicates that northern Indiana bats forage more in wetlands or above streams and ponds (Service, 2007). Northern long-eared bats forage on a variety of insects and spiders by catching insects in flight and gleaning prey off surfaces. Their diverse diet includes moths, flies, leafhoppers, caddisflies, and beetles (summary in Service, 2015). Northern long- eared bats forage between the canopy and understory on forested hillsides and ridges; they also utilize small forest clearings over roads and water (Service, 2015). The eastern hellbender is a fully aquatic salamander species that requires swift flowing streams with large, flat boulders or other cover material. Crayfish are the primary food source for hellbenders, although fish and other aquatic invertebrates have also been found in diet studies (summary in Mayasich et al., 2003).

The Trustees did not measure COC concentrations in bat or hellbender biological matrices (e.g., tissue or blood) or bat or hellbender prey/diet items (i.e., invertebrate tissue) from the SCVAA. However, reduced availability of insect prey species resulted from the significant decline in abundance of aquatic benthic invertebrates within the SCVAA due to COCs in surface water and sediment (declines documented in Ohio EPA, 1992; Ohio EPA, 2000; Ohio EPA, 2012). The decline in abundance of aquatic benthic invertebrates corresponds to a decrease in available productive foraging habitat for the Indiana Bat, Northern long-eared bat, and hellbender in the SCVAA. The injury to aquatic invertebrate communities discussed earlier provides evidence of reduced food sources available to predator species resident in the vicinity of the SCVAA. Based on best professional judgement, documented declines in the abundance of benthic invertebrates, and scientific literature of bat and hellbender foraging behavior, a reduction in food sources and foraging habitat was caused by the release of COCs in the SCVAA which suggests injury to these species.

Summary of Aquatic Resources Assessment Results

Using best professional judgment together with on-site studies, remedial data, and scientific literature, injuries occurred or likely occurred to surface water, sediments, benthic organisms, fish communities, fish-eating birds and mammals, and threatened and endangered species in the SCVAA, including their supporting ecosystems. In summary:

- Samples collected downstream of Dover exceeded literature-based, peer-reviewed Probable Effect Concentration (PECs), Threshold Effect Concentration (TECs), in addition to USEPA Ecological Screening Levels (ESLs); indicating that hazardous substances have been present at concentrations sufficient to cause direct toxicity to trust resources through surface water and sediment. Sugar Creek sediment concentrations exceeded thresholds that cause injury to benthic organisms, including a reduction in macroinvertebrate species richness and lack of sensitive taxa.
- Reduced macroinvertebrate abundance (fish food source) and documented declines in fish communities and biomass in Sugar Creek (downstream of DCC) indicates fish communities were injured.
- The concentrations of contaminants of concern found in whole fish samples exceeded Toxicity Reference Values (TRVs) for piscivorous wildlife, suggesting injury to piscivorous species.
- Injury to the benthic invertebrate community likely resulted in reduced food sources and foraging habitat for the federally endangered Indiana bat, the federally threatened Northern long-eared bat, and the state-listed Hellbender in the SCVAA.
- Other federal resources at the DCC Site including bald eagles may have been injured due to the proximity of a bald eagle nest, located approximately one-mile from the facility. At least one sighting of an eagle has been confirmed on DCC plant property.

2.7.6 *Habitat Equivalency Analysis (HEA) Scaling for Aquatic Resource Injuries*

HEA is a restoration scaling technique often used by natural resource trustees to quantify the amount of restoration needed to compensate for injuries to natural resources resulting from oil spills, hazardous substance releases, or physical injuries (e.g., vessel groundings). HEA-based injury and restoration scaling to determine the size/scope of restoration actions required to compensate for natural injuries are expressly authorized by DOI's NRDAR regulations, 43 C.F.R. §11.83(c)(2)(ix), and have been accepted by the courts[14]. HEA begins with the question "What, but for the release, would have happened to the injured area?" That is, how well would the habitat have been functioning and what services would the injured habitats have provided? This is the baseline for determining the degree of loss in services over time and space. For each impaired property, the HEA model considers the size of the area, the degree of injuries to biological resources, and the duration of impairment, which yields a measure of natural resource injury debits expressed in discount service acre years (DSAYs). Scaling of debits (what is owed) and credits (what is provided by the restoration activity) both use the DSAY metric which is calculated as the value of all of the ecosystem services provided by one acre of the injured habitat in one year. Services for future years are discounted (usually at 3%), placing a lower value on benefits that occur over longer period of time.

[14] *See United States v. Fisher*, 977 F.Supp. 1193, 1201 (S.D. Fla. 1997) (finding that the "HEA" is an appropriate methodology to scale the compensatory restoration project…"

To establish aquatic resource losses over time, the Trustees compared data collected from Sugar Creek, upstream and downstream of Dover Chemical Corp., with the upstream data representing baseline conditions (those that existed but for the release of hazardous substances from Dover Chemical Corp.). Trustees calculated injuries beginning in 1981 and estimated injuries to recover over time, given remedial actions and natural processes, through 2030.

The Trustees evaluated three habitat types, not including ground water, within the assessment area: the lagoon (7.6 acres), Sugar Creek (14 acres), and associated wetlands (20 acres) adjacent to both the lagoon and Sugar Creek. Total Debits in DSAYs calculated using HEA were 898 DSAYs (Table 2.11).

Table 2.11. Federal and state resources debits

Area of Concern	**Size (Acres)**	**Total Debits (DSAYs)**
Lagoon	7.6	506
Sugar Creek	14	285
Associated wetlands	20	107
Total	**41.6**	**898**

For a discussion of the restoration credits that were calculated for the selected restoration projects, please refer to Section 5.12.

3 ENVIRONMENTAL ASSESSMENT

In this Final RP/EA, the Trustees assess the environmental consequences of Alternatives One through Nine to determine whether implementation of any of these alternatives may significantly affect the quality of the human environment, particularly with respect to the physical, biological, socio-economic, or cultural environments. As such, the affected environment includes all areas being considered for restoration (including areas shown in Figure 3.2) and additional areas where there may be direct, indirect, and cumulative impacts and connected actions. The affected environment includes proposed restoration projects in the Sugar Creek Watershed (Figure 3.1) including the Sugar Creek buried valley aquifer (Stark and Tuscarawas Counties), and other watersheds including the Tuscarawas River, Little Beaver Creek, Yellow Creek, Cross Creek, or Captina Creek (Columbiana, Jefferson, and/or Belmont Counties), shown in Figure 3.2.

Information on the current natural resources of the NEPA affected environment proposed for restoration will assist the Trustees in planning restoration activities and ensure potential restoration projects are designed to both maximize ecological and human use benefits while also minimizing or eliminating project-related adverse environmental consequences. This chapter presents a description of the physical and biological environments for the waterways, ecosystems, and socioeconomic factors of the affected environment, as required by NEPA (42 U.S.C. § 4321, *et seq*.).

3.1 Physical Environment

3.1.1 *Sugar Creek Buried Valley Aquifer*

Dover Chemical Corp. is situated entirely over the Sugar Creek buried valley aquifer. The Sugar Creek buried valley aquifer is a highly productive sand and gravel formation with a zone of saturation (ground water) of over 250 feet thick. There are multiple users of the Sugar Creek buried valley aquifer ground water including the City of Dover's well field which supplies drinking water to approximately 13,000 customers.

The thicknesses of the sand and gravel deposits in the Tuscarawas River Basin are typically greater than 100 feet within the buried valleys and may reach up to 400 feet in some localities near the center of the larger valleys in the northern, glaciated regions. These formations are some of the most productive sources of ground water in east-central Ohio, including Tuscarawas County (Haefner and Simonson, 2010). Properly constructed individual wells near the Tuscarawas River may yield from 500 to 2,000, or more, gallons per minute. The Ohio EPA Division of Drinking and Ground Waters has determined the Sugar Creek buried valley aquifer is

a critical resource[15]. The Ohio Division of Natural Resources - Ground Water Resources of Tuscarawas County[16] provides yield rate and location of the buried valley aquifer.

3.1.2 *Sugar Creek Watershed*

The Sugar Creek watershed is in northeast Ohio in Wayne, Stark, Holmes, and Tuscarawas counties. The watershed covers 357 square miles dominated by agriculture (70%; Ohio EPA, 2002). The main stem of Sugar Creek runs 45 miles from north to south, near Smithville to Dover where it joins the Tuscarawas River. The watershed lies within two ecoregions: the glaciated Erie and Ontario Lake Plain (northern half) and the unglaciated Western Allegheny Plateau (southern half).

3.1.3 *Tuscarawas River*

The Tuscarawas River watershed covers approximately 2,589 square miles of northeast and east-central Ohio. The Tuscarawas River begins near Massillon, Ohio and flows around 90 miles to the confluence with the Walhonding River near Coshocton, Ohio. Land use is mostly forest and pasture/hay with more heavily urbanized areas occurring in the upper watershed (Summit and Stark counties). The watershed lies within two ecoregions: the glaciated Erie and Ontario Lake Plain (northern half) and the unglaciated Western Allegheny Plateau (southern half) (Ohio EPA, 2009).

3.1.4 *Little Beaver Creek*

The Little Beaver Creek watershed is in northeastern Ohio and western Pennsylvania. The watershed drains approximately 510 square miles and occupies portions of Columbiana, Carroll, and Mahoning Counties in Ohio and Lawrence and Beaver counties in Pennsylvania. Little Beaver Creek consists of three major branches: North Fork, Middle Fork, and West Fork. The mainstem begins at the confluence of the Middle Fork and the West Fork in St. Clair Township and flows around 16 miles to the confluence with the Ohio River near Smith's Ferry. The watershed lies within two ecoregions: the glaciated Erie and Ontario Lake Plain and the unglaciated Western Allegheny Plateau. The watershed is comprised of deep valleys, wooded slopes, and rock outcroppings. Predominant land-uses include deciduous forest and pasture/hay. Thirty-six miles of Little Beaver Creek are designated as State Wild and Scenic River, and National Scenic River (Ohio EPA, 2005).

[15] Critical resource is defined in OAC 3745-300-10 available here: https://codes.ohio.gov/ohio-administrative-code/rule-3745-300-10

[16] Available here: https://ohiodnr.gov/static/documents/geology/Tuscarawas_GWR_35x37_EOGS04784.pdf

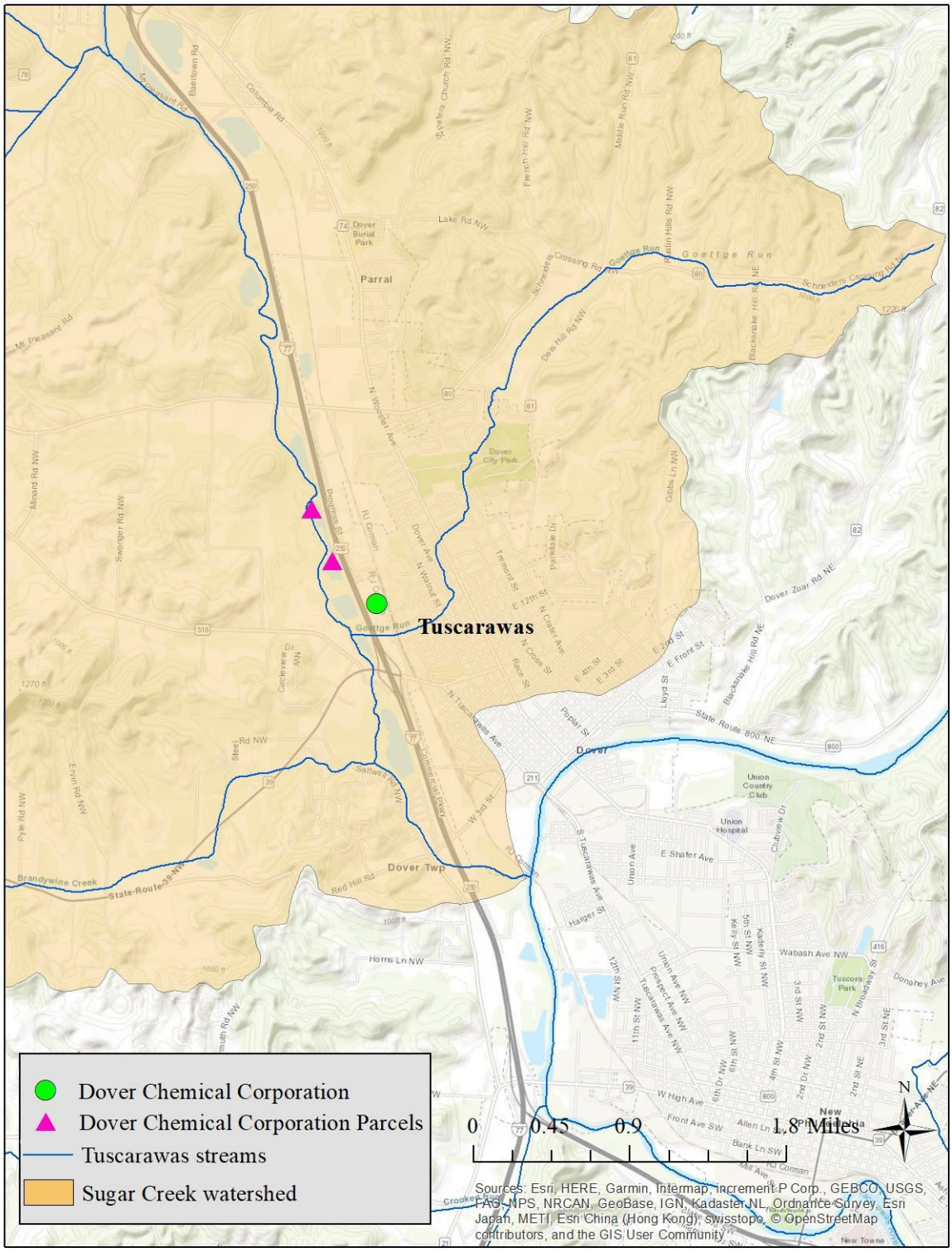

Figure 3.1: The affected environment includes, but is not limited to, Dover Chemical Corp. within the Sugar Creek watershed, and Tuscarawas River watershed. The approximate locations of potential restoration project sites (Dover Chemical Corp. Parcels) are included for reference.

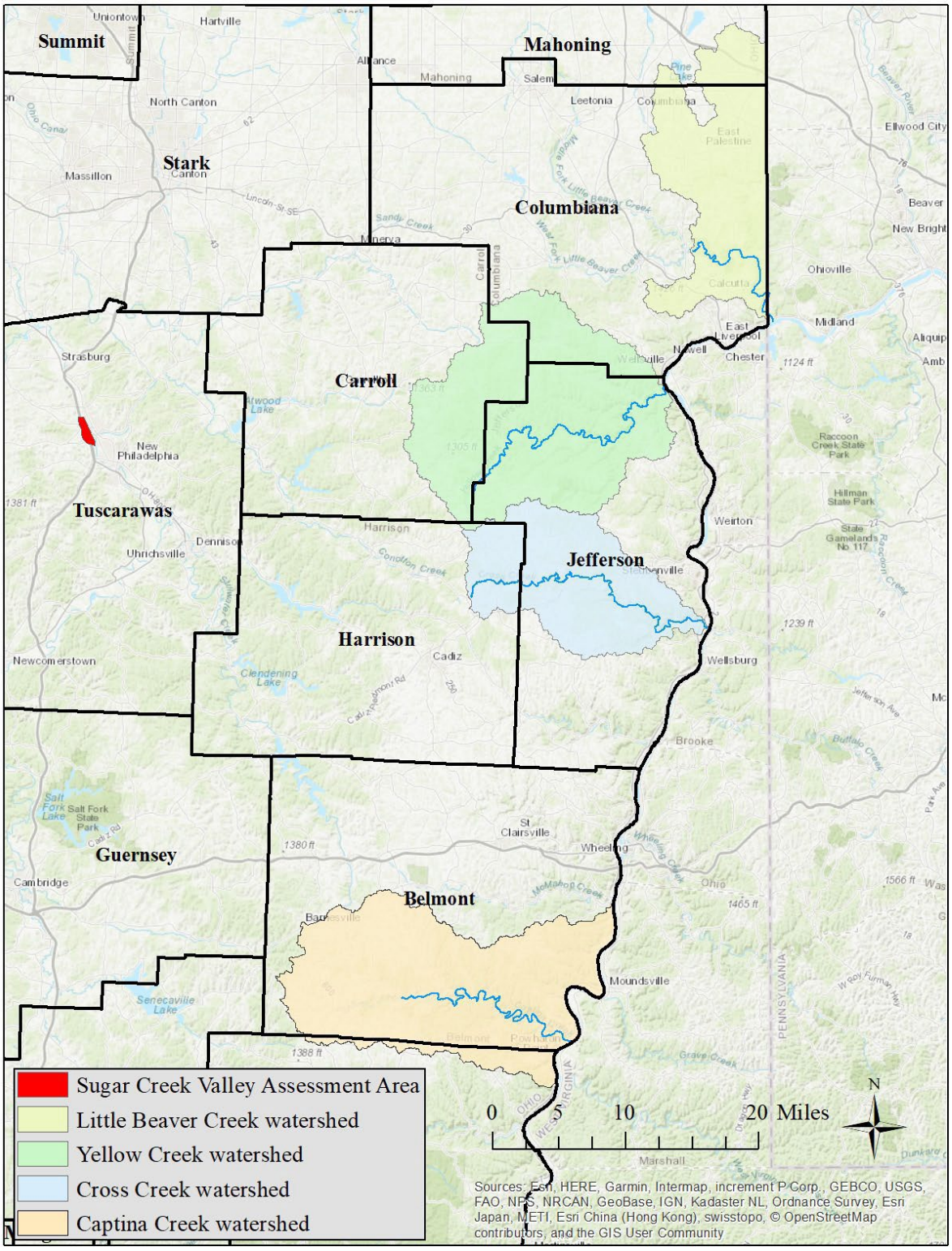

Figure 3.2: Watersheds proposed for Eastern Hellbender restoration projects (Little Beaver Creek, Yellow Creek, Cross Creek, and Captina Creek).

3.1.5 *Yellow Creek*

Yellow Creek is in eastern Ohio; the watershed covers approximately 239 square miles in Carroll, Columbiana, and Jefferson counties. Yellow Creek flows into the Ohio River. The watershed is located entirely within the Western Allegheny Plateau ecoregion which is composed of steep hills and narrow valleys. The 2001 land use was predominately forest (72%) and grasslands (14%). The geology in the Yellow Creek watershed supports underground and surface mining of coal. Ground water seeps are an important factor in basin water quality (Ohio EPA, 2008a).

3.1.6 *Cross Creek*

The Cross Creek watershed covers approximately 128 square miles in Jefferson and Harrison Counties and is a direct Ohio River tributary in eastern Ohio. The watershed is located entirely within the Western Allegheny Plateau ecoregion which is composed of steep hills and narrow valleys. The habitat scores of Cross Creek indicate the potential to support Exceptional Warmwater Habitat communities (Ohio EPA, 2013).

3.1.7 *Captina Creek*

The Captina Creek watershed covers approximately 180 square miles in the southern half of Belmont County and is a direct Ohio River tributary. The watershed is located within the Western Allegheny Plateau ecoregion. Water quality throughout the watershed has been consistently good despite historic and active coal mining. The limestone geology of the area has buffered acidic contributions and has kept the pH levels in the range acceptable for supporting aquatic life. Captina Creek is listed as an Outstanding State Water based on exceptional ecological values (Ohio EPA, 2010).

3.2 Biological Environment

3.2.1 *Aquatic habitat and species*

Ohio EPA uses the Qualitative Habitat Evaluation Index (QHEI) to evaluate the physical habitat of streams and rivers. Evaluated attributes contribute to a score based on overall importance to the establishment of a viable, diverse aquatic fauna. Attributes include substrate, instream cover, channel morphology, riparian canopy coverage, pool and riffle quality, and stream gradient. A robust data set of statewide scoring suggests that values higher than 60 are conducive to warmwater faunas, while values greater than 75 often have habitat conditions that may support exceptional biological communities (Ohio EPA, 2012). QHEI scores provide insight about whether or not the quality of the habitat in a given reach explains any observed deficiencies in biological communities. Sedimentation, bank erosion, presence or absence of riffles or pools, stream depth and flow, debris or material in stream, and riparian border condition are all parameters considered in the evaluation.

Ohio EPA conducts qualitative and quantitative sampling of macroinvertebrates to determine the status of macroinvertebrate communities in waterbodies. The Invertebrate Community Index

(ICI) is a scoring system developed and used by Ohio EPA that accounts for ten community metrics that are assigned values to compare the community composition to exceptional reference sites throughout Ohio (OAC 3745-1-07). The ICI final score can be used to describe the invertebrate community of a stream. Scores range from 0 (very poor community condition) to 60 (exceptional community condition; Ohio EPA, 2008b).

Ohio EPA conducts fish community assessments (for detailed methods see Ohio EPA 2008b) to determine the status of fish communities. The Index of Biotic Integrity (IBI) and Modified Index of Well-Being (MIwb), both of which are based on fish assemblage data collected in stream, are criteria that consist of numeric values included in the Ohio Water Quality Standards regulations in February 1990 (OAC 3745-1-07). The purpose of the classification system is to provide an objective, systematic basis for assigning aquatic life uses to surface waters and to provide an objective, standardized approach for determining the magnitude and severity of surface water impacts on the aquatic biota. Criteria for each index are specified for each of Ohio's five ecoregions and are further organized by organism group, index, site type, and aquatic life use designation. The IBI and MIwb scoring results in a final score that can be used to describe the fish community of a stream. IBI scores range from 0 (very poor community condition) to 60 (exceptional community condition). MIwb scores range from 0 (very poor community condition) to 12 (exceptional community condition; Ohio EPA, 2008b).

Sugar Creek

The aquatic habitat, fish and macroinvertebrate communities of Sugar Creek are well studied (Ohio EPA, 1992; Ohio EPA, 2000; Ohio EPA, 2012). Ohio EPA conducted a watershed-scale study in 1998 (Ohio EPA, 2000) which included the watershed within Wayne, Stark, Holmes, and Tuscarawas Counties, Ohio. The 1991 (Ohio EPA, 1992) and 2010 (Ohio EPA, 2012) studies were focused on Sugar Creek and the Tuscarawas River near the Dover Chemical Corp. Sugar Creek is within the historical range of the Eastern hellbender. More information on Sugar Creek is provided in the injury assessment presented in Chapter 3.

Tuscarawas River

In 2010, the Tuscarawas River upstream and downstream of Sugar Creek had natural channel conditions, substrates of cobble and sand, moderate instream cover, normal silt and substrate embeddedness, and good pool, riffle, and run development. QHEI scores were 80.8 and 83.5 for the Tuscarawas River upstream and downstream of Sugar Creek, respectively. These scores are typically associated with excellent river habitat and therefore, the Tuscarawas River is likely able to support warmwater and exceptional biological communities in these locations (Ohio EPA, 2012).

Macroinvertebrate sampling in the Tuscarawas River upstream and downstream of Sugar Creek revealed "exceptional" ICI scores of 46 and 50. Both sites, upstream and downstream of the confluence of Sugar Creek were exceptional, which suggests that Sugar Creek has not adversely affected the invertebrate communities of the Tuscarawas River immediately downstream.
The Tuscarawas River upstream and downstream of the confluence with Sugar Creek supports a fish community reflective of "exceptional" biological quality. For a one-mile stretch bracketing

the confluence with Sugar Creek in 2010, IBI and MIwb scores were 52-53 and 9.7-9.8, respectively. Five percent of the fish species found in the Tuscarawas River are considered intolerant of pollution, including river chub, bigeye chub, streamline chub, silver shiner, rosyface shiner, banded darter, and eastern sand darter (*Ammocrypta pellucida)*; Ohio EPA, 2012.

Little Beaver Creek

Ohio EPA conducted two comprehensive surveys of the Little Beaver Creek watershed in 1985 and 1999. Macroinvertebrate sampling at two sites on the mainstem of Little Beaver Creek resulted in an average ICI score of 47 ("exceptional"). Fish sampling at four locations on the mainstem of Little Beaver Creek resulted in an average IBI score of 48 ("exceptional"). Little Beaver Creek was rated as exceptional cold-water habitat (Ohio EPA, 1999) and has Ohio's largest population of Eastern Hellbenders (Ohio EPA, 2005).

Yellow Creek

Ohio EPA conducted a Biological and Water Quality Study of Yellow Creek in 2005 (Ohio EPA, 2008a). Overall, the biological sampling results reflected positive basin-wide attributes with invertebrate and fish communities reflecting "exceptional" communities. Fish IBI scores in this basin ranged from 12 to 60 and were amongst the highest values recorded in Ohio with several coldwater species present (e.g., redside dace (*Clinostomus elongatus*), mottled sculpin (*Cottus bairdii*), and redbelly dace (*Chrosomus erythrogaster*). QHEI scores ranged from 48.5 to 96.5, and some tributaries displayed some of the best habitat scores in Ohio. More detailed information can be found in Ohio EPA (2008a). Reproducing populations of the Eastern Hellbender also occur in the main stem of Yellow Creek.

Cross Creek

Ohio EPA conducted a Biological and Water Quality Study of Cross Creek in 2010 (Ohio EPA, 2013). Cross Creek had very good habitat conditions with QHEI scores exceeding 70 ("excellent") at most sites. In 2010, the average fish IBI and MIwb scores for Cross Creek main stem were 45.5 and 10.6, respectively. The fish scores ranged from "good" to "exceptional" and the fish communities met the warmwater habitat designation. Macroinvertebrate scores for the Cross Creek main stem locations also met warmwater habitat designation (ICI ranged from 32 to 44, "good" to "excellent"). Reproducing populations of the state endangered Eastern Hellbender also occur in the main stem of Cross Creek (Ohio EPA, 2013).

Captina Creek

Ohio EPA conducted a Biological and Water Quality Study of Captina Creek in 2008 and 2009 (Ohio EPA, 2010). The QHEI stream habitat scores averaged 72.2 which is consistent with "very good" overall habitat quality. Fish IBI scores from the mainstem of Captina Creek achieved exceptional warmwater habitat fish criterion (average IBI of 55.1 and average MIwb of 9.8) (Ohio EPA, 2010). Average macroinvertebrate ICI scores ranged from 46.8 to 49.8 for Captina Creek and five tributaries. The Captina Creek mainstem met the exceptional warmwater habitat criterion at all sites sampled (Ohio EPA, 2010). A reproducing population of the state endangered Eastern Hellbender is present in Captina Creek.

3.2.2 *Migratory birds*

Nearly all species of birds found in the United States are protected by the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.). The exceptions are certain human-introduced, non-native species as described in the Migratory Bird Treaty Reform Act of 2004.

Migratory bird species that inhabit or likely use habitats in the affected area include, but are not limited to, the osprey (*Pandion haliaetus*), bald eagle (*Haliaeetus leucocephalus*), Red-tailed hawk (*Buteo jamaicensis*), wood duck (*Aix sponsa*),Canada goose (*Branta canadensis*), great blue heron (*Ardea herodias*), turkey vulture (*Cathartes aura*), tree swallow (*Tachycineta bicolor*), mallard (*Anas platyrhynchus*), American black duck (*Anas rubripes*), belted kingfisher (*Ceryle alcyon*), indigo bunting (*Passerina cyanea),* Baltimore oriole (*Icterus galbula),* downy woodpecker (*Picoides pubescens*), hairy woodpecker ((*Picoides villosus),* and other numerous species of migratory Neotropical songbirds that inhabit the area seasonally (Figure 2.3). Ohio is part of the Atlantic Flyway, one of the major North American Flyways for migratory birds (Figure 2.3). As part of the flyway, additional migratory birds may use habitat within the affected environment for stopovers during migration.

The Service has also identified Birds of Conservation Concern which are “species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act of 1973” (Service, 2008). The affected areas (including areas proposed for restoration) lie within Bird Conservation Region 28 Appalachian Mountains. The Appalachian Mountains Bird Conservation Region includes the Ohio Hills and the Allegheny Plateau. Most of this region is forested with deciduous forests at lower elevations and various combinations of coniferous forests at higher elevations. Major river systems and large wetland complexes (where present) are important for breeding wood ducks and other waterfowl species during migration. Overall, there are 25 species on the Birds of Conservation Concern Region 28 list (Table 3.1).

Table 3.1 Bird Conservation Region 28 (Appalachian Mountains) Birds of Conservation Concern 2008 list.

Common name	**Scientific name**
Bald Eagle*	*Haliaeetus leucocephalus*
Peregrine Falcon†	*Falco peregrinus*
Upland Sandpiper	*Bartramia longicauda*
Northern Saw-whet Owl†	*Aegolius acadicus*
Whip-poor-will	*Antrostomus vociferus*
Red-headed Woodpecker	*Melanerpes erythrocephalus*
Yellow-bellied Sapsucker†	*Sphyrapicus varius*
Olive-sided Flycatcher	*Contopus cooperi*
Loggerhead Shrike	*Lanius ludovicianus*
Black-capped Chickadee†	*Poecile atricapillus*
Bewick's Wren	*Thryomanes bewickii*
Sedge Wren‡	*Cistothorus platensis*
Blue-winged Warbler	*Vermivora cyanoptera*
Golden-winged Warbler	*Vermivora chrysoptera*
Prairie Warbler	*Setophaga discolor*
Cerulean Warbler	*Setophaga cerulea*
Worm-eating Warbler	*Helmitheros vermivorum*
Swainson's Warbler	*Limnothlypis swainsonii*
Louisiana Waterthrush	*Parkesia motacilla*
Kentucky Warbler	*Geothlypis formosa*
Canada Warbler	*Cardellina canadensis*
Henslow's Sparrow	*Centronyx henslowii*
Rusty Blackbird‡	*Euphagus carolinus*
Red Crossbill†	*Loxia curvirostra*
Wood Thrush	*Hylocichla mustelina*

* ESA delisted
† Southern Appalachian breeding population
‡ Non-breeding in this region

3.2.3 *Threatened and Endangered Species*

Threatened and endangered species listed under both the ESA and the State of Ohio (OAC Revised Code 1531.25 and 1518) may be found in the affected environment. Occurrence records are publicly accessible by county, so the following counties were included even though only partial overlap with affected environment watersheds occur: Belmont, Columbiana, Jefferson, Stark, and Tuscarawas.

The federally listed species found in these counties include two species of bats, one snake species, and one plant species. These species are listed in Table 3.2. No critical habitat for federally listed species exists within the five counties.

All five counties of the affected environment are within the range of three listed bat species: the federally endangered Indiana bat, federally endangered northern long-eared bat, and the proposed as federally endangered tricolored bat. During the winter, Indiana bats and northern long-eared bats utilize underground hibernacula such as caves and abandoned mines. In spring, fall, and summer, the listed bats roost in trees in riparian, bottomland, or upland forests. Females of both species tend to use large maternity colonies in the summer for birthing and rearing pups. In summer, males may nest alone or in small groups. Indiana bats forage on flying insects in riparian and wetland areas or along forest edges. Northern long-eared bats forage on flying insects primarily in the understory of forested areas.

The federally threatened Eastern Massasauga Rattlesnake (*Sistrurus catenatus*) is found in Columbiana and Stark Counties. Eastern Massasaugas live in wet areas such as wet prairies, marshes, and low areas along rivers and lakes; the snakes also use adjacent upland areas during part of the year. Eastern Massasaugas hibernate alone in crayfish burrows, under logs, or in small mammal burrows. They feed on small mammals and sometimes small amphibians and reptiles.

Although the bald eagle is no longer listed under the federal ESA, it is still protected by two other federal laws: the MBTA and the BGEPA. The bald eagle is found in all five counties of the assessment area or areas identified for potential restoration projects. A bald eagle nest is located within one mile of Dover Chemical Corp. and Trustees observed an eagle on the property on the east side of I-77 near the lagoons during a site visit.

The state listed species include all of the federally listed species in Table 3.2 as well as the additional species listed in Table 3.3.

Table 3.2: Federally listed threatened (T) and endangered (E) species[17], proposed as endangered (P) along with their listing status under state law in Ohio. Counties listed are those where the species could potentially be present.

Species Common Name	Species Scientific Name	Federal Status	State Status	County(ies)
Indiana bat	*Myotis sodalis*	E	E	Belmont, Columbiana, Jefferson, Stark, Tuscarawas
Northern long-eared bat	*Myotis septentrionalis*	E	T	Belmont, Columbiana, Jefferson, Stark, Tuscarawas
Eastern massasauga	*Sistrurus catenatus*	T	E	Columbiana, Stark
Tricolored bat	*Perimyotis subflavus*	P	E	Belmont, Columbiana, Jefferson, Stark, Tuscarawas

Table 3.3: Species listed as endangered (E), threatened (T), or of special concern (SC) under only State of Ohio law[18]. See preceding table for state listed species that are also federally listed. Counties listed are those where the species could potentially be present.

Scientific Name	Common Name	Group	State Status	County(ies)
Accipiter striatus	Sharp-shinned Hawk	Bird	SC	Belmont, Columbiana, Jefferson, Stark, Tuscarawas
Adlumia fungosa	Mountain-fringe	Plant	T	Columbiana
Agalinis purpurea var. parviflora	Small Purple-foxglove	Plant	E	Stark
Alasmidonta marginata	Elktoe	Mollusk	SC	Stark
Ammodramus henslowii	Henslow's Sparrow	Bird	SC	Belmont, Columbiana, Jefferson, Stark, Tuscarawas
Ammodramus savannarum	Grasshopper Sparrow	Bird	SC	Belmont, Columbiana, Jefferson, Stark, Tuscarawas
Anguilla rostrate	American Eel	Fish	T	Columbiana, Jefferson
Antennaria virginica	Shale Barren Pussy-toes	Plant	T	Columbiana, Jefferson
Antrostomus vociferous	Eastern Whip-poor-will	Bird	SC	Columbiana, Jefferson, Tuscarawas
Arabidopsis lyrata	Lyre-leaved Rock Cress	Plant	E	Columbiana, Jefferson
Ardea alba	Great Egret	Bird	SC	Stark

[17] Service. March 2022. Information for Planning and Consultation Website.
[18] Ohio Department of Natural Resources Species Lists by County. Accessed February 19, 2021. https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/safety-conservation/about-odnr/wildlife/documents-publications/wildlife-plants-county

Scientific Name	Common Name	Group	State Status	County(ies)
Argia bipunctulata	Seepage Dancer	Damselfly	E	Stark
Astragalus Canadensis	Canada Milk-vetch	Plant	T	Jefferson
Aureolaria pedicularia var. pedicularia	Woodland Fern-leaved False Foxglove	Plant	E	Jefferson
Botaurus lentiginosus	American Bittern	Bird	E	Belmont, Columbiana
Botrychium multifidum	Leathery Grape Fern	Plant	E	Columbiana, Tuscarawas
Callitriche verna	Vernal Water-starwort	Plant	T	Columbiana
Calopteryx aequabilis	River Jewelwing	Damselfly	E	Belmont
Carex oligosperma	Few-seeded Sedge	Plant	T	Stark
Carex projecta	Necklace Sedge	Plant	T	Columbiana
Carex sprengelii	Sprengel's Sedge	Plant	T	Tuscarawas
Chimaphila umbellate	Pipsissewa	Plant	T	Columbiana, Jefferson
Chondestes grammacus	Lark Sparrow	Bird	E	Tuscarawas
Chordeiles minor	Common Nighthawk	Bird	SC	Columbiana, Jefferson, Stark
Circus hudsonius	Northern Harrier	Bird	E	Columbiana, Jefferson, Stark, Tuscarawas
Cistothorus palustris	Marsh Wren	Bird	SC	Columbiana, Stark
Cistothorus platensis	Sedge Wren	Bird	SC	Columbiana, Tuscarawas
Clemmys guttata	Spotted Turtle	Reptile	T	Columbiana, Stark
Clintonia umbellulata	Speckled Wood-lily	Plant	E	Columbiana, Jefferson
Coccyzus erythropthalmus	Black-billed Cuckoo	Bird	SC	Belmont, Columbiana, Jefferson, Stark, Tuscarawas
Colinus virginianus	Northern Bobwhite	Bird	SC	Columbiana, Jefferson, Stark, Tuscarawas
Cordulegaster erronea	Tiger Spiketail	Dragonfly	SC	Belmont, Columbiana
Corydalis sempervirens	Rock-harlequin	Plant	T	Columbiana, Tuscarawas
Cryptobranchus alleganiensis alleganiensis	Eastern Hellbender	Amphibian	E	Belmont, Columbiana, Jefferson, Tuscarawas
Cyclonaias tuberculate	Purple Wartyback	Mollusk	SC	Tuscarawas

Scientific Name	Common Name	Group	State Status	County(ies)
Dolichonyx oryzivorus	Bobolink	Bird	SC	Belmont, Columbiana, Jefferson, Stark, Tuscarawas
Dorocordulia libera	Racket-tailed Emerald	Dragonfly	E	Stark
Eleocharis flavescens	Green Spike-rush	Plant	T	Stark
Eleocharis tenuis	Slender Spike-rush	Plant	T	Columbiana
Ellipsaria lineolate	Butterfly	Mollusk	E	Columbiana
Elymus trachycaulus	Bearded Wheat Grass	Plant	T	Belmont
Epilobium angustifolium	Fireweed	Plant	E	Columbiana
Epilobium strictum	Simple Willow-herb	Plant	T	Columbiana, Stark
Eptesicus fuscus	Big Brown Bat	Mammal	SC	Belmont, Columbiana, Jefferson, Stark, Tuscarawas
Equisetum variegatum	Variegated Scouring-rush	Plant	E	Stark
Eriophorum virginicum	Tawny Cotton-grass	Plant	T	Stark
Esox masquinongy	Muskellunge	Fish	SC	Belmont, Jefferson, Tuscarawas
Etheostoma exile	Iowa Darter	Fish	E	Stark
Etheostoma Tippecanoe	Tippecanoe Darter	Fish	T	Belmont, Columbiana, Jefferson
Fulica Americana	American Coot	Bird	SC	Columbiana, Jefferson
Fundulus diaphanus menona	Western Banded Killifish	Fish	E	Belmont, Tuscarawas
Fusconaia subrotunda	Longsolid	Mollusk	E	Stark, Tuscarawas
Galium labradoricum	Bog Bedstraw	Plant	E	Columbiana, Stark
Gallinula galeata	Common Gallinule	Bird	SC	Belmont, Columbiana
Glyceria acutiflora	Sharp-glumed Manna Grass	Plant	T	Stark
Gomphus externus	Plains Clubtail	Dragonfly	E	Stark, Tuscarawas
Grus Canadensis	Sandhill Crane	Bird	T	Columbiana
Gymnocarpium dryopteris	Common Oak Fern	Plant	E	Columbiana, Jefferson
Hemidactylium scutatum	Four-toed Salamander	Amphibian	SC	Jefferson, Stark, Tuscarawas
Hiodon alosoides	Goldeye	Fish	E	Jefferson
Hypericum boreale	Northern St. John's-wort	Plant	T	Stark

Scientific Name	Common Name	Group	State Status	County(ies)
Ichthyomyzon bdellium	Ohio Lamprey	Fish	E	Jefferson
Ischnura kellicotti	Lilypad Forktail	Damselfly	E	Stark
Ixobrychus exilis	Least Bittern	Bird	T	Columbiana
Juncus platyphyllus	Flat-leaved Rush	Plant	E	Stark
Lampsilis fasciola	Wavy-rayed Lampmussel	Mollusk	SC	Belmont, Columbiana, Stark
Lampsilis ovata	Pocketbook	Mollusk	E	Columbiana, Tuscarawas
Lasionycteris noctivagans	Silver-haired Bat	Mammal	SC	Belmont, Columbiana, Jefferson
Lasiurus borealis	Red Bat	Mammal	SC	Belmont, Columbiana, Jefferson, Stark, Tuscarawas
Lasiurus cinereus	Hoary Bat	Mammal	SC	Belmont, Columbiana, Jefferson, Stark, Tuscarawas
Lasiurus cinereus	Hoary Bat	Mammal	SC	Columbiana
Lasmigona compressa	Creek Heelsplitter	Mollusk	SC	Columbiana, Stark, Tuscarawas
Lathyrus venosus	Wild Pea	Plant	T	Belmont
Lechea pulchella	Leggett's Pinweed	Plant	T	Stark
Ligumia recta	Black Sandshell	Mollusk	T	Columbiana, Jefferson, Tuscarawas
Maccaffertium Ithaca	None	Mayfly	SC	Belmont, Columbiana
Melanerpes erythrocephalus	Red-headed Woodpecker	Bird	SC	Belmont, Columbiana, Jefferson, Stark, Tuscarawas
Microtus ochrogaster	Prairie Vole	Mammal	SC	Tuscarawas
Microtus pinetorum	Woodland Vole	Mammal	SC	Jefferson
Myotis leibii	Eastern Small-footed Myotis	Mammal	SC	Belmont
Myotis lucifugus	Little Brown Bat	Mammal	SC	Belmont, Columbiana, Jefferson, Tuscarawas
Napaeozapus insignis	Woodland Jumping Mouse	Mammal	SC	Jefferson
Noturus eleutherus	Mountain Madtom	Fish	T	Tuscarawas
Noturus stigmosus	Northern Madtom	Fish	E	Tuscarawas

Scientific Name	Common Name	Group	State Status	County(ies)
Obliquaria reflexa	Threehorn Wartyback	Mollusk	T	Belmont, Columbiana, Jefferson, Tuscarawas
Ophiogomphus carolus	Riffle snaketail	Dragonfly	T	Columbiana, Jefferson
Orconectes (Crokerinus) obscurus	Allegheny Crayfish	Crayfish	SC	Belmont, Columbiana, Jefferson, Stark
Oxalis montana	White Wood-sorrel	Plant	E	Belmont
Percina copelandi	Channel Darter	Fish	T	Belmont, Columbiana, Jefferson
Percina evides	Gilt Darter	Fish	E	Columbiana
Percina shumardi	River Darter	Fish	T	Belmont, Columbiana, Jefferson
Perimyotis subflavus	Tri-colored Bat	Mammal	SC	Belmont, Columbiana, Jefferson, Stark, Tuscarawas
Peromyscus maniculatus	Deer Mouse	Mammal	SC	Stark, Tuscarawas
Pleurobema sintoxia	Round Pigtoe	Mollusk	SC	Stark, Tuscarawas
Polyodon spathula	Paddlefish	Fish	T	Belmont
Pooecetes gramineus	Vesper Sparrow	Bird	SC	Belmont, Columbiana, Jefferson, Stark, Tuscarawas
Porteranthus trifoliatus	Bowman's-root	Plant	T	Columbiana, Jefferson
Porzana carolina	Sora Rail	Bird	SC	Columbiana, Stark, Tuscarawas
Potamogeton zosteriformis	Flat-stemmed Pondweed	Plant	T	Stark
Potentilla palustris	Marsh Five-finger	Plant	T	Stark
Protonotaria citrea	Prothonotary Warbler	Bird	SC	Columbiana, Stark, Tuscarawas
Psilotreta indecisa	None	Caddisfly	T	Columbiana
Pteridium aquilinum var. pseudocaudatum	Tailed Bracken	Plant	E	Jefferson
Ptychobranchus fasciolaris	Kidneyshell	Mollusk	SC	Columbiana, Stark, Tuscarawas
Rallus limicola	Virginia Rail	Bird	SC	Belmont, Columbiana, Stark, Tuscarawas
Ramalina intermedia	Rock Ramalina	Plant	E	Belmont
Ranunculus fascicularis	Early Buttercup	Plant	T	Columbiana, Jefferson
Regina septemvittata	Queensnake	Reptile	SC	Belmont, Columbiana, Jefferson
Rhinichthys cataractae	Longnose Dace	Fish	SC	Belmont, Columbiana, Jefferson, Stark

Scientific Name	Common Name	Group	State Status	County(ies)
Rhododendron maximum	Great Rhododendron	Plant	T	Jefferson
Rhododendron periclymenoides	Pinxter-flower	Plant	T	Columbiana
Salix pedicellaris	Bog Willow	Plant	E	Stark
Sarracenia purpurea	Pitcher-plant	Plant	T	Stark
Scaphiopus holbrookii	Eastern Spadefoot	Amphibian	E	Tuscarawas
Scutellaria saxatilis	Rock Skullcap	Plant	T	Jefferson
Setophaga cerulea	Cerulean Warbler	Bird	SC	Belmont, Columbiana, Jefferson, Stark, Tuscarawas
Silene caroliniana ssp. pensylvanica	Carolina Catchfly	Plant	T	Jefferson
Somatochlora walshii	Brush-tipped emerald	Dragonfly	E	Stark
Sorex fumeus	Smoky Shrew	Mammal	SC	Belmont
Spiranthes romanzoffiana	Hooded Ladies'-tresses	Plant	T	Stark
Symphyotrichum drummondii	Drummond's Aster	Plant	T	Jefferson, Stark, Tuscarawas
Symphyotrichum oblongifolium	Shale Barren Aster	Plant	T	Belmont
Taxidea taxus	Badger	Mammal	SC	Stark, Tuscarawas
Terrapene carolina carolina	Eastern Box Turtle	Reptile	SC	Jefferson, Tuscarawas
Truncilla truncata	Deertoe	Mollusk	SC	Tuscarawas
Tyto alba	Barn Owl	Bird	T	Columbiana, Jefferson, Stark, Tuscarawas
Ursus americanus	Black Bear	Mammal	E	Belmont, Columbiana, Jefferson, Stark, Tuscarawas
Utricularia intermedia	Flat-leaved Bladderwort	Plant	T	Stark
Vaccinium oxycoccos	Small Cranberry	Plant	T	Stark
Viburnum opulus var. americanum	Highbush-cranberry	Plant	T	Stark
Zizania aquatica	Wild Rice	Plant	T	Stark

3.3 Demographics and Socioeconomic Resources

3.3.1 *Tuscarawas County, Ohio*

The population of Tuscarawas County was 93,263 in 2020, with 94% white, 1.0% Black or African American, 1.5% two or more races, 3.2% Hispanic or Latino, and less than one percent of the following: American Indian and Alaska Native, Asian, Native Hawaiian and other Pacific Islander (US Census April 1, 2020). Manufacturing (23.3%), health care and social assistance (15.6%), and retail trade (11%) industries contribute the highest employment percentages in the county. Accommodation and food services (8.9%) as well as educational services (8.4%) also make relatively large contributions to employment (Ohio Labor Market Information 2021).

Industry in Tuscarawas County ranges from engineering and automotive to high-tech manufacturing (Tuscarawas Economic Development Corporation). Tuscarawas County is primarily rural with only 1.6% of the county's area designated as urban (Ohio History Connection). The percentage of all individuals under the federal poverty level in Tuscarawas County is 13% (2021 ACS 5-Year Estimates, U.S. Census). Tuscarawas County is considered part of Appalachia.

3.3.2 *Stark County, Ohio*

The population of Stark County was 374,853 in 2020, with 88% white, 8.0% Black or African American, 2.7% two or more races, 2.2% Hispanic or Latino, 1% Asian, and less than one percent of the following: American Indian and Alaska Native, Native Hawaiian and other Pacific Islander (US Census April 1, 2020). Health care and social assistance (18.8%), manufacturing (16.8%), and retail trade (11.6%) industries contribute the highest employment percentages in the county. Accommodation and food services (9.1%) as well as educational services (9.0%) also make relatively large contributions to employment (Ohio Labor Market Information 2021). Major employers in the county include hospitals, medical centers, schools, and a few manufacturing and retail companies (Canton Regional Chamber of Commerce). Stark County is primarily rural with only 5% of the county's area designated as urban (Ohio History Connection). The percentage of all individuals under the federal poverty level in Stark County is 13.4% (2021 ACS 5-Year Estimates, U.S. Census).

3.3.3 *Jefferson County, Ohio*

The population of Jefferson County was 65,249 in 2020, with 91% white, 5.5% Black or African American, 2.3% two or more races, 1.6% Hispanic or Latino, and less than one percent of the following: Asian, American Indian and Alaska Native, Native Hawaiian and other Pacific Islander (US Census April 1, 2020). Health care and social assistance (21.4%), educational services (14.0%), and retail trade (10.5%) industries contribute the highest employment percentages in the county. Manufacturing (8.6%), accommodation and food services (7.9%), and transportation and warehousing (6.1%) also make relatively large contributions to employment (Ohio Labor Market Information 2021). Major employers in the county include hospitals, medical centers, schools, and a few manufacturing and retail companies (Canton Regional

Chamber of Commerce). In the late nineteenth and early twentieth centuries, coal mining (particularly strip mining), was a major employer in the county. Only a small proportion of the county is considered urban, and most residents live in rural areas (Ohio History Connection). The percentage of all individuals under the federal poverty level in Jefferson County is 16.8% (2020 ACS 5-Year Estimates, U.S. Census). Jefferson County is considered part of Appalachia.

3.3.4 *Columbiana County, Ohio*

The population of Columbiana County was 101,877 in 2020, with 95.2% white, 2.5% Black or African American, 1.7% two or more races, 1.9% Hispanic or Latino, and less than one percent of the following: Asian, American Indian and Alaska Native, Native Hawaiian and other Pacific Islander (US Census April 1, 2020). Manufacturing (22.9%), health care and social assistance (16.9%), and retail trade (11.3%) industries contribute the highest employment percentages in the county. Educational services (10.3%) and accommodation and food services (7.7%) also make relatively large contributions to employment (Ohio Labor Market Information 2021). The county has a long history of manufacturing and the first paper mill in Ohio was located in Columbiana County. Most residents of Columbiana County live in rural areas and the county is considered part of Appalachia (Ohio History Connection). The percentage of all individuals under the federal poverty level in Columbiana County is 12.9% (2021 ACS 5-Year Estimates, U.S. Census).

3.3.5 *Belmont County, Ohio*

The population of Belmont County was 66,497 in 2020, with 93.4% white, 4.2% black or African American, 1.7% two or more races, 1.1% Hispanic or Latino, and less than one percent of the following: Asian, American Indian and Alaska Native, Native Hawaiian and other Pacific Islander (US Census April 1, 2020). Health care and social assistance (18.0%), retail trade (15.8%), and accommodation and food services (11%) industries contribute the highest employment percentages in the county. Mining, quarrying, and oil and gas extraction (9.2%) and educational services (8.4%) also make relatively large contributions to employment (Ohio Labor Market Information 2021). The coal, iron, and steel industries have in the past and still do employ many residents. Belmont County is primarily rural and considered part of Appalachia (Ohio History Connection). The percentage of all individuals under the federal poverty level in Belmont County is 11.3% (2021 ACS 5-Year Estimates, U.S. Census).

3.4 Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (59 Fed. Reg. 7629, Feb 11, 1994) requires each federal agency to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. In a memorandum to heads of departments and agencies that accompanied Executive Order 12898, the President specifically recognized the importance of procedures under NEPA for identifying and addressing environmental justice concerns. The memorandum states that “each federal agency shall analyze the environmental effects, including

human health, economic and social effects, of federal actions, including effects on minority communities and low-income communities, when such analysis is required by [NEPA]" and emphasizes the importance of NEPA's public participation process in particular, directing that "each federal agency shall provide opportunities for community input in the NEPA process." The Council on Environmental Quality has oversight of the federal government's compliance with Executive Order 12898 and NEPA.

For the purposes of evaluating environmental justice issues associated with the implementation of the Selected Alternatives Two through Six, U.S. EPA's EJScreen Tool (https://ejscreen.epa.gov/mapper) was used to assess what percentage of the population in each of the counties affected by restoration activities is considered low income. Analysis of environmental justice was completed at the county-level due to data availability and applicability. The percentage of the population that is considered low income in the affected counties ranged from 31-36%, which were all higher than the state average of 30%. Additionally, poverty levels in each of the counties range from 11.3%-16.8%, the highest being in Jefferson County. In order to determine that disproportionately high and adverse effects would likely fall on minority or low-income populations, three conditions must be met simultaneously:

- There must be a minority or low-income population in the impact zone.
- A high and adverse impact must exist.
- The impact must be disproportionately high and adverse on the minority or low-income population.

While there is a proportion of the population that is low income in the counties where restoration will occur, there is no indication that disproportionately high and adverse effects will fall on minority or low-income populations based on available demographic and socioeconomic data. The expected benefits to surrounding communities associated with the selected restoration alternatives will outweigh any negative impacts.

4 RESTORATION ALTERNATIVES

To compensate the public for injuries to natural resources resulting from releases of hazardous substances from Dover Chemical Corp., the Trustees have developed alternatives for the "restoration, rehabilitation, replacement, and/or acquisition of the equivalent of the natural resources and the services those resources provide" (43 C.F.R. §11.82(a)). The Trustees proposed settlement with DCC includes a set of restoration-based projects that Dover Chemical Corp. would implement with Trustee oversight to compensate for ecological injuries, and a cash payment of $880,000.00 to be used by the state Trustees to implement ground water enhancement, restoration, and/or protection project(s).

This chapter describes the Trustees' restoration objectives and restoration alternatives considered to compensate for ground water and ecological injuries. Several restoration alternatives were considered to the Trustees. The Trustees evaluated the alternatives under CERCLA and NEPA. Alternatives that were not selected are not expected to provide natural resource services similar to injured/lost services, are not cost-effective way, lack sufficient detail to permit analysis, or that are not feasible due to changes in project scope and requirements.

The Trustees evaluated the following alternatives:

Alternative	**Project Name**
One	No Action/Natural Recovery; No Projects Implemented
Two	The Wilderness Center – Falcon Flats Restoration Project, Sugar Creek Watershed
Three	The Wilderness Center – Lash's Bog Enhancement and Restoration, Sugar Creek Watershed
Four	Sugar Creek Habitat Conservation Project, Sugar Creek Watershed
Five	Western Reserve Land Conservancy – Eastern Hellbender Project, Little Beaver Creek, Yellow Creek, Cross Creek, or Captina Creek Watersheds
Six	Trustee implemented ground water restoration, or protection project(s)
Seven	Joyce Hill Road SW Property Ground Water Recharge Project, Tuscarawas River Watershed
Eight	The City of Dover Wellhead Protection Project/Soccer Field Protection, Sugar Creek Watershed
Nine	City of Dover Canal Park Restoration and Enhancement Project, Sugar Creek Watershed

The Trustees evaluated these alternatives to determine if the associated restoration projects provide sufficient type, quality, and quantity of ecological services to compensate for those lost due to contamination. Projects were evaluated against CERCLA evaluation criteria (43 C.F.R. §11.82 (d)) and compliance with applicable laws.

4.1 Restoration Goals

As summarized in Chapter 2, the Trustees determined that injuries occurred to natural resources including ground water, surface water (including sediment), and biological resources that utilize aquatic habitats and provide ecological services. The restoration goals for ecological restoration and ground water restoration are as follows:

- The Trustees' ecological restoration goal is to compensate the public for past and expected future ecological losses caused by releases of hazardous substances from Dover Chemical Corp. through the implementation of restoration alternatives which provide comparable services. The releases have reduced the ability of natural resources to provide a baseline level of ecological services. Thus, the Trustees identified restoration projects that will compensate the public by providing ecological projects in and outside of the Sugar Creek watershed.

- The Trustees' ground water restoration goal is to compensate the public for past and expected future losses caused by releases of hazardous substances from Dover Chemical Corp. and for losses due to institutional controls on-site, which prevent the future use of the ground water as a result of the response action. Thus, the Trustees focused on restoration projects that will compensate the public by providing ground water recharge and protection.

With these goals in mind, the Trustees identified a series of restoration alternatives, described in the following sections, intended to offset injuries to natural resources and associated services.

4.2 Alternative One: No Action/Natural Recovery

Pursuant to CERCLA and NEPA, the Trustees considered a "No-Action" alternative. Under this alternative, the Trustees would rely on natural recovery and would take no direct action to restore injured natural resources or compensate for interim lost natural resource services. The remedial process would continue. No additional Trustee-led and funded activities aimed at enhancing and protecting ecological resources, or protecting ground water recharge, would be provided. Under this alternative, no compensation would be provided to compensate the public for losses of natural resources and the services they provide over time. While some natural recovery would likely occur over varying time scales for the injured natural resources, actual recovery is difficult or impossible to measure.

4.3 Alternative Two: The Wilderness Center – Falcon Flats Restoration Project, Sugar Creek Watershed

Dover Chemical Corp. will work with The Wilderness Center (TWC) to restore at least 13.5 acres of wetlands and riparian habitat within the 141-acre Falcon Flats preserve that is wholly owned by TWC and located in Sugar Creek Township, Stark County, Ohio. The Consent Decree requires DCC to develop a Restoration Work Plan to implement this project, which will be submitted to the Trustees for review and approval.

Within the larger preserve, two main areas have been identified for restoration. The first area (the 24-acre "North Area") consists of two agricultural fields and adjacent wetland areas and a stream corridor (Appendix A). Within the North Area, a minimum of 11.5 acres of restoration will occur. Two Key Restoration Areas (KRA1 and KRA2) have been identified in the North Area for wetland restoration and creation, stream restoration and riparian buffer enhancement, and wetland and upland enhancement through invasive species removal and supplemental plantings. The second area (the 7-acre "South Area") contains an existing wetland (identified as KRA 3) that is dominated by invasive species. Within the South Area, a minimum of 2.0 acres of restoration will occur through invasive species removal.

DCC shall enter into a consulting agreement (to be approved by the Trustees) with TWC requiring the latter to be responsible for the long-term ownership and care of the property, subject to restrictive deed language which will be subject to review and approval by the Trustees. Dover Chemical Corp. will also implement soil excavation and/or management to improve water characteristics of the site, planting of native wetland and riparian vegetation, and a five-year invasive species management program. Specific project requirements are included in Appendix A.

4.4 Alternative Three: The Wilderness Center – Lash's Bog Enhancement and Restoration, Sugar Creek Watershed

This project will restore and enhance wetlands and adjacent forested buffer habitat within the 40-acre Lash's Bog preserve owned by TWC, located in Sugar Creek Township, Stark County, Ohio. The CD requires DCC to develop a Restoration Work Plan to implement this project, which will be submitted to the Trustees for review and approval.
This project requires Dover Chemical Corp. to enhance and restore at least 15 acres owned by TWC within five years of Entry of the CD. This project will include enhancement through the removal of invasive species and supplemental native species plantings. The key restoration tasks include the treatment/removal of invasive reed canary grass (*Phalaris arundinacea*) and additional invasive species control efforts (primarily autumn olive, *Elaeagnus umbellata*) within the adjacent forested buffer at the Lash's Bog Preserve as shown in Attachment 2. DCC is required to enter into a consulting agreement (to be approved by the Trustees) with TWC requiring the latter to be responsible for the long-term ownership and care of the property, subject to restrictive deed language, which will be subject to review and approval by the Trustees. DCC will 1) implement management of invasive plant species in the bog through herbicide applications, manual and/or mechanical plant removal, and planting of native wetland and riparian species; 2) implement a five-year invasive species management program. Specific project requirements are included in Appendix A.

4.5 Alternative Four: Sugar Creek Habitat Conservation Project, Sugar Creek Watershed

The Consent Decree requires Dover Chemical Corp. to place Environmental Covenants on two properties adjacent to Sugar Creek that are owned by DCC to protect approximately 25.28 acres of Sugar Creek habitat in perpetuity. The proposed Environmental Covenants will be submitted to the Trustees for their review and approval prior to recording with the Tuscarawas County Auditor. Within one year of Entry of the CD, DCC will place and maintain Environmental Covenants on approximately 25.28 acres adjacent to Sugar Creek in Tuscarawas County, Ohio.

Specific project requirements are in Appendix A. This land is undeveloped and a legal restriction (Environmental Covenant; see Appendix C for template) will be put in place to prevent any future development.

4.6 Alternative Five: Western Reserve Land Conservancy – Eastern Hellbender Project, Little Beaver Creek, Yellow Creek, Cross Creek, or Captina Creek Watersheds

Dover Chemical Corp. will work with the Western Reserve Land Conservancy (WRLC) to identify specific parcels adjacent to Little Beaver Creek, Yellow Creek, Cross Creek and/or Captina Creek and to negotiate Conservation Easements with landowners to protect a minimum of 170 acres of critical stream and riparian habitat of the Eastern Hellbender salamander through a perpetual property protection tool, precluding any future development of at least 170 acres of property. Despite its name, this project is not "hellbender specific." Rather, this project was named after the hellbender because hellbenders are known as an indicator species. An indicator species serves as a measure of the environmental conditions that exist in a given locale. Hellbenders are extremely sensitive to poor water quality and pollution. Therefore, the hellbender is a clear indicator species for clean water because it cannot survive with anything less. Thus, in addition to benefitting multiple ecological resources, this project will also protect ground water recharge.

The Consent Decree requires DCC to work with the WRLC to implement the requirements of this project. Specific project requirements are in Appendix A of this Final RP/EA and a template conservation easement is included in Appendix B.

4.7 Alternative Six: Trustee Implemented Ground Water Restoration, and/or Protection Project(s)

Dover Chemical Corp. will pay the Trustees $880,000.00, to be utilized by the Trustees for projects protecting areas of ground water recharge. Potential projects would be, for example, purchases of properties and/or environmental easements to be applied to properties within the watershed under threat of development, cleanup of orphan plumes, water conservation, or other projects that restore or protect ground water resources. The Trustees will use this money to implement one or more natural resource restoration projects that restore and/or protect ground water resources, preferably for the Sugar Creek buried aquifer system.

4.8 Alternative Seven: Joyce Hill Road SW Property Ground Water Recharge Project, Tuscarawas River Watershed

The Joyce Hill Road SW Property was proposed by Dover Chemical Corp. as a ground water recharge project. The Property encompasses a total area of 37.26 acres. The closest city center, New Philadelphia, is located approximately 3.8 miles northeast of the Property. The property was historically used for coal mining. Topographically, the property is dominated by a steep central ridge, oriented north to south, with a successional old-field covering the east facing slope and portions of the ridgetop with a mixed-hardwood woodland existing on portions of the ridgetop and dominating the west-facing slope. A steep minor ridge bisects the central ridge at

the north end of the site and slopes slightly eastward towards County Road 55 (Joyce Hill Road). Hardwood forest and a small white pine grove covers both the north and south facing slopes. A steep ravine bounds the western and northern property line while the southern and eastern property line is dominated by a successional old-field. The topography of the Property is characteristic of east-central Ohio. In total, the successional old-field portion of the site encompasses approximately 12.2 acres with 23.3 acres consisting of mixed-hardwood woodland and approximately 1.7 acres consisting of an emergent wetland. The emergent wetland is low-quality, and its presence/characteristics are indicative of poor drainage. Soil is poor quality due to the repeated reworking for coal extraction. Ground water if present, is not in contact with the Sugar Creek or Tuscarawas aquifer systems. The property would be protected though a conservation easement.

4.9 Alternative Eight: The City of Dover Wellhead Protection Project/Soccer Field Protection, Sugar Creek Watershed

This project would provide additional protection for the City of Dover well field, enhance and improve green infrastructure to manage stormwater and ensure ground water recharge in perpetuity. The approximately 21-acre property was purchased by the City of Dover specifically for protecting ground water resources and providing available locations for future expansion or replacement of ground water wells. The City of Dover also intends to use the property as a community soccer field. Green playing fields and an adjacent parking lot have been constructed to provide additional recreational opportunities for public use.

4.10 Alternative Nine: The City of Dover Canal Park Restoration and Enhancement Project, Sugar Creek Watershed

The City of Dover Canal Park Restoration and Enhancement Project included restoration within the boundaries of the 30-acre Canal Park in the City of Dover. Proposed restoration tasks included streambank restoration, riparian enhancement, wetland enhancement, the development of a pollinator garden, and a mini-arboretum or rain garden.

5 Evaluation of Alternatives

5.1 Evaluation Criteria

5.1.1 *NRDAR Restoration Project Selection Criteria*

CERCLA regulations (43 C.F.R. § 11.82) require the reasonable development of a range of primary and compensatory restoration alternatives and then identification of the Selected Alternative(s) based on the following factors:

1. Technical feasibility[19];
2. The relationship of the expected costs of the proposed actions to the expected benefits from the restoration, rehabilitation, replacement, and/or acquisition of equivalent resources;
3. Cost effectiveness[20];
4. The results of actual or planned response actions;
5. Potential for additional injury resulting from the proposed actions, including long term and indirect impacts, to the injured resources or other services;
6. The natural recovery period;
7. Ability of the resources to recover with or without alternative actions;
8. Potential effects of the action on human health and safety;
9. Consistency with relevant federal, state, and tribal policies; and
10. Compliance with applicable federal, state, and tribal laws.

Table 5.1 presents a comparison of the alternatives against the NRDAR factors.

5.1.2 *NEPA Criteria*

As described earlier (Section 1.6), actions undertaken by the Trustees to restore natural resources or services under CERCLA and other federal laws are subject to the NEPA (42 U.S.C. § 4321 *et seq*.) and the regulations guiding its implementation at 40 C.F.R. Parts 1500 through 1517 and 43 C.F.R. Part 46. In undertaking their NEPA analysis, the Trustees evaluated the potential significance of proposed actions, considering both context and intensity. For the actions

19 Technical feasibility or technically feasible means that the technology and management skills necessary to implement an Assessment Plan or Restoration and Compensation Determination Plan are well known and that each element of the plan has a reasonable chance of successful completion in an acceptable period of time (43 C.F.R. § 11.14(qq)).

20 Cost-effective or cost-effectiveness means that when two or more activities provide the same or a similar level of benefits, the least costly activity providing that level of benefits will be selected (43 C.F.R. § 11.14(j)).

considered in this Final RP/EA, the appropriate context for considering potential significance of the action is at the local or regional level, as opposed to national, or worldwide.

NEPA regulations (40 C.F.R. §1508.27) require consideration of ten factors in determining significance of a proposed action:

1. Likely impacts of the proposed project.
2. Likely effects of the project on public health and safety.
3. Unique characteristics of the geographic area in which the project is to be implemented.
4. Controversial aspects of the project or its likely effects on the human environment.
5. Degree to which possible effects of implementing the project are highly uncertain or involve unknown risks.
6. Effect of the project on future actions that may significantly affect the human environment.
7. Possible significance of cumulative impacts from implementing this and other similar projects.
8. Effects of the project on National Historic Places, or likely impacts to significant cultural, scientific, or historic resources.
9. Degree to which the project may adversely affect endangered or threatened species or their critical habitat.
10. Likely violations of environmental protection laws.

Actions that have a minimal impact on the human environment may be addressed through Categorical Exclusions under the NEPA (40 C.F.R. §1508 and 43 C.F.R. §46.205). As such, by regulation, they would be excluded from the need to conduct additional analyses such as an EA or EIS. Alternatives Three and Five are covered by NEPA categorical exclusions in Part 516 DM Chapter 8, Appendix 7, and thus are not included in this EA. Research, inventory, and information collection activities directly related to the conservation of fish and wildlife resources which involve negligible animal mortality or habitat destruction, no introduction of contaminants, or no introduction of organisms not indigenous to the affected ecosystem. 516 DM Chapter 8.5 B.(1)

1. The operation, maintenance, and management of existing facilities and routine recurring management activities and improvements, including renovations and replacements which would result in no or only minor changes in the use, and would have no or negligible environmental effects on site or in the vicinity of the site. 516 DM Chapter 8.5 B.(2)
2. The construction of new, or the addition of, small structures or improvements, including structures and improvements for the restoration of wetland, riparian, in stream, or native

habitats, which would result in no or only minor changes in the use of the affected local area. 516 DM Chapter 8.5 B. (3).

3. The reintroduction of native, formerly native, or established species into suitable habitat within their historic or established range, where no or negligible environmental disturbances would be anticipated. 516 DM Chapter 8.5 B. (6)

4. Natural resource damage assessment restoration plans, prepared under sections 107, 111, and 122(j) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); section 311(f)(4) of the Clean Water Act; and the Oil Pollution Act; when only minor or negligible change in the use of the affected areas is planned. 516 DM Chapter 8.5 B. (11).

The following definitions were generally used to characterize the nature of the various impacts evaluated in this final RP/EA:

- Short-term or long-term impacts: These characteristics are determined on a case-by-case basis and do not refer to a specific timeframe. In general, short-term impacts are those that would occur only with respect to a particular activity or for a finite period. Long-term impacts are those that are more likely to be persistent and chronic.

- Direct or indirect impacts: A "direct" impact is caused by a proposed action and occurs contemporaneously at or near the location of the action. An indirect impact is caused by a proposed action and may occur later in time or be farther removed in distance but still be a reasonably foreseeable outcome of the action. For example, a direct impact of erosion on a stream might include sediment-laden waters in the vicinity of the action, whereas an "indirect" impact of the same erosion might lead to lack of fish spawning habitat and result in lowered reproduction rates of native fish spawning downstream where the sediment settles.

- Minor, moderate, or major impacts: These relative terms are used to characterize the magnitude of an impact. "Minor" impacts are generally those that may be perceptible but, in their context, are not amenable to measurement because of their relatively minor character. "Moderate" impacts are those that are more perceptible and, typically, more likely to be quantified or measured. "Major" impacts are those that, in their context and due to their intensity (severity), have the potential to meet the thresholds for significance set forth in Council on Environmental Quality (CEQ) regulations (40 C.F.R. § 1508.27) and, thus, warrant heightened attention and examination for potential means for mitigation to fulfill the requirements of NEPA.

- Adverse or beneficial impacts: An "adverse" impact is one having unfavorable or undesirable outcomes on the manmade or natural environment. A "beneficial" impact is one having positive outcomes on the man-made or natural environment. A single action may result in adverse impacts on one environmental resource and beneficial impacts on another resource.

- Cumulative impacts: The CEQ regulations implementing NEPA define "cumulative" impacts as the "impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions." (40 C.F.R. § 1508.7) Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time within a geographic area.

5.2 Evaluation of Alternative One: No Action/Natural Recovery Alternative

No restoration activities would be implemented under the No Action/Natural Recovery Alternative, outside of the remedial cleanup process already underway. With no active environmental restoration, the recovery of injured resources would increase at a slower rate over time while human land use patterns would trend toward increasing development. The Trustees considered the changes in ground water and ecological services from natural recovery and found that this Alternative:

- Does not restore injured natural resources to baseline, and thus, natural resources are unlikely to fully recover in a reasonable time frame.
- Does not compensate the public for interim losses. Remedial actions, which focus on the removal or containment of contamination and the reduction of future injury, fail to make the public whole for losses until baseline conditions are achieved.

While the No Action/Natural Recovery Alternative does not create additional adverse effects to the environment, and is technically feasible and cost-effective, it does not provide the ground water and ecological benefits described under Alternatives Two to Six. Under the No Action Alternative, adverse environmental consequences from ground water contamination, including but not restricted to HCB, PCDDs, and PCDFs in terrestrial and aquatic environments (*e.g.,* ecological injuries) are expected to continue into the future and would not be restored, enhanced, or rehabilitated through restoration actions. Therefore, the No Action/Natural Recovery Alternative is not a favorable restoration alternative when evaluated against the NRDAR factors (Section 5.1.1), and therefore, was not considered further. Quite simply, it does not support the use of recovered settlement funds to restore, rehabilitate, replace, and/or acquire the equivalent of the impacted resources (43 C.F.R. Part 11). This Alternative serves as a point of comparison to determine the context, duration, and magnitude of environmental consequences resulting from the implementation of the remaining Alternatives (see summary in Table 5.1).

5.3 Evaluation of Alternative Two: The Wilderness Center – Falcon Flats Restoration Project, Sugar Creek Watershed

The Falcon Flats Restoration Project includes creation of habitat and the enhancement of existing habitat. Restoration of wetlands and streams will create a variety of habitats which favor a more diverse aquatic community and improve downstream water quality. The protection and preservation of the restored and enhanced area through a conservation easement ensures that these areas, that provide habitat and ecological services similar to those lost, remain unharmed

by development. Project activities may include soil excavation for wetland creation or stream restoration, riparian buffer enhancement, trash removal, supplemental plantings of appropriate native species, and invasive species management. This project will provide similar trust resources as those injured in Sugar Creek, including instream habitats and adjacent wetlands for macroinvertebrates, fish, and other organisms through restoration and preservation.

This alternative is favored because it meets all of the NRDAR factors, is in alignment with the Trustees' restoration goals, and has a nexus to injured resources. The project is technically feasible, cost-effective, and would benefit multiple resources occupying aquatic and wetland habitat in the Sugar Creek watershed. The project would protect and enhance ground water recharge within the upper Sugar Creek watershed. The Trustees would apply methods that been successful in other locations to increase the probability of the project success. The project is expected to compensate the public for natural resource injuries by providing additional, similar services in the future. The habitat creation and enhancement proposed by this project would provide natural resource services similar to those injured in the SCVAA and the ecological benefits would occur in the same watershed of the injuries (see summary of NRDAR criteria in Table 5.1).

Minor, short-term, and localized reductions to existing resources may occur during project implementation, however, the final project would result in long-term benefits. During periods of soil excavation for wetland creation or stream restoration, there may be short periods of time where resource services provided by that area are reduced through physical disturbance. However, long-term, moderate beneficial improvements to water resources and the associated plants and animals would occur because of the creation and enhancement of aquatic and wetland habitat. Re-establishment of native vegetation is expected to result in beneficial impacts, such as providing areas for feeding and shelter for wildlife, as well as nutrient cycling and carbon sequestration and storage capacity.

Habitat creation and restoration of agricultural fields will involve re-grading and possibly removal of soil as well as rendering existing agricultural drain tiles inoperable to provide suitable hydrology for wetlands. Re-grading a portion of a restoration area can include the following types of actions: moving soil or sediment and placing the material either within the restoration area or at a disposal site, contouring the area to satisfy hydrologic and/or vegetative goals, and amending the area with topsoil or other material. Depending on the scope and scale of regrading, sediment or soil may be moved by non-motorized methods (*e.g.*, shovels) or by earth-moving equipment. These actions are expected to result in moderate, short-term, localized degradation of resource services due to the re-graded area and any area that is affected by soil movement or management. However, these adverse effects are outweighed by the major, long-term broader ecological benefits expected due to regrading. For example, likely benefits include, but are not limited to, improved hydrological conditions that would support high quality habitat and re-establish connections between habitats (*e.g.*, wetland and riparian areas).

Additionally, the project has the potential to benefit the local economy through the construction activity associated with this restoration project.

This alternative was evaluated for compliance with the National Historic Preservation Act (NHPA) Section 106 regulations (36 CFR Part 800). Based on review of readily available information regarding historical and cultural uses for the area of interest, an archaeological survey is required of the project area prior to implementation of project to ensure that harm to cultural and historic resources will not occur. Documentation of this review is found in Appendix G.

Due to the restoration and enhancement nature of Alternative Two and the best management practices (BMPs) that will be used, the Trustees anticipate only minor and temporary adverse impacts to the biological environment, including fish, wildlife, and their supporting habitats, and cultural resources and services. Based on best management practices that will be used during project implementation, the Service has determined that the project may affect but is not likely to adversely affect the Indiana bat, Northern long-eared bat, and the Tricolored bat (Appendix F). Based on the discussion above, the Trustees do not anticipate significant environmental consequences due to the implementation of this project (see summary in Table 5.2).

5.4 Evaluation of Alternative Three: The Wilderness Center – Lash's Bog Enhancement and Restoration

The Lash's Bog Enhancement and Restoration Project includes restoration and enhancement of wetlands and adjacent forested buffer habitat within the 40-acre Lash's Bog preserve, located in Sugar Creek Township, Stark County, Ohio. Restoration activities will include treatment/removal of invasive species and implementation of an invasive species management plan. Invasive species management may include herbicide applications, as well as manual and/or mechanical removal. The project also includes planting of native wetland and riparian species. Minimizing or eliminating invasive plant species, including reed canary grass (*Phalaris arundinacea*) and autumn olive (*Elaeagnus umbellata*), provides an overall improvement of the habitat allowing for increased growth and development of native plants and shrubs. In turn, increased prevalence of native plants provides improved food sources and higher quality nesting and foraging habitat for species dependent on the wetlands. Protection and preservation of wetlands and adjacent forested buffers through a conservation easement can improve water quality and ensure that these areas with habitat and ecological services similar to those lost remain unharmed by development.

This alternative is favored because it meets all of the NRDAR factors, is in alignment with the Trustee's restoration goals, and has a nexus to injured resources. Evaluation of the project by the restoration factors outlined in NRDAR regulations considers this a favored alternative. The project is technically feasible, cost-effective, and would be specifically targeted to benefit multiple, relevant resources that utilize aquatic and wetland habitat in the Sugar Creek watershed. The Trustees would apply methods that have been successful in other locations to increase the probability of the project success (see summary of NRDAR criteria in Table 5.1).

The habitat enhancement of this project would provide natural resource services similar to those injured in the SCVAA and ecological benefits would occur in the same watershed of the injuries.

Restoration and enhancement activities are expected to cause minor, short-term, localized harm to existing resource services, and result in long-term benefits across a broad geographic scope. Long-term, moderate benefits to water resources and the associated plants and animals would occur due to the enhancement of aquatic and wetland habitat. The use of herbicides for invasive plant species removal are not anticipated to cause impacts to humans or the environment as herbicides will be applied by an individual with a commercial applicator license (issued by the State of Ohio) and will follow herbicide label instructions.

Re-establishment of native vegetation is expected to result in beneficial impacts such as providing areas for feeding and shelter for wildlife, as well as nutrient cycling and carbon sequestration and storage capacity.

Potential positive social improvements include increased aesthetic value and land that is protected from development in perpetuity. Enhancement of the bog habitat will increase educational opportunities for the community.

This alternative was evaluated for compliance with the National Historic Preservation Act (NHPA) Section 106 regulations (36 CFR Part 800). A finding of no potential effect was determined for this Alternative. Documentation of this review is found in Appendix G. Because of the restoration and enhancement nature of the proposed habitat projects and the best management practices (BMPs) that will be used, the Trustees anticipate only minor and temporary adverse impacts to the biological environment, including wildlife, and their supporting habitats, and cultural resources and services. Based on best management practices that will be used during project implementation, the Service has determined that the project may affect but is not likely to adversely affect the Indiana bat, Northern long-eared bat, and the Tricolored bat (Appendix F). Based on the discussion above, the Trustees do not anticipate significant environmental consequences due to the implementation of this project (see summary in Table 5.2). Alternative Three is selected, as further described in Chapter 6, because it meets all the NRDAR factors, is in alignment with the Trustee's restoration goals, and has a nexus to injured resources.

5.5 Evaluation of Alternative Four: Sugar Creek Habitat Conservation Project, Sugar Creek Watershed

Dover Chemical Corp. will place an Environmental Covenant on two company owned parcels totaling 25.28 acres adjacent to Sugar Creek, Tuscarawas County, Ohio. The 25.28 acres are undeveloped, and legal restrictions will ensure no future development or degradation occurs, to protect Sugar Creek habitat in perpetuity.

The project is technically feasible, cost-effective, and would specifically target benefits to multiple resources that utilize aquatic and wetland habitat in Sugar Creek and the Sugar Creek watershed.

The project will compensate the public for natural resource injuries by providing additional, similar services as those injured. The undeveloped land would be protected in perpetuity, providing long-term aquatic and riparian habitat protection as well as long-term ground water

recharge and protection benefits within the Sugar Creek watershed (see summary of NRDAR criteria in Table 5.1). Protection of private land can increase biodiversity and provide landscape connectivity between habitats (Graves et al. 2019; Kareiva et al. 2021). Biodiversity is crucial for food production, clean water, and other needs that support the overall well-being of human communities.

Positive social improvements include continued aesthetic value of land protected from development in perpetuity through an Environmental Covenant. The Environmental Covenant will provide protection for important recharge of ground water, which is a positive social value for potential future public use. No negative social characteristics were identified.

No harm to cultural and historic resources will occur through preservation of the property through an Environmental Covenant (see Appendix G for NHPA documentation).

There are no negative effects to threatened and endangered species because no disturbance of habitat will occur, as this project involves the preservation of the property with an Environmental Covenant.

Since no physical or other disturbances are necessary to place an Environmental Covenant on this undeveloped property, no adverse environmental consequences are anticipated with this project. The Trustees have determined that this action is covered by a Categorical Exclusion as provided by 43 CFR 46.210 or 516 DM 8.5 (see Appendix H). Based on this determination and the discussion above, the Trustees do not anticipate significant adverse environmental consequences due to the implementation of this project (see summary in Table 5.2). Alternative Four is selected, as further described in Chapter 6, because it meets all the NRDAR factors, is in alignment with the Trustee's restoration goals, and has a nexus to injured resources.

5.6 Evaluation of Alternative Five: Western Reserve Land Conservancy – Eastern Hellbender Project, Little Beaver Creek, Yellow Creek, Cross Creek, or Captina Creek Watersheds

Dover Chemical Corp. will work with the WRLC to identify specific parcels adjacent to Little Beaver Creek, Yellow Creek, Cross Creek and/or Captina Creek that have high quality habitat important for hellbender reproduction and success that will also benefit other biological resources. Dover Chemical Corp. will work with WRLC to negotiate Conservation Easements with landowners to conserve a minimum of 170 acres within in these watersheds. Although outside the SVVAA, the streams associated with the Eastern hellbender project provide similar ecological services to those ecological services lost in Sugar Creek, with the added benefit of protecting streams with documented reproducing populations of Eastern hellbenders. Hellbenders are what is known as an indicator species, meaning hellbenders serve as a measure of the environmental conditions that exist in a given locale. Hellbenders are extremely sensitive to poor water quality and pollution. Therefore, the hellbender is a clear indicator species for clean water because it cannot survive with anything less. Thus, the Trustees selected a restoration alternative that requires protection of clean water to benefit resources that have been injured by the releases from Dover Chemical. Preservation of these areas and streams provide protection and enhancement of water quality, of high-quality habitat for benthic species, fish communities,

and associated bird and mammal populations similar to those in Sugar Creek. In addition, preservation and protection through conservation easements protects these areas from encroaching development. Conservation easements are a valuable tool to protect land from future development permanently, safeguarding the value of these resources against both natural and anthropogenic threats. Scientific literature confirms that land protection helps to increase species biodiversity, species richness and abundance, ensure ecosystem functioning and deliver ecosystem services.

The project is technically feasible, cost-effective, and would benefit important high-quality aquatic and riparian habitat. Placing Conservation Easements on high-quality hellbender habitat would also benefit other biological resources that utilize the stream. The project would provide protection and enhancement of ground water resources within the 170 acres (see summary of NRDAR criteria in Table 5.1).

The project has the potential to compensate the public for natural resource injuries by providing additional, similar services in the future. The proposed watersheds for this project are high-quality stream habitats with similar services to those lost in Sugar Creek. Protection of these streams will also provide protection for breeding populations of the state listed hellbender which was historically found in the Sugar Creek watershed. While the location of this project (Little Beaver Creek, Yellow Creek, Cross Creek and/or Captina Creek) is outside the Sugar Creek Watershed, it will provide the same or similar services lost due to injury in Sugar Creek.

No negative social consequences were identified.

Alternative Five will be evaluated for compliance with National Historic Preservation Act (NHPA) Section 106 regulations (36 CFR Part 800) when potential property(s) are identified but harm to cultural or historical resources are not expected (see NHPA documentation in Appendix G).

This alternative has been evaluated for compliance with Section 7 of the Endangered Species Act (ESA), (16 U.S.C. § 1351 et seq.) and the Trustees have determined that this action is covered by a Categorical Exclusion as provided by 43 CFR 46.210 or 516 DM 8.5. Documentation of the Categorical Exclusion is included in Appendix H). Negative effects to threatened and endangered species will not occur.

Since no physical or other disturbances are necessary to place Conservation Easements on property, no significant environmental consequences are anticipated with this project. The Trustees have determined that this action is covered by a Categorical Exclusion as provided by 43 CFR 46.210 or 516 DM 8.5 (see Appendix D). Based on this determination and the discussion above, the Trustees do not anticipate significant environmental consequences due to the implementation of this project (see summary in Table 5.2). This alternative is selected, as further described in Chapter 6, because it meets all the NRDAR factors, is in alignment with the Trustee's restoration goals, and has a nexus to injured resources.

5.7 Evaluation of Alternative Six: Trustee Implemented Ground Water Restoration and/or Protection Project(s)

Dover Chemical Corp. will pay the Trustees $880,000.00, to be utilized by the Trustees for projects protecting areas of ground water recharge for the Sugar Creek buried aquifer system. Examples of potential projects are purchases of properties or conservation easements for properties under threat of development within areas of ground water recharge. The Trustees will prefer protection of the Sugar Creek buried aquifer system areas of ground water recharge through purchases or conservation easements. If properties within the recharge area of Sugar Creek buried aquifer are not available, other projects that improve or restore ground water will be considered.

Potential positive social benefits of this project include increased aesthetic value of land as land is protected from future development. This project will be focused on protecting ground water resources which provides future positive benefits for the public, potentially including the City of Dover. No negative social consequences were identified (see summary in Table 5.2). This alternative is selected, as further described in Chapter 6, because it meets all the NRDAR factors, is in alignment with the Trustee's restoration goals, and has a nexus to injured resources.

5.8 Evaluation of Alternative Seven: Joyce Hill Road SW Property Ground Water Recharge Project, Tuscarawas River Watershed

The Joyce Hill Road SW property is a reclaimed mine area, which is within the Tuscarawas River watershed. The area is not suitable for consideration of ground water recharge because the soil is compacted and does not allow good infiltration of water. The area is planted with grasses to stabilize the soil but does not provide ecological benefits, habitat, or other resources similar to those injured. Significant and costly restoration activities would be required to create an appropriate ecological habitat that would benefit injured natural resources. The project would provide little potential for long-term success and is not technically feasible. This project did not meet the requirements of the Trustees to provide sufficient type, quality, and quantity of ground water services to compensate for those lost due to contamination. This alternative is not cost-effective, provides little potential for long-term success, and is not technically feasible. This alternative does not align with NRDAR factors, or with Trustee restoration goals, and is thus not considered a preferred option.

5.9 Evaluation of Alternative Eight: The City of Dover Wellhead Protection Project/Soccer Field Protection, Sugar Creek Watershed

This project is within the Sugar Creek buried aquifer recharge area, and was initially proposed to encompass a 38-acre property area with use limits designed to restore and enhance ecological services similar to those injured, while at the same time, providing additional protection to ground water recharge into the Sugar Creek buried aquifer. The project, as initially proposed, would have enhanced and provided green infrastructure (native plantings, passive recreational use, and a pollinator habitat) to manage stormwater and ensure ground water protection in perpetuity through additional property protection. However, the scope of the project was significantly modified from its initial geographic size (38 acres) to 21-acres to accommodate

active recreational use and activities. The modifications in the scope and size of the project significantly impacted its technical feasibility (e.g., active recreational use could increase surface water runoff, with the use of land management practices impacting and reducing ground water infiltration and quality). Changes in the scope of the project to include soccer fields and reduction of the proposed natural areas rendered the project to be misaligned with NRDAR regulations for restoration (See Table 5.1 for summary). Thus, the Trustees determined that this project did not meet the restoration criteria established in the NRDAR regulations for selection because of its multi-purpose and proposed future uses**.** This alternative does not align with NRDAR factors, or with Trustee restoration goals, and is thus not considered a preferred option.

5.10 Evaluation of Alternative Nine: City of Dover Canal Park Restoration and Enhancement Project, Sugar Creek Watershed

This project location is also within the Sugar Creek buried aquifer recharge area, and initially had high potential to improve and enhance ecological services similar to those injured, provide ground water recharge into the Sugar Creek buried aquifer, and provide additional community access to natural areas through the development of the city park. As initially proposed, the project included streambank restoration, riparian and wetland enhancement and the development of a pollinator garden. Over the course of developing the project, reductions in the acreage to be protected, enhanced, and/or restored, the proposed removal of trees adjacent to the Tuscarawas River, and the overall reduction of the scope of the project rendered the project to be misaligned with requirements of the NRDAR regulations for restoration (See Table 5.1 for summary). This alternative does not align with NRDAR factors, or with Trustee restoration goals, and is thus not considered a preferred option.

5.11 Cumulative Impacts

The CEQ regulations to implement NEPA require the assessment of cumulative impacts in the decision-making process for federal projects, plans, and programs. Cumulative impacts are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 C.F.R. §1508.7). As stated in the CEQ handbook, “Considering Cumulative Effects” (CEQ 1997), cumulative impacts need to be analyzed in terms of the specific resource, ecosystem, and human community being affected and should focus on effects that are truly meaningful.

The cumulative effects analysis of Selected Alternatives, as further described in Chapter 6, is commensurate with the nature of proposed project types and the degree of direct and indirect effects anticipated from implementation of the primarily beneficial projects. For the purpose of this analysis, the cumulative impact spatial boundary includes the project areas and areas in close proximity to the projects, as identified in Chapter 3. Collectively, activities associated with the Selected Alternatives are intended to compensate the public for past injuries and losses to trust resources and services resulting from releases of hazardous substances at or from the Dover Chemical Corporation Site. These alternatives are anticipated to result in predominantly beneficial impacts to those same resources and services, to help return injured natural resources and associated services to baseline conditions, and to compensate for interim losses.

When considered with other past, present, and reasonably foreseeable future actions within the project areas and in areas nearby, the Selected Alternatives are not anticipated to have adverse cumulative impacts. Direct and indirect adverse impacts, as discussed previously, are likely to be short-term and, except for periodic activities for invasive species management, to occur only during periods of active construction activities. Periods of active construction will vary (weeks to a few months), but individually and cumulatively, would result in only short-term impacts.

The resources or services that may be temporarily impacted during construction activities include air quality (by increased dust, noise, and exhaust fumes from construction equipment), and soils and sediments (direct disturbance), water quality (from temporary increases in turbidity), and noise (during active restoration implementation). Some short-term, minor impacts to fish, wildlife, and vegetation in the project areas could occur, but impacts to these and other resources would be minimized by the use of BMPs. Consequently, the minor and short-term impacts of restoration and habitat enhancement activities on air quality, soils and sediments, water quality, and noise have a low potential to result in cumulative significant impacts to these resources.

Activities associated with the Selected Alternatives are not expected to result in significant cumulative impacts on the human environment since they alone, or in combination with other current and future activities – including, but not limited to, public utility construction and maintenance, commercial and residential development, and other similar conservation and restoration projects in the vicinity, would not change the larger current hydrological patterns of discharge, recreational use, economic activity, or land-use in the affected environment. Activities within the scope of the Selected Alternatives will enhance or preserve habitat that exists naturally in the area.

Other activities in the affected environment area may be undertaken by other entities, private and public, vary widely. These may include activities on private parcels, such as maintenance of utilities, development of housing on adjacent uplands, and/or agriculture practices on adjacent uplands. These categories of activities are expected to result in short- and long-term adverse impacts within the affected environment area. Maintenance of public utilities, such as power lines, and pipelines in easements within state or federally-owned lands will not be impeded as a result of the Selected Alternatives. Where these actions occur, they would result in adverse short- and long-term impacts within the affected environment area. Local, state, and/or federal government agencies, as applicable, may undertake wildlife management activities on parcels under their control throughout the affected environment area. This may include restoration activities similar to those proposed under this restoration plan and others such as game plot planting and road maintenance. These activities would result in both short- and long-term adverse and beneficial impacts.

5.12 Credits for selected restoration projects

The Trustees developed restoration criteria used to prioritize restoration types and identified the specific projects that met those criteria to compensate for service losses; these criteria are described in Section 5.1.

5.12.1 *Ecological Resources*

Restoration credits in DSAYs were calculated for selected restoration projects (Table 5.3). A comparison of the restoration credit DSAYs (1,575) to the total debit DSAYs (898) demonstrates that the proposed restoration projects are more than adequate in compensating for injuries to natural resources and associated services. The Trustees believe the damages recovered through the Consent Decree achieves the goals of CERCLA to make the public whole, is fair and reasonable, and advances the public interest.

5.12.2 *Ground water Resources*

Dover Chemical Corp. will pay $880,000 to the State to fund the acquisition of conservation easements that protect enough ground water resources to compensate for approximately 75% of the injury to State ground water resources. In addition, the Falcon Flats Restoration Project, the Sugar Creek Habitat Conservation Project, and the Eastern Hellbender Project benefit both joint-Trustee resources and State-only ground water resources, and the Trustees have secured a recovery in significant excess of the amount necessary to compensate for the injury to joint-Trustee resources.

Further, the State's application of the ground water benefits of those three projects should not be limited to the excess recovery for joint-Trustee resources since the ground water benefits of the projects are separate and unique from the joint-Trustee resources benefits. The State has determined that, after accounting for the ground water benefits of those three projects and Defendant's payment of $880,000, the Decree will provide full compensation for the injury to State-only ground water resources.

Table 5.1: Evaluation of alternatives relative to NRDAR criteria listed in Section 5.1.1.

Alternative	**1. Technical Feasibility**	**2. Cost/benefit**	**3. Cost-effectiveness**	**4. The results of actual or planned response actions**	**5. Additional Injury**	**6. Recovery Period**	**7. Recovery Ability**	**8. Public Health and Safety**
Alternative One: No Action	High	N/A	N/A	N/A	Additional interim losses would occur.	Decades.	Limited, would require decades.	N/A
Alternative Two: The Wilderness Center – Falcon Flats Restoration Project	The technology and management actions needed to accomplish the proposed project are well established. Projects of a similar type and scale have been completed successfully.	Project will focus on off-site resources and services of the same kind as those injured from releases of hazardous substances.	Project has a high ratio of expected benefits to costs given the success of other similar projects. Project incorporates a cost-effective approach, using established techniques.	Any actual or planned response activities have no impact on the proposed project	Majority of impacts are anticipated to be positive and long-term, although short-term adverse impacts are possible from habitat management activities, such as stabilization activities of stream.	The recovery period to restore and enhance natural resources including instream habitat, would likely be less than the recovery period for the No Action Alternative.		There are no anticipated health and safety risks associated with The Wilderness Center- Falcons Flats.
Alternative Three: The Wilderness Center - Lash's Bog Enhancement and Restoration	Management actions needed to accomplish the project are standard and well known for projects of this type.	Project will focus on off-site resources and services of the same kind as those injured from releases of hazardous substances.	Project has a high ratio of expected benefits to costs given the success of other similar projects. Placement of conservation easements are a cost-effective approach, using established techniques.	Any actual or planned response activities have no impact on the proposed project.	Majority of impacts are anticipated to be positive and long-term, although short-term adverse impacts may be expected from habitat management activities, such as herbicide applications for invasive plant species.	The recovery period to enhance and preserve natural resources, would likely be less than the recovery period for the No Action Alternative.		There are no anticipated health and safety risks associated with The Wilderness Center – Lash's Bog.

Alternative	1. Technical Feasibility	2. Cost/benefit	3. Cost-effectiveness	4. The results of actual or planned response actions	5. Additional Injury	6. Recovery Period	7. Recovery Ability	8. Public Health and Safety
Alternative Four: Sugar Creek Habitat Conservation Project	Management action needed to accomplish the project is the placement of an environmental covenant; a standard and well known process.	Project is within assessment area and adjacent to Sugar Creek.	Project has a high ratio of expected benefits to costs given the success of other similar projects. The placement of environmental covenants is a cost-effective approach, using established processes.	Any actual or planned response activities have no impact on the proposed project.	No adverse impacts are expected from the placement of environmental covenants on the property.	The recovery period to preserve natural resources, would likely be less than the recovery period for the No Action Alternative.		There are no anticipated health and safety risks associated with The Sugar Creek Conservation Project.
Alternative Five: Western Reserve Land Conservancy-Eastern Hellbender Project	Management action needed to accomplish the project is the placement of a conservation easement, standard and well-known process for this type of project.	Project will focus on off-site resources and services of the same kind as those injured from releases of hazardous substances.	Project has a high ratio of expected benefits to costs given the success of other similar projects. Placement of conservation easements are a cost-effective approach, using established processes.	Any actual or planned response activities have no impact on the proposed project.	No adverse impacts are expected from the placement of conservation easements on the properties.	The recovery period to preserve natural resources, would likely be less than the recovery period for the No Action Alternative.		There are no anticipated health and safety risks associated with The Western Reserve Land Conservancy-Eastern Hellbender Project.

Alternative	1. Technical Feasibility	2. Cost/benefit	3. Cost-effectiveness	4. The results of actual or planned response actions	5. Additional Injury	6. Recovery Period	7. Recovery Ability	8. Public Health and Safety
Alternative Six: Trustee Implemented Ground Water Restoration or Protection Project	Management actions needed to accomplish the project is standard and well-known for this type project.	Projects will focus on areas within the assessment area and/or off-site resources and services of the same kind as those injured from releases of hazardous substances.	Project has a high ratio of expected benefits to costs given the success of other similar projects. Placement of conservation easements are a cost-effective approach, using established techniques.	Dependent on Trustee approved projects, there is the possibility that actual or planned response activities will have impact on the proposed project.				There are no anticipated health and safety risks associated with future ground water restoration or protection projects.
Alternative Seven: Joyce Hill road SW Property Ground Water Recharge Project	The location of Alternative Three is not within the ground water recharge area to the Sugar Creek or Tuscarawas aquifers, thus is not technically feasible.	Project is not within assessment area nor within areas of off-site resources and services of the same kind as those injured form the releases of hazardous substances.	Trustees will develop suitable projects and anticipate a high ratio of expected benefits to costs given the success of other similar projects.	Any actual or planned response activities have no impact on the proposed project.	The location of this project is not within the ground water recharge area to the Sugar Creek or Tuscarawas aquifers, thus, there is no positive benefit to this project.	The project location is outside the area of the Sugar Creek valley aquifer and recovery period to preserve natural resources, would likely be greater than the recovery period for the No Action Alternative.		There are no anticipated health and safety risks associated with the Joyce Hill SW road project.

Alternative	1. Technical Feasibility	2. Cost/benefit	3. Cost-effectiveness	4. The results of actual or planned response actions	5. Additional Injury	6. Recovery Period	7. Recovery Ability	8. Public Health and Safety
Alternative Eight: The City of Dover Wellhead Protection Project. Soccer Field	The technology needed to accomplish the proposed project is well known. Projects of a similar type have been completed successfully.	Although within Sugar Creek watershed, the reduced scope of the project does not improve, restore, or preserve the resources and services of the same kind as those injured from the releases of hazardous substances.	Although within the Sugar Creek watershed, the reduced scope of the project does not provide benefits to the resources and services as those injured from the releases of hazardous substances.	Any actual or planned response activities have no impact on the proposed project.	Impacts were anticipated to be positive and long-term, although short-term adverse impacts were expected from habitat management activities, such as tree planting, and herbicide applications for invasive plant species.	The reduced scope of the project would likely increase the recovery period to preserve Ground water resources.		There are no anticipated health and safety risks associated with the City of Dover Wellhead Protection project.
Alternative Nine: The City of Dover – Canal Park Restoration and Enhancement Project	The technology needed to accomplish the proposed is well known.	Although within Sugar Creek watershed, the reduced scope of the project does not improve, restore, or preserve the resources and services of the same kind as those injured from the releases of hazardous substances.	Although within the Sugar Creek watershed, the reduced scope of the project does not provide benefits to the resources and services as those injured from the releases of hazardous substances.	Any actual or planned response activities have no impact on the proposed project.	Impacts were anticipated to be positive and long-term, although short-term adverse impacts were expected from habitat management activities, such as tree planting, trail development, and herbicide applications for invasive plant species.	Due to the reduced scope of the project, the recovery period to preserve natural resources, would likely be greater than feasible.		There are no anticipated health and safety risks associated with the City of Dover Canal Park Restoration and Enhancement Project.

Table 5.2: Evaluation of alternatives relative to NEPA criteria listed in Section 5.1.2.

Alternative & Project	**Environmental Impacts[21]: Positive**	**Environmental Impacts: Negative**	**Social Impacts[22]: Positive**	**Social Impacts: Negative**
Alternative One: No Action	• None	• Does not restore to baseline	• None	• Does not compensate the public for injuries to natural resources
Alternative Two: The Wilderness Center – Falcon Flats Restoration Project, Sugar Creek Watershed	• Some increase in habitat quality through native plantings and control of invasive species. • Increase of riparian habitat, upland, and wetland habitat.	• Short term disturbance during construction, planting efforts, and invasive species control.	• Potential economic benefits of minor construction project. • Minor changes to local land-use from agriculture to wetland, riparian and upland habitats.	• Short-term localized impacts resulting from the noise and exhaust from construction vehicles
Alternative Three: The Wilderness Center – Lash's Bog Enhancement and Restoration, Sugar Creek Watershed	• Some increase in habitat quality through native plantings and control of invasive species	• Short term disturbance during planting efforts and invasive species control.	• Potential of increased aesthetic value as land is protected from development.	• None.
Alternative Four: Sugar Creek Habitat Conservation Project, Sugar Creek Watershed	• Protection of existing habitat from development or destruction.	• None.	• Potential of increased aesthetic value as land is protected from development.	• None.
Alternative Five: Western Reserve Land Conservancy – Eastern Hellbender Project, Little Beaver Creek, Yellow Creek, Cross Creek, or Captina Creek Watersheds	• Protection of existing habitat from development.	• None.	• Potential economic benefit for willing landowners.	• None.

[21] "Environmental impacts" includes physical, biological, climate and air impacts
[22] "Social impacts" includes cultural, historical, recreation, socioeconomic, and environmental justice impacts

Alternative & Project	Environmental Impacts: Positive	Environmental Impacts: Negative	Social Impacts: Positive	Social Impacts: Negative
Alternative Six: Trustee implemented ground water restoration, or protection project(s)	• Protection of ground water.	• None.	• Potential of increased aesthetic value as land is protected from development. • Protection and recharge of ground water for future public use.	• Potential of minor changes in land use patterns that may compete with economic development.
Alternative Seven: Joyce Hill Road SW Property Ground Water Recharge Project, Tuscarawas River Watershed	• Protection of low quality habitat in perpetuity.	• Quality and suitability of land as wildlife habitat unknown.	• None.	• Does not compensate the public for injuries to ground water.
Alternative Eight: The City of Dover Wellhead Protection Project/Soccer Field Protection, Sugar Creek Watershed	• Minor increase in protected natural habitat in the Sugar Creek watershed.	•Herbicide use on maintained sport fields near natural habitats with minimal buffer space.	• Minor increase in natural space and park land.	• Does not compensate the public for injuries to ground water
Alternative Nine: City of Dover – Canal Park Restoration and Enhancement Project, Sugar Creek Watershed	• Some increase in stream habitat quality through removal of concrete slabs and installation of bank stabilization structures, native plantings and control of invasive species. • Increase in wetland habitat by native plantings.	• Short term disturbance during construction, planting efforts, and invasive species control.	• Increased nature interpretation and passive enjoyment. • Potential economic benefits of minor construction project.	• Temporary closure of park areas during project implementation. • Short-term localized impacts resulting from the noise and exhaust from construction vehicles

Table 5.3. Selected restoration projects to compensate for federal and state resource injuries and associated credits (in DSAYs).

Restoration Project	**Size (acres)**	**Restoration Credits (DSAYs)**
The Wilderness Center - Falcon Flats Preserve	13.5	343
The Wilderness Center - Lash's Bog	15	108
Western Reserve Land Conservancy - Eastern Hellbender Protection Project	170	597
Sugar Creek Habitat Conservation Project	25	527
Total	**223.5**	**1,575**

6 SELECTED ALTERNATIVES AND CONCLUSIONS

The Trustees evaluated nine restoration alternatives. Of these, Alternative Two, Three, Four, Five, and Six best address natural resource injuries and service reductions resulting from the release of hazardous substances within the SVCAA. Based on the Trustees' evaluation of the environmental consequences of all nine Alternatives, the NRDAR factors described in 43 C.F.R. § 11.82(d), and the potential for realized environmental and social benefits, the Trustees identified Alternatives Two, Three, Four, Five, and Six as their Selected Alternatives.

Alternatives Evaluated but Not Selected:

- Alternative One provides no restoration options and is therefore insufficient to compensate for natural resource injuries.
- Alternative Seven, the Joyce Hill Road SW Property Ground Water Recharge Project, does not provide resources and services equivalent to those injured from the release of hazardous substances. The project is not located within the recharge area to the Sugar Creek or Tuscarawas River aquifers, and due to the soil composition of the reclaimed mine, the soil at the Joyce Hill Road SW property does not provide equivalent ground water recharge to that injured resource.
- Alternative Eight, the City of Dover Wellhead Protection Project/Soccer Field does not provide resources and services equivalent to those injured from the release of hazardous substances due to the reduction in the scope and size of the project. Although located within the Sugar Creek watershed, the changes in project scope and size have created a misalignment with the requirements of the NRDAR regulations for restoration.
- Alternative Nine, the City of Dover Canal Park Restoration and Enhancement Project does not provide resources and services equivalent to those injured from the release of hazardous substances due to the reduction in the scope of the project. Although located within the Sugar Creek watershed, the reduced scope of the project has created a misalignment with the requirements of the NRDAR regulations for restoration.

The Trustees identified Alternatives, Two, Three, Four, Five, and Six as Selected Alternatives, representing cost-effective, technically feasible and beneficial means by which to restore or replace the injured natural resources and the services they provided.

A Finding of No Significant Impact (FONSI; Appendix I) and Environmental Action Statement (Appendix J) are attached to this Final Restoration Plan.

At the completion of this Final RP, restoration projects are still in the planning phase. As these projects progress, the selected projects will be subject to additional environmental compliance prior to implementation, including Section 7 consultation (under the ESA) for restoration projects that may affect threatened or endangered species or their designated critical habitat, and consultation under Section 106 of the National Historic Preservation Act for any potential cultural or historical impacts.

7 PREPARERS, AGENCIES, AND PERSONS CONSULTED

7.1 Preparers

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7.2 Agencies and Persons Consulted

7.2.1 Federal Agencies

U.S. Fish and Wildlife Service

7.2.2 State Agencies

Ohio Environmental Protection Agency Ohio Attorney General

7.2.3 Local Agencies, Non-Governmental Organizations, and Others

Dover Chemical Corp.

The Wilderness Center

Western Reserve Land Conservancy

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9 APPENDICES

Appendix A: Restoration Statements of Work

The Wilderness Center – Falcon Flats Restoration Project

I. Purpose

This Scope of Work describes the requirements for the implementation of The Wilderness Center – Falcon Flats Restoration Project. This project will restore and enhance wetlands and riparian habitat within the 141-acre Falcon Flats preserve owned by The Wilderness Center ("TWC"), located in Sugar Creek Township, Stark County, Ohio, from approximately RM 17.55 to RM 18.55 of Sugar Creek. The Consent Decree requires Dover Chemical Corporation ("Settling Defendant") to develop a Restoration Work Plan to implement this project, which will be submitted to the Trustees for review and approval.

II. Project Requirements (General)

This project requires Settling Defendant to restore at least 13.5 acres of TWC's Falcon Flats preserve within five years of the Effective Date of the Consent Decree. Within the larger preserve, two main areas have been identified for restoration. The first area (the 24-acre north area or NA) consists of two agricultural fields and adjacent wetland areas and a stream corridor (Attachment 1). Within the NA, a minimum of 11.5 acres of restoration will occur. Two Key Restoration Areas (KRAs 1 and 2) have been identified in the NA for wetland restoration and creation, stream restoration and riparian buffer enhancement, and wetland and upland enhancement through invasive species removal and supplemental plantings.

The second area (the 7-acre south area or SA) contains an existing wetland (identified as KRA 3) that is dominated by invasive species. Within the SA, a minimum of 2.0 acres of restoration will occur through invasive species removal.

Settling Defendant shall enter into a consulting agreement (to be approved by the Trustees) with TWC requiring the latter to be responsible for the long-term ownership and care of the property, subject to restrictive deed language to be added by Settling Defendant and TWC, which will be subject to review and approval by the Trustees. Settling Defendant is responsible for ensuring the execution of the restrictive deed language, which will also be subject to approval by the Trustees. Settling Defendant will also implement soil excavation and/or management to improve water characteristics of the site, planting of native wetland and riparian vegetation, and a five-year invasive species management program.

III. Project Requirements (Specific)

The Settling Defendant's proposed Restoration Work Plan for this project will be consistent with the design identified in the conceptual restoration design in Attachment 1. and will include:

A. A topographic map showing the location of the property or properties to be part of the project.

B. The total acreages of each property, as well as an estimate from aerial photographs and GIS, or other mapping software, of the acreages of various habitat types existing on each property.

C. A description and/or map of the current ecological value of and natural resource services provided by each property and the improvements that are expected from the project. Ecological values and natural resource services may include, but are not limited to, nesting habitat for migratory and local birds and improved wetland habitat for amphibian populations.

D. A description of wetlands and other features on the property that will be enhanced through actions such as control of exotic and/ or invasive species, establishment of native species.

E. A description of trash and/or debris, if any, on the property and a plan for removal of such.

F. An implementation schedule.

G. Detailed plans for:

    1. Physical changes (*e.g.*, excavating, berms) including approximate elevations and expected water control/depths of water bodies.

    2. Removal of exotic and/or invasive species throughout the defined minimum 13.5 acres of restoration area.

    3. Planting of native species of plants and shrubs that the Trustees deem adequate to enhance the existing emergent wetland habitat. This includes maps of locations for native plantings, a list of species to be used, and the number of plantings for each location.

    4. Identification and removal of all debris and trash within the project area.

    5. Maintenance and monitoring, including restoration performance measures to be implemented by TWC for a five-year period.

The Settling Defendant or its contractor will obtain any permits required for implementation of the Falcons Flats Restoration Project.

IV. Progress Reports

During the period of the development and implementation of the Restoration Work Plan, Settling Defendant will submit brief (1 to 2 page) quarterly progress reports describing the status of the project. The Progress Report for each preceding quarter will be submitted by the 15th day of January, April, July, and October. The Progress Reports will include:

A. Activities conducted during the period.

B. Problems encountered during the period.

C. Schedule variances and corrective actions, as necessary.

D. Status of permits and applications.

E. Projected activities planned for the next quarter.

V. Annual Monitoring Reports

TWC will prepare and submit a brief (*e.g.*, 1 to 2 page) annual report documenting the status of the property as related to the deed restrictions put in place as part of this project. The annual report will be due each year in accordance with the schedule provided in the deed restrictions and will include:

A. Property name and address.

B. Summary of any observations made during the annual inspection, including photographs or other pertinent information.

C. Documentation of any potential breaches of the terms of the deed restrictions and proposed corrective actions.

D. Summary of any land transfer or sale of property, including the name of the new landowner.

E. Discussion of any proposed restoration or habitat enhancement activities considered for the property.

VI. Deliverables

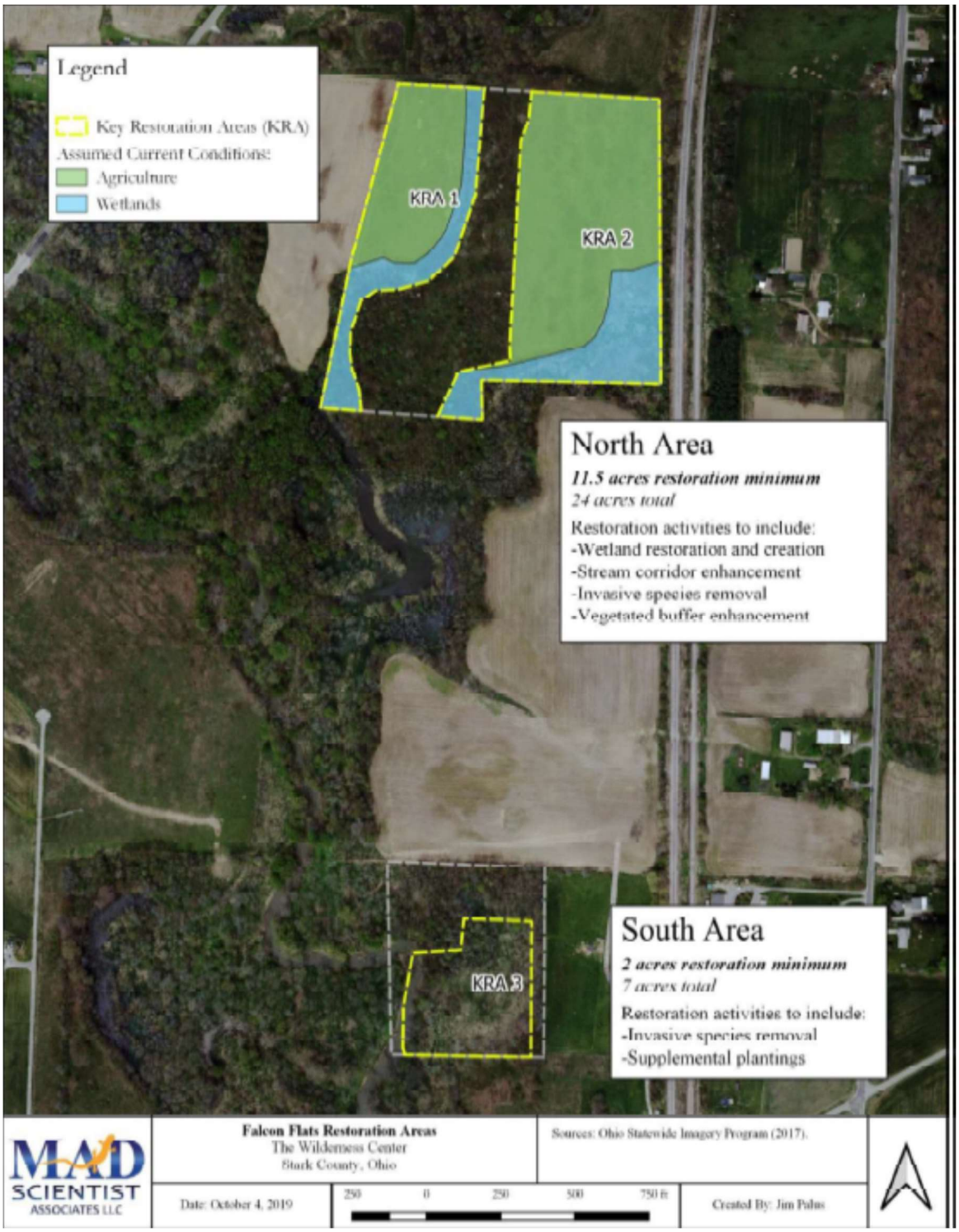
The following deliverables will be generated and submitted to the Trustee representatives for approval as per the schedule below.

DELIVERABLE (UNLESS WAIVED BY THE TRUSTEES)	DUE DATE
Restoration Work Plan	Due 150 days after the Effective Date of the Consent Decree.
Restoration Completion Report	In accordance with the schedule provided in the approved Restoration Work Plan. This will occur after the five-year monitoring period.
Deed Restrictions	Due 60 days after the Trustees approved the Restoration Completion Report.
Quarterly Progress Reports	The 15th day of January, April, July, and October for the preceding quarter, unless the due date is modified or the requirement is waived by the Trustees
Annual Monitoring Report	Due each year in accordance with the schedule provided in the deed restrictions.

Deliverables will be submitted via electronic mail to the individuals at the addresses specified below, unless those individuals or their successors give notice of a change in writing:

- Deborah Millsap, U.S. Fish and Wildlife Service, deborah_millsap@fws.gov
- Brian Tucker, Ohio EPA, brian.tucker@epa.oh.gov

Attachment 1



The Wilderness Center – Lash's Bog Enhancement and Restoration Project

I. Purpose

This Scope of Work describes the requirements for the Lash's Bog Enhancement and Restoration Project. This project will restore and enhance wetlands and adjacent forested buffer habitat within the 40-acre Lash's Bog preserve owned by The Wilderness Center ("TWC"), located in Sugar Creek Township, Stark County, Ohio. The Consent Decree requires Dover Chemical Corporation ("Settling Defendant") to develop a Restoration Work Plan to implement this project, which will be submitted to the Trustees for review and approval.

II. Project Requirements (General)

This project requires Settling Defendant to enhance and restore at least 15 acres owned by TWC within five years of the Effective Date of the Consent Decree. This project will include enhancement through the removal of invasive species and supplemental native species plantings. The key restoration tasks include the treatment/removal of invasive reed canary grass (*Phalaris arundinacea*) and additional invasive species control efforts (primarily autumn olive, *Elaeagnus umbellata*) within the adjacent forested buffer at the Lash's Bog Preserve as shown in Attachment 2. Settling Defendant shall enter into a consulting agreement (to be approved by the Trustees) with TWC requiring the latter to be responsible for the long-term ownership and care of the property, subject to restrictive deed language to be added by Settling Defendant and TWC, which will be subject to review and approval by the Trustees. Settling Defendant is responsible for ensuring the execution of the restrictive deed language, which will also be subject to approval by the Trustees. The Settling Defendant will: 1) implement management of invasive plant species in the bog through herbicide applications, manual and/or mechanical plant removal, and planting of native wetland and riparian species; 2) implement a five-year invasive species management program.

III. Restoration Work Plan Requirements (Specific)

The Settling Defendant's proposed Restoration Work Plan for this project will include:

A. Topographic map(s) showing the location of the property or properties to be consolidated into this project. Maps will include species types (including invasive species) at the beginning of the restoration, and will outline the planned restoration areas, including planting locations and lists of native species to be used. The Wilderness Center will be consulted during in the drafting of the Restoration Work Plan and at other appropriate points during the restoration.

B. The total acreages of each property, as well as an estimate from aerial photographs and GIS, or other mapping software, of the acreages of various habitat types existing on each property.

C. A description and/or map of the current ecological value and natural resource services of each property and the improvements that are expected from the restoration project. Ecological values and natural resource services may include, but are not limited to, nesting habitat for migratory and local birds and improved wetland habitat for amphibians.

D. A description of wetlands and other features on the property that will be enhanced through restoration actions, such as control of exotic and/or invasive species and establishment of native plant species.

E. A description of trash and/or debris, if any, on the Property and a plan for removal of such.

F. An implementation schedule.

G. Detailed plans for:

1. The locations, materials, and methods for removal of exotic and/or invasive species throughout the defined 15 acres of restoration area.

2. Planting of native species of plants and shrubs that the Trustees deem adequate to enhance the existing emergent wetland habitat. This includes maps of locations for native plantings, a list of species to be used, and the number of plantings for each location.

3. Identification and removal of all debris and trash within the boundaries of the project area.

4. Maintenance and monitoring, including restoration performance measures to be implemented by TWC, for a five-year period.

The Settling Defendant or its contractor will obtain any permits required for implementation of the Lash's Bog Enhancement and Restoration Project.

IV. Progress Reports

During the period of the development and implementation of the Lash's Bog Restoration Work Plan, Settling Defendant will submit brief (1 to 2 pages) quarterly progress reports describing the status of the project. The Progress Report for each preceding quarter will be submitted by the 15th day of January, April, July, and October. The Progress Reports will include:

A. Activities conducted during the period.

B. Problems encountered during the period.

C. Schedule variances and corrective actions, as necessary.

D. Status of any permits and applications.

E. Projected activities planned for the next quarter.

V. Annual Monitoring Reports

TWC will prepare and submit a brief (*e.g.*, 1 to 2 page) annual report documenting the status of the property and consistency with the deed restrictions executed as part of this project. The annual report will include:

A. Property name and address.

B. Summary of any observations made during the annual inspection, including photographs or other pertinent information.

C. Documentation of any potential breaches of the terms of the deed restrictions and proposed corrective actions.

D. Summary of any land transfer or sale of property, including the name of the new landowner.

E. Discussion of any proposed restoration or habitat enhancement activities considered for the property.

VI. Deliverables

The following deliverables will be generated and submitted to the Trustee representatives for approval as per the schedule below.

DELIVERABLE (UNLESS WAIVED BY THE TRUSTEES)	DUE DATE
Restoration Work Plan	Due 150 days after the Effective Date of the Consent Decree.
Restoration Completion Report	In accordance with the schedule provided in the approved Restoration Work Plan. This will occur after the five-year monitoring period.
Deed Restrictions	Due 60 days after the Trustees approved the Restoration Completion Report.
Quarterly Progress Reports	The 15th day of January, April, July, and October for the preceding quarter, unless the due date is modified or the requirement is waived by the Trustees
Annual Monitoring Report	Due each year in accordance with the schedule provided in the deed restrictions.

Deliverables will be submitted via electronic mail to the individuals at the addresses specified below, unless those individuals or their successors give notice of a change to in writing to Settling Defendant and The Wilderness Center:

- Deborah Millsap, U.S. Fish and Wildlife Service, deborah_millsap@fws.gov
- Brian Tucker, Ohio EPA, brian.tucker@epa.oh.gov

Attachment 2 – Map of Lash's Bog Area

Figure 2. Invasive treatment areas for Lash's Bog. Estimated 7 acres impacted by reed canarygrass and ~8 acres degraded by autumn olive and other non-native upland species (Minimum restoration area of 15 acres).

Sugar Creek Habitat Conservation Project

I. Purpose

This Scope of Work describes the requirements for the Sugar Creek Habitat Conservation Project. The Consent Decree requires Dover Chemical Corporation ("Settling Defendant") to place Environmental Covenants on two properties adjacent to Sugar Creek that are owned by the Settling Defendant to protect approximately 25.28 acres of Sugar Creek habitat in perpetuity. The proposed Environmental Covenants will be submitted to the Trustees for their review and approval prior to recording with the Tuscarawas County Auditor.

II. Project Properties

The project area includes approximately 25.28 acres adjacent to Sugar Creek.

Location- Permanent Parcel # 10-00297-000 10.36 acres
Location- Permanent Parcel # 10-00298-000 14.92 acres

The Sugar Creek Habitat Conservation Project includes the following:

A. Within one year of the Effective Date of the Consent Decree, Settling Defendant will place and maintain Environmental Covenants on approximately 25.28 acres adjacent to Sugar Creek in Tuscarawas County, Ohio. This land is undeveloped and a legal restriction will be put in place to prevent any future development.

B. The Settling Defendant will secure Environmental Covenants, in a form approved by the Trustees, protecting that land in perpetuity.

C. Long-term ownership and care of the property will be the responsibility of the Settling Defendant, requiring the conservation and long-term management of the property subject to the terms of the Environmental Covenants.

The Sugar Creek Habitat Conservation project will meet specific requirements, as provided below.

III. Sugar Creek Habitat Conservation Project Requirements (General)

The Settling Defendant will prepare and submit for review and approval a Current Conditions Report containing the information required by the Trustees, including:

A. The location of the properties including the natural features and any existing structures and built infrastructure.

B. The total acreages of each property, as well as an estimate from aerial photographs and GIS, or other mapping software, of the acreages of various habitat types at each property.

C. A brief description of the ecological value of the Property and natural resource services provided by the properties.

D. A brief description of wetlands and other natural features on the properties that will be protected through the placement of Environmental Covenants.

E. A brief description of existing land use and permitted activities of the landowner.

IV. Sugar Creek Habitat Conservation Project Requirements (Specific)

In addition to the General Requirements described above, the Sugar Creek Habitat Conservation project will include:

A. Draft language for the proposed Environmental Covenants that will be reviewed and approved by the Trustees before finalizing the agreement with the Settling Defendant.

B. Schedule, at the convenience of the Settling Defendant and the Trustees, an inspection of each property proposed for the Project.

C. Conduct a licensed survey of each property, if necessary, and prepare a final draft of the proposed Environmental Covenants specifying the areas to be protected and rights reserved by the Settling Defendant.

D. Conduct an annual inspection of each property entered into this project to verify the terms of the covenant are being satisfied by the Settling Defendant and prepare an annual report documenting the status of the Environmental Covenants.

E. Notify the Trustees of any breaches in the terms of the Environmental Covenants and communicate the progress of any corrective actions to return the properties into compliance with the Environmental Covenants.

V. Annual Monitoring Reports

The Settling Defendant will prepare and submit a brief (1 to 2 page) annual report documenting the status of each Environmental Covenant entered into as part of this project. The annual report will be submitted each year in accordance with the schedule provided in each Environmental Covenant and will include:

A. Property name and address, as shown in the Environmental Covenants.

B. Summary of any observations made during the annual inspection, including photographs or other pertinent information.

C. Documentation of any potential breaches of the terms of the Environmental Covenants and proposed corrective actions.

D. Summary of any land transfer or sale of property, including the name of the new landowner.

E. Discussion of any proposed restoration or habitat enhancement activities considered for each property.

VI. Deliverables

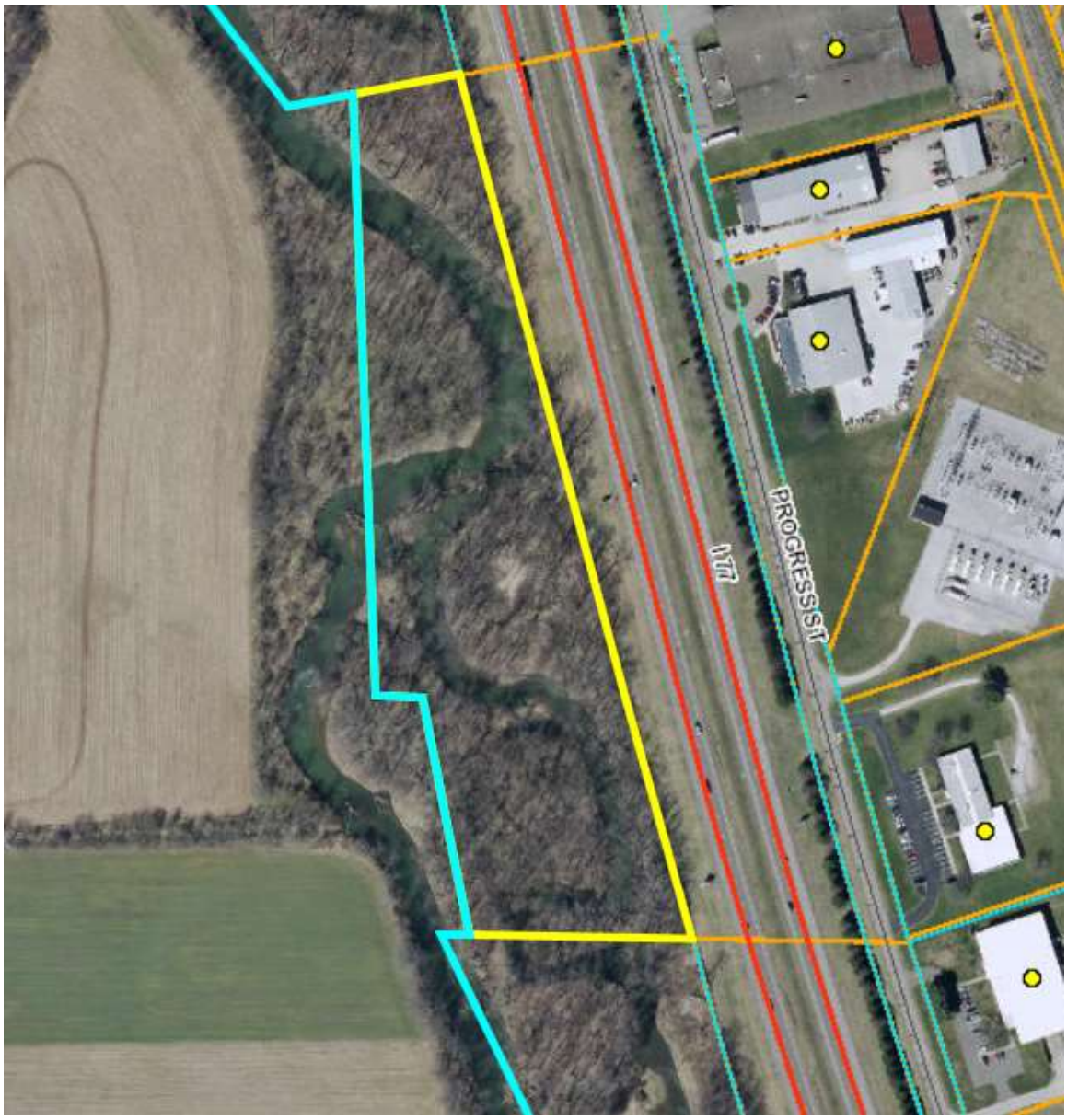
The following deliverables will be generated and submitted to the Trustee representatives for approval as per the schedule below.

DELIVERABLE (UNLESS WAIVED BY THE TRUSTEES)	DUE DATE
Current Conditions Report for Each Property Under Consideration	Due 60 days after the Trustees have conducted a site visit and provided notice to proceed but not fewer than 150 days after the Effective Date of the Consent Decree
Draft Environmental Covenants	Due 30 days after the Trustees approved the Current Conditions Report.
Annual Monitoring Report	Due each year in accordance with the schedule provided in the Conservation Easement.

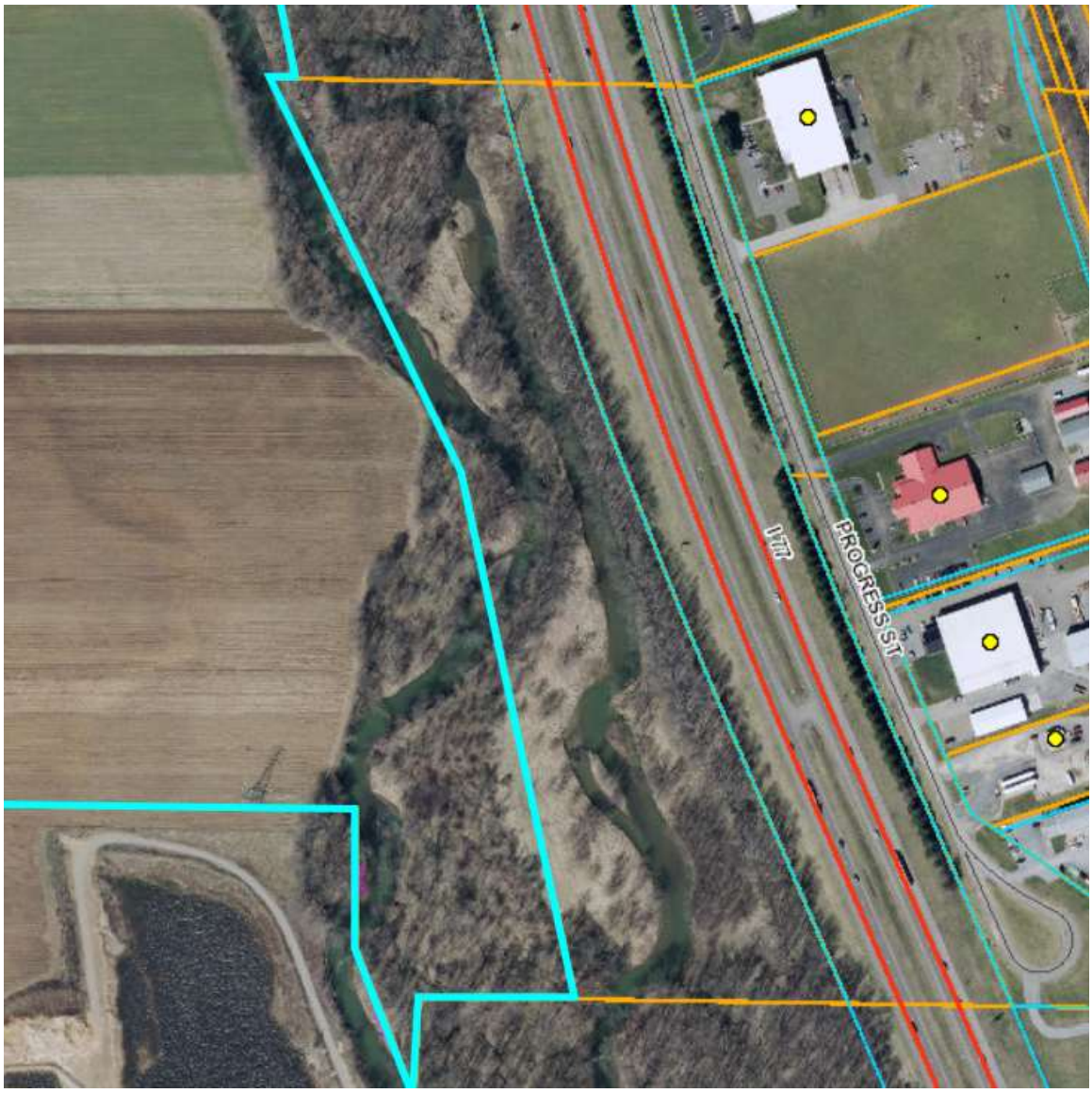
Deliverables will be submitted via electronic mail to the individuals at the addresses specified below, unless those individuals or their successors give notice of a change to Settling Defendant in writing:

- Deborah Millsap, U.S. Fish and Wildlife Service, deborah_millsap@fws.gov
- Brian Tucker, Ohio EPA, brian.tucker@epa.oh.gov

Attachment 1 – Parcel # 10-00297-000 (10.36 Acres)



Attachment 2 – Parcel #10-000298-000 (14.92 Acres)



Western Reserve Land Conservancy – Eastern Hellbender Project

I. Purpose

This Scope of Work describes the requirements for the Western Reserve Land Conservancy – Eastern Hellbender Project. This project will protect at least 170 acres of critical stream and riparian habitat of the Eastern Hellbender salamander, while also supporting groundwater recharge. The Consent Decree requires Dover Chemical Corporation ("Settling Defendant") to work with the Western Reserve Land Conservancy ("WRLC") to implement the requirements of this project.

II. Project Requirements (General)

This project requires Settling Defendant to ensure the protection of a minimum of 170 acres within five years of the Effective Date of the Consent Decree. WRLC will identify and assess specific parcels adjacent to Little Beaver Creek, Yellow Creek, Cross Creek and/or Captina Creek. Following preliminary discussions with the landowners, WRLC will visit the proposed location(s) and determine whether to enter into negotiations with the landowners. WRLC will then, at the convenience of the landowners and Trustees, schedule a Trustee inspection of each property proposed for the project. If the Trustees authorize WRLC to continue negotiations, WRLC will use a Trustee-approved template Conservation Easement document to negotiate a proposed Conservation Easement with the landowners. Once WRLC and the landowners reach an agreement in principle, WRLC will draft a Current Conditions Report (described below) for the property. WRLC will provide the draft Conservation Easement and Current Conditions Report for each property to the Trustees for review and approval. Following approval by the Trustees of each proposed property and Conservation Easement, Settling Defendant shall fund and ensure the execution of the Conservation Easement. WRLC shall hold the Conservation Easements and shall have primary responsibility for the long-term enforcement of the land use restrictions provided in the Conservation Easements, with the Trustees also having enforcement authority.

III. Project Requirements (Specific)

A. The Current Conditions Report will include:

1. The location of the Property including the natural features, and any existing structures and built infrastructure.

2. The total acreages of each Property, as well as an estimate from aerial photographs and GIS, or other mapping software, of the acreages of various habitat types at each property.

3. A description and/or map of the ecological value of and natural resource services provided by the Property. Ecological values and natural resource services may include, but are not limited to, wetland habitat for Hellbender salamander populations and nesting habitat for migratory and local birds.

4. A description of surface water, wetlands, and other natural features on the Property that will be protected through the placement of the Conservation Easement.

5. A description, including a map of existing and future land use(s) and permitted activities of the landowner, including delineation of any areas used for farming, maple sugaring, residential areas or other approved activities.

B. In addition to the General Requirements described above, Settling Defendant will ensure that WRLC:

1. Conducts a licensed survey of each property, if needed, and includes a map specifying areas to be protected and rights reserved by the landowner with each proposed Conservation Easement that is submitted to the Trustees for approval.

2. Conducts an annual inspection of each property entered into this project to verify the terms of the Conservation Easement are being satisfied by the landowner and prepare an annual report (described below) documenting the status of the Conservation Easement.

3. Notifies the Trustees and Settling Defendant of any breaches in the terms of the Conservation Easements and communicates the progress of any corrective actions to return the property into compliance with the Conservation Easement.

IV. Annual Monitoring Reports

WRLC will prepare and submit a brief (*e.g.*, 1 to 2 page) annual report documenting the status of each Conservation Easement entered into as part of this project. The annual report will be due each year in accordance with the schedule provided in the Conservation Easement and will include:

A. Property name and address, as shown in the Conservation Easement.

B. Summary of any observations made during the annual inspection, including photographs or other pertinent information.

C. Documentation of any potential breaches of the terms of the Conservation Easements and proposed corrective actions.

D. Summary of any land transfer or sale of property, including the name of the new landowner.

E. Discussion of any proposed restoration or habitat enhancement activities considered for the property.

V. Deliverables

The following deliverables will be generated and submitted to the Trustee representatives for approval as per the schedule below.

DELIVERABLES (UNLESS WAIVED BY THE TRUSTEES)	DUE DATE
Draft Conservation Easement	Due 90 days after the Trustees visit the property and authorize WRLC to proceed with negotiations.
Current Conditions Report for Each Property Under Consideration	Due 90 days after the Trustees visit the property and authorize WRLC to proceed with negotiations.
Annual Monitoring Report	Due each year in accordance with the schedule provided in the Conservation Easement.

Deliverables will be submitted via electronic mail to the individuals at the addresses specified below, unless those individuals or their successors give notice of a change to Settling Defendant and WRLC in writing:

Deborah Millsap, U.S. Fish and Wildlife Service, deborah_millsap@fws.gov
Brian Tucker, Ohio EPA, brian.tucker@epa.oh.gov

Attachment 1 – Map of the Eastern Hellbender Protection Project

COLUMBIANA, JEFFERSON & BELMONT COUNTIES

Eastern Hellbender Protection Project

Western Reserve Land Conservancy is working to protect critical Eastern Hellbender (Cryptobranchus alleganiensis alleganiensis) habitat in the Ohio River drainage of Eastern Ohio. The Eastern Hellbender is the largest salamander species in the United States and is currently listed as an Endangered species in Ohio by the Ohio Department of Natural Resources.

Historically the Hellbender was found throughout major tributaries of the Ohio River drainage; however, their habitats have shown sharp declines over the last century due to habitat destruction caused by sedimentation, removal of rocks from streams, dams, and the impacts of fossil fuel extraction.

- **Protect** Eastern Hellbender breeding habitat.
- **Located** along Little Beaver Creek, Yellow Creek, Cross Creek, & Captina Creek.
- **Includes** conservation easements and land acquisition.

This program seeks to protect critical habitat through the fee acquisition of key habitat parcels and the purchase of conservation easements along the remaining Hellbender streams in eastern Ohio. This program will support the recovery efforts led by Ohio Hellbender Partnership to reintroduce this species to streams along the Flushing Escarpment in eastern Ohio.

Appendix B: Conservation Easement Template

CONSERVATION EASEMENT

This Conservation Easement (hereinafter referred to as the "Easement") is made and entered into this ____ day of _____, 20XX, by [*Insert Grantor's name(s)*], whose address is [*Insert full address*] (hereinafter referred to as "Grantor(s)"), and the [*Insert Grantee's name*], an Ohio nonprofit corporation, whose address is [*Insert full address*], together with its successors and assigns, (hereinafter referred to as "Grantee"). The Grantor and the Grantee are hereinafter collectively referred to as the "Parties." The terms Grantor and Grantee as used herein include heirs, successors and assigns of each.

This is an agreement for the granting of a conservation easement by Grantor and the monitoring, reporting, and enforcement of such Easement by Grantee. Grantee agrees to monitor, report and enforce the Easement in perpetuity.

RECITALS

A. Conserved Land

WHEREAS, Grantor is the owner in fee simple of approximately [*insert property acreage*] of real property located at [*insert full address, including county and parcel Nos*] (hereinafter referred to as the "**Conserved Land**"), legally described on Exhibit A and further described and depicted in a Baseline Documentation Report, designated Exhibit B, with the Property Identification map of Exhibit B graphically depicting the Conserved Land, both exhibits are attached hereto and made a part hereof; and

WHEREAS, the United States Fish and Wildlife Service ("USFWS") and the Ohio Environmental Protection Agency ("OEPA") (collectively referred to herein as "Trustees") are responsible for overseeing the protection of natural resources that have been impacted by the release of hazardous substances and have therefore secured through consent decree the funding necessary to acquire conservation easements on properties that possess valuable natural resources worthy of permanent protection; and

WHEREAS, the Conserved Land is such a property and now the subject of this purchased conservation easement; and

WHEREAS, the Conserved Land possesses significant scenic, natural, agricultural, and open space values (collectively, the "**Conservation Values**") of great importance to Grantor, Grantee, to the residents of _____ Township, _____ County, and to the State of Ohio; and

WHEREAS, the Conserved Land is located within Grantee's service area and has substantial value as a scenic, natural, agricultural, and educational resource in its present state as a natural, scenic, wooded and open area, constituting a natural habitat for plants and wildlife; and

WHEREAS, the Conserved Land contains approximately _____ linear feet of _____, a tributary to the _____ River; and

***WHEREAS**, the preservation of the Conserved Land is consistent with goals outlined in the Farmland Protection Policy Act, P.L. 97-98, Section 2 [7 USC 4201], in which "Congress finds that the Nation's farmland is a unique natural resource and provides food and fiber necessary for the continued welfare of the people of the United States," and that "the Department of Agriculture and other Federal agencies should take steps to assure that the actions of the Federal Government do not cause United States farmland to be irreversibly converted to nonagricultural uses"; and*

***WHEREAS**, the preservation of the Conserved Land is consistent with goals to protect farmland contained in the Ohio Farmland Protection Policy that directs state agencies to take the protection of productive farmland into consideration when they make policy decisions affecting land acquisition and development; and*

***WHEREAS**, the Conserved Land produces food and fiber that enters into commercial food supply markets; and*

***WHEREAS**, the Conserved Land consists in part of open pasture land, which part as described and depicted in Exhibit B is herein called the "**Agricultural Zones**," the majority of whose soils are significant because of their fertility; and*

***WHEREAS**, the Conserved Land consists in part of woodlands, wetlands, and stream corridors, which part as described and depicted in Exhibit B is herein called the "**Natural Zones**," which provides wildlife habitat and acts as a groundwater recharge source for local aquifers, and provides relief from flooding and erosion to downstream properties; and*

WHEREAS, the Conserved Land has outstanding scenic qualities that can be enjoyed by the general public; namely, the open space and farm view from _____ in _____ Township, _____ County, Ohio; and

B. Baseline Documentation Report (BDR)

WHEREAS, Grantor intends to preserve the Conserved Land for conservation of natural resources, specifically, the Conserved Land conserves: [*include, for example, riparian and woodland features necessary for contiguous habitat corridors for waterfowl, migratory birds and pollution-intolerant fish or amphibian species, or prime agricultural soils*], together hereinafter referred to as "natural resource values" of the Conserved Land, and

WHEREAS, Grantor and Grantee recognize that the Baseline Documentation Report (BDR) (contained within Exhibit B hereto) describes the natural resource values, the physical

conditions, any existing physical structures, and the uses of the Conserved Land and provides an accurate representation of the current conditions (the "**Current Conditions**") as of the effective date of this Easement and that it is intended to serve as an objective information baseline for monitoring compliance with the terms of this Easement; and

WHEREAS, there are situated on the Conserved Land, within the ____ acre **Existing Building Area**, existing structures and other improvements, including, but not limited to, one single family residence, landscaping, a septic system, driveways and parking areas, a barn, and utilities and appurtenances associated with such improvements (all hereinafter referred to as the "**Existing Structures and Improvements**"), and further depicted and described in the Existing Building Area map in Exhibit B; and

WHEREAS, Grantor and Grantee intend that the Current Conditions on the Conserved Land are permitted to continue and to be maintained as they exist as of the date of the BDR or change through natural ecological succession.

C. Qualified Organization

WHEREAS, Grantee is a charitable organization authorized to acquire conservation easements in accordance with the provisions of Ohio Revised Code (ORC) Section 5301.69(B) and is a "qualified organization" under Section 170 of the U.S. Internal Revenue Code (IRC), as amended from time to time, and under the regulations promulgated thereunder, and

WHEREAS, Grantee is willing to accept this Easement subject to the reservations and to the terms, conditions and obligations set out herein; and

WHEREAS, consistent with consistent with provisions of the IRC requiring Grantee to have a commitment to protect the Conservation Purposes (as defined below) and the resources to enforce the restrictions contained in this Easement, (a) Grantee's obligation under this Easement entails a commitment to defend the ecological, scientific, and educational value, and the agricultural, natural scenic and open condition of the Conserved Land; (b) significant costs are necessary to carry out this commitment; and (c) accordingly, Grantor and Grantee have reached agreement on the payment by Grantor of a stewardship fee as described in paragraph [*Insert*] below.

D. Statement of Purpose

It is the purpose of this Easement to assure that the Conservation Values of the Conserved Land, as identified by the BDR in Exhibit B, will be preserved and that the entire Conserved Land will be retained forever *as: with respect to the Agricultural Zone (defined below), this Easement is granted for the purposes of preserving agricultural land as open space for the scenic enjoyment of the general public and/or pursuant to clearly delineated federal, state or local governmental*

*policies, which will yield a significant public benefit, as well as enabling the Agricultural Zone to remain (a) in agricultural use, whether for the raising and caring of various species of farm animals and/or for the production of food and fiber, by preserving and protecting in perpetuity its agricultural values, character, use and utility, and to prevent any use of the Agricultural Zone of the Protected Property that would significantly impair or interfere with its agricultural value, character, use or utility; and (b) available in perpetuity for agricultural use by preserving and protecting its agricultural soils and agricultural viability and productivity; provided that, at the election of Grantor, all or a part of the Agricultural Zone shall be permitted to return to its natural state and condition during the course of undisturbed ecological succession. In the event that any portion of the Agricultural Zone is allowed to return to a natural state, it shall not be a violation under any provision of this Easement for Grantor to re-establish agricultural use even if re-establishment of such use requires the clearing of vegetation which would otherwise be prohibited; and with respect to the Natural Zone (defined below), this Easement is granted for the purposes of the (a) protection of a relatively natural habitat of fish, wildlife or plants, or similar ecosystems, and (b) preservation of open space and forest land, together with the right of visual access to and a view of the Natural Zone by the general public in its scenic, relatively natural and predominantly undeveloped, wooded and open condition, which will yield a significant public benefit. The Agricultural Zone and Natural Zone purposes described herein shall be referred to collectively as the "**Conservation Purposes**".* The Conserved Land shall be permitted to be used and maintained in accordance with the Current Conditions identified in the BDR. Any use of the Conserved Land that will significantly impair or interfere with the Conservation Values of the Conserved Land or that is inconsistent with the Conservation Purposes of this Easement shall be prohibited.

Now therefore, for and in consideration of the premises and the foregoing recitations and other good and valuable consideration, and in consideration of the mutual promises, covenants, conditions, restrictions, and obligations contained herein pursuant to the laws of the State of Ohio and the United States, Grantor does hereby voluntarily grant, give and convey with general warranty covenants unto Grantee its successors and assigns, a perpetual [*agricultural and conservation easement*], as defined in Sections 5301.67 through 5301.70 of the Ohio Revised Code, and which is intended to meet the requirements of a Qualified Conservation Contribution under the IRC, with respect to the Conserved Land. The Easement is subject to the following terms and conditions:

TERMS AND CONDITIONS OF THE EASEMENT

1. ***The Conserved Land*** *is comprised of two use zones:*

1.1.1. Agricultural Zone – the area of the Conserved Land within which uses consistent with fulfilling the agricultural purposes of this Easement are permitted.

1.1.2. *Natural Zone – the area of the Conserved Land within which uses consistent with fulfilling the natural purposes of this Easement are permitted.*

2. **Retained and Reserved Rights**. Grantor retains for itself, and for its beneficiaries, successors, and assigns, all rights accruing from Grantor's ownership of the Conserved Land that are not prohibited in this Easement or inconsistent with the maintenance of the Conservation Values of the Conserved Land, including: the right of access to, and quiet enjoyment of, all portions of the Conserved Land; the right to exclude any member of the public from trespassing on the Conserved Land; the right to sell or otherwise transfer the Conserved Land subject to the terms hereof; and the right to engage in recreational activity that is conducted so as not to compromise the Conservation Values of the Conserved Land. This Easement shall not be construed as a dedication of the Conserved Land for public use, nor is the Grantee authorized by this Easement to make any use of the Conserved Land other than as provided herein. Any and all activities permitted under this Easement shall be conducted in a manner which protects and does not harm the Conservation Values of the Conserved Land. In addition to the foregoing, and notwithstanding anything else contained herein, the following rights are expressly reserved to the Grantor:

2.1. **Conveyance.** Grantor may sell, give, mortgage, lease or otherwise convey the Conserved Land, provided that such conveyance is subject to this Easement and written notice is provided to the Grantee and Trustees in accordance with Paragraph 10 of this Easement.

2.2. **Right to Privacy**. Grantor retains the right to privacy and the right to exclude any member of the public from trespassing on the Conserved Land. Notwithstanding this provision, Grantee shall have the right to inspect the Conserved Land and enforce the provisions of this Easement as set forth herein.

2.3. **Fences**. Grantor may clear, repair, and replace existing fences, and build new fences on the Conserved Land for purposes of trespass prevention and reasonable and customary management of livestock and wildlife.

2.4. **Use of Fertilizers and Herbicides**. *Grantor reserves the right to use natural and chemical fertilizers and herbicide controls within the Agricultural Zone and wetland approved herbicides in the Natural Zone; provided such use is in compliance with all applicable federal, state and local statutes and regulations, but only to the extent such*

use does not have an adverse impact on the Conservation Values of the Conserved Land and is otherwise consistent with the Conservation Purposes. Chemical fertilizers and non-wetland approved herbicide controls are prohibited in the Natural Zone unless expressly approved by the Trustees.

2.5. **Tree Removal**. Grantor reserves the right to remove (i) from anywhere on the Conserved Land dead, diseased or materially damaged trees and trees that pose a danger to human life or neighboring properties, (ii) trees from areas within which existing trails are being widened or new trails created (as provided in subparagraph 2.11), (iii) trees pursuant to and in accordance with the provisions of subparagraph 2.14, and (iv) trees from anywhere within the Agricultural Areas in furtherance of the Conservation Purposes as described above for the Agricultural Areas; provided, however, that any such removal does not impair significant conservation interests as described in the IRC.

2.6. **Existing Structures and Improvements**.

2.6.1. Notwithstanding the terms, conditions and restrictions expressed below, Grantor and Grantee agree that the Existing Structures and Improvements shall be permitted to remain on the Conserved Land and be used by Grantor, and Grantor's successors and assigns, in substantially the same manner as they are being used as of the effective date of this Easement. In addition, new structures and amenities related to the use of the Conserved Land for [residential, recreational and/or agricultural] purposes (collectively "New Structures"), may be constructed within the Existing Building Area, so long as (A) there is never more than one single-family residence and one septic system located within the Existing Building Area, and (B) all New Structures are constructed within the Existing Building Area.

2.6.2. The Existing Structures and Improvements and any New Structures may be maintained, remodeled, resurfaced, regraded, removed, expanded and replaced; provided that (A) any removal of any of the Existing Structures and Improvements or New Structures shall be promptly followed by Grantor either (1) grading and restoring the site of such removed structure(s) and/or improvement(s) to a vegetated state and removing from the Conserved Land all materials resulting from such removal, or (2) replacing the same; and (B) expansion of the Existing Structures and Improvements and any New Structures shall (1) be confined to and remain within the Existing Building Area, and (2) conform to all governmental regulations then in effect.

2.7. **Reserved Building Area**.

2.7.1. Creation. Notwithstanding anything to the contrary contained in this Grant, Grantor reserves the right, after notice to Grantee, to create a _____ acre house lot as depicted in the Reserved Building Area map of Exhibit B, which, notwithstanding the prohibition in subparagraph 4.7 herein, may be subdivided from the remainder of the Conserved Land but not transferred separately from the Conserved Land (the "Reserved Building Area"). If at the time Grantor exercises its right to create the Reserved Building Area the minimum lot size required by local zoning and/or health department regulations is greater than the acreage specified above, the Reserved Building Area may be increased to, but may not be greater than, such minimum lot size; provided, however, that the cleared area within the Reserved Building Area shall not be increased to greater than ___ acres. Upon exercise of the right reserved herein, this Easement may be amended for the purpose of describing and depicting the exact location and size of the Reserved Building Area.

2.7.2. Clearing, Landscaping and Grading. The Reserved Building Area may be cleared, landscaped or graded by Grantor; provided that the size of any such clearing, landscaping, and grading shall be conducted in a manner that is not detrimental to water quality, significant natural habitats, or the scenic qualities of the Conserved Land, and be otherwise consistent with the Conservation Purposes.

2.7.3. Construction. Grantor may construct, within the Reserved Building Area, a single residential dwelling, utilities (including a single septic system), outbuildings, landscaping, and other improvements typically associated with a single-family residence (the "New Residential Improvements"). Utilities and driveways to serve the Reserved Building Area may be constructed within the Reserved Building Area and across the Conserved Land as is reasonably necessary to access the Reserved Building Area.

2.7.4. Siting Approval. The siting of the Reserved Building Area and of all New Residential Improvements pursuant to this subparagraph 2(c), including the siting of buildings, driveway alignments, tree clearing, septic and utility placement, and wetland and stream fillings or crossings, shall be subject to (A) all governmental regulations in effect at the time of construction, and (B) the prior written approval of Grantee.

2.7.5. Maintenance, Renovations, etc. Once constructed within the Reserved Building Area, the New Residential Improvements thereon may, from time to time, be maintained, remodeled, resurfaced, regraded, removed, expanded and replaced; provided that any (A) removal of any of the New Residential Improvements shall be promptly followed by Grantor either grading and restoring the site of such removed New Residential Improvements to a vegetated state and removing from the Conserved

Land all materials resulting from such removal, or promptly replacing same, and (B) expansion of the New Residential Improvements shall be confined to and remain within the Reserved Building Area and conform to all governmental regulations then in effect.

2.7.6. Easement Terms Apply. Other than as excepted in this subparagraph 2.7, uses of and activities on the Reserved Building Area are subject to the remaining terms and provisions of this Easement.

2.8. **Utility Services and Septic Systems**. With sixty (60) days advance notice provided to the Grantee and approval of the proposed project by Grantee, Grantor may install, maintain, repair, replace, remove, and relocate electric, gas, geothermal, water facilities, sewer lines and/or other public or private utilities, including telephone or other communication services over or under the Conserved Land for the purpose of providing electrical, gas, water, sewer, or other utilities to serve the Existing Structures and Improvements, New Structures, the New Residential Improvements (collectively, the Permitted Improvements") described herein. Grantor may also grant easements over and under the Conserved Land for such purposes. Grantor may maintain, repair, replace, install, remove, or improve a septic system(s) or other underground sanitary system for the benefit of any of the Permitted Improvements. The utilities and sanitary system described above shall be collectively referred as the "Infrastructure Improvements"). Upon receipt of advance notice, Grantee will review Grantor's proposal and choice of location(s) for the Infrastructure Improvements, and in Grantee's reasonable discretion determine whether the proposal would be consistent with the Conservation Values of the Conserved Land, and the Conservation Purposes of this Easement. If Grantee determines that the proposal would be inconsistent with the Conservation Values of the Conserved Land, or the Conservation Purposes of this Easement Grantee shall work with Grantor to determine a reasonable alternative location for such Infrastructure Improvements.

2.9. **Road Construction**. Grantor may construct and maintain unpaved roads that may be reasonably necessary and incidental to maintaining the Infrastructure Improvements, the Reserved Building Area Improvements (defined below) and for carrying out the uses permitted on the Conserved Land by this Easement. Notwithstanding the foregoing, existing paved roads on the Conserved Land as of the date of this Easement may be re-paved by Grantor within the existing roadway as necessary to maintain the same following the execution of this Easement.

2.10. **Water**. Grantor may use any water rights necessary and sufficient to maintain the Conserved Land and Permitted Improvements herein provided that Grantee or Trustees do not find that such use impairs the Conservation Values intended to be conserved by this Easement.

2.11. **Trails**. Grantor may maintain and/or establish unpaved trails, so long as the Conservation Values of the Conserved Land are maintained. Existing trails may be widened and new trails created with the express approval of the Trustees. Notwithstanding the foregoing, existing paved walking trails on the Conserved Land as of the date of this Easement may be re-paved by Grantor as necessary to maintain the same following the execution of this Easement.

2.12. **Hunting**. Grantor reserves the right to hunt, and to permit others to hunt, including extending such right to the public on the Conserved Land, provided that such hunting is conducted by (i) individuals possessing appropriate licensing or other required permits, (ii) in compliance with all federal, state and local hunting laws and regulations, and (iii) where hunting access is provided to the public, access must be limited as necessary so that such activity does not degrade the Conservation Value of the Conserved Land or is otherwise consistent with the Conservation Purposes of this Easement.

2.13. **Agricultural Uses**. Grantor reserves the right to continue within the Agricultural Zone all lawfully permitted manner of agricultural use and enjoyment of the existing farm structures and grounds of the Agricultural Zone including, but not limited to:

2.13.1. the construction, maintenance, repair and restoration of paths and fences;

2.13.2. the installation, maintenance and repair of drainage tiles and swales, including grass waterways, and the right to repair, maintain and install drainage systems including catch basins, drainage fields, and the like within the Agricultural Zone, and as reasonably necessary for agricultural uses and as approved in advance by Grantee, within the Natural Zone;

2.13.3. the right to spread manure, to remove trees (including trees and limbs encroaching on the Agricultural Zone), grass or other vegetation;

2.13.4. the right to place soil or fill or to excavate or change the general topography of the Agricultural Zone as reasonably necessary or desirable for agricultural uses, including

the creation of new ponds, so long as such excavation and topography manipulation does not interrupt the flow of existing natural water courses;

2.13.5. the right to perform routine maintenance, landscaping, horticultural activities and upkeep;

2.13.6. the right to construct fences and temporary agricultural structures (which are defined as structures that are not permanently attached to the ground and do not contain a foundation or an impermeable surface covering the ground), such as run-in sheds and hoop houses; provided that at no time shall the aggregate square footage of the footprints of such temporary agricultural structures exceed 7,500 square feet, and once constructed, such temporary agricultural structures may be maintained, repaired and restored; and

2.13.7. the right to keep horses and livestock for agricultural and recreational activities.

Provided, however, in exercising the rights described above, Grantor shall take reasonable measures to limit the impact on the Conservation Values of the Conserved Land and conduct such uses and activities within the Agricultural Zone in a manner that will remain consistent with the Purposes of this Easement.

2.14. **Maple Sugaring**. Grantor reserves the right to tap maple trees on the Conserved Land and to collect sap from such trees for the purpose of converting maple sap into maple syrup by any methods utilized by the maple syrup industry ("Sugaring"); provided, however, that such activities do not impair conservation interests as described in this Easement. Grantor may construct trails necessary for Sugaring, provided such trails shall be installed and maintained using Best Management Practices, including practices that reduce or prevent soil erosion, soil degradation, and habitat disturbance. Temporary structures directly associated with sap collection, such as small pole buildings commonly used to cover sap gathering tanks, may be constructed on the Conserved Land; however permanent structures, such as a sugarhouse, which are permanently attached to the ground and contain a foundation or impermeable surface covering the ground, are not permitted.

2.15. **Forestry Practices**. Grantor reserves the right to sustainably harvest trees as delineated on the BDR and maps within the Natural Zone, for commercial and non-commercial uses, including timber, crop tree release, firewood and other woodland management practices using prudent silviculture techniques, machinery, vehicles and

equipment and otherwise in accordance with a Woodland Stewardship Management Plan (the "Management Plan") and pursuant to a Timber Harvest Plan. Forested areas on the Protected Property shall be managed by Grantor to create and enhance healthy forests consistent with the purposes and pursuant to prudent silviculture techniques set forth in the Management Plan prepared for Grantor by a Professional Forester. For the purposes hereof, "Professional Forester" is defined as a State of Ohio Service Forester, a Certified Forester (certified through the Society of American Foresters), a member in good standing of the Association of Consulting Foresters, or a NRCS Technical Service Provider (or their successors or equivalents as of the date of the Management Plan), or other professional agreed to in advance by Grantee. The Management Plan shall be in the form of the Ohio Department of Natural Resources (ODNR) Division of Forestry Woodland Stewardship Management Plan template document (a copy of which has been provided to Grantor), or a substantially similar form subject to Grantee's prior approval, and shall describe in detail objective goals for any non-commercial harvesting activities, such as crop tree release and firewood production for use on the Conserved Land. The Management Plan shall be delivered to Grantee no less than 30 days prior to the commencement of any harvest activities on the Conserved Land, after which the Grantee shall have 30 days to approve, approve with modifications, or disapprove the Management Plan. Any subsequent updates or modifications to an approved Management Plan shall be submitted to the Grantee for review and are subject to approval, approval with modification, or disapproval by the Grantee. At least 15 days prior to any commercial harvest, Grantor shall provide Grantee with the current Management Plan and a written Timber Harvest Plan ("Harvest Plan") prepared by a Professional Forester. The Harvest Plan shall be in the form of the ODNR Division of Soil & Water Conservation's Timber Harvest Notice of Intent (NOI) and Timber Harvest Plan template document (a copy of which has been provided to Grantor), or substantially similar document subject to Grantee's prior approval. Grantee shall have 15 days to approve, approve with modifications or disapprove the Harvest Plan. Unless otherwise agreed to by Grantee, the Harvest Plan must include, at a minimum, the signatures of the Grantor, Professional Forester, and the logging company, as well as a summary of activities and practices intended to comply with all industry best management practices (BMPs) as of the time of the harvest, including guidelines found in the publication by The Ohio State University Extension Service entitled BMPs for Erosion Control for Logging Practices in Ohio (Bulletin 916), as may be amended or replaced from time to time. Harvesting activities and techniques such as "high grading" (taking the highest value/quality trees and leaving the lowest value/quality trees), "diameter limit cutting" (taking only the largest trees), and "clear cutting" (cutting all trees) are expressly prohibited hereunder unless consistent with the purposes for which

this Easement is granted, strongly recommended by the Professional Forester preparing the Harvest Plan, and approved in advance by Grantee. Grantor will preserve the Conserved Land in a manner consistent with a Farm Conservation Plan ("Conservation Plan") prepared in consultation with Natural Resource Conservation Service (NRCS) and a Woodland Stewardship Management Plan prepared in consultation with the Division of Forestry, Ohio Department of Natural Resources. However, Grantor may develop and implement a Conservation Plan that proposes a higher level of conservation and is consistent with the objectives of this Easement as stated in Paragraph 1 of this Easement. A copy of the plan or plan updates, shall be provided to the Grantee and Trustees at the time the plan is completed. Grantee shall have the right to enter the Conserved Land, at reasonable times, in order to monitor compliance with the Conservation Plan(s).

2.16. **Subsurface Oil and Gas Exploration**. Grantor reserves the right to allow for the subsurface exploration and extraction of oil and gas and similar substances from the Conserved Land provided that any such exploration and extraction is done from neighboring properties and there are no surface disturbances (e.g., drill pads, pipelines, tanks, water retention ponds, meters, access roads) upon the Conserved Land from any such activities.

2.17. **Total Impervious Surface Limitation**. Notwithstanding any other provision of this Easement authorizing the Permitted Improvements and/or the Infrastructure Improvements, the total combined footprint of all impervious surfaces resulting from Grantor's exercise of the right to install, construct, maintain, expand, or replace the Permitted Improvements and Infrastructure Improvements shall not exceed three percent (3%) of the total calculated area of the Conserved Land.

2.18. **General Authority provided to the Grantee by this Easement.** By granting this Easement, Grantor hereby generally grants to Grantee the right to (a) preserve and protect the Conservation Values of the Conserved Land; (b) post or clearly mark the boundaries of the Conserved Land, including any conserved natural resources, at reasonable boundary intervals; (c) to enter upon the Conserved Land as provided herein; (d) to prevent any activity on or use of the Conserved Land that is inconsistent with the Conservation Purposes of this Easement and to require the restoration of such areas or features of the Conserved Land that may be damaged by any inconsistent activity or use.

3. **Prohibited Uses/Restrictions.** Except to the extent that activities and uses are authorized in this Easement, any activity on or use of the Conserved Land inconsistent with the Conservation

Values of the Conserved Land, or with the Conservation Purpose of this Easement, is prohibited. *The Natural Zone shall be protected from any inconsistent agricultural, commercial, residential, or other inconsistent uses. The Agricultural Zone shall be protected from any inconsistent residential and/or other inconsistent uses.* Without limiting the generality of the foregoing, the following activities and uses are expressly prohibited throughout the Conserved Land:

3.1. **Structures and Commercial Use.** Except as otherwise provided herein, the Conserved Land shall be kept in its natural state [or agricultural state] and no new buildings, billboards, signs or other structures of any kind, either temporary or permanent, shall be placed or erected on the Conserved Land. Commercial use, including, but not limited to, a golf course, landfill or dump, or mobile home or trailer park is not permitted. For purpose of this paragraph 4.1 agricultural uses are not considered commercial. Signs which are consistent with the purpose of this Easement and whose placement and number do not diminish the Conservation Values of the conserved Land are permitted, including (1) educational signage: (2) signs stating the name and address of the Conserved land; (3) signs facilitating directions; and (4) signs identifying the Conservation Value of the Conserved Land and restricting access to the same.

3.2. **Filling, Excavation and Roads**. Subject to the Grantor's reservation of rights in Paragraph 2 of this Easement, there shall be no ditching, draining, filling, excavating, or removal of top soil, sand, gravel, or rock, minerals or other materials on or at the Conserved Land, nor any change in topography of the land in any manner, other than that caused by the forces of nature. Any existing roads or trails constructed as of the date of this Easement may continue to be maintained but any new trails or roads constructed on the Conserved Land after the date of this Easement must be constructed of pervious material. Notwithstanding the reservation of rights in Paragraph 2 of this Easement, no road or trail development, agricultural or forest management activities shall be performed within 100 feet of [***insert creek name***], with the exception of invasive species management including herbicide treatment (near aquatic use approved only), controlled burns, and or selective hand removal of invasive plant species. All trails and roads will be limited in scope and all trails and roads will be installed and maintained using best management practices to prevent soil erosion and other impacts on the Conserved Land. Any activities permitted by this subparagraph 4.2 shall not be detrimental to water quality, significant natural habitats, or the scenic qualities of the Conserved Land and shall be otherwise consistent with the Conservation Purposes and the Conservation Values.

3.3. **Utility Structures and Equipment.** Subject to Grantor's reservation of rights in Paragraph 2 of this Easement, there shall be no construction or placement on the Conserved Land of commercial, industrial, or municipal antennas, poles, towers, pipes, conduit lines, or other infrastructure intended for electric power, natural gas, petroleum products, sewage, drainage, telecommunications, or any other utilities; and no sale, transfer, or granting of any interest in the Conserved Land for such purposes.

3.4. **Mining/Extraction.** The mining or extraction of any mineral, including oil or gas, by any method that disturbs the surface of the Conserved Land is prohibited. Notwithstanding the foregoing, nothing herein shall prohibit the Conserved Land from being leased or otherwise committed as part of a drilling unit for oil and gas production, so long as any such lease or other commitment does not authorize or provide for activities, including but not limited to drilling pads, access roads, or surface pipelines, that will damage the surface of the Conserved Land in any manner that is inconsistent with the Purpose of this Easement, regardless of whether such impacts are temporary or permanent in nature.

3.5. **Habitat Disturbance**. Except as permitted in Grantor's exercise of the reserved rights retained in this Easement and for the purposes of promoting the growth and management of native vegetation no native trees, ground cover or other vegetation shall be removed from the Conserved Land.

3.6. **Dumping**. Except for leaves, mulch, wood chips and other similar materials typically used in the creation of compost ("Compost Material") generated on the Conserved Land or for Compost Material brought onto and used exclusively on the Conserved Land for [*agricultural and*] landscaping purposes in a manner compatible with the Purpose of this Easement, the Conserved Land shall at all times be kept free of garbage, waste, debris, ashes, Compost Material, trash, abandoned vehicles or parts, appliances, and machinery (unless necessary for performance of activities contemplated under this Easement on a temporary basis), hazardous or toxic substances, and placement of underground storage tanks on or in the Conserved Land..

3.7. **Motor Vehicles.** Use of motorized vehicles for recreation, including snow mobiles, all-terrain vehicles or other motorized vehicles, shall not be permitted on the Conserved Land. However, non-recreational motorized vehicles (e.g., road vehicles, tractors and other all-terrain vehicles) are permitted on the Conserved Land for maintenance, monitoring and management of the Conserved Land (including permitted trails and roads) and improvements thereon provided such vehicles are used in a manner consistent with the Conservation Purpose of this Easement. Any use of motorized vehicles on the Conserved Land shall not cause rutting or other damage to the surface of the Conserved Land which

could create the potential for erosion or contribute to other adverse impacts to the Conservation Values.

3.8. **Subdivision.** Except as may be otherwise provided in this Easement, (i) the parcel(s) presently constituting the Conserved Land shall not be divided, subdivided or transferred separately from the other; and (ii) any transfer of the Conserved Land must include all parcels.

3.9. **General Prohibition**. Each and every other activity, construction or use that is inconsistent with the Conservation Purpose of this Easement or which may endanger, adversely affect or impair the Conservation Values of the Conserved Land is prohibited.

4. **Ongoing Responsibilities of Grantor and Grantee**. Other than as specified herein, this Easement is not intended to impose any legal or other responsibility on the Grantee, or in any way to affect any existing obligation of Grantor as owner of the Conserved Land. In particular, but without limitation:

4.1. **Real Property Interest**. This Conservation Easement constitutes a real property interest immediately vested in Grantee binding upon Grantor and Grantee, their respective agents, personnel, representatives, heirs, assigns, and all other successors to them in interest, and shall continue as a servitude running with and burdening the Conserved Land in perpetuity.

4.2. **Taxes**. Grantor shall continue to be solely responsible for payment of all taxes and assessments levied against the Conserved Land, and is required to do so by the scheduled due date. If the Grantee is ever required to pay any taxes or assessments on its interest in the Conserved Land, or if Grantee determines that it should pay taxes or assessments in order to protect its interests, Grantor shall within ten (10) days of written demand reimburse Grantee for the amount of such taxes.

4.3. **Upkeep and Maintenance**. Grantor shall continue to be solely responsible for the upkeep and maintenance of the Conserved Land, to the extent it may be required by local, state and federal laws and regulations. The Grantee shall have no obligation for the upkeep and maintenance of the Conserved Land.

4.4. **Liability and Indemnification; Insurance**. Grantor and Grantee acknowledge and agree that Grantor retains the fee simple ownership of the Conserved Land and therefore Grantor controls day-to-day activities on, and access to, the Conserved Land, except for Grantee's limited rights to monitor the condition of the Conservation Values and to enforce the terms of this Easement. Grantor therefore agrees that general liability for risks, damages, injuries, claims or costs arising by virtue of Grantor's continued ownership, use, and control of the Conserved Land shall remain with

Grantor as a normal and customary incident of the right of property ownership. Accordingly, Grantor shall indemnify Grantee, its employees, agents and assigns against, and hold Grantee, its employees, agents and assigns, harmless from any and all loss, cost, claim, liability, or expense (including reasonable attorneys' fees) arising from or with respect to the Conserved Land and not caused by Grantee or its employees, agents or assigns. Grantor shall keep the Conserved Land insured with comprehensive general liability insurance in reasonable amounts (which insurance shall cover the contractual indemnity obligations of Grantor to Grantee hereunder) against claims for personal injury, death and property damage, cause Grantee to be named as an additional insured on such insurance policies, and provide evidence of such insurance to Grantee as of the effective date of this Easement and periodically thereafter as such insurance coverage is renewed or replaced. Such evidence shall be in the form of a certificate of insurance which (a) indicates that Grantee is an additional insured; and (b) requires written notice from the insurer to Grantee not less than 30 days before making a material change in or canceling such coverage.

5. **Enforcement Rights and Remedies of the Grantee**. In order to enforce the terms of this Easement, the Grantee shall have the following rights and remedies:

5.1. **Right to Enforce**. Notwithstanding anything to the contrary contained in this Easement, based on a shared interest in the conservation of the Conserved Land and the Conservation Values therein, Grantor agrees that the restrictions set forth in this Easement shall be for the mutual benefit of the OEPA and the USFWS, as the Trustees, and shall be enforceable by them to the extent that Grantee fails to enforce such restrictions or acts contrary to the Conservation Purpose of this Easement as determined by OEPA and/or USFWS. This Easement and the covenants and restrictions set forth herein shall not be amended, released, extinguished, assigned or otherwise modified without the prior written consent of the OEPA and the USFWS.

5.2. **Right to Enter and Inspect**. Grantee, or its duly authorized representatives, may enter the Conserved Land at all reasonable times, after not less than 24 hours written or telephone notice, for the purposes of inspecting the Conserved Land in order to further the objectives of and determine compliance with the terms of this Easement; provided that no such notice need be given prior to Grantee entering the Conserved Land under emergency circumstances. For the purpose of this provision, "emergency circumstances" shall mean that Grantee has a good-faith basis to believe that a violation of this Easement is occurring or is imminent. Grantee will enter and inspect the Conserved Land at least annually and subsequent to each inspection will provide a monitoring report to Grantor detailing Grantee's findings including all potential or apparent violations, if any, identified during such inspection. Additionally, Grantee will also provide Grantor with a copy of the status report that Grantee is required to submit to the OEPA and USFWS every five years documenting that the Conserved Land is being maintained in accordance with the Conservation Purpose of this Easement and reporting any concerns or violations

identified. Trustees may also enter the Conserved Land if, in the reasonable judgment of either party, it is necessary to protect the Conservation Values of the Conserved Land.

5.3. **Grantee's Approval and Withholding of Approval**. When Grantee's approval is required, Grantee shall grant or withhold its approval in writing within sixty (60) days of receipt of Grantor's written request therefor. In the case of withholding of approval, Grantee shall notify Grantor in writing with reasonable specificity of the reasons for withholding of Approval, and the conditions, if any, on which approval might otherwise be given. Failure of Grantee to respond in writing within such sixty (60) days shall be deemed to constitute written approval by Grantee of any request submitted for approval that is not contrary to the express restrictions hereof.

5.3.1. **Approval by Grantee of Certain Uses or Activities**. Grantor's exercise of certain Reserved Rights under paragraph 2 of this Easement shall be subject to the prior approval of Grantee. Grantor shall request such approval in writing and shall include therewith information identifying the proposed activity and the reasons for the proposed activity with reasonable specificity. Grantee's evaluation of the request shall generally take into account the criteria included at subparagraph 6.2.2, below, as they relate to the activity itself as well as to the site for the proposed activity, and Grantee's approval shall not be unreasonably withheld.

5.3.2. **Approval by Grantee of Sites**. The exercise of the right to construct structures, improvements or other surface disturbing activity shall be subject to the prior approval by Grantee of the site for such proposed activity. Grantor shall request such approval in writing and shall include therewith information identifying the proposed site with reasonable specificity, evidencing conformity with the requirements of the applicable paragraphs under which the right is reserved hereunder, and, when applicable, evidencing conformity with existing land use regulations. Grantee's approval, which shall not be unreasonably withheld, shall take into account the following criteria:

5.3.2.1. the extent to which use of the site for the proposed activity would impair the scenic qualities of the Conserved Land that are visible from public roads;

5.3.2.2. the extent to which use of the site for the proposed activity would destroy an important habitat or would have a material adverse effect on the movement of wildlife;

5.3.2.3. the extent to which use of the site for the proposed activity would impair water quality;

5.3.2.4. in the case of any proposal to build new structures or roads, the extent to which the scenic quality of the Conserved Land may be adversely impacted;

5.3.2.5. the extent to which the proposed activity or use of the site for the proposed activity would otherwise significantly impair the Conservation Values.

Grantor and Grantee shall cooperate and shall act in good faith to arrive at agreement on suitable sites in connection with any determinations that are necessary to be made by them (either separately or jointly) under this paragraph 6.2. Notwithstanding the foregoing, Grantee's approval of a proposed site or activity shall be withheld if the site for the proposed activity would interfere with or impair the Conservation Values of the Conserved Land.

5.4. **Notice to Grantee**. Following the receipt of Grantee's approval when required under subparagraph 6.2, and not less than thirty (30) days prior to the commencement of any use or activity approved under subparagraph 6.2, Grantor agrees to notify Grantee in writing of the intention to exercise such right. The notice shall describe the nature, scope, location, timetable, and any other material aspect of the proposed activity in sufficient detail to permit Grantee to monitor such activity. When such information was not provided to Grantee under the requirements of subparagraph 6.2, the notice shall also include information evidencing the conformity of such activity with the requirements of the applicable paragraphs under which the right is reserved hereunder, and, when applicable, evidencing conformity with existing land use regulations. At Grantee's sole discretion, Grantee may permit commencement of the activity less than thirty (30) days after receiving Grantor's written notice. Nothing in this paragraph shall diminish or limit Grantor's obligations under paragraph 10, with respect to Grantor's written notice to Grantee concerning a transfer of any interest in the Conserved Land.

5.5. **Breach**. Failure to secure such approval or give such notice as may be required by this paragraph 6.2 shall be a material breach of this Easement notwithstanding any other provision of this Easement and shall entitle Grantee to such rights or remedies as may be available under this Easement.

6. **Grantee's Remedies**. In the event of a violation of the terms of this Easement, Grantee shall give written notice to Grantor of such violation and demand corrective action sufficient to cure the violation and, if the violation involves damage to the Conserved Land resulting from any use or activity inconsistent with the Conservation Purposes, to restore the portion of the Conserved Land so damaged. If Grantor fails to cure the violation within 30 days after receipt of notice thereof from Grantee, or if the violation cannot reasonably

be cured within a 30-day period, Grantor fails to begin curing such violation within the 30-day period or, once having commenced a cure, fails to continue diligently to cure such violation until finally cured, Grantee may bring an action at law or in equity in a court of competent jurisdiction to enforce the terms of this Easement, to enjoin the violation *ex parte* if necessary, by way of temporary or permanent injunction, to recover from Grantor any damages to which it may be entitled for violation of the terms of this Easement or damage to any of the Conservation Values arising from such violation, including damages for diminished environmental values, and to require the restoration of the Conserved Land to the condition that existed prior to any such damage, without limiting Grantor's liability therefor. Grantee, in its sole discretion, may apply any damages recovered to the cost of undertaking any corrective action on the Conserved Land. If Grantee, in its reasonable discretion, determines that circumstances require its immediate action to prevent or mitigate significant damage to the Conservation Values of the Conserved Land, Grantee may pursue its remedies under this paragraph upon giving notice to Grantor of such circumstances but without waiting for the period provided for cure to expire. Grantee's rights under this paragraph apply equally in the event of either actual or threatened violation of the terms of this Easement, and Grantor agrees that Grantee's remedies at law for any violation of the terms of this Easement are inadequate and that Grantee shall be entitled to the injunctive relief described in this paragraph, both temporary and permanent, in addition to such other relief to which Grantee may be entitled, including specific performance of the terms of this Easement, without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies. Grantee's remedies described in this paragraph apply to violations caused directly by Grantor or by third persons, whether or not claiming by, through or under Grantor, and shall be cumulative and shall be in addition to all remedies now or hereafter existing at law or in equity. Grantee does not waive or forfeit the right to take action as may be necessary to ensure compliance with the terms, conditions and purposes of this Easement by prior failure to act. Any costs incurred by Grantee in enforcing the terms of this Easement, including, without limitation, costs of suit and attorneys' fees, and any costs of restoration necessitated by the violation of the terms of this Easement shall be borne by Grantor.

7. Extinguishment and Appropriation.

7.1. Extinguishment. This Easement may be extinguished, in whole or in part, only by a judicial ruling by a court of competent jurisdiction that, inter alia, an unexpected change in condition has occurred that renders impossible the protection of all of the Conservation Values of the Conserved Land and fulfillment of the Conservation Purpose of this Easement. If this Easement is extinguished, in whole or in part, Grantor shall reimburse Grantee. In such a case, Grantee, no later than the time of subsequent sale of the formerly restricted land, shall be entitled to compensation for the rights thereby extinguished. The Grantee shall be entitled to compensation for its share of the loss in a condemnation proceeding (as described in paragraph 9.2 below), or in the event of an extinguishment

and the generation of proceeds from the formerly restricted Conserved Land through subsequent sale or other means. The Grantee shall receive, at the time the Easement is extinguished or terminated, compensation for its entire lost interest in the Easement, the value of which shall be in proportion of the ratio of the appraised fair market value of the Easement on the effective date of the Easement to the appraised fair market value of the Conserved Land without deduction for the value of the Easement on the effective date of the Easement. All such proceeds received by Grantee shall be used by Grantee in a manner consistent with the Conservation Purpose of this Easement.

7.2. **Eminent Domain**. If all or any portion of the Conserved Land or interest therein is taken or proposed to be taken under the power of eminent domain by public, corporate, or other authority, or otherwise acquired by such authority through a purchase in lieu of a taking, Grantor shall within fifteen days (15) of being notified of such proposed taking notify Grantee in writing and Grantor and Grantee shall join in appropriate proceeding at the time of such taking to recover the full value of the interests in the Conserved Land subject to the taking and all incidental and direct damages resulting from the taking. All expenses reasonably incurred by Grantor and Grantee in connection with such taking shall be paid out of the recovered proceeds. Grantor and Grantee shall be respectively entitled to compensation from the balance of the recovered proceeds in conformity with the provisions of Paragraph 9.1.

7.3. **Distribution of Compensation**. The portion of the funds paid to Grantor as a result of the transactions identified in this Paragraph 8 but due under the terms of this Easement to Grantee shall be held in trust by Grantor for payment to the Grantee as specified in Paragraph 8.1 (Extinguishment) of this Easement. Grantor shall discharge the obligation of the trust by immediately distributing the portion of such compensation to Grantee under Paragraph 8.1 (Extinguishment) of this Easement.

8. **Promotion**. With the permission of Grantor, which shall not be unreasonably withheld, Grantee may post a sign(s) which state(s) that the Conserved Land is preserved by a conservation easement.

9. **Assignment**. Subject to the restrictions set forth herein, this Easement is in gross and may be assigned or transferred by Grantee. The transferee or assignee will be required to carry out in perpetuity the Conservation Purpose of this Easement. In addition, the Grantee agrees to the following:

9.1. The organization or entity receiving this interest must be (a) a qualified organization as that term is defined in Section 170(h)(3) of the IRC, as that section may be amended from time to time, and in the regulations promulgated thereunder and (b) an entity which is organized and operated primarily for one of the conservation purposes specified in Section 170(h)(4)(A) of the IRC, as that section may be amended from time to time, and in the regulations promulgated thereunder.

9.2. If either Grantee, or its assignee, ever ceases to exist or no longer qualifies under Section 170(h) of the IRC, a court of competent jurisdiction shall order the transfer of this Easement to another qualified organization that agrees to assume the responsibility imposed by this Easement on such party.

10. **Transfer of Conserved Land**. In order to assure that the transferee of title to or a possessory interest in the Protected Property is aware of the existence of this Grant, Grantor agrees that a reference to this Conservation Easement shall be incorporated in any subsequent deed, or other legal instrument, by which Grantor divests either the fee simple title to, or a possessory interest in, the Protected Property. Grantor shall give Grantee notice of the proposed transfer of any interest in the Protected Property at least fifteen (15) days prior to such transfer.

11. **Compliance with Environmental Laws.** "Environmental Law" or "Environmental Laws" means any and all Federal, state, local or municipal laws, rules, orders, regulations, statutes, ordinances, codes, guidelines, policies or requirements of any governmental authority regulating or imposing standards of liability or standards of conduct (including common law) concerning air, water, solid waste, hazardous materials, worker and community right-to-know, hazard communication, noise, radioactive material, resource protection, inland wetlands and watercourses, health protection and similar environmental health, safety, building and land use as may now or at any time hereafter be in effect. Grantor warrants that the Conserved Land is in compliance with, and shall remain in compliance with, all applicable Environmental Laws. Grantor warrants that there are no notices by any governmental authority of any violation or alleged violation of, non-compliance or alleged non-compliance with, or any liability under any Environmental Law relating to the operations or conditions of the Conserved Land. Grantor warrants that they have no actual knowledge of a release or threatened release of any hazardous materials, waste, or other harmful substance on, at, beneath, or from the Conserved Land exceeding regulatory limits.

12. **Amendment; Discretionary Approval**.

12.1. **Background**. Grantee and Grantor recognize that future circumstances that are unforeseen at the time of this Easement may arise which make it beneficial or

necessary to take certain action in order to ensure the continued protection of the Conservation Values of the Conserved Land and to guaranty the perpetual nature of this Easement. Any such action, if determined to be beneficial or necessary, shall be in the form of either (i) an amendment, in the case of a permanent modification of the terms of this Easement, including but not by way of limitation, a clerical or technical correction or modification of a reserved right; or (ii) a discretionary approval, in the case of a temporary activity or impact relating to the maintenance or management of the Conserved Land which does not require a permanent modification of the Easement terms. All amendments and discretionary approvals shall be subject to this paragraph 12. Nothing in this paragraph, however, shall require Grantor or Grantee to consult or negotiate regarding, or to agree to any amendment or discretionary approval.

12.2. **Amendment**. This Easement may be amended only with the written consent of Grantee, Grantor and the Trustees. Grantee shall not consent to any amendment of this Easement unless (i) Grantor submits a written request for amendment pursuant to Grantee's existing amendment policy and such amendment otherwise qualifies under Grantee's policy then in effect respecting conservation easement amendments; (ii) the effect of such amendment is neutral with respect to or enhances the Conservation Purposes; and (iii) the Trustees consent to such amendment. Any such amendment shall be consistent with the purposes of this Easement and shall comply with IRC Sections 170(h) and shall also be consistent with ORC Sections 5301.67 through 5301.70 and any regulations promulgated pursuant to such sections. Any such amendment shall be recorded in the Official Records of _____ County, Ohio. Grantee shall require subordination of any mortgage as a condition of permitting any amendment to this Easement.

12.3. **Discretionary Approval**. Grantee's consent for activities otherwise prohibited under this Easement may be given under the following conditions and circumstances. If, owing to unforeseen or changed circumstances, the performance of an activity prohibited under this Easement is deemed beneficial or necessary by Grantor, Grantor may request, and Grantee may, in consultation with the Trustees, grant permission for such activity without resorting to the formalities of an amendment, subject to the following limitations. Such request for Grantee's consent shall (i) be made, and Grantee shall consider and respond to such request in accordance with the provisions of paragraph 6.3, entitled "Grantee's Approval or Withholding of Approval"; and (ii) describe the proposed activity in sufficient detail to allow Grantee to evaluate the consistency of the proposed activity with the purpose of this Easement. Grantee may grant its consent only if it determines that (x) the performance of such activity is, in fact, beneficial or necessary; (xi) the Trustees, after consultation with Grantee, consent to Grantee's issuance of a discretionary approval; and (xii) such activity (A) does not violate the Conservation Purposes of this Easement, and (B) results in an outcome that is neutral with respect to or enhances the Conservation Purposes of this Easement.

13. **General**. Notwithstanding the foregoing, Grantee, Grantor and Trustees shall have no power or right to agree to any activity that would (i) result in the extinguishment of this Easement; (ii) adversely affect the perpetual nature of this Easement; (iii) adversely affect the qualification of this Easement or the status of Grantee under any applicable laws, including IRC Sections 170(h) and 501(c)(3) and the laws of the State of Ohio; or (iv) result in either private benefit or inurement to any party. For purposes of this paragraph, the terms private benefit and inurement shall have the same meanings ascribed to them in IRC Section 501(c)(3) and associated Treasury Regulations.

14. **Subordination of Liens**. Any liens or mortgages on the title of the Conserved Land existing prior to the date of the Easement must be subordinated to this Easement or eliminated prior to recording this Easement.

15. **Recording.** The Grantee is authorized to record or file this Easement and any subsequent amendments to this Easement, as well as any notices or instruments appropriate to assure the perpetual enforceability of this Easement; for such purpose, Grantor appoints Grantee as its attorney-in-fact to execute, acknowledge and deliver any necessary instrument on its behalf. Without limiting the foregoing, Grantor agrees to execute any such instruments upon request.

16. **Stewardship Fee**. Grantor hereby covenants, promises, and agrees to pay, or to cause the closing agent in connection with the future transfer for value of all or less than all of the Protected Property to pay, to Grantee, or any successor having stewardship obligations pertaining to the Protected Property, at closing, a Stewardship Fee (the "Fee") in an amount equal to two percent (2%) of the full consideration paid, including that portion of such consideration attributable to improvements. In the event the Fee is not paid as provided herein, Grantee shall have the right to initiate proceedings to impose a lien on the Protected Property to secure the continuing obligation of Grantor and its successors in title to pay the Fee; provided that any lien securing payment of the Fee shall be subordinate to the lien of any first mortgage on the Protected Property. Such lien may be imposed, enforced and/or foreclosed in accordance with the laws of the State of Ohio.

17. **Severability**. If any provision of this Easement or the application thereof to any person or circumstance is found to be invalid, the remainder of the provisions of this Easement and the application of such provisions to persons or circumstances other than those as to which it is found to be invalid shall not be affected thereby.

18. **Entire Agreement; Recitals and Exhibits**. This Grant sets forth the entire agreement of the parties with respect to this Conservation Easement and supersedes all prior discussions, negotiations, understandings, or agreements relating to this Conservation Easement, all of which are merged herein. Any and all recitals in this Conservation Easement are agreed by the

parties to be accurate, are incorporated into this Conservation Easement by this reference, and shall constitute integral terms and conditions of this Grant. Any and all exhibits and addenda attached to and referred to in this Conservation Easement are hereby incorporated into this Easement as if fully set out in their entirety herein.

19. **Termination of Rights and Obligations**. A Party's rights and obligations under this Easement terminate upon transfer of the Party's interest in the Easement or the Conserved Land, except that the Party's liability for acts or omissions prior to transfer shall survive transfer.

20. **Counterparts**. This Easement may be executed in multiple counterparts by Grantor and Grantee, each acting at different times and at separate locations, whether or not in the presence of each other, and any copy of this Easement to which signatures of both Grantor and Grantee have been appended shall constitute one and the same original, and one of which shall constitute proof of the terms of this Easement without the necessity of producing any other original copy.

21. **Waiver**. Any forbearance by Grantee to exercise its rights under this Easement shall not be deemed or construed to be a waiver by Grantee of such violation or another violation of this Easement or any of Grantee's rights under this Easement. No delay or omission by Grantee in the exercise of any right or remedy upon any breach shall impair such right or remedy or be construed a waiver.

22. **Governing Law**. This Easement shall be governed by and interpreted under the laws of the State of Ohio and applicable federal law. Except as otherwise specifically provided, all references to statutes and regulations that are contained in this Easement shall be construed to mean the version of that statute or regulation in effect as of the date on which this Easement is recorded. Any action or proceeding arising out of the terms of this Easement shall be brought in the applicable court of competent jurisdiction.

23. **No Merger**. Should Grantee obtain fee title to the Conserved Land, either the purposes, terms, obligations, and restrictions of this Easement shall continue to bind and govern Grantee with respect to its rights and obligations regarding the Conserved Land, or Grantee shall, transfer this Easement to a State or local government agency or non-profit organization which, at the time of transfer, is a qualified organization under Ohio law and Section 170(h) or successor provision of the IRC, which has among its purposes the conservation and preservation of land and water areas.

24. **Notices**. Any notice, demand, request, consent, approval, instruction or communication that either party desires or is required to give to the other hereunder shall be in writing and either

delivered personally or sent by United States registered or certified mail, return receipt requested, postage prepaid, or by prepaid overnight express courier, and addressed as follows:

To Grantor:	_____ _____ _____ Attention: _____
To Grantee:	Western Reserve Land Conservancy 3850 Chagrin River Road Moreland Hills, OH 44022 Attention: President or General Counsel
To OEPA:	Division of Environmental Response and Revitalization- Ohio EPA Southeast District Office 2195 Front Street Logan, Ohio 43138
To USFWS:	U.S. Fish and Wildlife Service, Midwest Region 3 5600 American Blvd. West, Ste. 990 Bloomington, Minnesota 55437

or to such other address as either of the above parties from time to time shall designate by written notice to the other, and the same shall be effective upon receipt if delivered personally or by overnight courier or three business days after deposit in the mail, if mailed. If any deadline under this Easement falls on a Saturday, Sunday or legal holiday (which for purposes of this Easement shall not be considered a "business day"), the deadline shall be extended to the next business day.

[Remainder of page intentionally left blank – Signature pages to follow]

TO HAVE AND TO HOLD the above-described Easement to the use, benefit, and behalf of the Grantee, and its successors and assigns forever.

The Grantor(s)

(ADD NAME)
Signature: _____

(ADD NAME)
Signature: _____

Acknowledgement

State of Ohio)
) ss:
County of _____)

On this ___ day of _____, 20XX, before me, a Notary Public in and for said County and State, personally appeared (ADD NAME OF GRANTOR(S), Grantor(s) in the foregoing Conservation Easement, who acknowledged before me to be said persons and who signed the foregoing instrument and acknowledged the same as their voluntary act and deed.

Witness my official signature and seal on the day last above mentioned.

_____
Notary Public, State of Ohio

Acceptance by (INSERT GRANTEE NAME)

Grantee: (INSERT NAME)

Signature: _____

Print Name: _____

Acknowledgement

State of Ohio)
) ss:
County of _____)

The foregoing instrument was acknowledged before me this ____ day of _____, 20XX, by _____, acting for and on behalf of the (insert Grantee name) who acknowledged that (s)he executed the same for and on behalf of that organization and did so on her/his and as the (insert Grantee's name) own free act and deed.

_____
Notary Public
My Commission Expires:

Acceptance by Trustee Ohio Environmental Protection Agency

The Ohio Environmental Protection Agency, an agency of the State of Ohio, as a Trustee responsible for overseeing the protection of natural resources in the State of Ohio, hereby accepts and approves the foregoing Conservation Easement, and the rights conveyed therein.

Signature: _____

[Insert Name]
[Insert Title]

Acknowledgement

State of Ohio)
) ss:
County of [Insert County]_____)

The foregoing instrument was acknowledged before me this ____ day of _____, 20XX, by [Insert Name and Title], Director of the Ohio Environmental Protection Agency, acting for and on behalf of the Agency, who acknowledged executing the same for and on behalf of the Agency as Trustee, and that the signature was completed as the Agency's voluntary act and deed.

_____
Notary Public, State of Ohio
My Commission Expires:

Acceptance by Trustee United States Fish and Wildlife Service

The United States Fish and Wildlife Service (USFWS), a bureau of the United States Department of the Interior, as a Trustee responsible for overseeing the protection of natural resources in the State of Ohio, hereby accepts and approves the foregoing Conservation Easement, and the rights conveyed therein.

Signature: _____

[Insert Name]
[Insert Title]

Acknowledgement

Acknowledgement

State of Ohio)
) ss:
County of [Insert County]_____)

The foregoing instrument was acknowledged before me this ____ day of _____, 20XX, by [Insert Name and Title], of the United States Fish and Wildlife Service, acting for and on behalf of USFWS, who acknowledged executing the same for and on behalf of the USFWS as Trustee, and that the signature was completed as the USFWS's voluntary act and deed.

_____
Notary Public, State of Ohio
My Commission Expires:

Appendix C: Environmental Covenant Template

To be recorded with Deed Records - R.C. 317.08

ENVIRONMENTAL COVENANT

This Environmental Covenant is entered into by Dover Chemical Corporation, having an address of 3676 Davis Road NW, Dover, Ohio 44622 (Owner), the Ohio Environmental Protection Agency (Ohio EPA) and the United States Fish and Wildlife Service ("FWS" or "Service") (the Party or Parties) pursuant to Ohio Revised Code (RC) 5301.80 to 5301.92. The Service and Ohio EPA are non-holder agencies (collectively the Trustees), for the purpose of subjecting the properties described herein ("the Covenant Area") to the activity and use limitations set forth herein.

WHEREAS, the Owner is the owner in fee of certain real property, comprised of two parcels,10.6 acres and 14.92 acres, for a total of 25.28 acres (the "Covenant Area") in their entirety and is situated in Tuscarawas County, Ohio, in the Tuscarawas River watershed;

WHEREAS, negotiations between Dover Chemical Corporation and the Trustees, in conjunction with the United States Department of Justice and the Ohio Attorney General, resulted in a Consent Decree filed in the United States District Court, Northern District of Ohio, *United States v. Dover Chemical Corp.*, No. 5:17-cv-02335-BYP (N.D. Ohio) ("the remedial action") and in *United States v. Dover Chemical Corp.*, No. XX-cv-XXXXX (N.D. Ohio) ("the natural resource damages action"), resulting in Dover Chemical Corporation's decision to place an Environmental Covenant on the Covenant Area properties. The Administrative Record for the natural resource damages action is maintained by the Ohio EPA at Ohio EPA's Southeast District Office, 2195 East Front Street, Logan, Ohio 43138;

WHEREAS, the activity and use limitations protect against exposure to chlorobenzenes; hexachlorocyclohexane (BHC); carbon tetrachloride (CCl4); polychlorinated dibenzodioxins; and polychlorinated dibenzofurans ([PCDDs/PCDFs], a group of compounds referred to collectively as "dioxins"), and other chemicals the [on or underlying the Covenant Area; and will also protect or enhance the groundwater recharge which shall occur in the Covenant Area.

WHEREAS, Dover Chemical Corporation agreed to fulfill its obligation to ensure the Covenant Area and the Covenant Area's Conservation Values are protected in perpetuity by this Environmental Covenant.

Now therefore, Owner and the Trustees agree to the following:

1. Environmental Covenant. This instrument is an environmental covenant developed and executed pursuant to R.C. 5301.80 to 5301.92.

2. Covenant Area. This Covenant concerns an approximately 25.28 acre tract of real property comprised of two parcels, Parcel # 10-00297-000 and Parcel # 10-00298-000, in Tuscarawas County, Ohio, and more particularly described in **Exhibit A** [legal description] and **Exhibit B** [map] attached hereto and hereby incorporated by reference herein (the Covenant Area).

3. Owner. The Owner is the fee simple owner of the Covenant Area.

4. Holder. Pursuant to R.C. 5301.81, the Holder of this Environmental Covenant is the Owner of the property identified above.

5. Activity and Use Limitations. As part of the conditions set forth in the Consent Decree issued to Dover Chemical Corporation, the Owner hereby imposes and agrees to comply with the following activity and use limitations on the Covenant Area:

a. Land Use: Any commercial, industrial or residential activities are prohibited;

b. Construction: The placement or construction of any man-made modifications, either temporary or permanent, such as buildings, structures, billboards, fences, roads, parking lots, wind turbines, and towers for communications or otherwise on the Covenant Area is prohibited;

i. There shall be no filling, excavating, or removal of top soil, sand, gravel, rock, minerals or other materials on or at the Covenant Area, nor changes in topography of the Covenant Area, other than those caused by the forces of nature.

ii. No power or petroleum transmission lines may be constructed, nor may any other interests in the Covenant Area be grated for this purpose. However, the Owner reserves the right to maintain and repair telephone, electric, water, wells, or other utility lines or mains needed to provide for the needs of the Owner, successor or assigns.

c. Cutting and Other Control of Vegetation: Any cutting of trees, ground cover or vegetation, or destroying by means of herbicides or

pesticides on the Covenant Area is prohibited, other than the removal or control of invasive and noxious species and control activities that are authorized by the Restoration Work Plan approved by the Trustees;

d. Dumping: Waste, garbage and unsightly or offensive materials are not permitted and may not be accumulated on the Covenant Area; and

e. Water Courses: Natural water courses and streams and adjacent riparian buffers may not be dredged, straightened, filled, channelized, impeded, diverted or otherwise altered on the Covenant Area, other than as part of activities that are authorized by the Restoration Work Plan approved by the Trustees;

f. Motor Vehicles: Use of vehicles of recreation, including all-terrain vehicles, snowmobiles or other motorized recreational vehicles, shall not be permitted on the Covenant Area.

6. Running with the Land. This Environmental Covenant, shall be binding upon the Owner and all assigns and successors in interest, including any Transferee, and shall run with the land, pursuant to R.C. 5301.85, subject to amendment or termination as set forth herein. The term "Transferee" as used in this Environmental Covenant, shall mean any future owner of any interest in the Covenant Area or any portion thereof, including, but not limited to, owners of an interest in fee simple, mortgagees, easement holders, and/or lessees.

7. Compliance Enforcement. Compliance with this Environmental Covenant may be enforced by the Trustees pursuant to R.C. 5301.91 and other applicable law. Failure to timely enforce compliance with this Environmental Covenant or the use limitations contained herein by any party shall not bar subsequent enforcement by such party and shall not be deemed a waiver of the party's right to take action to enforce any provision of this Covenant. Nothing in this Environmental Covenant shall restrict the Trustees from exercising any authority under applicable law in order to protect public health or safety or the environment.

8. Rights of Access. Owner hereby grants to the Trustees, its agents, contractors, and employees the right of access to the Covenant Area for implementation or enforcement of this Environmental Covenant.

9. Compliance Reporting. Owner and any Transferee, if applicable, shall annually submit to the Trustees by September 1st of each year after the year of this

Covenant's Effective Date written documentation verifying that the activity and use limitations remain in place and are being complied with.

10. Notice upon Conveyance. Each instrument hereafter conveying any interest in the Covenant Area or any portion of the Covenant Area shall contain a notice of the activity and use limitations set forth in this Environmental Covenant and provide the recorded location of this Environmental Covenant. The notice shall be substantially in the following form:

> THE INTEREST CONVEYED HEREBY IS SUBJECT TO AN ENVIRONMENTAL COVENANT, DATED_____, 2021, RECORDED IN THE DEED OR OFFICIAL RECORDS OF THE TUSCARAWAS COUNTY RECORDER ON _____, 2021, IN [DOCUMENT ____, *or* BOOK___, PAGE ____,]. THE ENVIRONMENTAL COVENANT CONTAINS THE FOLLOWING ACTIVITY AND USE LIMITATIONS:
>
> [Restate restrictions from Paragraph 5 of this Covenant]

Owner or Transferee, if applicable, shall notify the Trustees within ten (10) days after each conveyance of an interest in any portion of the Covenant Area. Owner's notice shall include the name, address and telephone number of the Transferee, a copy of the deed or other documentation evidencing the conveyance, and a survey map that shows the boundaries of the property being transferred.

11. Representations and Warranties. Owner hereby represents and warrants to the other signatories hereto:

a. that the Owner is the sole owner of the Covenant Area;

b. that the Owner holds fee simple title to the Covenant Area that is free, clear and unencumbered and, for example, is not subject to any utility, road or other easement;

c. that the Owner has the power and authority to enter into this Environmental Covenant, to grant the rights and interests herein provided and to carry out all obligations hereunder; and

d. that this Environmental Covenant will not materially violate or contravene or constitute a material default under any other agreement, document or instrument to which Owner is a party or by which Owner may be bound or affected.

12. Amendment or Termination. This Environmental Covenant may be

amended or terminated only by consent of all of the following: the Owner and Holder or a Transferee and the Trustees, pursuant to R.C. 5301.89 or 5301.90 and other applicable law. "Amendment" means any changes to the Environmental Covenant, including the activity and use limitations set forth herein, or the elimination of one or more activity and use limitations when there is at least one limitation remaining. "Termination" means the elimination of all activity and use limitations set forth herein and all other obligations under this Environmental Covenant. Amendment or termination shall not affect Dover Chemical Corporation's obligations pursuant to the Consent Decree.

This Environmental Covenant may be amended or terminated only by a written instrument duly executed by the Trustees *[,*Regional Director of the Service, and the Director of Ohio*,]* and the Owner or Transferee*[s]* of the Covenant Area as applicable. Within thirty (30) days of signature by all requisite parties on any amendment or termination of this Environmental Covenant, the Owner or Transferee*[s]* shall file such instrument for recording with the Tuscarawas County Recorder's Office, and shall provide a file and date-stamped copy of the recorded instrument to the Service and Ohio EPA.

13. Severability. If any provision of this Environmental Covenant is found to be unenforceable in any respect, the validity, legality, and enforceability of the remaining provisions shall not in any way be affected or impaired.

14. Governing Law. This Environmental Covenant shall be governed by and interpreted in accordance with the laws of the State of Ohio.

15. Recordation. Within thirty (30) days after the date of the final required signature upon this Environmental Covenant, the Owner shall file this Environmental Covenant for recording, in the same manner as a deed to the property, with the Tuscarawas County Recorder's Office.

16. Effective Date. The effective date of this Environmental Covenant shall be the date upon which the fully executed Environmental Covenant has been recorded as a deed record for the Covenant Area with the Tuscarawas County Recorder.

17. Distribution of Environmental Covenant. The Owner shall distribute a file- and date-stamped copy of the recorded Environmental Covenant to the Trustees.

18. Notice. Unless otherwise notified in writing by or on behalf of the current owner or the Trustees, any document or communication required by this Environmental Covenant shall be submitted to:

As to Ohio EPA:

Ohio EPA – Central Office
Division of Environmental Response and Revitalization
50 West Town Street
Columbus, Ohio 43216
Attn.: DERR Records Management Officer

Or, send electronically to: records@epa.ohio.gov

And

Ohio EPA - Southeast District Office
2195 East Front Street
Logan, Ohio 43138
Attn.: DERR Site Coordinator for Dover Chemical NRD

As to U.S. Fish and Wildlife Service:

Regional Director
U.S. Fish and Wildlife Service
Midwest Region 3
5600 American Boulevard West, Suite 990
Bloomington, Minnesota 55437

And

U.S. Fish and Wildlife Service
Ohio Ecological Services Office
4625 Morse Road
Columbus, Ohio 43230
Attn: NRDAR Case Manager

As to Owner:

Dover Chemical Corporation
[Name, title, or position]
[Address]

19. Counterparts. This Covenant may be executed in several counterparts, each of which may be deemed an original, and all of such counterparts together shall constitute one and the same Covenant.

The undersigned represents and certifies that they are authorized to execute this Environmental Covenant.

IT IS SO AGREED:

OWNER:
Dover Chemical Corporation

By: _____

Its: _____

Date: _____

State of _____)
) ss:
County of _____)

Before me, a notary public, in and for said county and state, personally appeared , a duly authorized representative of _____, who acknowledged to me that *[he/she]* did execute the foregoing instrument on behalf of _____.

IN TESTIMONY WHEREOF, I have subscribed my name and affixed my official seal this ____day of _____, 2021.

_____
_
Notary Public

OHIO ENVIRONMENTAL PROTECTION AGENCY:

_____

By: _____
Director

Date: _____

State of Ohio)
) ss:
County of Franklin)

Before me, a notary public, in and for said county and state, personally appeared , the Director of Ohio EPA, who acknowledged to me that she did execute the foregoing instrument on behalf of Ohio EPA.

IN TESTIMONY WHEREOF, I have subscribed my name and affixed my official seal this _____day of _____, 2021.

_____

_

Notary Public

U.S. FISH AND WILDLIFE SERVICE:

_____
By: Charles Wooley
Regional Director, Midwest Region 3

Date: _____

State of Minnesota)
) ss:
County of)

Before me, a notary public, in and for said county and state, personally appeared , the Regional Director of Region 3, U.S. Fish and Wildlife Service, who acknowledged to me that *[he/she]* did execute the foregoing instrument on behalf of U.S. Fish and Wildlife Service.

IN TESTIMONY WHEREOF, I have subscribed my name and affixed my official seal this _____day of _____, 2021.

_____
_

Appendix D: Copy of Public Comments

Comments to Draft Restoration Plan and Environmental Assessment for the Sugar Creek Valley Natural Resource Damage Assessment at the Dover Chemical Corporation Site

The City of Dover submits the following comments on the Draft Restoration Plan and Environmental Assessment for the Sugar Creek Valley Natural Resource Damage Assessment at the Dover Chemical Corporation Site (the "Restoration Plan").

1. **The Restoration Plan fails to sufficiently describe how the proposed restoration projects remedy the injury to natural resources caused by Dover Chemical Corporation.**

The Consent Decree between the United States of America and Dover Chemical Corporation requires that the United States Fish and Wildlife Service and the Ohio Environmental Protection Agency (collectively, the "Trustees") prepare a Restoration Plan that describes Dover Chemical Corporation's proposed restoration projects. Dover Chemical Corporation's restoration projects must be in accordance with 43 C.F.R. Part 11.

43 C.F.R. § 11.82 governs alternatives for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources. Under these regulations, the Trustees must develop a reasonable number of alternatives for "the restoration or rehabilitation of the *injured* natural resources to a condition where they can provide the level of services available at baseline." 43 C.F.R. § 11.82(a) (emphasis added). Additionally, "baseline," as used above, is defined by Part II as "the condition or conditions that would have existed at the assessment area had the…release of the hazardous substance under investigation not occurred." 43 C.F.R. § 11.14(e). "Assessment area" is defined by the same Part as "the area or areas within which natural resources have been affected directly or indirectly by the…release of a hazardous substance and that serves as the geographic basis for the injury assessment." 43 C.F.R. § 11.14(c).

The Dover Chemical Corporation site, where the injury to, destruction of, or loss of natural resources occurred, is located in the City of Dover, Tuscarawas County, Ohio. The Sugar Creek Valley Natural Resource Assessment Area in Dover, Ohio served as the geographic basis for the injury assessment. Restoration Plan p. 12. However, the Restoration Plan includes only restoration projects in Sugar Creek Township in Stark County, Ohio and projects outside of the Sugar Creek Watershed. The proposed projects are clearly not localized to the actual injured natural resources; restoration of wetlands and riparian habitat located in Sugar Creek Township, Stark County, Ohio does not adequately address the natural resources injured and ecological services lost due to releases of hazardous from the Dover Chemical Corporation site. The Restoration Plan even admits that the Western Reserve Land Conservancy – Eastern Hellbender Project is "outside the Sugar Creek Watershed." Restoration Plan p. 76. The Restoration Plan claims the Eastern Hellbender Project "will provide the same or similar services lost due to injury in Sugar Creek," but does not provide any evidence in support of the assertion. Restoration Plan p. 76. Instead, the Restoration Plan then moves on to the social and economic benefits to landowners outside of the Sugar Creek Watershed.

Hazardous substances released by Dover Chemical Corporation "injured natural resources including ground water, surface water (including wetlands), biota, and ecological habitats (riparian

and upland)." Restoration Plan p. 13. Some freshwater fish and migratory bird species, as well as threatened and endangered species such as the Indiana bat, the Northern long-eared bat, and the Eastern Hellbender were "injured or potentially injured." Restoration Plan p. 13. The restoration projects proposed include some wetland and riparian habitat restoration, but also include the treatment and removal of invasive reed canary grass, an environmental covenant on Dover Chemical Corporation's own property, and the negotiation of conservation easements in areas outside of the affected Sugar Creek Watershed. These proposed projects do not target the natural resources actually injured by Dover Chemical Corporation's release of hazardous substances.

2. **The analysis of alternatives in the plan is flawed because Alternative 1 included no action, Alternative 2 included all the projects the Trustees found favorable, and Alternative 3 included just the projects the Trustees found unfavorable.**

43 C.F.R. § 11.82 requires the Trustees "to develop a reasonable number of possible alternatives that would restore, rehabilitate, replace, and/or acquire the equivalent of the injured resources." There are ten factors to consider when selecting an alternative restoration project: (1) technical feasibility; (2) the relationship of the expected costs of the proposed actions to the expected benefits from the restoration, rehabilitation, replacement, and/or acquisition of equivalent resources; (3) cost-effectiveness; (4) the results of any actual or planned response actions; (5) potential for additional injury resulting from the proposed actions; (6) the natural recovery period; (7) ability of the resources to recover with or without alternative actions; (8) potential effects of the action on human health and safety; (9) consistency with relevant Federal, State, and tribal policies; and (10) compliance with applicable Federal, State, and tribal laws. 43 C.F.R. § 11.82(d).

Alternative One of the Restoration Plan proposes no action. Alternative One does not meet the requirements of 43 C.F.R. § 11.82. As the Restoration Plan states, "Alternative One provides no restoration options and is therefore insufficient to compensate for natural resource injuries." Restoration Plan p. 86. This is a throwaway alternative that could not be selected under the regulations because it does not restore, rehabilitate, replace, or acquire the equivalent of the injured resources. Although the regulations require that a "No Action-Natural Recovery" be one of the possible alternatives considered, the consideration of only two other alternatives is not a "reasonable number of possible alternatives," as also required by 43 C.F.R. § 11.82. Alternative Three includes solely projects the Trustees found insufficient. As the Restoration Plan states, "Alternative Three included projects that were not feasible or did not compensate the public for the lost services." Restoration Plan p. 86. Alternative Three was set up to fail, leaving Alternative Two as the only viable option almost by default. The Trustees should have considered a broader range of alternatives and at least one other alternative with projects deemed feasible for an appropriate comparison, preferably an alternative with viable restoration projects in the City of Dover, where the harm occurred, and continues to occur.

3. **The Restoration Plan fails to consider any additional projects located near Dover Chemical Corporation or in the City of Dover, where the majority of the injury to natural resources occurred, and to provide the City of Dover, a major stakeholder, with a meaningful opportunity to participate in the development of potential restoration alternatives.**

Alternative Three of the Restoration Plan includes two projects in the City of Dover, as well as one project near or in New Philadelphia. The potential City of Dover projects include only recreational actions, and the Restoration Plan makes no comment on why no groundwater and/or ecological projects were considered within the City of Dover. Restoration Plan pp. 68, 78. As stated prior, the Restoration Plan must consider projects for the restoration of injured natural resources in order to provide a level equivalent to the conditions that would have existed at the areas where natural resources have been directly or indirectly affected. *See* 43 C.F.R. Part 11. The Restoration Plan fails to provide any reasonable possible alternatives to address the injury to natural resources within the assessment area.

Additionally, the Trustees failed to give the City of Dover a meaningful opportunity to participate in the development of potential restoration alternatives in the City of Dover where Dover Chemical Corporation is located. The City of Dover was not afforded an opportunity provide any meaningful input into potential restoration alternatives that would address the injuries to the natural resources where the injuries occurred. The two restoration options located in the City of Dover and included in Alternative Three were not feasible as proposed. For example, the Canal Park Restoration and Enhancement Project was not developed in coordination with the City of Dover and failed to consider important facts regarding the development of the park.

4. **The Restoration Plan fails to adequately explain how the conservation easement benefits the restoration or rehabilitation of the injured natural resources.**

The Western Reserve Land Conservancy – East Hellbender Project involves the negotiation of conservation easements with landowners in areas outside of the Sugar Creek Watershed. Benefits described in the Restoration Plan include conserving important stream and riparian habitat of the Eastern Hellbender salamander, which could benefit "other biological resources that utilize the stream." Restoration Plan p. 76. The Eastern Hellbender salamander is one of three threatened and endangered species specifically mentioned that were "injured or potentially injured" by Dover Chemical Company's release of hazardous substances. Restoration Plan p. 13. Natural resources clearly injured by the release of hazardous substances include ground water, surface water (including wetlands), biota, and ecological habitats (riparian and upland). Restoration Plan p. 13. Freshwater fish and migratory bird species were also injured or potentially inured. Restoration Plan p. 13.

The Restoration Plan fails to explain the how conservation easements outside of the Sugar Creek Watershed benefit the natural resources actually injured by Dover Chemical Company. As previously mentioned, 43 C.F.R. § 11.82(a) requires the trustee to consider alternatives for "restoration or rehabilitation of the injured natural resources to a condition where they can provide the level of services available at baseline." Not only is the proposed project not localized to the assessment area actually injured by Dover Chemical Company's release of hazardous substances, but the Eastern Hellbender salamander is a potentially injured species among many other injured and potentially injured natural resources and species. This proposed project, even in conjunction with the three other proposed projects of Alternative Two, does not adequately address the injuries to natural resources caused by Dover Chemical Company's release of hazardous substances.

The City of Dover will supplement these comments on the Draft Restoration Plan and Environmental Assessment for the Sugar Creek Valley Natural Resource Damage Assessment at the Dover Chemical Corporation Site with its comments to the draft Consent Decree for Natural Resource Damages between the United States of America v. Dover Chemical Corporation, D.J. Ref. No. 90–11–3–11517/1, Civil Action No. 5:17-cv-02335-BYP.

Appendix E: Trustee Response to Public Comments

APPENDIX E: Trustee Responses to Public Comments

The Sugar Creek Valley Natural Resource Damage Trustees at the Dover Chemical Corporation Site received written comments from one commenter, the City of Dover, on the Draft Restoration Plan/Environmental Assessment (Draft RP/EA). This Appendix provides the Trustees' responses to those comments. The 30-day public comment period on the Draft RP/EA ended on November 2, 2022.

Comment 1: The Restoration Plan fails to sufficiently describe how the proposed restoration projects remedy the injury to natural resources caused by Dover Chemical Corporation.

The Consent Decree between the United States of America and Dover Chemical Corporation requires that the United States Fish and Wildlife Service and the Ohio Environmental Protection Agency (collectively, the "Trustees") prepare a Restoration Plan that describes Dover Chemical Corporation's proposed restoration projects. Dover Chemical Corporation's restoration projects must be in accordance with 43 C.F.R. Part 11.

43 C.F.R. § 11.82 governs alternatives for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources. Under these regulations, the Trustees must develop a reasonable number of alternatives for "the restoration or rehabilitation of the injured natural resources to a condition where they can provide the level of services available at baseline." 43 C.F.R. § 11.82(a) (emphasis added). Additionally, "baseline," as used above, is defined by Part II as "the condition or conditions that would have existed at the assessment area had the…release of the hazardous substance under investigation not occurred." 43 C.F.R. § 11.14(e). "Assessment area" is defined by the same Part as "the area or areas within which natural resources have been affected directly or indirectly by the…release of a hazardous substance and that serves as the geographic basis for the injury assessment." 43 C.F.R. § 11.14(c).

The Dover Chemical Corporation site, where the injury to, destruction of, or loss of natural resources occurred, is located in the City of Dover, Tuscarawas County, Ohio. The Sugar Creek Valley Natural Resource Assessment Area in Dover, Ohio served as the geographic basis for the injury assessment. Restoration Plan p. 12. However, the Restoration Plan includes only restoration projects in Sugar Creek Township in Stark County, Ohio, and projects outside of the Sugar Creek Watershed. The proposed projects are clearly not localized to the actual injured natural resources; restoration of wetlands and riparian habitat located in Sugar Creek Township, Stark County, Ohio does not adequately address the natural resources injured and ecological services lost due to releases of hazardous from the Dover Chemical Corporation site. The Restoration Plan even admits that the Western Reserve Land Conservancy – Eastern Hellbender Project is "outside the Sugar Creek Watershed." Restoration Plan p. 76. The Restoration Plan claims the Eastern Hellbender Project "will provide the same or similar services lost due to injury in Sugar Creek," but does not provide any evidence in support of the assertion. Restoration Plan p. 76. Instead, the Restoration Plan then moves on to the social and economic benefits to landowners outside of the Sugar Creek Watershed.

Hazardous substances released by Dover Chemical Corporation "injured natural resources including ground water, surface water (including wetlands), biota, and ecological habitats (riparian and upland)." Restoration Plan p. 13. Some freshwater fish and migratory bird species, as well as threatened and endangered species such as the Indiana bat, the Northern long-eared bat, and the Eastern Hellbender were "injured or potentially injured." Restoration Plan p. 13. The restoration projects proposed include some wetland and riparian habitat restoration, but also include the treatment and removal of invasive reed canary grass, an environmental covenant on Dover Chemical Corporation's own property, and the negotiation of conservation easements in areas outside of the affected Sugar Creek Watershed. These proposed projects do not target the natural resources injured by Dover Chemical Corporation's release of hazardous substances.

Trustee Response to Comment 1:

The Trustees have revised Sections 2.7.4, *Ground water Scaling Methodology Results*; 2.7.6, *Habitat Equivalency Analysis (HEA) Scaling for Aquatic Resources*; 5.12.1, *Ecological Services* and 5.12.2 *Ground Water Resources* to clarify the analyses used to quantify losses as a result of releases from Dover Chemical and explain the benefits of restoration projects the Trustees relied upon to propose, and now select, the restoration alternatives in this Final RP/EA to remedy the injury to such resources.

In its comment, the City states that the proposed projects "…are clearly not localized to the actual injured resources' and "…does not adequately address the natural resources injured and ecological service losses lost…from the…site."

The Department of Interior guidance prioritizes the restoration of injured natural resources at or near the area where the injury occurred, if feasible. This includes actions that restore, rehabilitate, or replace injured resources as close to the point of injury as possible. However, in certain instances, like occurred here, restoration at or near the site is not always feasible. If restoration at or near the site of injury is not feasible, restoration actions may occur away from the site. Under CERCLA, there is no limitation that recovered funds may only be spent for restoration of contaminated areas.

Simply stated, restoration and acquisition projects must compensate the public for the loss of natural resources and/or their services resulting from a release of hazardous substances. In other words, the emphasis of CERCLA restoration is on the restoration of the natural resources or its services, and not the location of the injury. To emphasize this point, CERCLA specifically authorizes the consideration and selection of restoration projects that "acquire the equivalent" of the natural resources injured. 43 C.F.R. 11.82(b)(iii). The selection of, and responsibility for, restoration is at the discretion of the designated Trustees through the authorized official, which specifically allows the Trustees to identify and acquire resources that serve as substitutes for those that are injured.

The Trustees evaluated projects within and outside of the Assessment Area (for a discussion of preferred and non-preferred alternatives, please review Chapter 4 *Restoration Alternatives*,

Sections 4.1 through 4.10 of the Final Restoration Plan and Environmental Assessment (Final RP/EA). Ultimately, based on the review using CERCLA evaluation factors (*See*, Section 5.1.1 *NRDAR Restoration Project Selection Criteria)*, the Trustees selected restoration-based projects that are both inside and outside the Assessment Area. As described in the Final RP/EA, there are a myriad of factors which led to these selections, and numerous connections between the injured resources and the proposed (and now selected) restoration projects. The Trustees have documented injuries to surface water, groundwater, sediment, birds, listed species and supporting habitats for trust resources. Selected projects include restoration projects and protection of properties via conservation easement and environmental covenant to protect natural resources in perpetuity both inside and outside of the Assessment Area.

By way of example, restoration activities will include work to increase stream sinuosity, which will assist in restoring natural fluvial features favoring flora and fauna of the waterway and improving aesthetic qualities and will improve water quality downstream. Furthermore, minimizing or eliminating invasive plant species, like reed canary grass, provides an overall improvement of the habitat allowing for increased growth and development of native plants and shrubs. Native species provide the keystone elements for ecosystem functions. Native plants will, in most cases, form self-sustaining plant communities that do not require much maintenance because they are adapted to a local region. There are specific associations of mycorrhizae with plants, invertebrates with woody debris, pollinators -including bats – with flowers, and birds with structural habitat that are present only with native plants. Protection and preservation of streams through restrictive deed language ensures that these areas with habitat and ecological services similar to those lost remain unharmed by development. These projects will provide similar trust resources and services as those injured in Sugar Creek including instream habitats and adjacent wetlands for macroinvertebrates, fish, and other organisms through restoration and preservation.

For a comprehensive explanation of the benefits of these projects to restore, replace, rehabilitate and/or acquire the equivalent of the resources or services injured, please reference the Final RP/EA at *Table 5.1 Evaluation of alternatives relative to NRDAR criteria listed in Section 5.1.1* and the explanation of each of the project descriptions in Chapter 4, *Proposed Restoration Alternatives* and evaluation of those projects in Chapter 5, *Evaluation of Alternatives* , wherein the Trustees provided additional detail on each of these projects for clarity.

Comment 2: The analysis of alternatives in the plan is flawed because Alternative 1 included no action, Alternative 2 included all the projects the Trustees found favorable, and Alternative 3 included just the projects the Trustees found unfavorable.

43 C.F.R. § 11.82 requires the Trustees "to develop a reasonable number of possible alternatives that would restore, rehabilitate, replace, and/or acquire the equivalent of the injured resources." There are ten factors to consider when selecting an alternative restoration project: (1) technical feasibility; (2) the relationship of the expected costs of the proposed actions to the expected benefits from the restoration, rehabilitation, replacement, and/or acquisition of equivalent resources; (3) cost-effectiveness; (4) the results of any actual or planned response actions; (5)

potential for additional injury resulting from the proposed actions; (6) the natural recovery period; (7) ability of the resources to recover with or without alternative actions; (8) potential effects of the action on human health and safety; (9) consistency with relevant Federal, State, and tribal policies; and (10) compliance with applicable Federal, State, and tribal laws. 43 C.F.R. § 11.82(d).

Alternative One of the Restoration Plan proposes no action. Alternative One does not meet the requirements of 43 C.F.R. § 11.82. As the Restoration Plan states, "Alternative One provides no restoration options and is therefore insufficient to compensate for natural resource injuries." Restoration Plan p. 86. This is a throwaway alternative that could not be selected under the regulations because it does not restore, rehabilitate, replace, or acquire the equivalent of the injured resources. Although the regulations require that a "No Action-Natural Recovery" be one of the possible alternatives considered, the consideration of only two other alternatives is not a "reasonable number of possible alternatives," as also required by 43 C.F.R. § 11.82. Alternative Three includes solely projects the Trustees found insufficient. As the Restoration Plan states, "Alternative Three included projects that were not feasible or did not compensate the public for the lost services." Restoration Plan p. 86. Alternative Three was set up to fail, leaving Alternative Two as the only viable option almost by default. The Trustees should have considered a broader range of alternatives and at least one other alternative with projects deemed feasible for an appropriate comparison, preferably an alternative with viable restoration projects in the City of Dover, where the harm occurred, and continues to occur.

Trustee Response to Comment 2:

The Trustees acknowledge that under both CERCLA and NEPA, the Trustees must retain and analyze a reasonable number of alternatives in a restoration plan. 43 C.F.R. §11.81(a), §11.82, §§ 11.83(c) and (d), and §11.93 (CERCLA); 40 C.F.R. §1502.14 (NEPA). The purpose of the alternatives analysis "is to inform both the public and the decisionmaker," by giving them clearly defined alternatives. *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 195 (D.C. Cir 1991). These alternatives must include a "No Action" alternative, which was appropriately included by the Trustees. 40 C.F.R. §1502.14(c). While no minimum number of alternatives must be considered, *Citizens for Smart Growth v. Sec'y Dept. Transp*., agencies must present a reasoned alternatives analysis." *Gulf Restoration Network v. Jewell*, 161 F.Supp. 3d 1119,1130 (S.D. Ala. 2016). Here, the Trustees provided a reasonable range of alternatives and complied with its regulatory responsibilities under both CERCLA and NEPA. Under Alternative Two in the Draft RP/EA, the Trustees considered five (5) distinct preferred projects and within Alternative Three in the Draft RP/EA, the Trustees considered three (3) non-preferred alternatives. It was within the Trustees' discretion how the alternatives would be presented in the documents, procedurally. The NEPA regulations provide no rule for presentation of alternatives in a RP or NEPA document, meaning whether the Trustees "lumped" the preferred vs. non-preferred alternatives together or "separated" them into individual alternatives, per project, is not at issue. Rather, the court requires a reasonable range of alternatives, which the Trustees provided. In the Draft RP/EA, the Trustees lumped the preferred and non-preferred alternatives together, including those within and outside of the Assessment Area. However, in consideration of the concern expressed in this comment relative to the Trustees preferred and non-preferred

alternatives, the Trustees have revised Chapter 4, *Proposed Restoration Alternatives* and Sections 4.2 through 4.10 in the Final RP/EA to separate the restoration projects into distinct alternatives for clarity, and have provided additional information on each restoration alternative considered under CERCLA and the evaluation of those alternatives under NEPA. The underlying conclusion in the Draft RP/EA regarding the analysis of alternatives into preferred and non-preferred projects has not been modified in the Final RP/EA.

Comment 3: The Restoration Plan fails to consider any additional projects located near Dover Chemical Corporation or in the City of Dover, where the majority of the injury to natural resources occurred, and to provide the City of Dover, a major stakeholder, with a meaningful opportunity to participate in the development of potential restoration alternatives.

Alternative Three of the Restoration Plan includes two projects in the City of Dover, as well as one project near or in New Philadelphia. The potential City of Dover projects include only recreational actions, and the Restoration Plan makes no comment on why no groundwater and/or ecological projects were considered within the City of Dover. Restoration Plan pp. 68, 78. As stated prior, the Restoration Plan must consider projects for the restoration of injured natural resources in order to provide a level equivalent to the conditions that would have existed at the areas where natural resources have been directly or indirectly affected. See 43 C.F.R. Part 11. The Restoration Plan fails to provide any reasonable possible alternatives to address the injury to natural resources within the assessment area.

Additionally, the Trustees failed to give the City of Dover a meaningful opportunity to participate in the development of potential restoration alternatives in the City of Dover where Dover Chemical Corporation is located. The City of Dover was not afforded an opportunity provide any meaningful input into potential restoration alternatives that would address the injuries to the natural resources where the injuries occurred. The two restoration options located in the City of Dover and included in Alternative Three were not feasible as proposed. For example, the Canal Park Restoration and Enhancement Project was not developed in coordination with the City of Dover and failed to consider important facts regarding the development of the park.

Trustee Response to Comment 3:

The Trustees would like to clarify the misstatement of the regulations above. The commenter states, *"…the Restoration Plan must consider projects for the restoration of injured natural resources in order to provide a level equivalent to the conditions that would have existed* ***at the areas where resources have been directly or indirectly affected."*** In fact, the NRDAR regulations specify that a restoration plan "must list a reasonable number of possible alternatives for (i) the restoration or rehabilitation of the injured natural resources to a condition where they can provide the level of services available at baseline, or (ii) the replacement and/or acquisition of equivalent natural resources of providing such services." See, 43 C.F.R. §11.82 (a). The regulations do not specify a geographic location for the restoration.

The Draft RP/EA evidence that the Trustees considered restoration projects located near Dover Chemical Corporation and within limits of the City of Dover that could potentially restore, replace or compensate for lost natural resources at the site. Of the five (5) restoration projects in the preferred alternative category of the Draft RP/EA, the Sugar Creek Habitat Conservation Project requires Dover Chemical to place Environmental Covenants on two properties that are adjacent to Sugar Creek, permanently protecting "in perpetuity" 25.28 acres of currently undeveloped Sugar Creek habitat from future development that is both near Dover Chemical and within the City of Dover.

Regarding the ground water injury, the Trustees have stated a preference that projects to restore and/or protect ground water resources, would be selected "preferably for the Sugar Creek buried aquifer system." Section 4.7 of Final RP/EA, *Trustee Implemented Ground Water Restoration and/or Protection Project(s)*.

Additionally, in the non-preferred alternatives section of the Draft and Final RP/EA the Trustees considered two (2) restoration projects located near Dover Chemical and within the limits of the City of Dover: the City of Dover Wellhead Protection Project/Soccer Field Protection and the City of Dover Canal Park Restoration and Enhancement Project. The Trustees coordinated with various City employees when evaluating these projects. Ultimately, the Trustees determined that the Canal Park project was no longer feasible because the overall reduction of the scope of the project rendered the project to be misaligned with requirements of the NRDAR regulations for restoration (see Section 5.12 of Final RP/EA, *Evaluation of Alternative Nine: City of Dover Canal Park Restoration and Enhancement Project, Sugar Creek Watershed*). Regarding the Wellhead/Soccer Field project, the Trustees determined that this project did not meet the restoration criteria established in the NRDAR regulations for selection because of its multi-purpose and proposed future uses (see Section 5.9, of Final RP/EA, *Evaluation of Alternative Eight: The City of Dover Wellhead Protection Project/Soccer Field Protection, Sugar Creek Watershed).*

For a comprehensive discussion of the alternatives analysis, please refer to the Final RP/EA where the Trustees have provided additional detail explaining their analysis (Chapter 5, of Final RP/EA. *Evaluation of Alternatives*).

Finally, the CERCLA NRDAR regulations provide the Trustees with flexibility to follow a process to ensure public participation and cost-effective timely resolution of potential legal claims. Here, the Trustees provided a 30-day public comment period on the Draft RP/EA and have thoughtfully considered the City's comments, resulting in edits to the Final RP/EA to add additional detail and clarity to the document. Prior to noticing the Draft RP/EA, the Trustees corresponded with the City of Dover on the NRDAR, leading to a virtual meeting on December 6, 2021, attended by the Department of Justice and the Fish and Wildlife Service to discuss the NRDAR and respond to non-confidential settlement questions the City may have regarding it. This was an additional step undertaken by the Trustees that was not required by the regulations (which themselves are optional) but was scheduled by the Trustees to involve the City in the NRDAR process. Further, the Trustees provided a courtesy copy of the Draft RP/EA to the City to ensure the City was aware

of its publication and will be providing the City of Dover with a courtesy copy of the Final RP/EA prior to publication.

Comment 4: The Restoration Plan fails to adequately explain how the conservation easement benefits the restoration or rehabilitation of the injured natural resources.

The Western Reserve Land Conservancy – East Hellbender Project involves the negotiation of conservation easements with landowners in areas outside of the Sugar Creek Watershed. Benefits described in the Restoration Plan include conserving important stream and riparian habitat of the Eastern Hellbender salamander, which could benefit "other biological resources that utilize the stream" Restoration Plan p. 76. The Eastern Hellbender salamander is one of three threatened and endangered species specifically mentioned that were "injured or potentially injured" by Dover Chemical Company's release of hazardous substances. Restoration Plan p. 13. Natural resources clearly injured by the release of hazardous substances include ground water, surface water (including wetlands), biota, and ecological habitats (riparian and upland). Restoration Plan p. 13. Freshwater fish and migratory bird species were also injured or potentially inured. Restoration Plan p. 13.

The Restoration Plan fails to explain the how conservation easements outside of the Sugar Creek Watershed benefit the natural resources actually injured by Dover Chemical Company. As previously mentioned, 43 C.F.R. § 11.82(a) requires the trustee to consider alternatives for "restoration or rehabilitation of the injured natural resources to a condition where they can provide the level of services available at baseline." Not only is the proposed project not localized to the assessment area actually injured by Dover Chemical Company's release of hazardous substances, but the Eastern Hellbender salamander is a potentially injured species among many other injured and potentially injured natural resources and species. This proposed project, even in conjunction with the three other proposed projects of Alternative Two, does not adequately address the injuries to natural resources caused by Dover Chemical Company's release of hazardous substances.

The City of Dover will supplement these comments on the draft Restoration Plan and Environmental Assessment for the Sugar Creek Valley Natural Resource Damage Assessment at the Dover Chemical Corporation Site with its comments to the draft Consent Decree for Natural Resource Damages between the United States of America v. Dover Chemical Corporation, D.J. Ref. No. 90–11–3–11517/1, Civil Action No. 5:17-cv-02335-BYP.

Trustee Response to Comment 4

The Trustees have provided additional information in Sections 4.6 *Alternative Five: Western Reserve Land Conservancy – Eastern Hellbender Project, Little Beaver Creek, Yellow Creek, Cross Creek, or Captina Creek Watersheds* and 5.6 *Evaluation of Alternative Five: Western Reserve Land Conservancy – Eastern Hellbender Project, Little Beaver Creek, Yellow Creek, Cross Creek, or Captina Creek Watersheds* of the Final RP/EA to explain how the acquisition of a property right through a conservation easement will benefit injured natural resources.

Of initial note, and as discussed above, the acquisition of conservation easements and environmental covenants outside of the Sugar Creek Assessment Area is an appropriate restoration action under the regulations, and the selection and combination of restoration activities is at the discretion of the authorized official. *See*, 43 C.F.R. §11.82(b). Here, the Trustees carefully considered projects both inside the Assessment Area and outside of the Assessment Area including active restoration projects and property acquisition projects, selecting a combination of activities to restore joint ecological resources. See page 62, Chapter 5, *Evaluation of Alternatives.*

The Trustees continue to support their selection of preferred restoration projects as meeting the regulatory requirement for restoration of injured resources. The Trustees recognize that the identification or "naming" of the Eastern Hellbender Project may have been misleading without further explanation. This project focuses on the acquisition of a minimum of 170 acres of property in surrounding counties through a perpetual property protection tool, precluding any future development of the properties. (Please refer to the templates prepared for both property instruments, provided as Appendices B and C of the Final RP/EA and the Consent Decree). This project is not "hellbender" specific. Rather, this project was named after the hellbender because it will not only benefit the hellbender, but because hellbenders are known as an indicator species. An indicator species serves as a measure of the environmental conditions that exist in a given locale. Hellbenders are extremely sensitive to poor water quality and pollution. Therefore, the hellbender is a clear indicator species for clean water because it cannot survive with anything less. Thus, the Trustees selected a restoration project that requires protection of clean water to benefit resources that have been injured by the releases from Dover Chemical.

From a restoration perspective, conservation easements are a valuable tool to protect land from future development permanently, safeguarding the value of these resources against both natural and anthropogenic threats. Scientific literature confirms that land protection helps to increase species biodiversity, species richness and abundance, ensure ecosystem functioning and deliver ecosystem services. The Eastern Hellbender Project requires the acquisition of a minimum of 170 acres of critical stream and riparian property to be protected from future development, in perpetuity. This property right protects both the surface water and the ground water recharge, and benefits the injured resources and supporting ecosystem of migratory birds, bats, freshwater fish and other biota, including the Eastern Hellbender. Protection and preservation of streams through restrictive deed language ensures that these areas with habitat and ecological services similar to those lost remain unharmed by development. These projects will provide similar trust resources as those injured in Sugar Creek including instream habitats and adjacent wetlands for macroinvertebrates, fish, and other organisms through restoration and preservation.

For a comprehensive discussion of this project and the other property acquisition projects, please refer to Chapter 5, *Evaluation of Alternatives* (page 62) in the Final Restoration Plan and Environmental Assessment.

Appendix F: Endangered Species Act Intra-Service Section 7 Biological Evaluation

Intra-Service Section 7 Biological Evaluation Form
Region 3

Originating Person: Deborah Millsap Date Submitted: February 17, 2023

Telephone Number: 614-600-7229

For assistance with section 7 reviews, go to Region 3's Section 7 Technical Assistance website: http://www.fws.gov/midwest/endangered/section7/s7process/

I. Service Program and Geographic Area or Station Name: FWS/State of Ohio NRDA case: Dover Chemical

II. Location: Location of the project including County, State and TSR (township, section & range):

Falcon Flats – Stark County, Ohio

Location:

- North Parcel 40.6975 / -81.5842 Permanent No. = 67-80168 53 Acres
- South Parcel 40.6902 / -81.5844 Permanent No. = 67-80145 48 Acres

III. Species/Critical Habitat: Federally listed, proposed, and candidate species or designated or proposed critical habitat that may occur within the action area:

- Indiana bat (*Myotis sodalis*) E
- Northern long-eared bat (*Myotis septentrionalis*) T
- Tricolored bat (*Perimyotis subflavus*) Proposed E

IV. Project Description: Describe the proposed project or action, including all conservation elements. If referencing other documents, prepare an executive summary. Include map and photos of site, if possible. (Attach additional pages as needed):

Restoration of Falcon Flats Wetland Habitat. Approximately 13.5 acres of wetland and riparian habitat will be restored and enhanced within the 101-acre Falcon Flats parcel. This wetland restoration project will help to improve the overall habitat quality for the entire property.

- The project includes, but is not limited to, soil excavation and/or management to improve water quality, planting of native wetland and upland vegetation, and a five-year invasive species management program.

- Appropriate Clean Water Act 404 permits will be obtained prior to stream restoration.

- The project will manage invasive plant species through herbicide applications, manual and/or mechanical plant removal, and planting of native wetland and upland species.

- Long-term ownership and management of the protected Falcon Flats area will be the responsibility of the Wilderness Center as a charitable trust, requiring the conservation and long-term management of the property subject to limited use provisions in an environmental covenant.

V. Determination of Effects:

A. Description of Effects: Describe how the action(s) will affect the species and critical habitats listed in item III, including how Part IV conservation elements benefit or avoid adverse effects. Your rationale for the Section 7 determinations made below should be fully described here.

Wetland and riparian habitat, will be restored, enhanced, and preserved through conversion of agricultural lands into wetland and riparian habitat and invasive plant species management will increase foraging habitat for the Indiana bat, northern long-eared bat, and tri-colored bat.

Projects implemented through the Restoration Plan are not likely to adversely affect federally listed species or jeopardize continued existence of the tri-colored bat due to the following:

1. Potential roost or maturity trees will be avoided. The endangered Indiana bat, threatened northern long-eared bat and proposed endangered tricolored bat all occur throughout the State of Ohio. These three bat species are assumed to be present wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for these bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. During spring, summer, and fall, tricolored bats roost primarily among leaf clusters of live or recently dead trees, emerging at dusk to hunt for insects over waterways and forest edges. Northern long-eared bats have been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, all three of these species can be found hibernating in caves and abandoned mines.

2. Avoidance measures will be implemented to eliminate any potential adverse effects to the listed and proposed bat species that may be onsite. Trees that are ≥3 inches diameter at breast height will only be cut or removed between October 1 and March 31 in order to avoid adverse effects to all three bat species. If any tree clearing is necessary for this project, it will occur between October 1 and March 30.

3. If the Restoration Plan is changed or avoidance measures cannot be adhered to for this project, then coordination with the U.S. Fish and Wildlife Service, Ohio Ecological Services Office, will be required prior to conducting any further work.

B. Determination: Determine the anticipated effects of the proposed project on species and critical habitats listed in item III. Check all applicable boxes and list the species (or attach a list) associated with each determination. For assistance with making appropriate Section 7 determinations, go to Region 3's Section 7 Technical Assistance website:
http://www.fws.gov/midwest/endangered/section7/s7process/

	Determination
No Effect: This determination is appropriate when the proposed project will not directly or indirectly affect (neither negatively nor beneficially) individuals of listed/proposed/candidate species or designated/proposed critical habitat of such species. No concurrence from ESFO required.	____
May Affect but Not Likely to Adversely Affect: This determination is appropriate when the proposed project is likely to cause insignificant, discountable, or wholly beneficial effects to individuals and designated critical habitat. Concurrence from ESFO required.	X
May Affect and Likely to Adversely Affect: This determination is appropriate when the proposed project is likely to adversely impact individuals of listed species or designated critical habitat of such species. Concurrence from ESFO required.	____
Not Likely to Jeopardize candidate or proposed species/critical habitat: This determination is appropriate when the proposed project is not expected to jeopardize the continued existence of a species proposed for listing or a candidate species, or adversely modify an area proposed for designation as critical habitat. Concurrence from ESFO required.	X
Likely to Jeopardize candidate or proposed species/critical habitat: This determination is appropriate when the proposed project is reasonably expected to jeopardize the continued existence of a species proposed for listing or a candidate species, or adversely modify an area proposed for designation as critical habitat. Concurrence from ESFO required.	____

Signature Deborah Millsap Date February 15, 2023

Reviewing Ecological Services Office Evaluation (check all that apply):

A. **Concurrence ___X____** **Nonconcurrence _____**
Explanation for nonconcurrence:

We concur with your determination due to the implementation of seasonal tree clearing restrictions for the listed and proposed bat species.

B. Formal consultation required _____
List species or critical habitat unit

C. Conference required _____
List species or critical habitat unit

Name of Reviewing ES Office: Ohio Ecological Services

Signature PATRICE ASHFIELD Digitally signed by PATRICE ASHFIELD Date: 2023.02.21 13:27:42 -05'00' Date _____

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Intra-Service Section 7 Biological Evaluation Form
Region 3

Originating Person: Deborah Millsap Date Submitted: February 15, 2023

Telephone Number: 614-600-7229

For assistance with section 7 reviews, go to Region 3's Section 7 Technical Assistance website: http://www.fws.gov/midwest/endangered/section7/s7process/

I. Service Program and Geographic Area or Station Name: FWS/State of Ohio NRDA case: Dover Chemical

II. Location: Location of the project including County, State and TSR (township, section & range):

Lash's Bog – Stark County **Location: 40.7019 / -81.6150**
Permanent Parcel # 67-80169

III. Species/Critical Habitat: List federally-listed, proposed, and candidate species or designated or proposed critical habitat that may occur within the action area:

- Indiana bat (*Myotis sodalis*) E
- Northern long-eared bat (*Myotis septentrionalis*) T
- Tricolored bat (*Perimyotis subflavus*) Proposed E

IV. Project Description: Describe the proposed project or action, including all conservation elements. If referencing other documents, prepare an executive summary. Include map and photos of site, if possible. (Attach additional pages as needed):

Lash's Bog: This Project entails the restoration and enhancement of 15 acres of degraded wetland habitat and adjacent forested buffer habitat within the 40-acre Lash's Bog preserve owned by The Wilderness Center. A Restoration Plan will outline the activities that will be conducted including the removal of non-native invasive vegetation and planting native species to augment the restoration of the site. Key restoration activities include the treatment and/or removal of invasive reed canary grass (*Phalaris arundinacea*) and additional invasive species control efforts such as for autumn olive (*Elaeagnus umbellata*) occurring within the adjacent forested buffer. Overall, implementation of this Restoration Project will improve the wetand and upland habitats that will provide long-term beneficial effects for many species within this rare and unique bog ecosystem.

The Restoration Project will manage invasive plant species in the bog through herbicide applications, manual and/or mechanical plant removal, and planting native wetland and upland species. The invasive species management program will be conducted for five years.

Long term ownership and management of the protected Lash Bog area will be the responsibility of the Wilderness Center, requiring the conservation and long-term management of the property.

V. Determination of Effects:

A. Description of Effects: Describe how the action(s) will affect the species and critical habitats listed in item III, including how Part IV conservation elements benefit or avoid adverse effects. Your rationale for the Section 7 determinations made below (VB.) should be fully described here.

The endangered Indiana bat, threatened northern long-eared bat, and proposed endangered tricolored bat all occur throughout the State of Ohio. These three bat species are assumed to be present wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for these bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. During spring, summer, and fall, tricolored bats roost primarily among leaf clusters of live or recently dead trees, emerging at dusk to hunt for insects over waterways and forest edges. Northern long-eared bats have been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, all three of these species can be found hibernating in caves and abandoned mines.

Rare and unique bog and wetland habitat will be preserved and enhanced through invasive plant species management that should increase foraging habitat for the Indiana bat, northern long-eared bat, and tricolored bat.

Implementation of the Restoration Plan is beneficial overall and adverse effects to listed bats and proposed bat species will not be adversely affected due to the following avoidance measures:

1) No trees are planned to be removed or impacted by the proposed restoration activities. If any tree clearing is necessary for this project, it will only occur between October 1 and March 30.

2) Avoidance measures will be implemented to eliminate any potential adverse effects to the listed and proposed bat species that may be onsite. Trees that are ≥3 inches diameter at breast height will only be cut or removed between October 1 and March 31 in order to avoid adverse effects to all three bat species.

3) The U.S. Fish and Wildlife Service, Ohio Ecological Services Office, must be contacted if the Restoration Plan is modified or avoidance measures cannot be implemented per this consultation. All work activity will cease until that coordination is complete.

B. Determination: Determine the anticipated effects of the proposed project on species and critical habitats listed in item III. Check all applicable boxes and list the species (or attach a list) associated with each determination**. For assistance with making appropriate Section 7 determinations, go to Region 3's Section 7 Technical Assistance website:**
http://www.fws.gov/midwest/endangered/section7/s7process/

	Determination
No Effect: This determination is appropriate when the proposed project will not directly or indirectly affect (neither negatively nor beneficially) individuals of listed/proposed/candidate species or designated/proposed critical habitat of such species. No concurrence from ESFO required.	_____
May Affect but Not Likely to Adversely Affect: This determination is appropriate when the proposed project is likely to cause insignificant, discountable, or wholly beneficial effects to individuals and designated critical habitat. Concurrence from ESFO required.	X
May Affect and Likely to Adversely Affect: This determination is appropriate when the proposed project is likely to adversely impact individuals of listed species or designated critical habitat of such species. Concurrence from ESFO required.	_____
Not Likely to Jeopardize candidate or proposed species/critical habitat: This determination is appropriate when the proposed project is not expected to jeopardize the continued existence of a species proposed for listing or a candidate species, or adversely modify an area proposed for designation as critical habitat. Concurrence from ESFO required.	X
Likely to Jeopardize candidate or proposed species/critical habitat: This determination is appropriate when the proposed project is reasonably expected to jeopardize the continued existence of a species proposed for listing or a candidate species, or adversely modify an area proposed for designation as critical habitat. Concurrence from ESFO required.	_____

Signature: Deborah Millsap Date: February 15, 2023

Reviewing Ecological Services Office Evaluation (check all that apply):

A. **Concurrence ___X__** **Nonconcurrence _____**
Explanation for nonconcurrence:

We concur the Lash Bog Restoration Project is not likely to adversely affect listed bats or jeopardize the continued existence of the proposed as endangered tricolored bat due to the avoidance of any tree removal between October 1 and March 31.

B. Formal consultation required _____
List species or critical habitat unit

C. Conference required _____
List species or critical habitat unit

Name of Reviewing ES Office: Ohio Ecological Services

Signature PATRICE ASHFIELD Digitally signed by PATRICE ASHFIELD Date: 2023.02.21 14:54:50 -05'00' Date _____

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Appendix G: National Historic Preservation Act Clearance

REQUEST FOR MIDWEST RHPO NHPA CLEARANCE

For Undertakings that may have the Potential to Cause Effects on Historic Properties

Project Background:

Project Name: Dover Chemical NRDAR Restoration: Falcon Flats Restoration Project Type: Restoration

County: Stark State: Ohio On USFWS land? Yes ☐ No ☒

USFWS Program: Other If Other, please name: Natural Resource Damage Assessment Restoration

Project Location: Township(s) Sugar Creek ☐N ☐S, Range(s) _____ ☐E ☐W, Section(s): _____

Total Project Area Size (in Acres): 13.5 If road/trail, (linear ft, L and W): _____

USFWS Project Leader: Deborah Millsap Station: Ohio Phone #: 614-600-7229 (cell)

If there is a Governmental/NGO partner(s), please name: n/a

Mandatory Attachments (on separate sheets):

1. USGS topographical map and aerial photo, ensuring that the project boundaries are exact.
2. Details of anticipated project activities, i.e. ground/building disturbance (add maps as necessary)
3. Only the relevant sections of design drawings showing soil disturbance boundaries (e.g. planviews)
4. Landuse history and environmental setting of the project area (add maps as necessary)

☐ **Check here if you have done any informal consultation(s) outside the USFWS** (if not, check here ☒)
If so, did you talk with SHPO? Tribes? Did you consult any database with known surveys or sites?
Please attach any information you have regarding your outside informal consultation(s).

☐ **Check here if there has been a field survey done in the project area already** (if not, check here ☒)
If so, who conducted it and when? Did they find any buildings/sites? Please see the next section.
Please attach any information/report(s) you have regarding any previous field survey(s).

☐ **Check here if there are known buildings/sites* in the project area** (if not, check here ☒)
*Sites are such places as artifact scatters, mounds or earthworks, cemeteries, privy pits, old foundations, ruins, bridges, dams, water control structures, historic roads/trails/fences, and trash pits/piles.

Information needed to be furnished to RHPO if there are known buildings/sites in the project area:

1. Age of building(s)/site(s) or date(s) built: _____ RPI # or State #(s) _____
2. **Attach** ground level photographs of both inside and outside of buildings/sites.
3. **Attach** close-up aerial photo or a sketch map illustrating the placement of the buildings/sites in the project area, key the ground photos to the aerial photo/sketch map.
4. **Attach** detailed descriptions of the buildings/sites with emphasis on their size, floor plans and architectural elements. Individually, what kind of physical shape are they in (good, fair or poor)?

Submitted by: Deborah Millsap Date: 2/8/2023 Phone #: 614-600-7229

RHPO Only **

Investigation

☐ No Field Survey Needed
☐ Field Survey Done
- ☐ Phase I (ARPA# _____)
- ☐ Phase II (ARPA# _____)
- ☐ Phase III (ARPA# _____)

**Final Finding by RHPO*

☐ No Potential Effect. ☐ No site/building(s) in APE. No Effect.
☐ Site/Building(s) present, but none are Historic Properties. No Effect.
☐ Historic Property(ies) present, but No Effect/No Adverse Effect.
☐ Historic Property(ies) present, Adverse Effect, Resolved with MOA.

Justify Finding: See attached recommendations for required survey.

☒ Stipulations Archaeological survey is required in advance of ground-disturbing activities.

Daniel O'Toole Digitally signed by Daniel O'Toole Date: 2023.02.17 12:09:28 -07'00'

USFWS Midwest RHPO	Date	RHPO Project #
	2/17/2023	2023.OH.ECS.005

*Although the project has been cleared, inadvertent discoveries are still possible. If so, please stop immediately and contact the RHPO.

The Falcon Flats Restoration Project proposes ground disturbance below the level of previous agricultural disturbance in an area with high potential for buried archaeological resources. A Phase I archaeological survey is therefore required in advance of ground disturbance within the project area in order to determine the presence or absence of buried archaeological resources that could be affected by project activities. If present, a Phase II archaeological survey is likely to be required in order to evaluate archaeological resources for significance and research potential. If significance and research potential are present, a Phase III data recovery survey could be warranted to mitigate adverse effects to any archaeological resources that are found to be eligible for listing on the National Register of Historic Places. It is therefore recommended that the Settling Defendant establish a contract for archaeological services with a clause that the contractor would move directly into subsequent phases of survey, as needed, without demobilizing.

Archaeological survey is required in advance of ground-disturbing activities such as wetland restoration and creation, soil excavation, streambank excavation, and other earth-moving activities, including supplemental plantings depending on the size of rootballs and the depth of plantings. Archaeological survey is not required for minimally ground-disturbing project activities, such as in-stream work and invasive species removal, so long as invasive brush and trees are flush-cut and stumps are not pulled or grubbed.

REQUEST FOR MIDWEST RHPO NHPA CLEARANCE

For Undertakings that may have the Potential to Cause Effects on Historic Properties

Project Background:

Project Name: Dover Chemical NRDAR Restoration: Lash's Bog Project Type: Restoration

County: Stark State: Ohio On USFWS land? Yes ☐ No ☒

USFWS Program: Other If Other, please name: Natural Resource Damage Assessment Restoration

Project Location: Township(s) Sugar Creek ☐N ☐S, Range(s) _____ ☐E ☐W, Section(s): _____

Total Project Area Size (in Acres): 15 If road/trail, (linear ft, L and W): _____

USFWS Project Leader: Deborah Millsap Station: Ohio Phone #: 614-600-7229 (cell)

If there is a Governmental/NGO partner(s), please name: n/a

Mandatory Attachments (on separate sheets):

1. USGS topographical map and aerial photo, ensuring that the project boundaries are exact.
2. Details of anticipated project activities, i.e. ground/building disturbance (add maps as necessary)
3. Only the relevant sections of design drawings showing soil disturbance boundaries (e.g. planviews)
4. Landuse history and environmental setting of the project area (add maps as necessary)

☐ **Check here if you have done any informal consultation(s) outside the USFWS** (if not, check here ☒)
If so, did you talk with SHPO? Tribes? Did you consult any database with known surveys or sites?
Please attach any information you have regarding your outside informal consultation(s).

☐ **Check here if there has been a field survey done in the project area already** (if not, check here ☒)
If so, who conducted it and when? Did they find any buildings/sites? Please see the next section.
Please attach any information/report(s) you have regarding any previous field survey(s).

☐ **Check here if there are known buildings/sites* in the project area** (if not, check here ☐)
*Sites are such places as artifact scatters, mounds or earthworks, cemeteries, privy pits, old foundations, ruins, bridges, dams, water control structures, historic roads/trails/fences, and trash pits/piles.

Information needed to be furnished to RHPO if there are known buildings/sites in the project area:

1. Age of building(s)/site(s) or date(s) built: _____ RPI # or State #(s) _____
2. **Attach** ground level photographs of both inside and outside of buildings/sites.
3. **Attach** close-up aerial photo or a sketch map illustrating the placement of the buildings/sites in the project area, key the ground photos to the aerial photo/sketch map.
4. **Attach** detailed descriptions of the buildings/sites with emphasis on their size, floor plans and architectural elements. Individually, what kind of physical shape are they in (good, fair or poor)?

Submitted by: Deborah Millsap Date: 2/8/2023 Phone #: 614-600-7229

RHPO Only **

Investigation

☒ No Field Survey Needed
☐ Field Survey Done
- ☐ Phase I (ARPA# _____)
- ☐ Phase II (ARPA# _____)
- ☐ Phase III (ARPA# _____)

**Final Finding by RHPO*

☒ No Potential Effect. ☐ No site/building(s) in APE. No Effect.
☐ Site/Building(s) present, but none are Historic Properties. No Effect.
☐ Historic Property(ies) present, but No Effect/No Adverse Effect.
☐ Historic Property(ies) present, Adverse Effect, Resolved with MOA.

Justify Finding: No buildings located on parcels. No historic district or historic landscape present.

☒ Stipulations Flush-cut large brush and trees and avoid pulling stumps in upland areas that have not been previously plowed and cropped.

Daniel O'Toole Digitally signed by Daniel O'Toole Date: 2023.02.15 19:28:32 -07'00' | 2/15/2023 | 2023.OH.ECS.004

USFWS Midwest RHPO | Date | RHPO Project #

*Although the project has been cleared, inadvertent discoveries are still possible. If so, please stop immediately and contact the RHPO.

REQUEST FOR MIDWEST RHPO NHPA CLEARANCE

For Undertakings that may have the Potential to Cause Effects on Historic Properties

Project Background:

Project Name: Dover Chemical NRDAR Restoration : Sugar Creek Habitat Project Project Type: Preservation

County: Tuscarawas State: Ohio On USFWS land? Yes ☐ No ☒

USFWS Program: Other If Other, please name: Natural Resource Damage Assessment Restoration

Project Location: Township(s) Dover ☐N ☐S, Range(s) _____ ☐E ☐W, Section(s): _____

Total Project Area Size (in Acres): 25.28 If road/trail, (linear ft, L and W): _____

USFWS Project Leader: Deborah Millsap Station: Ohio Phone #: 614-600-7229 (cell)

If there is a Governmental/NGO partner(s), please name: n/a

Mandatory Attachments (on separate sheets):

1. USGS topographical map and aerial photo, ensuring that the project boundaries are exact.
2. Details of anticipated project activities, i.e. ground/building disturbance (add maps as necessary)
3. Only the relevant sections of design drawings showing soil disturbance boundaries (e.g. planviews)
4. Landuse history and environmental setting of the project area (add maps as necessary)

☐ **Check here if you have done any informal consultation(s) outside the USFWS** (if not, check here ☒)
If so, did you talk with SHPO? Tribes? Did you consult any database with known surveys or sites?
Please attach any information you have regarding your outside informal consultation(s).

☐ **Check here if there has been a field survey done in the project area already** (if not, check here ☒)
If so, who conducted it and when? Did they find any buildings/sites? Please see the next section.
Please attach any information/report(s) you have regarding any previous field survey(s).

☐ **Check here if there are known buildings/sites* in the project area** (if not, check here ☒)
*Sites are such places as artifact scatters, mounds or earthworks, cemeteries, privy pits, old foundations, ruins, bridges, dams, water control structures, historic roads/trails/fences, and trash pits/piles.

Information needed to be furnished to RHPO if there are known buildings/sites in the project area:

1. Age of building(s)/site(s) or date(s) built: _____ RPI # or State #(s) _____
2. **Attach** ground level photographs of both inside and outside of buildings/sites.
3. **Attach** close-up aerial photo or a sketch map illustrating the placement of the buildings/sites in the project area, key the ground photos to the aerial photo/sketch map.
4. **Attach** detailed descriptions of the buildings/sites with emphasis on their size, floor plans and architectural elements. Individually, what kind of physical shape are they in (good, fair or poor)?

Submitted by: Deborah Millsap Date: 2/8/2023 Phone #: 614-600-7229

RHPO Only ***

Investigation

☒ No Field Survey Needed
☐ Field Survey Done
- ☐ Phase I (ARPA# _____)
- ☐ Phase II (ARPA# _____)
- ☐ Phase III (ARPA# _____)

**Final Finding by RHPO*

☒ No Potential Effect. ☐ No site/building(s) in APE. No Effect.
☐ Site/Building(s) present, but none are Historic Properties. No Effect.
☐ Historic Property(ies) present, but No Effect/No Adverse Effect.
☐ Historic Property(ies) present, Adverse Effect, Resolved with MOA.

Justify Finding: No buildings located on parcels. No ground disturbance associated with environmental covenants. No historic district or historic landscape present.

☐ Stipulations _____

Daniel O'Toole Digitally signed by Daniel O'Toole Date: 2023.02.10 13:06:16 -07'00' | 2/10/2023 | 2023.OH.ECS.002

USFWS Midwest RHPO | Date | RHPO Project #

*Although the project has been cleared, inadvertent discoveries are still possible. If so, please stop immediately and contact the RHPO.

REQUEST FOR MIDWEST RHPO NHPA CLEARANCE

For Undertakings that may have the Potential to Cause Effects on Historic Properties

Project Background:

Project Name: Dover Chemical NRDAR Restoration : Eastern Hellbender Project Project Type: Preservation

County: Columbiana, Jefferson, Belmont State: Ohio On USFWS land? Yes ☐ No ☒

USFWS Program: Other If Other, please name: Natural Resource Damage Assessment Restoration

Project Location: Township(s) _____ ☐N ☐S, Range(s) _____ ☐E ☐W, Section(s): _____

Total Project Area Size (in Acres): 170 If road/trail, (linear ft, L and W): _____

USFWS Project Leader: Deborah Millsap Station: Ohio Phone #: 614-600-7229 (cell)

If there is a Governmental/NGO partner(s), please name: n/a

Mandatory Attachments (on separate sheets):

1. USGS topographical map and aerial photo, ensuring that the project boundaries are exact.
2. Details of anticipated project activities, i.e. ground/building disturbance (add maps as necessary)
3. Only the relevant sections of design drawings showing soil disturbance boundaries (e.g. planviews)
4. Landuse history and environmental setting of the project area (add maps as necessary)

☐ **Check here if you have done any informal consultation(s) outside the USFWS** (if not, check here ☒)
If so, did you talk with SHPO? Tribes? Did you consult any database with known surveys or sites?
Please attach any information you have regarding your outside informal consultation(s).

☐ **Check here if there has been a field survey done in the project area already** (if not, check here ☒)
If so, who conducted it and when? Did they find any buildings/sites? Please see the next section.
Please attach any information/report(s) you have regarding any previous field survey(s).

☐ **Check here if there are known buildings/sites* in the project area** (if not, check here ☒)
*Sites are such places as artifact scatters, mounds or earthworks, cemeteries, privy pits, old foundations, ruins, bridges, dams, water control structures, historic roads/trails/fences, and trash pits/piles.

Information needed to be furnished to RHPO if there are known buildings/sites in the project area:

1. Age of building(s)/site(s) or date(s) built: _____ RPI # or State #(s) _____
2. **Attach** ground level photographs of both inside and outside of buildings/sites.
3. **Attach** close-up aerial photo or a sketch map illustrating the placement of the buildings/sites in the project area, key the ground photos to the aerial photo/sketch map.
4. **Attach** detailed descriptions of the buildings/sites with emphasis on their size, floor plans and architectural elements. Individually, what kind of physical shape are they in (good, fair or poor)?

Submitted by: Deborah Millsap Date: 2/8/2023 Phone #: 614-600-7229

RHPO Only **

Investigation

☒ No Field Survey Needed
☐ Field Survey Done
- ☐ Phase I (ARPA# _____)
- ☐ Phase II (ARPA# _____)
- ☐ Phase III (ARPA# _____)

**Final Finding by RHPO*

☒ No Potential Effect. ☐ No site/building(s) in APE. No Effect.
☐ Site/Building(s) present, but none are Historic Properties. No Effect.
☐ Historic Property(ies) present, but No Effect/No Adverse Effect.
☐ Historic Property(ies) present, Adverse Effect, Resolved with MOA.

Justify Finding: No on-the-ground activities. This finding only applies to administrative actions that facilitate project planning.

☒ Stipulations Individual conservation easements will require further review once locations are determined during project implementation.

Daniel O'Toole Digitally signed by Daniel O'Toole Date: 2023.02.10 13:58:30 -07'00' | 2/10/2023 | 2023.OH.ECS.003

USFWS Midwest RHPO | Date | RHPO Project #

*Although the project has been cleared, inadvertent discoveries are still possible. If so, please stop immediately and contact the RHPO.

Appendix H: Categorical Exclusion Checklist for NEPA Compliance

CATEGORICAL EXCLUSION CHECKLIST FOR NEPA COMPLIANCE

Proposed Action:
Dover Chemical Natural Resource Damage Assessment and Restoration
Draft Restoration Plan Proposed Projects – Sugar Creek Property

Approximately 25 acres of wetland and riparian habitat adjacent to Sugar Creek will be preserved by an environmental covenant with Dover Chemical to ensure the long-term protection of the stream and adjacent upland habitat.

Long-term management of the protected area will be the responsibility of Dover Chemical, requiring the conservation and long-term management of the property subject to provisions stipulated in the environmental covenant.

Acquisition will also provide habitat for Indiana bat (*Myotis sodalis*), northern long-eared bat (*Myotis septentrionalis*), bald eagle (*Haliaeetus leucocephalus*), and migratory birds. No restoration is planned for the acquired property.

This proposed action is covered by the following categorical exclusion 516 DM8.5 B (11)

Extraordinary Circumstances (43 CFR 46.215) :
Could This Proposed Action (*check (✓) yes or no for each item below)*:

Yes	No	
□	x	a. Have significant adverse effects on public health or safety?
□	x	b. Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation or refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (EO 11990); floodplains (EO 11988); national monuments; migratory birds; and other ecologically significant or critical areas?
□	x	c. Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources [NEPA section 102(2)(E)]?
□	x	d. Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks?
□	x	e. Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?
□	x	f. Have a direct relationship to other actions with individually insignificant but cumulatively significant environmental effects?
□	x	g. Have significant impacts on properties listed, or eligible for listing, on the National Register of Historic Places as determined by the bureau?
□	x	h. Have adverse effects on species listed or proposed to be listed on the List of Endangered or Threatened Species, or have significant impacts on designated Critical Habitat for these species?

□ x i. Violate a Federal law, or a State, local, or tribal law or requirement imposed for the protection of the environment?

□ x j. Have a disproportionately high and adverse effect on low income or minority populations (EO 12898).

□ x k. Limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (EO 13007).

□ x l. Contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act and EO 13112).

□ x m. Have material adverse effects on resources requiring compliance with Executive Order 11988 (Floodplain Management), Executive Order 11990 (Protection of Wetlands), or the Fish and Wildlife Coordination Act?

(If any of the above exceptions receive a "Yes" check (✓) , an EA/EIS must be prepared.)

Within the spirit and intent of the Council of Environmental Quality's regulations for implementing the National Environmental Policy Act (NEPA) and other statutes, orders, and policies that protect fish and wildlife resources, I have established the following administrative record and have determined:

x **The proposed action is covered by a categorical exclusion as provided by 43 CFR §46.210 or 516 DM 8.5. No further NEPA documentation will therefore be made.**

□ **An Extraordinary Circumstance could exist for the proposed action and, so an EA/EIS must be prepared.**

Service signature approval:

Signature DEBORAH MILLSAP Digitally signed by DEBORAH MILLSAP Date: 2023.02.21 17:16:11 -05'00' Date: _____

Title _____

Signature PATRICE ASHFIELD Digitally signed by PATRICE ASHFIELD Date: 2023.02.21 15:24:17 -05'00' Date: _____

Title Field Supervisor, Ohio ES Field Office

CATEGORICAL EXCLUSION CHECKLIST FOR NEPA COMPLIANCE

Proposed Action:
Dover Chemcial Natural Resource Damage Assessment and Restoration
Draft Restoration Plan Proposed Projects – Eastern Hellbender Project

Approximately 170 acres of agricultural, wetland, and riparian habitat will be preserved and/or enhanced along Yellow Creek, Cross Creek, or Captina Creek adjacent to properties that are already conserved by Western Reserve Land Conservancy (WRLC). The properties will be placed under conservation easements to provide long-term protection of the stream and riparian habitat for the Eastern Hellbender salamander and other aquatic organisms.

Property adjacent to Yellow Creek is under development pressure due to expansion of a nearby mining operation. Long-term management of the protected areas will be the responsibility of the WRLC, requiring the conservation and long-term management of the property subject to limited use provisions as defined in the conservation easements with the landowners.

Acquisition will also provide habitat for Indiana bat (*Myotis sodalis*), Northern long-eared bat (*Myotis septentrionalis*), bald eagle (*Haliaeetus leucocephalus*), Eastern Hellbender (*Cryptobranchus alleganiensis*), and migratory birds. No restoration is planned for the acquired property.

This proposed action is covered by the following categorical exclusion 516 DM8.5 B (11)

Extraordinary Circumstances (43 CFR 46.215) :
Could This Proposed Action (*check (✓) yes or no for each item below)*:

Yes	No	
□	x	a. Have significant adverse effects on public health or safety?
□	x	b. Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation or refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (EO 11990); floodplains (EO 11988); national monuments; migratory birds; and other ecologically significant or critical areas?
□	x	c. Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources [NEPA section 102(2)(E)]?
□	x	d. Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks?
□	x	e. Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?
□	x	f. Have a direct relationship to other actions with individually insignificant but cumulatively significant environmental effects?
□	x	g. Have significant impacts on properties listed, or eligible for listing, on the

National Register of Historic Places as determined by the bureau?

□ x h. Have adverse effects on species listed or proposed to be listed on the List of Endangered or Threatened Species, or have significant impacts on designated Critical Habitat for these species?

□ x i. Violate a Federal law, or a State, local, or tribal law or requirement imposed for the protection of the environment?

□ x j. Have a disproportionately high and adverse effect on low income or minority populations (EO 12898).

□ x k. Limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (EO 13007).

□ x l. Contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act and EO 13112).

□ x m. Have material adverse effects on resources requiring compliance with Executive Order 11988 (Floodplain Management), Executive Order 11990 (Protection of Wetlands), or the Fish and Wildlife Coordination Act?

(If any of the above exceptions receive a "Yes" check (✓) , an EA/EIS must be prepared.)

Within the spirit and intent of the Council of Environmental Quality's regulations for implementing the National Environmental Policy Act (NEPA) and other statutes, orders, and policies that protect fish and wildlife resources, I have established the following administrative record and have determined:

x **The proposed action is covered by a categorical exclusion as provided by 43 CFR §46.210 or 516 DM 8.5. No further NEPA documentation will therefore be made.**

□ **An Extraordinary Circumstance could exist for the proposed action and, so an EA/EIS must be prepared.**

Service signature approval:

Signature DEBORAH MILLSAP Digitally signed by DEBORAH MILLSAP Date: 2023.02.21 17:14:42 -05'00' Date: _____

Title _____

Signature PATRICE ASHFIELD Digitally signed by PATRICE ASHFIELD Date: 2023.02.21 15:14:41 -05'00' Date: _____

Title Project Leader, FWS Ohio ES Office

Appendix I: Finding of No Significant Impact

FINDING OF NO SIGNIFICANT IMPACT

ISSUANCE OF A FINAL RESTORATION PLAN AND ENVIRONMENTAL ASSESSMENT FOR THE SUGAR CREEK VALLEY NATURAL RESOURCE DAMAGE ASSESSMENT AT THE DOVER CHEMICAL SITE

Pursuant to the National Environmental Policy Act of 1969 (NEPA), we reviewed the Draft Restoration Plan and Environmental Assessment (Draft RP/EA) to evaluate specific restoration alternatives. This Finding of No Significant Impact (FONSI) was prepared specifically for Alternatives 2 (The Wilderness Center – Falcon Flats Restoration Project) and 3 (The Wilderness Center – Lash's Bog Enhancement and Restoration) (formerly contained under Alternative 2 in the Draft RP/EA and currently identified in the Final RP/EA [1] as Alternatives 2 and 3 for procedural purposes only)[2]. Alternatives 4 (Sugar Creek Habitat Conservation Project) and 5 (Western Reserve Land Conservancy – Eastern Hellbender Project) meet the criteria for categorical exclusions. Alternative 6 (Trustee Implemented Ground Water Restoration and/or Protection Projects) is not included in this FONSI determination because it is solely a ground water project(s) that addresses a state-only resource. The Draft RP/EA was prepared by the Trustees, including the U.S. Department of the Interior (DOI), acting through the U.S. Fish and Wildlife Service and State of Ohio, acting through the Ohio Environmental Protection Agency (Ohio EPA) (collectively, the "Trustees"). In the Draft RP/EA, the Trustees reviewed and evaluated a suite of restoration projects under three categories/alternatives that included a total of nine projects that offset the natural resource injuries and services lost from releases of hazardous substances by Dover Chemical Corporation.

Selected Alternative 2: The Wilderness Center – Falcon Flats Restoration Project

Alternative 2 focuses on restoring a minimum of 13.5 acres of wetlands and riparian habitat within the 141-acre Falcon Flats preserve that is wholly owned by the TWC and located in Sugar Creek Township, Stark County, Ohio. Implementation of Alternative 2 is expected to increase habitat quality by restoring and enhancing TWC lands, consistent with the project goals identified in Final RP/EA.

Selected Alternative 3: The Wilderness Center – Lash's Bog Enhancement and Restoration

Alternative 3 focuses on restoring and enhancing a minimum of 15 acres of wetlands and adjacent buffer habitat within the Lash's Bog Preserve. As with Alternative 2, Alternative 3 is expected to increase the quality of the habitat consistent with the project goals identified in the Final RP/EA.

[1] In the Draft RP/EA, the Trustees "lumped" the alternatives into three categories: No Action, Preferred and Non-Preferred. After receiving public comments, the Trustees reorganized the alternatives, procedurally, in the Final RP/EA to segment each alternative into its own category.

[2] None of the conclusions in the Draft RP/EA have been modified in the Final RP/EA. Rather, the Trustees provided additional information to clarify and further explain its decision making process after receipt of comments from the City of Dover.

The Trustees evaluated Alternatives 2 and 3 according to restoration screening and evaluation criteria in accordance with the Comprehensive Environmental Response Compensation, and Liability Act (CERCLA) Natural Resource Damage Assessment and Restoration regulations (NRDAR), 43 C.F.R. §11.81(d)(2), and analyzed the environmental consequences of the restoration projects pursuant to NEPA. The Trustees concluded that Alternatives 2 and 3 are unlikely to have significant adverse impacts on the environment under NEPA. These alternatives also meet the mandates under the NRDAR regulations to restore and replace natural resources and services injured by releases of hazardous substances and are consistent with the goals and objectives of the Final RP/EA.

Public Comment and Outreach

Beginning on October 3, 2022, the Draft RP/EA was made available for review and public comment for 30 days. Notice of the public comment period was announced via press release, posting on the FWS' webpage for this NRDAR matter, and through direct outreach to interested parties and stakeholders including the City of Dover and Dover Chemical Corporation. The public comment period ended on November 2, 2022. During the public review period, the Trustees received comments on the Draft RP/EA from one commenter, the City of Dover; public comments and the Trustees' responses can be found in Appendices D and E of the Final RP/EA. After reviewing and responding to public comments and making appropriate modifications for clarity, the Trustees determined it is appropriate to proceed with the Selected Alternatives. This FONSI precedes the decision of the Trustees to approve the Final RP/EA, publish it, and begin implementation of restoration.

The Final RP/EA, and associated FONSI, will be made available to the public on the Dover Chemical Corporation Sugar Creek Natural Resource Damage Assessment and Restoration website[3] for the NRDAR case. Notification of the availability of the Final RP/EA and FONSI will be made by directed outreach to the City of Dover and Dover Chemical Corporation.

[3] https://www.fws.gov/project/dover-chemical-corporation-sugar-creek-natural-resource-damage-assessment-and-restoration

Determination

Based upon information and analysis contained within the Draft RP/EA, we have determined the activities of Alternatives 2 and 3 are not a major Federal action that would significantly affect the quality of the human environment within the meaning of NEPA 42 U.S.C. § 4332(2)(c). Effects to physical, biological, socio-economic, and cultural resources are identified in the Draft RP/EA and are minor and beneficial. The Draft RP/EA is hereby incorporated by reference, and upon execution of this FONSI, the Final RP/EA will be incorporated herein. This action is not an action that would require the development of an Environmental Impact Statement (EIS). Accordingly, preparation of an EIS on the proposed action is not warranted.

It is my decision to issue the Final Restoration Plan and Environmental Assessment and begin implementation.

CHARLES TRAXLER
Digitally signed by CHARLES TRAXLER
Date: 2023.02.23 14:31:39 -06'00'

Charles W. Traxler
Acting Regional Director/DOI Authorized Official Date

Appendix J: Environmental Action Statement

UNITED STATES FISH AND WILDLIFE SERVICE

550 FW 3
Exhibit 4

ENVIRONMENTAL ACTION STATEMENT

Within the spirit and intent of the Council on Environmental Quality's regulations for implementing the National Environmental Policy Act (NEPA), and other statutes, orders, and policies that protect fish and wildlife resources, I have established the following administrative record and determined that the action of (describe action):

Implementing the selected alternatives (listed below) in the Final Restoration Plan/Environmental Assessment for the Sugar Creek Valley Natural Resource Damage Assessment at the Dover Chemical Corporation Site:
The Wilderness Center - Falcon Flats Restoration Project
The Wilderness Center - Lash's Bog Enhancement and Restoration
Sugar Creek Habitat Conservation Project
Western Reserve Land Conservancy - Eastern Hellbender Project

☑ is a categorical exclusion as provided by 51 6 DM 2, Appendix I and 516 DM 6, Appendix 1. No further NEPA documentation will therefore be made.

☑ is found not to have significant environmental effects as determined by the attached environmental assessment and finding of no significant impact.

☐ is found to have significant effects and, therefore, further consideration of this action will require a notice of intent to be published in the Federal Register announcing the decision to prepare an EIS.

☐ is not approved because of unacceptable environmental damage, or violation of Fish and Wildlife Service mandates, policy, regulations, or procedures.

☐ is an emergency action within the context of 40 CFR 1506.11. Only those actions necessary to control the immediate impacts of the emergency will be taken. Other related actions remain subject to NEPA review.

Other supporting documents:

Final Restoration Plan/Environmental Assessment (RP/EA) including:
-Finding of No Significant Impact (FONSI)
-Categorical Exclusion (Eastern Hellbender Project and Sugar Creek Preservation Project)
-Intraservice Section 7 Evaluations
-Regional National Historic Preservation Act Clearance
-Coastal Barrier Resource Act Consultation (Not applicable)

Signature Approval:

DEBORAH MILLSAP
Digitally signed by DEBORAH MILLSAP
Date: 2023.02.22 09:09:24 -05'00'

Originator

SARAH BOWMAN
Digitally signed by SARAH BOWMAN
Date: 2023.02.22 09:23:02 -05'00'

NRDAR Coordinator, Midwest Region 3

CHARLES TRAXLER
Digitally signed by CHARLES TRAXLER
Date: 2023.02.23 14:32:49 -06'00'

Charles W. Traxler
Acting Regional Director, Midwest Region 3

Appendix K: Trustees Signature Pages

U.S. Department of the Interior Approval of the Final Restoration Plan and Environmental Assessment for the Sugar Creek Valley Natural Resource Damage Assessment at the Dover Chemical Corporation Site

In accordance with the U.S. Department of Interior policy regarding documentation for natural resource damage assessment and restoration projects (521 DM 3), the Authorized Official for the Department must demonstrate approval of draft and final Restoration Plans with their associated National Environmental Policy Act documentation, with concurrence from the Department's Office of the Solicitor.

The Authorized Official for the Dover Chemical Corporation Site is the Regional Director for the U.S. Fish and Wildlife Service's Midwest Region 3.

By the signature below, the final Restoration Plan and Environmental Assessment for the Dover Chemical Corporation Site is hereby approved.

Approved:

CHARLES TRAXLER

Digitally signed by CHARLES TRAXLER
Date: 2023.02.23 14:33:37 -06'00'

Charles W. Traxler
DOI Authorized Official
Acting Regional Director, Midwest Region 3, U.S. Fish and Wildlife Service

Ohio Environmental Protection Agency Approval of the Final Restoration Plan and Environmental Assessment for the Sugar Creek Valley Natural Resource Damage Assessment at the Dover Chemical Corporation Site

In accordance with the Memorandum of Understanding between the United States Fish and Wildlife Service and the Ohio Environmental Protection Agency executed July 22, 2009, the State of Ohio indicates by their signature below their agreement to concur, in its entirety, with this Final Restoration Plan and Environmental Assessment for the Dover Chemical Corporation Site on behalf of their agency.

Approved:

Anne M. Vogel, Director
Ohio Environmental Protection Agency